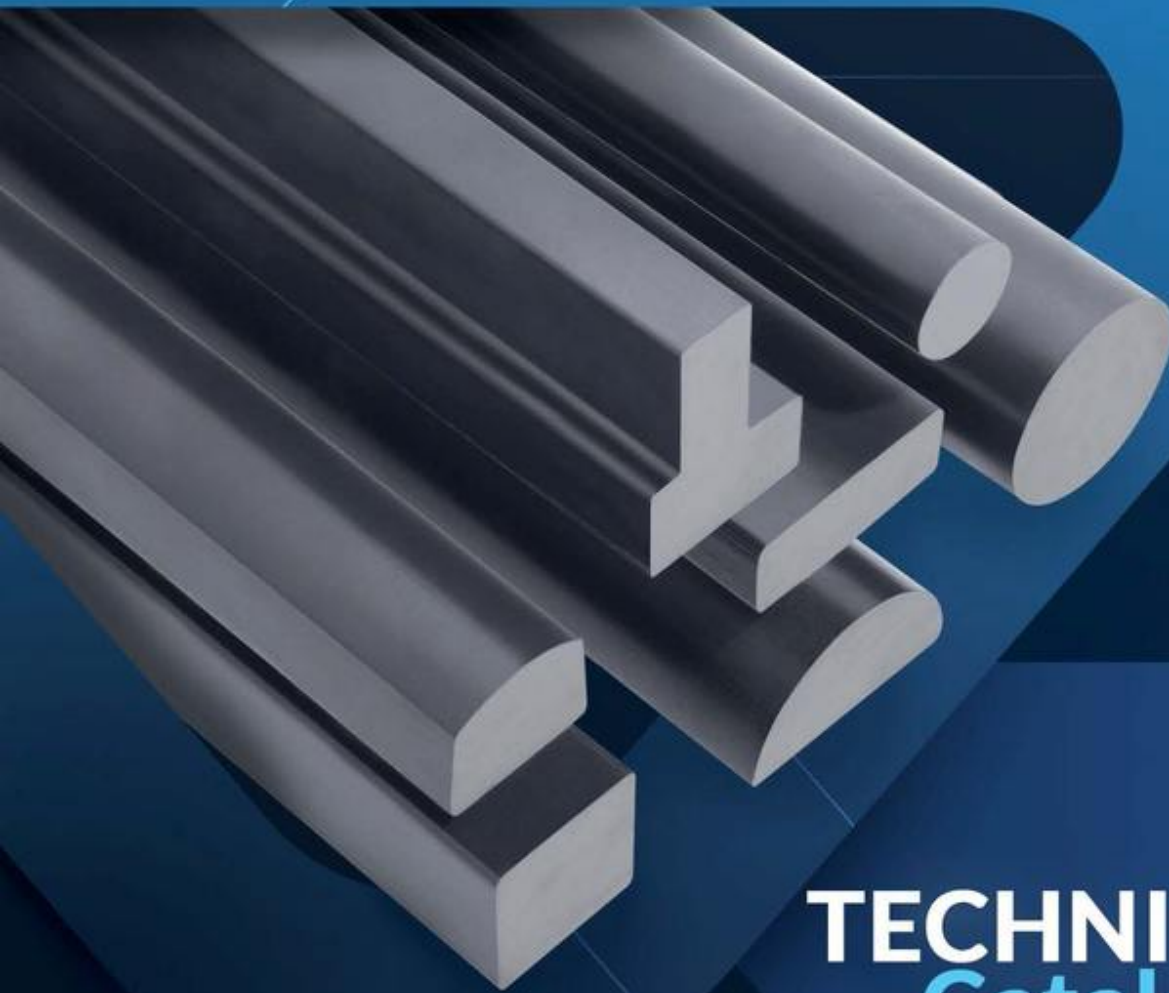


VERSABAR CONTINUOUS CAST BAR

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TECHNICAL Catalog



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CERTIFICATION



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Introduction

CAST IRON

Gray iron and nodular iron are alloys of iron-carbon-silicon. Carbon is added to the liquid metal in amounts that exceed iron solubility limits and precipitates as graphite particles. The shape of the graphite may be lamellar (gray iron) or spherical (nodular iron). Figures 1a and 1b show the typical microstructure of these two types of iron.

The shape and distribution of graphite, as well as the matrix structure, have a direct influence on the properties of cast iron. That is why selecting the right class is the first and most crucial step in developing new applications.

In addition to the **standard** classes of cast iron, it may be necessary to examine variations of these classes with alloying element additions or heat treatment processes that will help achieve the metallurgical properties suited to specific needs.

Our technical department will be able to help you determine which class of material is most suitable for your needs through info@abmtgroup.com

Figure 1a. GRAY IRON

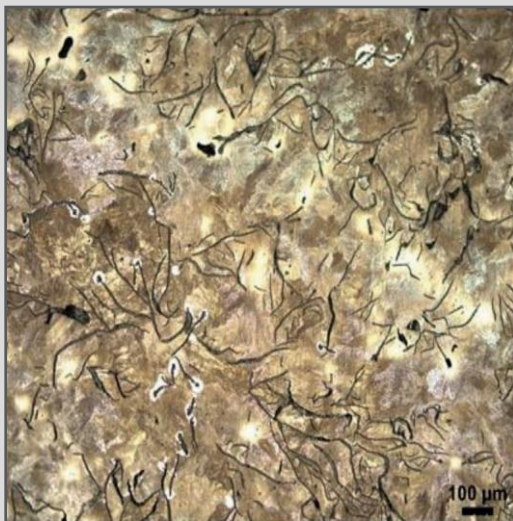
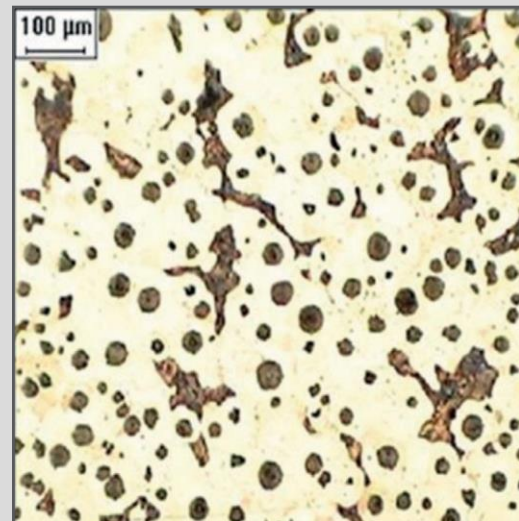


Figure 1b. NODULAR IRON



Continuous Cast

VERSABAR®

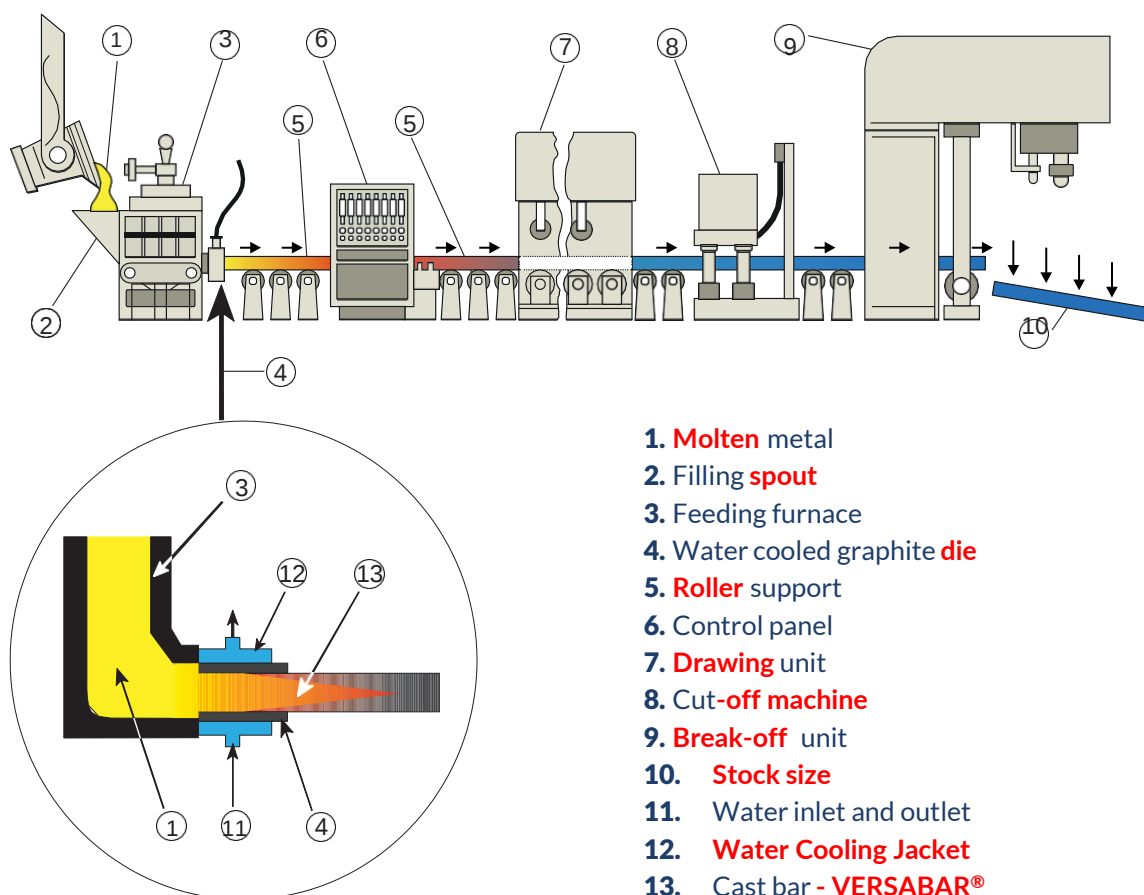
CONTINUOUS CAST PROCESS

The constant evolution of cast iron **cast** technology is increasingly contributing to the development of new applications, thus enabling more economical alternatives to obtain products with the same or higher quality as those obtained from steel bars or conventional casting (sand). The name **VERSABAR®** is a trademark for **Continuous Cast Iron Bar**, called the Continuous **Cast** process (figure 2), which consists of leaking the liquid metal into a feeder furnace, where a water-cooled graphite coil is mounted on the lower front, which gives the desired shape and dimension of the continuous cast bar to be produced.

The continuous casting process consists of melting and forming the final product in a single operation, ensuring control and constancy of physical and geometric properties of each product.

The liquid metal comes into contact with the **graphite die** and a solid shell begins to form. When this layer is strong enough to withstand the metallostatic pressure and the liquid metal in the bar's core, an electronic control unit drives the motors that pull the bar in a horizontal direction. As the bar runs the length of the machine the solidification process is completed. The bars are then notched with cutting discs and then punctured to the length requested by the customers.

Figure 2. CONTINUOUS **CAST** PROCESS | **VERSABAR®**



Continuous Cast VERSABAR®

GEOMETRY FLEXIBILITY

As the geometry of VERSABAR® is delineated by a cooled graphite shell, it is possible to produce bars with excellent mechanical properties and with a more refined structure, and high integrity. These characteristics make VERSABAR® an economical and high-performance material, allowing it to be used to manufacture various metal components.

The continuous **cast** process allows for the production of various geometric shapes, such as round, square, rectangular, oval sections, and others that closely resemble the final geometry of the part (Figure 3) to be manufactured from a **VERSABAR®**.

Figure 3 - Special shapes near the final geometry of the part



ADVANTAGES OF VERSABAR®:

VERSABAR® has many advantages when compared to other cast iron. Due to its unique nature and its manufacturing process, many defects typical to traditional casting methods can be avoided, thus reducing one of the main sources of loss (scrap) after machining. Among the defects rarely found in **VERSABAR®**, the following stand out:

Gas Bubbles/Porosities: Defects that occur internally in a casting and that are usually rounded in appearance with a smooth internal surface, and may also present an elongated appearance and

come in various sizes. The formation of porosities can have several causes, all of which originate from gas sources. The following can be cited as probable causes of porosity formation:

a) **Gases from molding materials, sands and paints.**

b) **Mechanical trapping of gases**

- contained in the mold cavities;
- generated by the molds and cores;
- due to turbulence during leak;
- due to inadequate channel systems.

Continuous Cast

VERSABAR®

c) Gases dissolved in the liquid metal.

For the production of VERSABAR®, the mold used is made of graphite, which does not release gases when subjected to high temperatures. In addition, the main sources of gases mentioned above do not exist. In continuous cast bars produced by continuous casting, the presence of gases is limited to those contained in the liquid metal, which significantly reduces the tendency for porosity formation compared to other casting processes.

Recesses: cavities caused by the contraction of the liquid metal during solidification, typically located in the thicker sections, at the thermal centers of the parts. In the casting of cast iron in sand, in addition to the contraction of the liquid metal during solidification, there is an additional factor: the expansion of the mold, which increases the need for liquid metal to compensate for the dimensional variation that the part undergoes.

In continuous **cast**, there are two variables that reduce the tendency of the appearance of recesses, which are:

Graphite molds: because they are rigid, they do not deform with the stresses that occur during the solidification of cast iron.

Continuous feeding: a furnace with approximately 2t of liquid metal works as a riser, feeding the part until complete solidification.

Thus, when machining a part from **VERSABAR®**, there will be no risk of unpleasant surprises at the end of machining, such as the appearance of recesses.

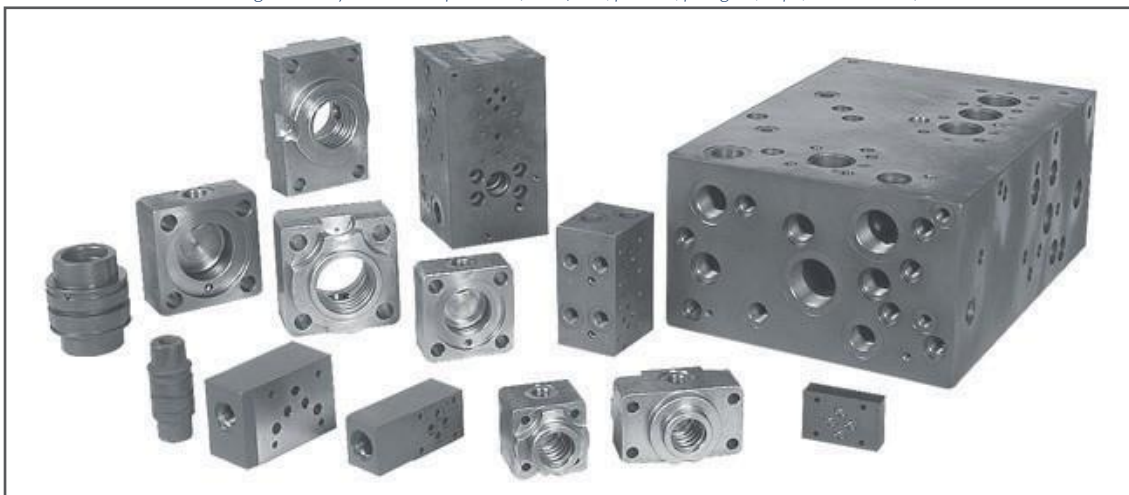
Slag inclusions: this non-metal residue has always caused problems to foundries operating with closed molds. These impurities are routinely leaked along with the liquid iron into the mold. The continuous casting process begins with the pouring of the liquid iron into the feeding furnace. As slag typically has a lower density than liquid iron, it floats and concentrates at the top of the furnace, where it can be easily removed. This causes only the impurity-free metal to enter the die and form defect-free bars.

Watertightness: in conventional casting (sand) it is not uncommon to find coarse graphite in thick parts, which, when subjected to high pressure, may leak oil. In continuous casting, due to the high heat extraction rates provided by the cooled graphite mold, a faster and more uniform cooling rate of the liquid iron is achieved.

This particular characteristic of the process is responsible for the refinement of the graphite, providing high watertightness, which is essential in the production of hydraulic components. (see Figure 4)

More refined structure: Also, due to the use of cooled graphite molds to shape the desired geometry of the bars, the continuous casting billets **VERSABAR®** have more refined structures compared to parts of the same thickness (cooling module) produced in sand molds, providing the material with better mechanical properties.

Figure 4 - Hydraulic components (manifolds, pistons, plungers, caps, valve bodies)



Continuous Cast VERSABAR®

BENEFITS OF VERSABAR®

Compared to Steel
(Weight and Vibration Damping)

Density of **VERSABAR®** = 7.2g/cm³ Density of steel = 7.86 g/cm³

The density of **VERSABAR®**, approximately 10% lower than steel, is due to the higher percentage of carbon (density = 2.2g/cm³) in the form of graphite in the cast iron structure. This results in lower weight and higher vibration damping, important features in the manufacture of gears and other machine components.

Less overmetal removal

The continuous casting process allows for the production of bars in different shapes and dimensions, very close to those desired in the finished part. The bars are produced with a surface free of sand inclusions, parting lines, channels, and other feeding inconsistencies found in other castings. This means uninterrupted smooth cuts with less time to machine a part of **VERSABAR®**.

Improved machinability

Due to the uniformity of its microstructure, the absence of surface abrasive inclusions (sand residues), the absence of a decarburized layer, and being produced from high-quality gray and ductile cast iron, the continuous casting billets exhibit superior machinability compared to cast iron produced in sand.

In addition to the benefit of less material removal, **VERSABAR®** offers more attractive features. The presence of graphite in the structure acts as a chip breaker and natural lubricant during machining. This generates a higher cutting speed and lower tooling wear. By machining more parts per hour, you will reduce your cycle time and increase your productivity and machine capacity. The result is a lower total cost per part. The best results are found in gray and nodular cast iron with ferritic matrix.

High strength classes

For the production of components that require high mechanical strength, an alloy that meets the FE 70002 class is available, but its strength and toughness can be increased through austempering heat treatment, resulting in a ductile iron with a bainitic matrix. With this material, strength limit values of around 1000 to 1500 MPa can be reached, with elongation values of up to 6%. Ductile cast iron subjected to austempering heat treatment are suitable for the manufacture of gears, valve actuator shafts, pins, bushings, and other components that require good toughness combined with high wear resistance. Due to its high hardenability, this material can also undergo heat treatments such as quenching and tempering, normalizing, and others, making it possible to achieve a wide range of mechanical property combinations.

Elimination of tooling costs (patterns and core boxes)

Because it has different sizes and shapes, it will always be possible to select a type of **VERSABAR®** that most closely matches the final shape of the component to be machined. This eliminates the high costs of casting tools and the long lead times to obtain them, significantly reducing the final cost of the product, especially when it comes to items with low demand, such as prototypes, parts that will undergo modifications, maintenance parts, among others.

Vibration dampening

The graphite present in the structure of **VERSABAR®** confers a superior damping capacity than in low carbon steels, being 20 times* more in gray and 3 times in nodular. This increased vibration damping results in quieter products compared to steel components manufactured to the same dimensional tolerances and with similar finishes.

* Source: ASM Metals Handbook

Continuous Cast VERSABAR®

Less scrap after machining

Machining productivity revolves around the consistency of the material and the exemption from common defects in sand castings, this makes **VERSABAR®** the best product in machining performance.

Surface Heat Treatments

VERSABAR® is suitable for different types of heat treatments and other surface treatments. These processes can improve fatigue resistance, wear and corrosion resistance.

Consult your local heat treatment service for the best process for your needs. Surface quenching in valve guides, hard chrome coating in molds for glassware, nitriding and shot peening are some examples of treatments used in **VERSABAR®**.

Thermal conductivity

VERSABAR® in gray cast iron has excellent thermal conductivity due to the presence of graphite. This feature is an advantage in applications where the requirement for heat exchange is an important factor. The lamellar graphite in a ferritic matrix has a thermal conductivity value about 2 times greater than that of low carbon steels.

Wear resistance

Cast iron generally exhibits better resistance to mechanical wear than steel, especially in situations of frictional wear. The presence of graphite in the **VERSABAR®** matrix creates a graphitic dry lubricant that allows solid surfaces to slide against each other without deteriorating surface quality, making it easier to use.

Aluminum, Bronze and Sand Casting Alternative

Using **VERSABAR®** as an alternative to other materials will result in benefits such as a reduction in machining cost, increased productivity, and the homogeneity of the casting promotes better performance and durability of the component when subjected to mechanical stresses.

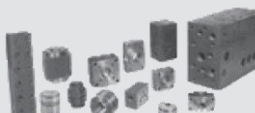
Many metal and non-metal components, depending on the application, are susceptible to replacement by **VERSABAR®** cast iron bars. For more information, please consult our engineering department.

Continuous Cast VERSABAR®

TYPICAL APPLICATIONS OF VERSABAR®

Many metal components typically produced in gray or ductile cast iron, some types of steel, aluminum, and bronze can be strong candidates for conversion to VERSABAR®. Table 1 shows some applications where VERSABAR® has successfully replaced other materials.

Table 1 - Typical applications of VERSABAR®

MARKET SEGMENT	COMPONENTS	
Hydraulics and pneumatics	Manifolds, plungers, cylinder caps, cylinder heads, valve bodies, rotors.	
Glassware	Molds, patterns, pins, punches, neck rings, cores.	
Machinery and Equipment	Pulleys, couplings, sheaves, shafts, guide rails, bushings, washers, nuts, gears, pins, counterweights, tables, flanges, bearings, hammers.	
Auto Parts	Bearings caps, spacers, plungers, brake pistons, rings, valve guides, actuator shafts, valve seats.	
Other	Thermocouple protectors, die cuts, seals, cones, plugs, valve plates, rollers for cooling beds, dies.	
Tooling	Plastic injection molds, non-ferrous alloys, sand casting molds, patterns, models, tools.	

These examples show the versatility of the VERSABAR®, a product that caters to a wide range of segments. From simple applications such as washers and pulleys to complex applications such as molds for the glass industry and valve bodies for hydraulic components.

Continuous Cast Gray

DESCRIPTION

The classes produced in FC 200, FC 250, FC 300, and GMI represent the group of gray cast iron produced by the continuous casting process – VERSABAR®. These classes always present graphite in the form of veins, and are distinguished by the type of graphite and the matrix. These characteristics influence the following properties:

- **Machinability;**
- **Hardness;**
- **Vibration dampening;**
- **Thermal conductivity;**
- **Wear resistance;**
- **Tensile strength limit;**
- **Surface finish and others.**

The most common specification of gray cast iron according to ASTM A 247, graphite has the VII form predominantly of type A, size 3 – 8.

When analyzed according to EN ISO 945-1 the graphite has the form I predominantly of type A, size 3 – 5.

The FC 200 class features graphite distributed in a predominantly pearlitic matrix, offering exceptional machinability and excellent surface finish. It is recommended for use in parts that require moderate strength, as well as good vibration and noise damping; thermal conductivity is also excellent in this grade.

The FC 250 class features a distribution with a predominantly pearlitic matrix, which provides good mechanical properties, effective vibration damping, good machinability, high resistance to pressure, and a good surface finish after machining.

The FC 300 class also features this distribution, but with a predominantly pearlitic matrix, which gives it better mechanical properties, excellent wear resistance, and good hardenability. The damping of noise and vibrations is also good, making it a great choice.

In the GMI class, the graphite is predominantly of type D, size 6 - 8, in a predominantly ferritic matrix. With a refined grain structure, VERSABAR® GMI is recommended for the production of molds in the glass industry and also for parts that require excellent surface finish, ensuring the polishing of the mold – a characteristic essential for giving the final product more shine.

NOTE: For the FC 200, FC 250, and FC 300 classes, due to the rapid cooling during the solidification of the periphery, they will not contain type A graphite, but mainly fine type D and E graphite, with a predominantly ferritic matrix. The overmaterial can be removed by machining.

Gray Iron

VERSABAR® FC 200 - Ferritic Gray Iron

Description

VERSABAR® FC 200 is a gray cast iron that is characterized primarily by excellent machinability and surface finish, allowing for increased cutting speeds and reduced premature tool wear, thus ensuring tight dimensional tolerances.

The specifications follow ASTM A48 Class 30, DIN-EN 16482 - Class GJL 200, and ABNT NBR 15850 - Class FC 200.

Microstructure

The typical microstructure of VERSABAR® FC 200 consists of lamellar graphite, form VII, predominantly of type A, size 3 - 8, as defined by ASTM A 247. When analyzed according to EN ISO 945-1 the graphite has the form I predominantly of type A, size 3 - 5.

The matrix is predominantly perlitic. The periphery consists of type D graphite, size 6 - 8, with approximately 5% of carbides dispersed in the overcast region (see Figures 5a and 5b).

Figure 5a - Typical microstructure at the center
(VERSABAR® FC 200)



Figure 5b - Typical microstructure at the periphery
(VERSABAR® FC 200)



Mechanical Properties

In Table 2, the minimum and maximum hardness values for analyses performed on the transverse section of the bar are specified, as well as the tensile strength values for test specimens taken from the middle radius section of the bar.

Table 2 - Mechanical properties of VERSABAR® FC 200

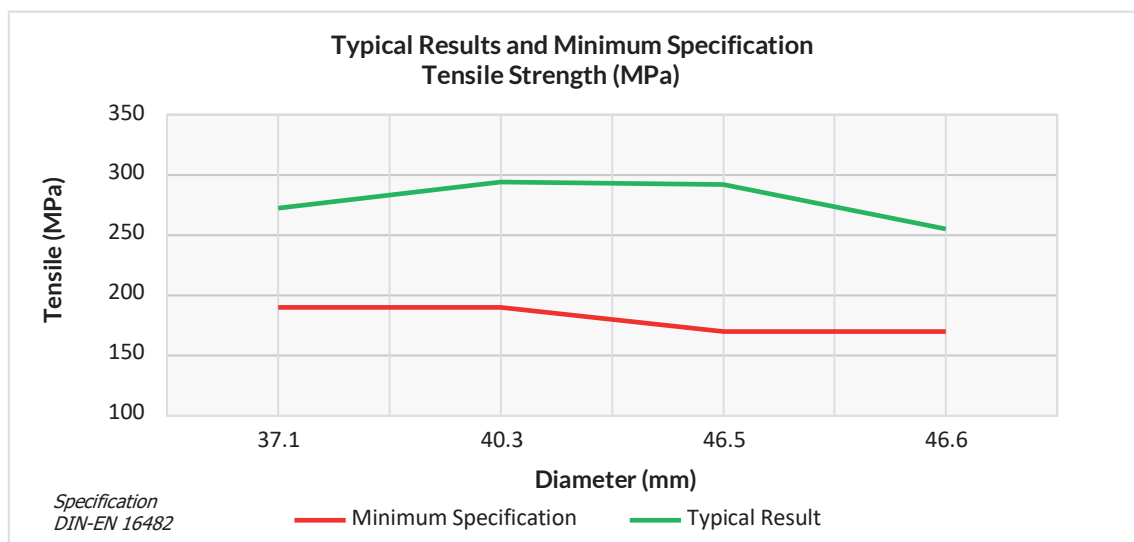
Gross Dimensions (mm)	Nominal Dimensions (inch)	Tensile Strength (min.) ₁ (MPa)	Hardness ₂ (HB)
≤ 50 ¹	≤ 1.9685	155	160 - 270

1) DIN-EN 16482 specification. 2) Tupy specification. 3) For this material class, ASTM A48 does not define the mechanical properties of the cast material.

Gray Iron

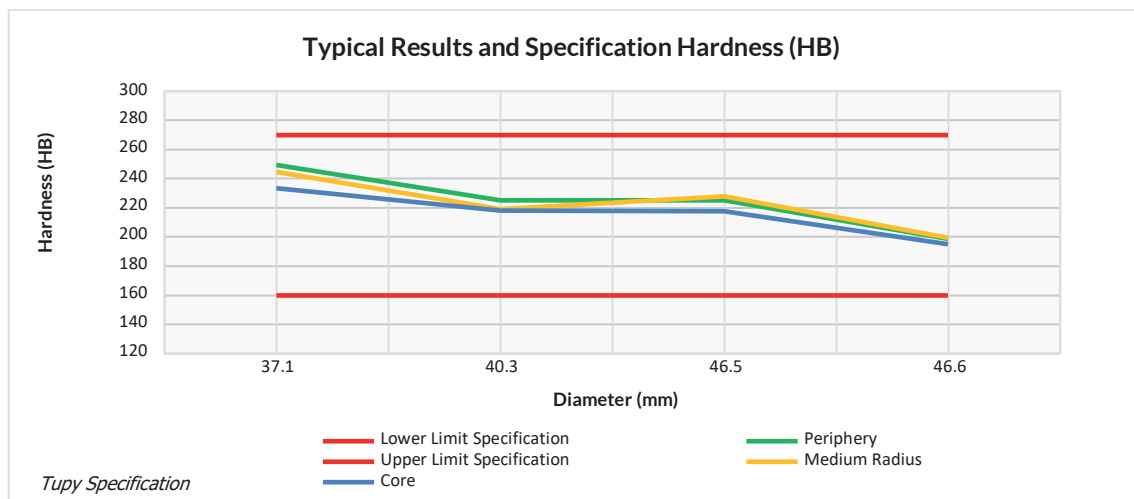
The tensile strength varies with the diameter and thickness of the bars, i.e., the larger the diameter, the lower the tensile strength. The typical results found in specimens taken in the middle radius section of the bars are shown in graph 1.

Graph 1: Tensile strength of VERSABAR® FC 200 - Typical results and specification



The typical hardness results found in the cross section of the bars, in the periphery, medium radius and core regions are shown in graph 2.

Graph 2: Typical hardness results of VERSABAR® FC 200 in different regions



Gray Iron

Chemical Composition

The overall chemical composition for VERSABAR® FC 200, as shown in Table 3, is subject to the mechanical properties. The chemical analysis refers to the sample taken from the liquid metal, and may vary if compared with the analysis performed on the bar.

Table 3 - VERSABAR® FC 200 chemical composition

Element	%
C ₁	2.8 - 3.70
Si	2.20 - 2.70
Mn	0.20 - 0.70
S	0.20 max.
P	0.15 max.
Cr	0.10 max.

Note 1: The carbon ranges are specified for each size group in order to control the type and size of the graphite. The variation within the same range is approximately 0.20%.

Heat Treatment

VERSABAR® FC 200 may be quenched in oil where the purpose of quenching is to increase hardness and mechanical strength and, as a result, wear resistance. Another usual heat treatment is annealing, used to reduce hardness (110 - 170 HB), which appreciably improves machinability.

Typical applications

The VERSABAR® FC 200 is recommended for applications that require moderate mechanical properties, vibration and noise damping, as well as thermal conductivity, such as bushings, pulleys, rings, handles, machine tool tables, counterweights, flanges, plugs, machine structures, bearings, couplings, sheaves, spools, spindles for textile machines, etc., as shown in Figure 6.

Figure 6 - Gear made with VERSABAR® FC 200



Profile and size range

Table 4 demonstrates the dimensions and geometric shapes produced with VERSABAR® FC 200. The standard cutting length of our cast iron products is 1880 mm (74.0157 "). For other dimensions and lengths, please consult our engineering department.

Table 4 - Sizing produced in VERSABAR® FC 200

Round	Square	Rectangular	Special
27.6 mm to 46.6 mm 1.0826" to 1.834"	Customer design sizes and continuous cast bar available upon request.		

Perlitic Gray Iron

VERSABAR® FC 250 - Perlitic Gray Iron

Description

VERSABAR® FC 250 is a gray cast iron suitable for applications that require moderate strength, good vibration damping, and thermal conductivity, along with characteristics of excellent machinability, allowing for increased cutting speeds, higher productivity, and reduced premature tool wear, thus ensuring tight dimensional tolerances.

The specifications follow ASTM A48 Class 35, DIN-EN 16482 - Class GJL 250, and ABNT NBR 15850 - Class FC 250.

Microstructure

The typical microstructure of VERSABAR® FC 250 consists of lamellar graphite, form VII, predominantly of type A, size 3 - 8, as defined by ASTM A 247. When analyzed according to EN ISO 945-1 the graphite has the form I predominantly of type A, size 3 - 5.

The matrix is predominantly perlitic. The periphery consists of type D graphite, size 6 - 8, with approximately 5% of carbides dispersed in the overcast region (see Figures 7a and 7b).

Figure 7a - Typical microstructure at the center (VERSABAR® FC 250)



Figure 7b - Typical microstructure at the periphery (VERSABAR® FC 250)



Mechanical Properties

In Table 5, the minimum and maximum hardness values for analyses performed on the transverse section of the bar are specified, as well as the tensile strength values for test specimens taken from the middle radius section of the bar.

Table 5 - Mechanical properties of VERSABAR® FC 250

Gross Dimensions (mm)	Nominal Dimensions (inch)	Tensile Strength (min.) ¹ (MPa)	Hardness ² (HB)
≤ 50 ¹	≤ 1.9685	195	170 - 240
50 < D ≤ 100 ¹	1.9685 < D ≤ 3.9370	180	
100 < D ≤ 200 ¹	3.9370 < D ≤ 7.8740	165	
200 < D ≤ 400 ¹	7.8740 < D ≤ 15.7480	155	
> 400 ³	> 15.7480	145	

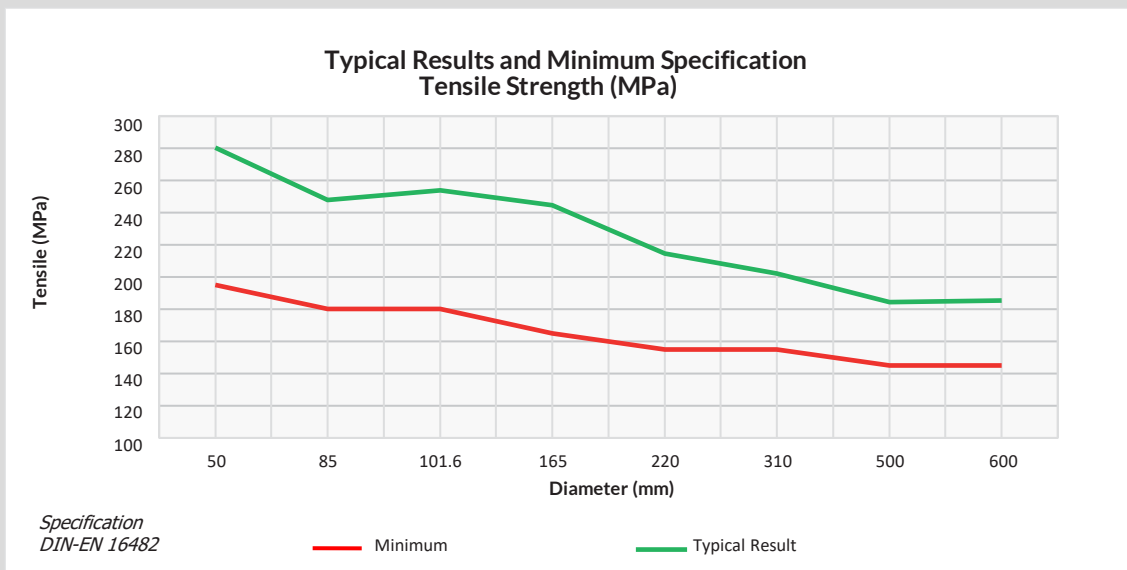
1) DIN-EN 16482 specification. 2) Tupy specification. 3) For this material class, ASTM A48 does not define the mechanical properties of the cast material.

Cast iron

Gray

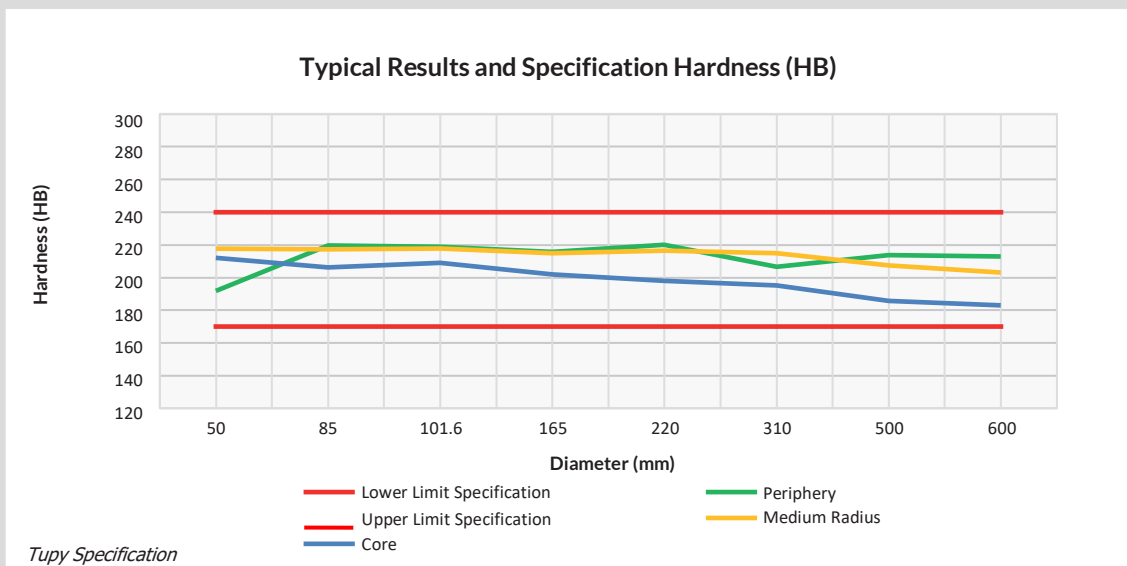
The tensile strength varies with the diameter and thickness of the bars, i.e., the larger the diameter, the lower the tensile strength. The typical results found in specimens taken in the middle radius section of the bars are shown in graph 3.

Graph 3: Tensile strength of VERSABAR® FC 250 - Typical results and specification



The typical hardness results found in the cross section of the bars, in the periphery, medium radius and core regions are shown in graph 4.

Graph 4: Typical hardness results of VERSABAR® FC 250 in different regions



Cast Iron

Gray

Chemical Composition

The overall chemical composition for VERSABAR® FC 250, as shown in Table 6, is subject to the mechanical properties. The chemical analysis refers to the sample taken from the liquid metal, and may vary if compared with the analysis performed on the bar.

Table 6 - VERSABAR® FC 250 chemical composition

Element	%
C ₁	2.8 - 3.70
Si	2.20 - 2.70
Mn	0.20 - 0.70
S	0.20 max.
P	0.15 max.
Cr	0.10 max.

Note 1: The carbon ranges are specified for each size group in order to control the type and size of the graphite. The variation within the same range is approximately 0.20%.

Note 2: Additions of pearlitizing elements can be made to achieve the mechanical properties.

Heat Treatment

VERSABAR® FC 250 may be quenched in oil where the purpose of quenching is to increase hardness and mechanical strength and, as a result, wear resistance. Another usual heat treatment is annealing, used to reduce hardness, which appreciably improves machinability.

Typical applications

The VERSABAR® FC 250 is recommended for applications such as machine tools, gearboxes, machine bases with recommended wall thicknesses of up to 30 mm, compressors, pulleys, distribution blocks, hydraulic parts, pump parts, and high-stress assemblies, as well as ratcheting plates, as shown in Figure 8.

Figure 8 - Pulleys made with VERSABAR® FC 250



Profile and size range

Table 7 demonstrates the dimensions and geometric shapes produced with VERSABAR® FC 250. The standard cutting length of our cast iron products is 1880 mm (74.0157 "). For other dimensions and lengths, please consult our engineering department.

Table 7 - Sizing produced in VERSABAR® FC 250

Round	Square	Rectangular	Special
25.0 mm to 635 mm	30 mm x 30 mm 420 mm x 420 mm	20 mm x 40 mm 530 mm x 570 mm	Customer design sizes and continuous cast bar available upon request.
0.9842" to 25.000"	1.1811" - 1.1811" 16.5354" - 16.5354"	0.7874" - 1.5748" 20.8661" - 22.4409"	

Cast iron

Gray

VERSABAR® FC 300 - Pearlitic Gray Iron

Description

VERSABAR® FC 300 is a gray cast iron with an essentially pearlitic structure, which provides high mechanical properties, excellent wear resistance, good surface finish, noise and vibration damping, and good hardenability. Another important characteristic is the good sealability, which, combined with the aforementioned properties, allows its use in parts for hydraulic components subjected to high pressures.

The specifications follow ASTM A48 Class 40, DIN-EN 16482 - Class GJL 300, and ABNT NBR 15850 - Class FC 300.

Microstructure

The typical microstructure of VERSABAR® FC 300 consists of lamellar graphite, form VII, predominantly of type A, size 3 - 8, as defined by ASTM A 247. When analyzed according to EN ISO 945-1 the graphite has the form I predominantly of type A, size 3 - 5.

The matrix is predominantly pearlitic. The periphery consists of type D graphite, size 6 - 8, with approximately 5% of carbides dispersed in the overcast region (see Figures 9a and 9b).

Figure 9a - Typical microstructure at the center (VERSABAR® FC 300)



Figure 9b - Typical microstructure at the periphery (VERSABAR® FC 300)



Mechanical Properties

In Table 8, the minimum and maximum hardness values for analyses performed on the transverse section of the bar are specified, as well as the tensile strength values for test specimens taken from the middle radius section of the bar.

Table 8 - Mechanical properties of VERSABAR® FC 300

Gross Dimensions (mm)	Nominal Dimensions (inch)	Tensile Strength (min.) ¹ (MPa)	Hardness ² (HB)
≤ 50 ₁	≤ 1.9685	220	180 – 280
50 < D ≤ 100 ₁	1.9685 < D ≤ 3.9370	205	
100 < D ≤ 200 ₁	3.9370 < D ≤ 7.8740	195	
200 < D ≤ 400 ₁	7.8740 < D ≤ 15.7480	185	
> 400 ₃	> 15.7480	180	

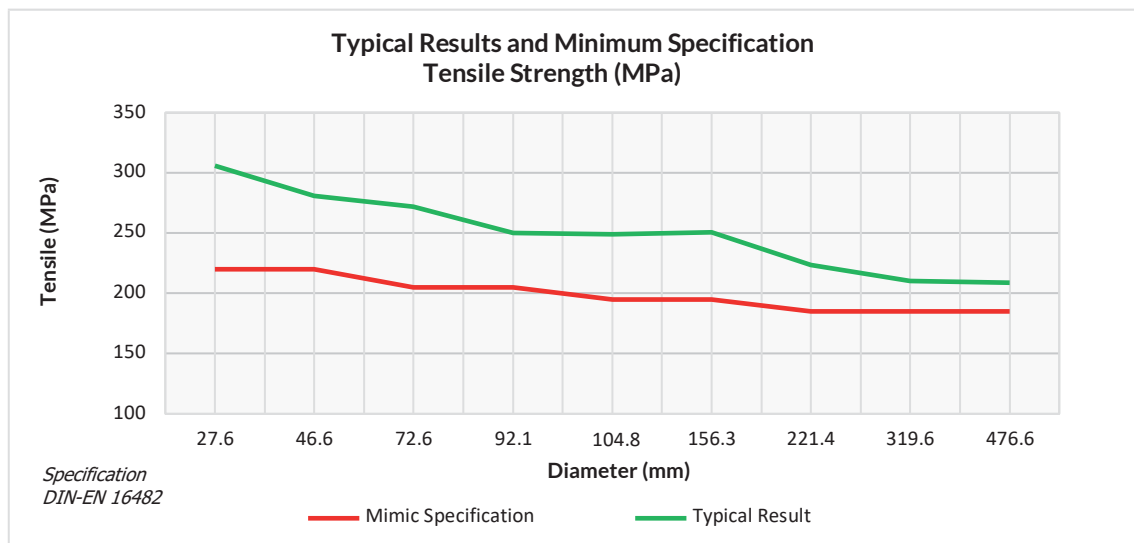
1) DIN-EN 16482 specification. 2) Tupy specification. 3) Tupy Specification. 4) For this material class, ASTM A48 does not define the mechanical properties of the cast material.

Cast Iron

Gray

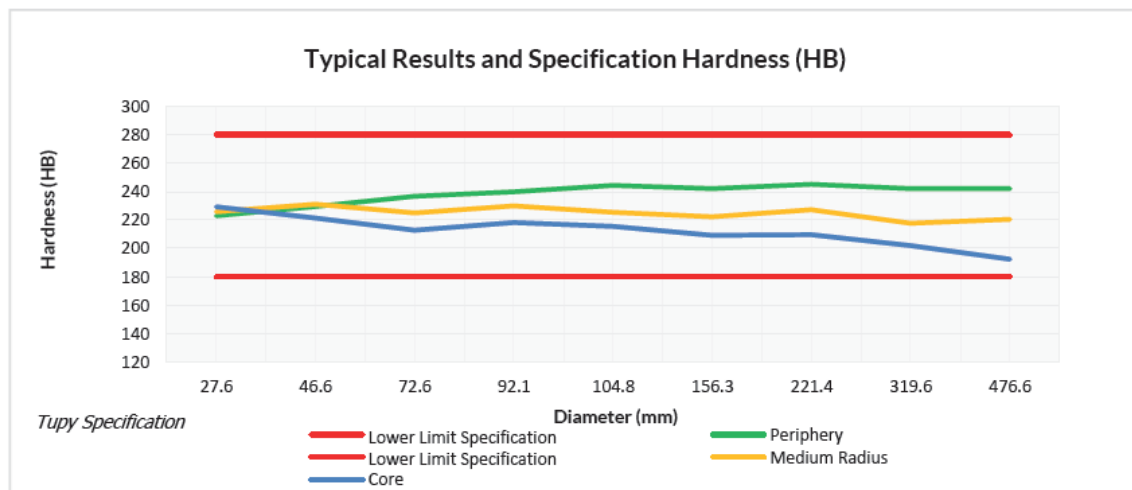
The tensile strength varies with the diameter and thickness of the bars, i.e., the larger the diameter, the lower the tensile strength. The typical results found in specimens taken in the middle radius section of the bars are shown in graph 5.

Graph 5: Tensile strength of VERSABAR® FC 300 - Typical results and specification



The typical hardness results found in the cross section of the bars, in the periphery, medium radius and core regions are shown in graph 6.

Graph 6: Typical hardness results of VERSABAR® FC 300 in different regions



Cast iron

Gray

Chemical Composition

The overall chemical composition for VERSABAR® FC 300, as shown in Table 9, is subject to the mechanical properties. The chemical analysis refers to the sample taken from the liquid metal, and may vary if compared with the analysis performed on the bar.

Table 9 - VERSABAR® FC 300 chemical composition

Element	%
C ₁	2.80 - 3.70
Si	2.20 - 2.70
Mn	0.20 - 0.70
S	0.20 max.
P	0.15 max.
Cr	0.10 max.

Note 1: The carbon ranges are specified for each size group in order to control the type and size of the graphite. The variation within the same range is approximately 0.20%.

Note 2: Perlitizing alloy elements can be added.

Heat Treatment

VERSABAR® FC 300 may be quenched in oil where the purpose of quenching is to increase hardness and mechanical strength and, as a result, wear resistance. As the matrix is predominantly pearlitic, it is possible to make surface quenching (flame or induction).

Typical applications

The VERSABAR® FC 300, in addition to having high mechanical properties, features good surface finish and good sealability, which allows its use in machine components subjected to wear, such as: guide rails, plungers, hydraulic valves, cylinder heads, cylinder caps, rack gears, piston rings, thermocouple protectors, molds, dies, couplings, spacers, etc., as shown in Figure 10.

Figure 10 - Pulleys made with VERSABAR® FC 300



Profile and size range defines the dimensions and geometric shapes produced with VERSABAR® FC 300. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 10 - Sizing produced in VERSABAR® FC 300

Round	Square	Rectangular	Special
25.0 mm to 635 mm	31.7 mm x 31.7 mm 406.4 mm x 406.4 mm	19 mm x 38.1 mm 410 mm x 610 mm	Customer design sizes and continuous cast bar available upon request.
0.9842" to 25.000"	1.2480" - 1.2480" 16.0000" - 16.0000"	0.7480" - 1.5000" 16.1417" - 24.0157"	

Cast Iron

Gray

VERSABAR® GMI - GRAY IRON WITH "D" GRAPHITE (REFINED)

Description

VERSABAR® GMI (Glass Mold Iron) is a gray cast iron with predominantly type D graphite. Originally developed for the production of molds in the glass industry, GMI has extremely refined graphite, giving it an excellent surface finish with high quality. It also stands out for its excellent machinability and good thermal conductivity. When subjected to repetitive thermal cycles of heating/cooling, it also stands out for its excellent dimensional stability due to the small size of the graphite and the predominantly ferritic matrix.

Microstructure

The typical microstructure of VERSABAR® GMI consists of refined graphite, form VII, predominantly of type D and E (minimum 70%), size 6 - 8, as defined by ASTM A 247. When analyzed according to EN ISO 945-1 the graphite has the form I predominantly of type D and E, size 5 - 8.

The matrix is predominantly ferritic, and may contain at most 5% carbides dispersed in the overmaterial region (as shown in figures 11a and 11b).

Figure 11a - Typical Microstructure VERSABAR® GMI Center

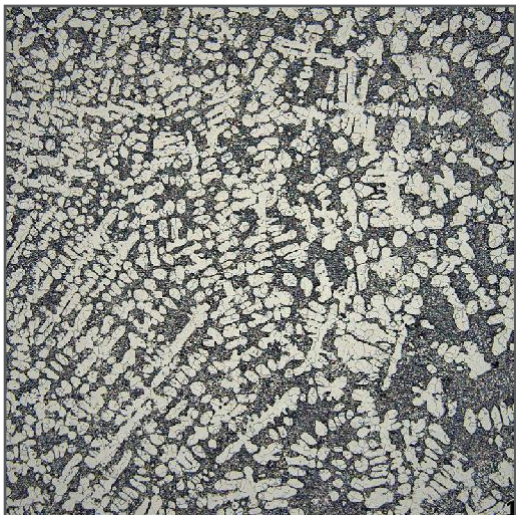
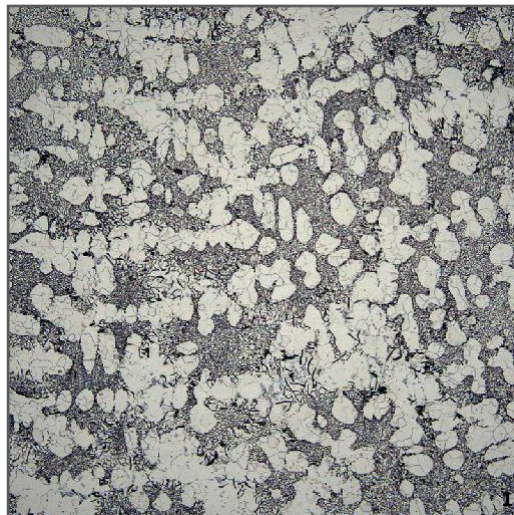


Figure 11b - Periphery Microstructure VERSABAR® GMI



Physical Properties

Thermal conductivity (W/m.K) 100 to 400°C = 41 to 44

Coefficient of thermal expansion (10⁻⁶/K) 20°C / 20°C to 400°C = 10 to 12.5

Mechanical Properties

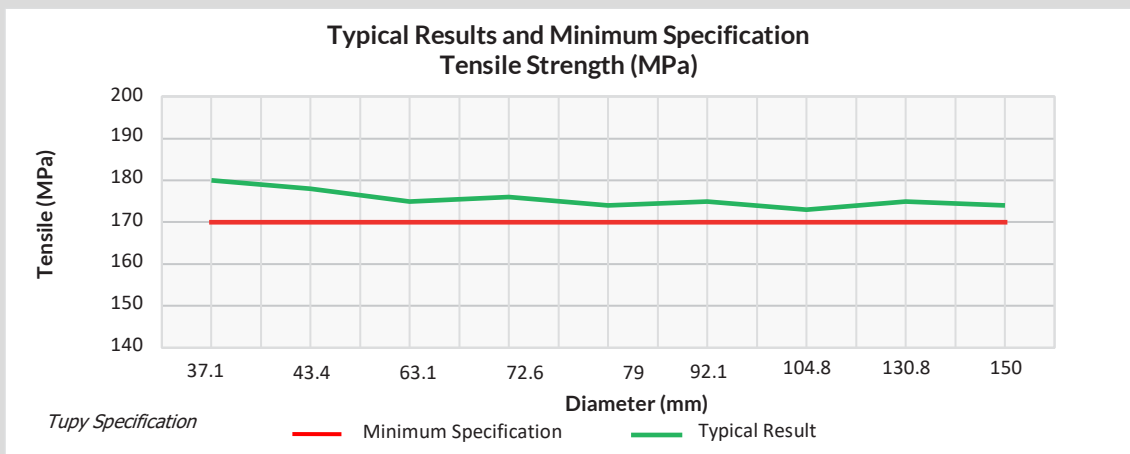
VERSABAR® GMI follows TUPY specifications for minimum and maximum hardness and tensile strength values. The tensile strength varies with the diameter and thickness of the bars, i.e., the larger the diameter, the lower the tensile strength. The typical results found in specimens taken in the middle radius section of the bars are shown in graphs 7 and 8.

Cast iron

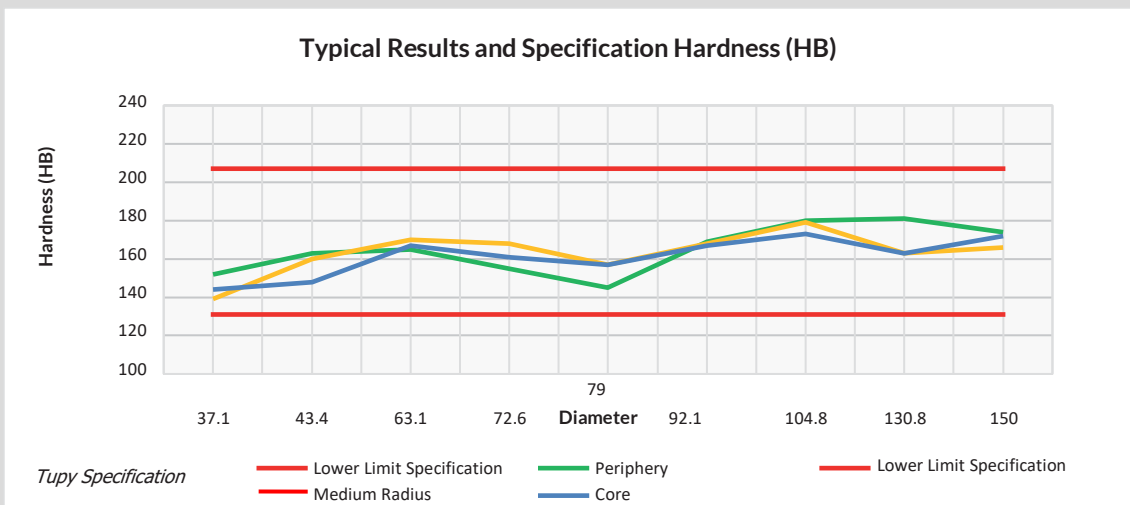
Gray

Tensile strength (min) = 170 MPa Hardness (HB) = 131 – 207

Graph 7: Tensile strength of VERSABAR® GMI - Typical results and specification



Graph 8: Hardness VERSABAR® GMI



Cast Iron

Gray

Chemical Composition

The overall chemical composition of VERSABAR®GMI is subordinate to mechanical properties and is shown in table 11. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 11 - VERSABAR®GMI chemical composition

Element	%
C ₁	3.10 - 3.80
Si	2.20 - 2.80
Mn	0.30 max.
P	0.10 max.
S	0.015 max.
Cr	0.10 max.

Note 1: The carbon ranges are specified for each size group in order to control the size of the graphite. The variation within the same range is approximately 0.20%.

VERSABAR®GMI Characteristics

- High mechanical properties and high thermal conductivity;
- Excellent dimensional stability at high temperatures;
- Low tendency to expansion;
- Good resistance to wear, oxidation and corrosion;
- Good adhesion for surface coatings;
- High resistance to thermal fatigue and thermal shock;
- Excellent machinability with low wear of cutting tools;
- Excellent finish of the machined surface;
- Produces an exceptionally fine polished finish.

Heat Treatment

Ferritization heat treatment is the most common treatment in VERSABAR®GMI. Additionally, it can be oil-quenched, where the goal of quenching is to increase hardness and mechanical strength, and consequently, wear resistance.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In the case of glassware, the molds are generally chrome plated. Other types of protection available upon request.

Typical applications

VERSABAR®GMI (Glass Mold Iron) has as its main characteristics excellent surface finish, excellent machinability, dimensional stability at high temperatures, and good thermal conductivity. Its main field of application is in the production of parts for the glass industry (Figures 12 and 13), such as molds, forms, deflectors, pins, and neck rings, and it can also be used for brake piston plungers.

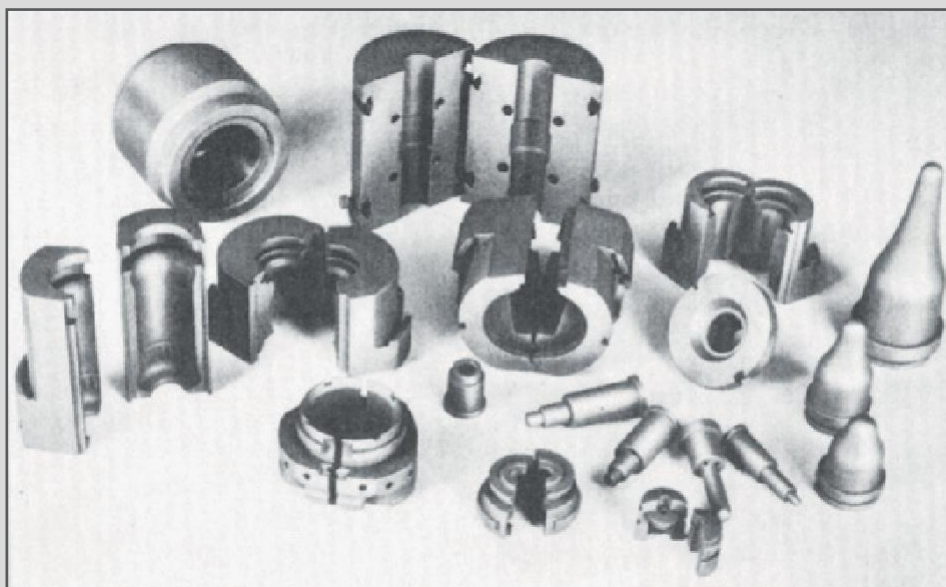
Figure 12 - Shapes and accessories applied to the glassware industry



Cast iron

Gray

Figure 13 - Shapes and accessories applied to the glassware industry



Profile and size range

Table 12 demonstrates the dimensions and geometric shapes produced with VERSABAR® GMI. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 12 - Sizing produced in VERSABAR® GMI

● Round	■ Rectangular	▤ Special
37.1 mm to 150 mm	42.7 mm x 49 mm	Customer design sizes and continuous cast bar available upon request.
1.4606" to 5.9055"	1.6811" - 1.9291"	

Working temperature and service life VERSABAR® GMI

Some applications of VERSABAR® GMI used in the glassware listed in table 13 with the respective working temperature and service life according to the glass manufacturing process. This information was published at the 2nd Meeting of the Tool, Mold, and Die Chain held in 2004 under the title 'Cast Iron Molds for Glass Parts Production.

Table 13 - Working temperature and application of VERSABAR® GMI

VERSABAR® alloy	Application	Average temperature (°C) *	Manufacturing process	Parts produced using molds *
GMI	Preforms	370	Blowing	250,000
GMI	Perfume Mold	500	Blowing	72,500 - 75,000
GMI	Medication Mold	500	Blowing	145,000 - 150,000
GMI	Neck Ring 350	350	Blowing	45,000 - 50,000

Source: <https://abmproceedings.com.br/ptbr/article/aplicaes-dos-ferros-fundidos-obtidos-atravs-do-processo-de-fundio-continua-nas-vidrarias>

Cast Iron

Nodular

DESCRIPTION

The ductile cast iron produced by continuous casting VERSABAR® have as their dominant structural characteristic free carbon in the form of nodules (spheres) of graphite, which act as chip breakers and natural lubricants during machining. These two characteristics result in a higher cutting speed and lower tool wear. VERSABAR® is produced in classes GJS 4007, FE 40015, FE 40018, FE 45012, FE 55006, FE 50007, FE 60003, FE 70002, NPE 60, WRI-100 and ADI.

Besides the shape of the graphite, the levels of ferrite and/or pearlite in the matrix determine the mechanical properties of the material and, consequently, its class. The tensile strength limit of VERSABAR®, in the raw melt condition, can vary between 370 and 700 MPa, with elongation from 2 to 15%.

VERSABAR® nodular can undergo various heat treatments, protection treatments, and surface hardening (increased wear resistance), such as hot-dip galvanizing or electroplating, chrome plating, and carburizing. Our technical team is at your disposal to provide more technical information on heat treatment for specific dimensions.

Can VERSABAR® be welded?

Yes, but it requires special care, and the use of Nickel-based electrodes is recommended. Otherwise, the ZAC (Heat Affected Zone) will become hard and brittle due to carbide formation. VERSABAR Nodular is recommended for parts that require high mechanical properties, wear resistance, good toughness and optimum watertightness. Consult our engineering department for more details.

VERSABAR® - GJS 4007/ FE 40015/ FE 40018 / FE 45012 - The main characteristics of nodular cast iron with predominantly ferritic matrix are:

- Ductility;
- Excellent surface finish;
- Excellent watertightness.

VERSABAR® - FE 55006, FE 50007, FE 60003, FE 70002, NPE-60, WRI-100 - the main characteristics of nodular cast iron with predominantly pearlitic matrix are:

- Mechanical strength;
- High wear resistance;
- High hardness;
- Excellent surface finish;
- Excellent watertightness;
- Excellent hardenability;
- Resistance to oxidation and corrosion;
- Resistance to thermal fatigue;
- Dimensional stability at high temperatures.

VERSABAR® ADI (Austempered Ductile Iron) - in the raw casting condition, the matrix is pearlitic/ferritic; after the austempering heat treatment, the matrix becomes bainitic. The main features are:

- Excellent mechanical properties, maintaining ductility;
- Excellent abrasion resistance and fatigue resistance;
- High hardness, resistance to wear, oxidation and corrosion;
- Excellent vibration damping capacity;
- Excellent impact resistance;
- Reduction of the noise level of the gears when in operation;
- Lower machining cost and lower energy consumption to obtain the final product;
- Lower component weight due to lower iron density;
- Greater vibration damping capacity, therefore less noise.

"Tupy does not perform the austempering heat treatment."

The aforementioned properties make VERSABAR® a favorable alternative for replacing other materials, such as steel, aluminum, bronze, or sand castings. Consult our engineering department for more details.

Cast iron

Nodular

VERSABAR® GJS 4007 - FERRITIC NODULAR IRON

Description

VERSABAR® GJS 4007 is a ductile cast iron that offers excellent machinability and surface finish, combined with good fatigue resistance, electrical conductivity, and noise and vibration damping. The ferritic matrix provides high toughness and high magnetic permeability.

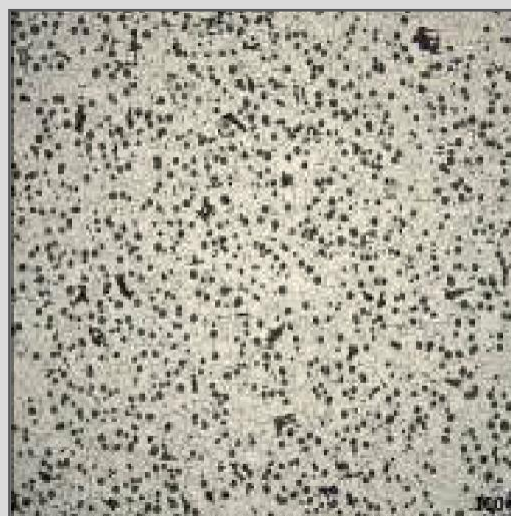
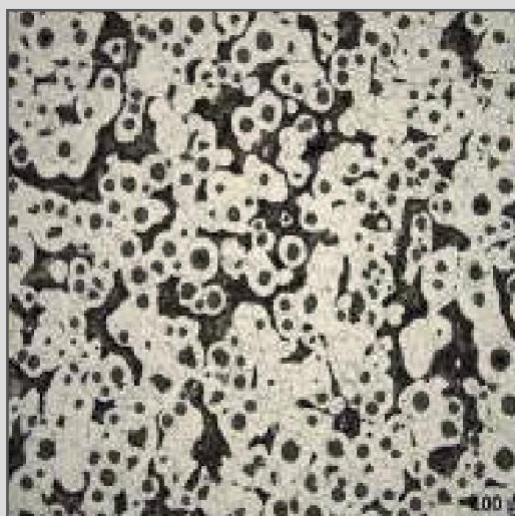
The specifications of the VERSABAR® GJS 4007 properties are Tupy.

Microstructure

The typical microstructure of VERSABAR® GJS 4007 is composed of nodular (spherical) graphite, forms I and II, size 5 - 8, according to the definition in ASTM A 247 standard. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

The matrix is predominantly ferritic, and may present at most 5% carbides dispersed in the overmaterial region (figures 13a and 13b).

Figure 13a - Typical microstructure at the center (VERSABAR® GJS 4007) Figure 13b - Typical microstructure at the periphery (VERSABAR® GJS 4007)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® GJS 4007 are specified in table 14.

Table 14 - Mechanical properties VERSABAR® GJS 4007

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ¹ (HB)	Tensile ¹ (MPa)	Flow ¹ (MPa)	Elongation (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	140 to 210	400	250	71
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		390	250	71
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		370	240	62
>4002	> 15.7480		360	240	52

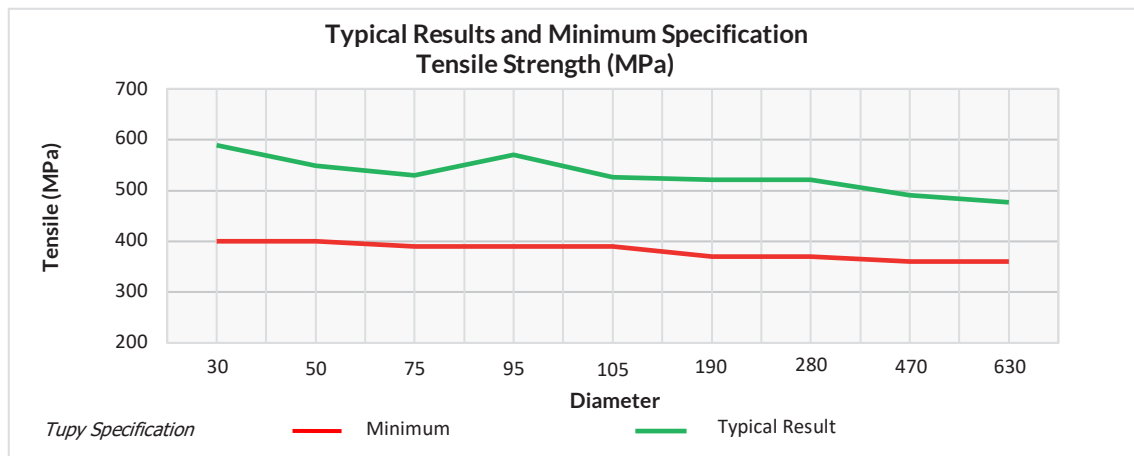
1) Tupy Specification. | 2) ASTM A536 does not define the mechanical properties of the cast material; however, VERSABAR® is produced according to the Tupy Specification.

Cast Iron

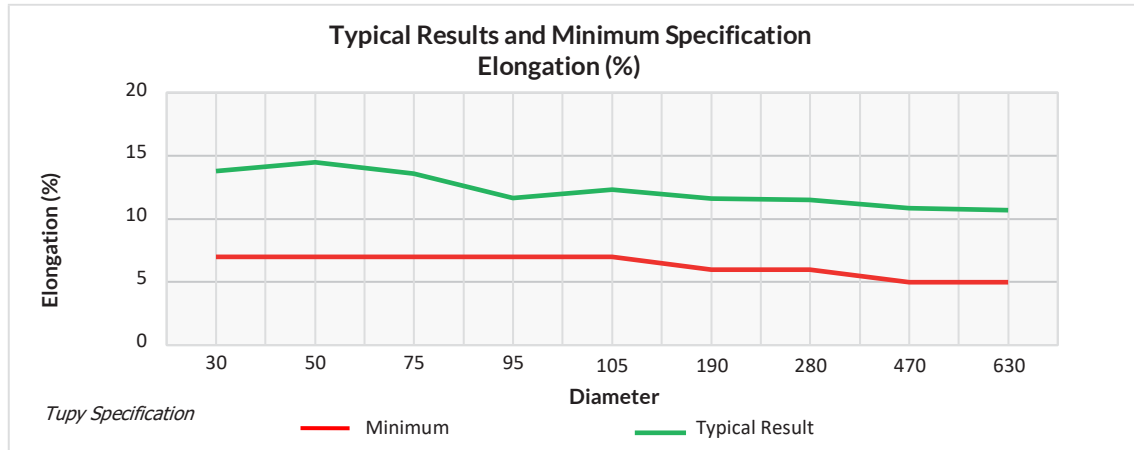
Nodular

Typical tensile strength, elongation and hardness results are presented in graphs 9, 10 and 11:

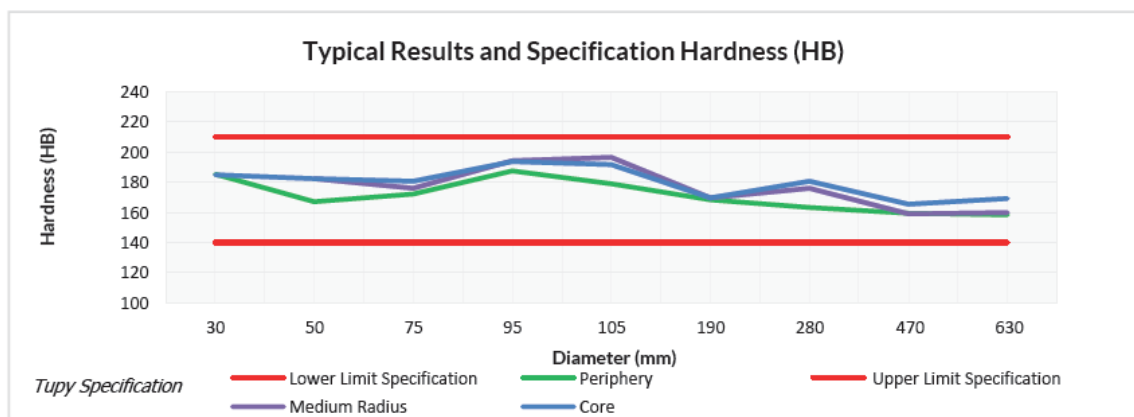
Graph 9: Tensile strength - VERSABAR® GJS 4007



Graph 10: Elongation- VERSABAR® GJS 4007



Graph 11: Hardness - VERSABAR® GJS 4007



Cast iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® GJS 4007 is subordinate to mechanical properties and is shown in table 15. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 15 - Chemical composition VERSABAR® GJS 4007

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Heat Treatment

Heat treatment is a set of processes that aims to improve the properties of materials, without changing their final form. VERSABAR® GJS 4007 can be treated through the ferritization process. Hardening and quenching is not recommended. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® GJS 4007, the process of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Typical applications

The mechanical properties allow the application of VERSABAR® GJS 4007 in machine components subject to shocks, gears, nuts, shafts, and hydraulic components operating under high pressure, such as: guide support for band saw, pump housings, lobe pumps, axial piston pumps, shaft housings, pulleys, pistons, manifolds, plungers, guides, covers, cylinder heads, sleeves for injection machines, rollers for cooling beds, hydraulic valves, plates, molds, support bearings, rotors, etc.

Profile and size range

Table 16 demonstrates the dimensions and geometric shapes produced with VERSABAR® GJS 4007. The standard cutting length of our cast iron products is 1880 mm (74.0157 "). For other dimensions and lengths, please consult our engineering department.

Table 16 - Sizing produced in VERSABAR® GJS 4007

Round	Square	Rectangular	Special
27.6 mm to 630 mm	31.7 mm x 31.7 mm 470 mm x 470 mm	26.8 mm x 37.8 mm 530 mm x 570 mm	Customer design sizes and continuous cast bar available upon request.
1.0826" to 24.8031"	1.2480" - 1.2480" 10.5039" - 10.5039"	1.0551" - 1.4881" 20.8661" - 22.4409"	

Cast Iron

Nodular

VERSABAR® FE 40015 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 40015 is a ductile cast iron that, in addition to excellent machinability and surface finish, offers good fatigue resistance, electrical conductivity, and noise and vibration damping. The ferritic matrix provides high toughness and high magnetic permeability.

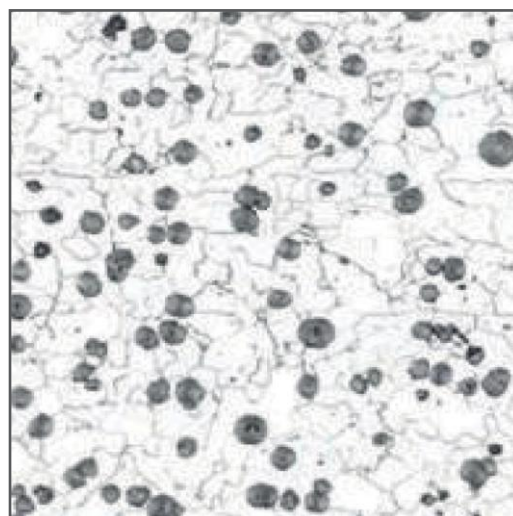
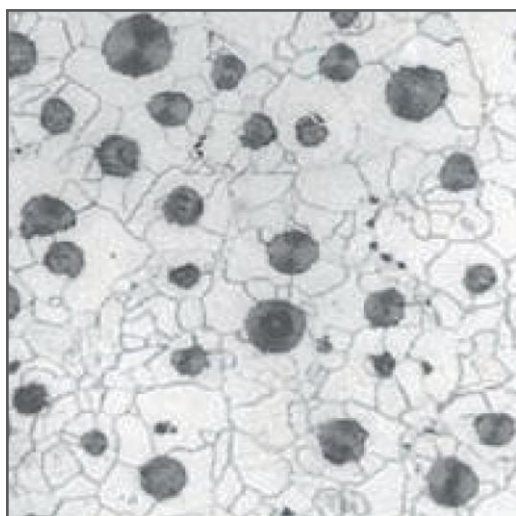
The specifications follow the standards ABNT NBR 15850 – class FE 40015, DIN-EN 16482 – class GJS 400-15.

Microstructure

The typical microstructure of VERSABAR® FE 40015 is composed of nodular (spherical) graphite, forms I and II, size 5 - 8, according to the definition in ASTM A 247 standard. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 – 8.

The matrix is predominantly ferritic, and may contain at most 5% carbides dispersed in the overmaterial region (figures 14a and 14b).

Figure 14a - Typical microstructure at the center VERSABAR® FE 40015) Figure 14b - Typical microstructure at the periphery (VERSABAR® FE 40015)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 40015 are specified in table 17.

Table 17 - Mechanical properties VERSABAR® FE 40015

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ₁ (HB)	Tensile ₁ (MPa)	Flow ₁ (MPa)	Elongation (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	120 to 180	400	250	15
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		390	250	14
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		370	240	11
>400 ²	> 15.7480		360	240	9

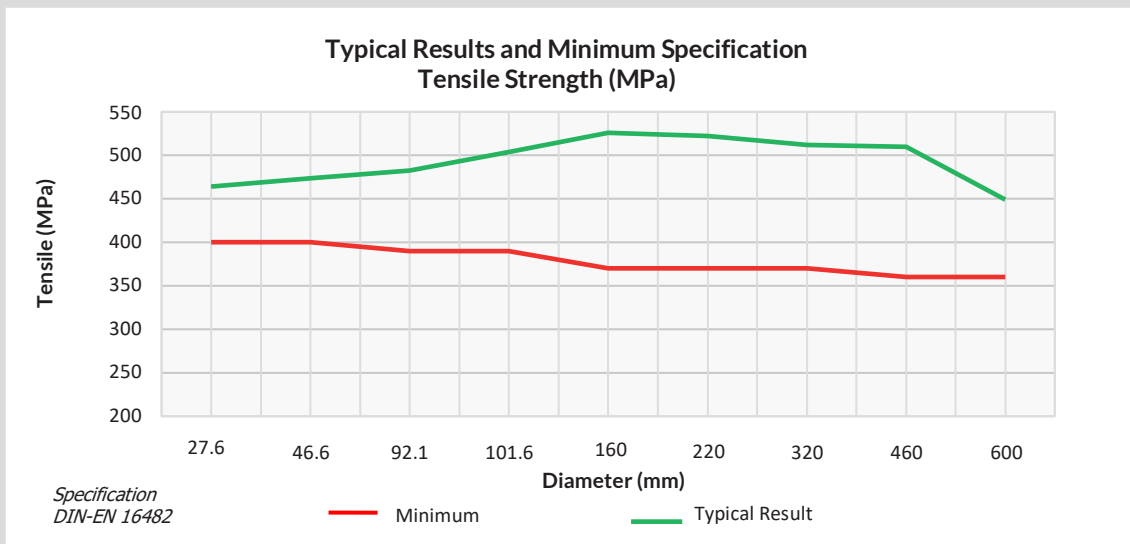
1) DIN-EN 16482 Specification | 2) Tupy Specification. | 3) ASTM A536 does not define the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN-EN 16482.

Cast iron

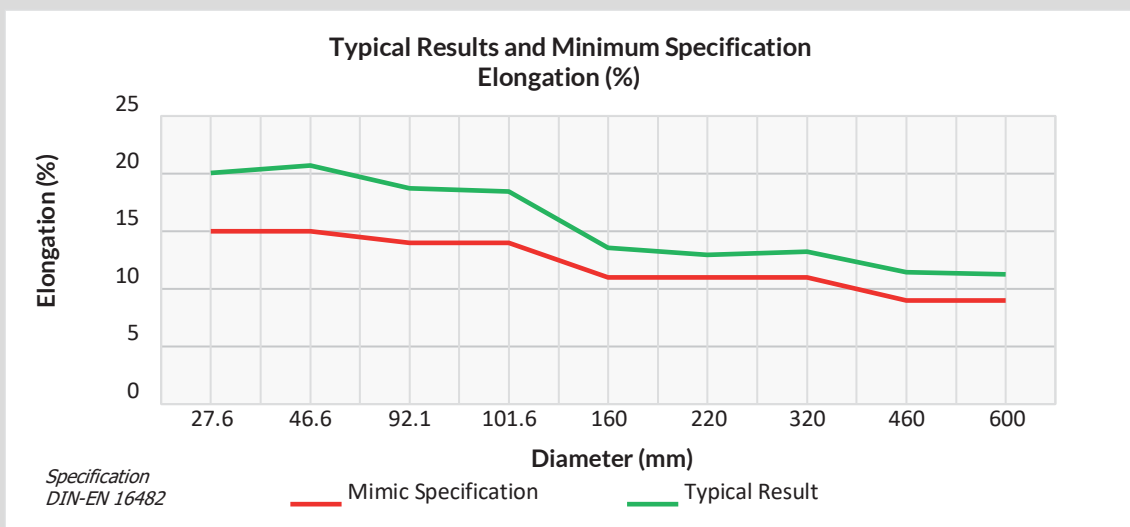
Nodular

Typical tensile strength and elongation results are presented in graphs 12 and 13:

Graph 12: Tensile strength - VERSABAR® FE 40015



Graph 13: Elongation - VERSABAR® FE 40015

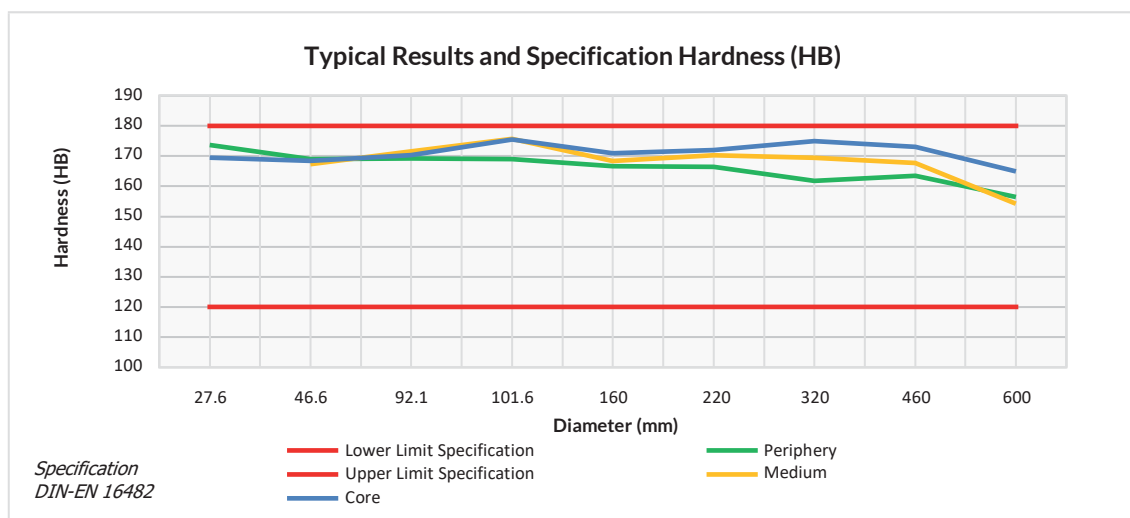


Cast Iron

Nodular

The graph 14 shows the typical hardness results found in the cross-section of VERSABAR® FE 40015.

Graph 14: Hardness - VERSABAR® FE 40015



Chemical Composition

The overall chemical composition of VERSABAR® FE 40015 is subordinate to mechanical properties and is shown in table 18. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 18 - VERSABAR® FE 40015 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 max.

Heat Treatment

Heat treatment is a set of processes that aims to improve the properties of materials, without changing their final form. VERSABAR® FE 40015 can be treated through the ferritization process. Hardening and quenching is not recommended. For more details, please consult our engineering department.

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® FE 40015, the processes of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Cast iron

Nodular

Typical applications

The mechanical properties allow the application of VERSABAR® FE 400-15 in machine components subject to shocks, gears, nuts, shafts, and hydraulic components operating under high pressure, such as: pump housings, lobe pumps, axial piston pumps, shaft housings, pulleys, pistons, manifolds, plungers, guides, covers, cylinder heads, sleeves for injection machines, rollers for cooling beds, hydraulic valves, plates, molds, support bearings, rotors, etc., according to figure 15.

Profile and size range

Table 19 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 400-15. The standard cutting length of our cast iron products is 1880 mm (74.0157 "). For other dimensions and lengths, please consult our engineering department.

Table 19 – Sizing produced in VERSABAR® FE 400-15

● Round	■ Square	■ Rectangular	Special
30.0 mm to 600 mm	60 mm x 60 mm	50 mm x 90 mm	Customer design sizes and continuous cast bar available upon request.
	470 mm x 470 mm	530 mm x 570 mm	
1.1811" to 23.6220"	2.3622" – 2.3622"	1.9685" – 3.5433"	
	18.5039" – 18.5039"	20.8661" – 22.4409"	

Figure 15 – Parts produced with VERSABAR® FE 400-15



Cast Iron

Nodular

VERSABAR® FE 45012 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 45012 is a ductile cast iron that, in addition to excellent machinability and surface finish, offers good fatigue resistance, electrical conductivity, and noise and vibration damping. The matrix provides high toughness and high magnetic permeability.

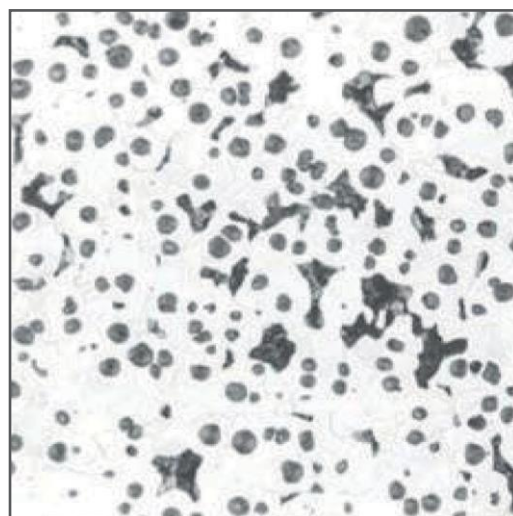
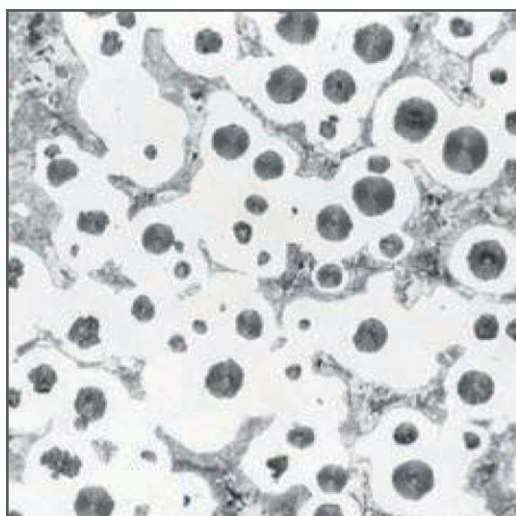
The specifications follow the standards ABNT NBR 15850 – class FE 45012, DIN EN 16482 – class GJS 450-12 and ASTM A 536 – class 65-45-12.

Microstructure

The typical microstructure of VERSABAR® FE 45012 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form VI predominantly, size 4 - 8.

The matrix is predominantly ferritic, and may contain at most 5% carbides dispersed in the overmaterial region (figures 16a and 16b).

Figure 16a - Typical microstructure at the center VERSABAR® FE 45012) Figure 16b - Typical microstructure at the periphery (VERSABAR® FE 45012



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 45012 are specified in table 20.

Table 20 - Mechanical properties VERSABAR® FE 45012

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ^{1,2} (HB)	Tensile ^{1,2} (MPa)	Flow ^{1,2} (MPa)	Elongation ^{1,2} (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	160 to 210	450	310	12
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		440	300	11
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		440	300	10
>400 ²	> 15.7480		420	290	9

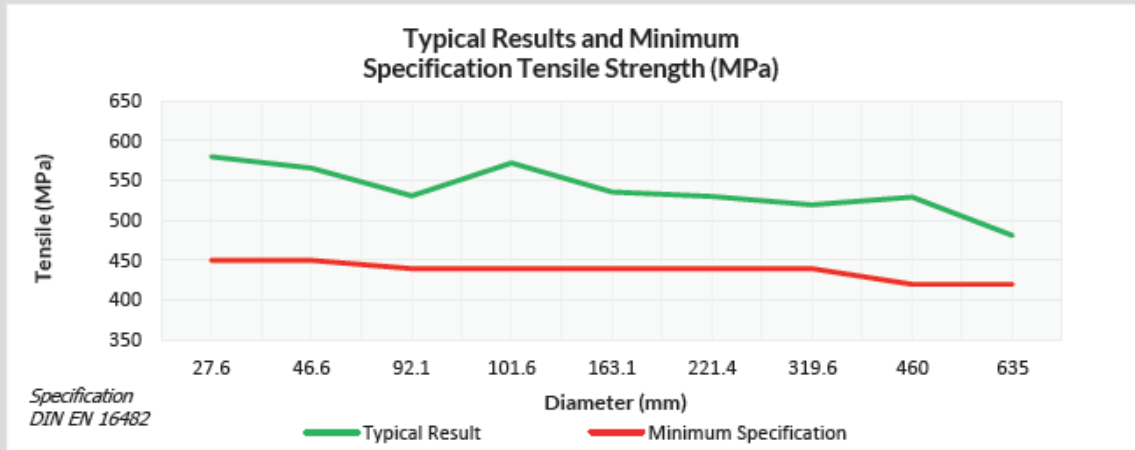
1) Specification DIN EN 16482. | 2) ASTM A536 defines the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN EN 16482. | 3) Tupy Specification.

Cast iron

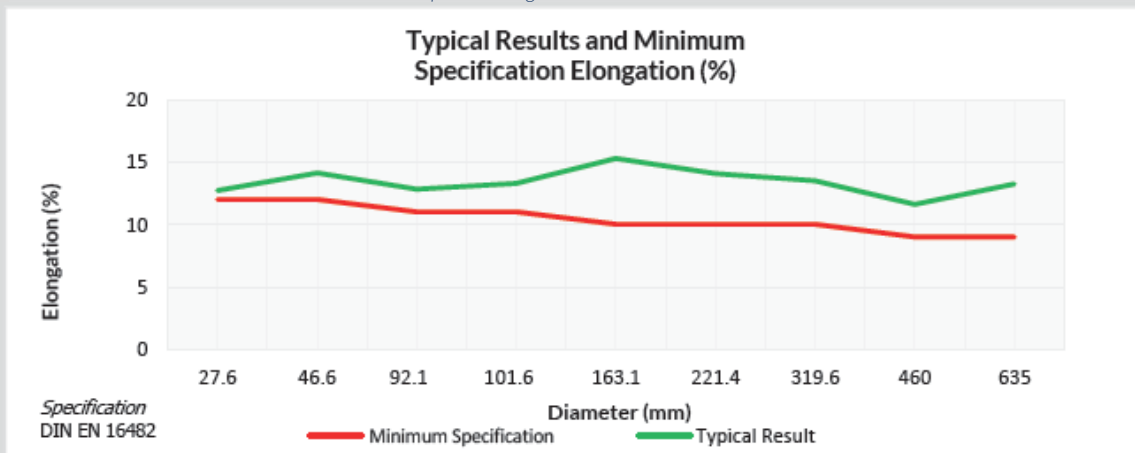
Nodular

Typical tensile strength and elongation results are presented in graphs 15, 16 and 17:

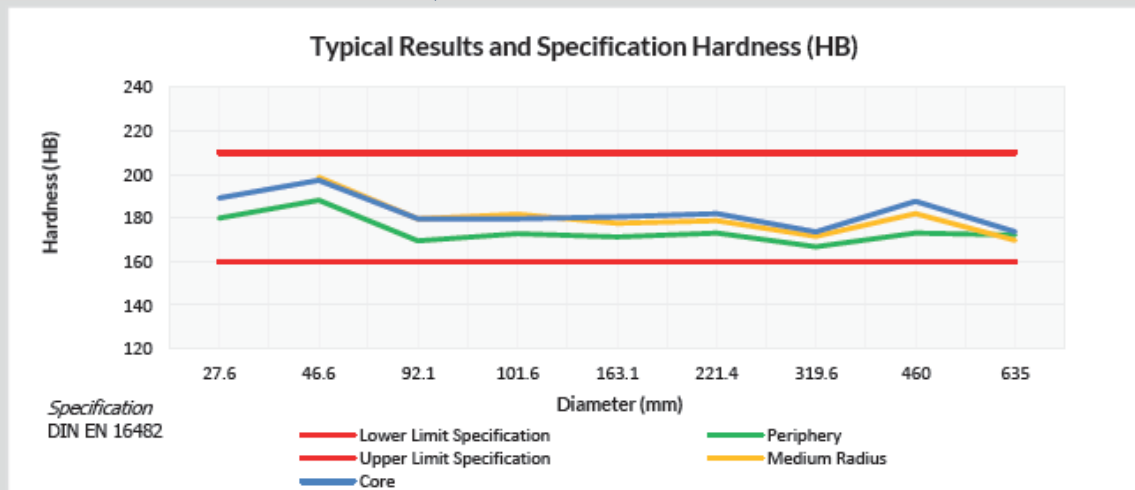
Graph 15: Tensile strength - VERSABAR® FE 45012



Graph 16: Elongation - VERSABAR® FE 45012



Graph 17: Hardness - VERSABAR® FE 45012



Cast Iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® FE 45012 is subordinate to mechanical properties and is shown in table 21. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 21 - VERSABAR® FE 45012 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Heat Treatment

Heat treatment is a set of processes that aims to improve the properties of materials, without changing their final form. VERSABAR® FE 45012 can be treated through the ferritization process. Hardening and quenching is not recommended. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® FE 45012, the processes of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Table 22 - Sizing produced in VERSABAR® FE 450-12

Round	Square	Rectangular	Special
27.6 mm to 635 mm	31.7 mm x 31.7 mm 470 mm x 470 mm	19.1 mm x 38.1 mm 469.9 mm x 558.8 mm	Customer design sizes and continuous cast bar available upon request.
1.0826" to 25.000"	1.2480" - 1.2480" 10.5039" - 10.5039"	0.7519" - 1.5000" 18.5000" - 22.000"	

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Typical applications

The mechanical properties allow the application of VERSABAR® FE 45012 in machine components subject to shocks, gears, nuts, shafts, and hydraulic components operating under high pressure, such as: housings, pumps, axial piston pumps, shaft housings, pulleys, pistons, manifolds, plungers, guides, covers, cylinder heads, sleeves for injection machines, compressor sleeves, rollers for cooling beds, hydraulic valves, plates, molds, support bearings, rotors, etc., according to figure 17.

Profile and size range

Table 22 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 450-12. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Figure 17 - Parts produced with VERSABAR® FE 450-12



Cast iron

Nodular

VERSABAR® GJS 40018 - FERRITIC NODULAR IRON

Description

VERSABAR® GJS 400-18 is a cast iron with nodular graphite that includes mandatory ferritization heat treatment in its scope. This provides superior machinability combined with good impact resistance, fatigue resistance, noise and vibration damping, electrical conductivity, and magnetic permeability, along with an increase in ductility compared to FE 450-12 and GJS 400-15.

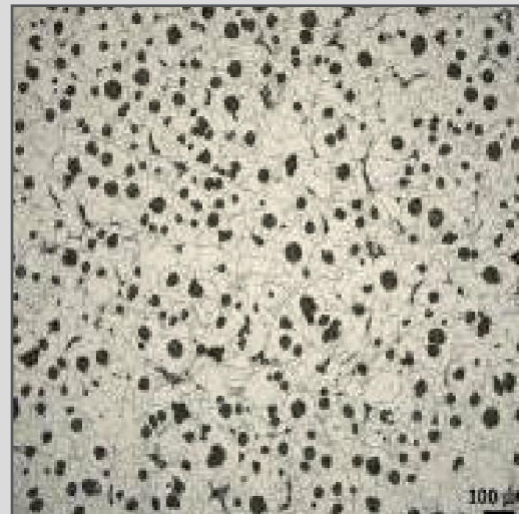
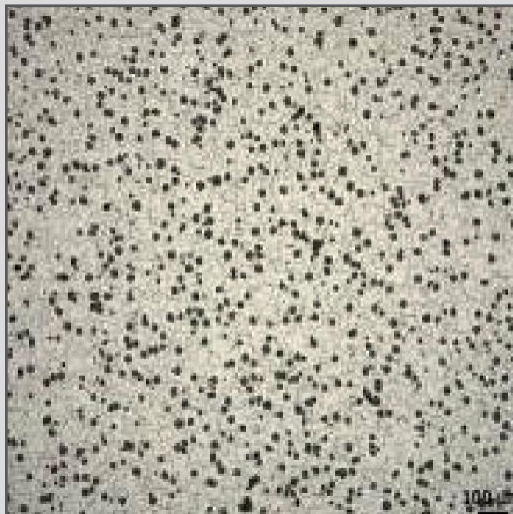
The specifications follow the standards DIN-EN 16482 - class GJS 400-18 and ASTM A 536 - class 60-40-18.

Microstructure

The typical microstructure of VERSABAR® GJS 400-18 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

The matrix is predominantly ferritic, containing a maximum of 5% of carbides dispersed in the overmaterial region (figures 18a and 18b).

Figure 18a - Typical microstructure at the center VERSABAR® GJS 400-18 Figure 18b - Typical microstructure at the periphery VERSABAR® GJS 400-18



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® GJS 400-18 are specified in table 23.

Table 23 - Mechanical properties VERSABAR® GJS 400-18

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ¹ (HB)	Tensile ^{1,3} (MPa)	Flow ^{1,3} (MPa)	Elongation ^{1,3} (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	120 to 180	400	250	18
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		390	250	15
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		370	240	12
>400 ²	> 15.7480		360	230	10

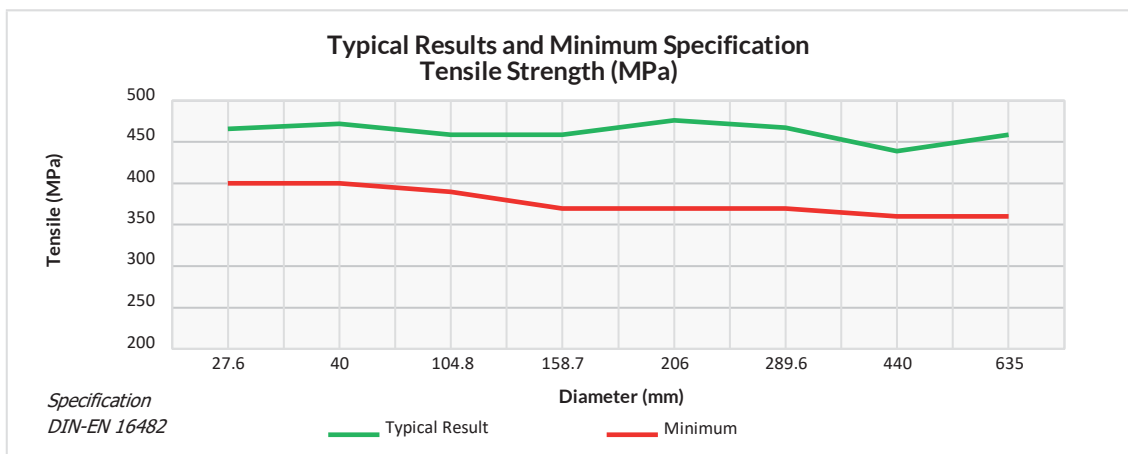
1) DIN-EN 16482 Specification. | 2) Tupy Specification. | 3) ASTM A536 does not define the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN-EN 16482.

Cast Iron

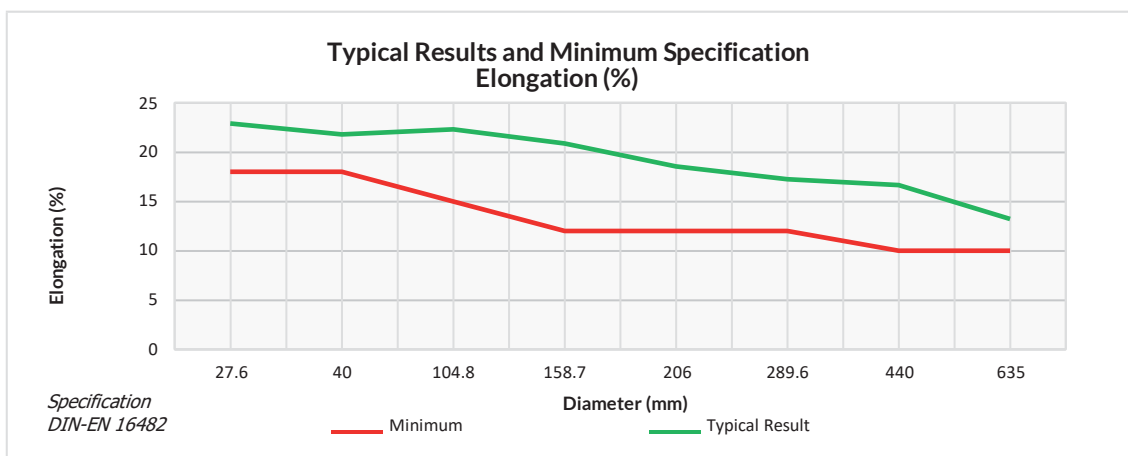
Nodular

Typical tensile strength and elongation results are presented in graphs 18, 19 and 20:

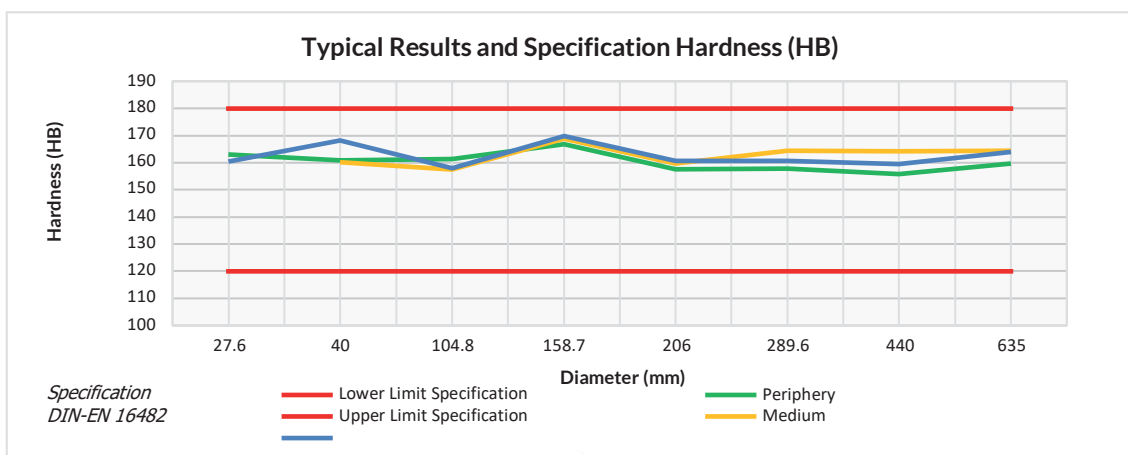
Graphs 18: Tensile strength - VERSABAR® GJS 400-18



Graphs 19: Elongation- VERSABAR® GJS 400-18



Graphs 20: Hardness - VERSABAR® GJS 400-18



Cast iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® GJS 400-18 is subordinate to mechanical properties and is shown in table 24. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 24 - Chemical composition VERSABAR® GJS 400-18

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Heat Treatment

Heat treatment is a set of processes that aims to improve the properties of materials, without changing their final form. Since VERSABAR® GJS 400-18 undergoes a ferritization treatment, it is not recommended to perform hardening and quenching processes. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® GJS 400-18 the process of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Typical applications

The mechanical properties allow the application of VERSABAR® GJS 400-18 in machine components subject to shocks, gears, nuts, shafts, and hydraulic components operating under high pressure, such as: housings, pumps, axial piston pumps, shaft housings, pulleys, pistons, manifolds, plungers, guides, covers, cylinder heads, sleeves for injection machines, injector sleeves, rollers for cooling beds, hydraulic valves, plates, molds, support bearings, rotors, etc., according to figure 19.

Profile and size range

Table 25 demonstrates the dimensions and geometric shapes produced with VERSABAR® GJS 400-18. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 25 - Sizing produced in VERSABAR® GJS 400-18

Round	Square	Rectangular	Special
46.6 mm to 635 mm	158 mm x 158 mm 206 mm x 206 mm	40 mm x 100 mm 480 mm x 520 mm	Customer design sizes and continuous cast bar available upon request.
1.8346" to 25.000"	6.2204" - 6.2204" 8.1102" - 8.1102"	1.5748" - 3.9370" 18.8976" - 20.4724"	

Figure 19 - Parts produced with VERSABAR® GJS 400-18



Cast Iron

Nodular

VERSABAR® FE 50007 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 50007 is a nodular cast iron that provides high mechanical properties, good surface finish, and excellent hardenability, allowing its use in parts that require high tensile strength and/or wear resistance, thermal fatigue resistance, and dimensional stability at high temperatures.

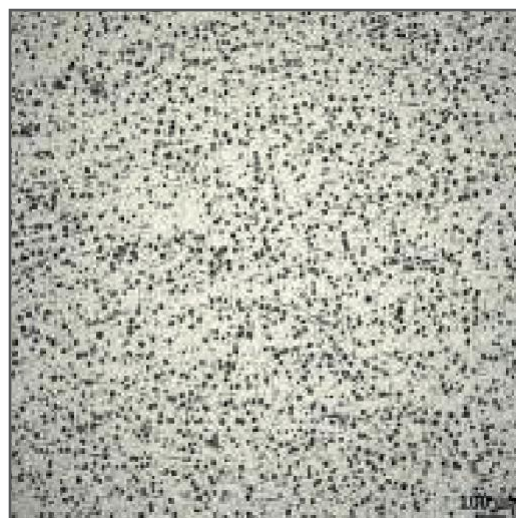
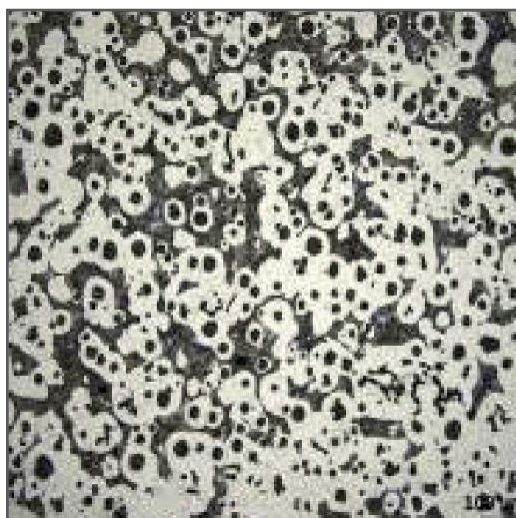
The specifications follow the standards ABNT NBR 15850 – class FE 50007 and DIN-EN 16482 - class GJS 500-7.

Microstructure

The typical microstructure of VERSABAR® FE-50007 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 – 8.

The matrix is predominantly ferritic, and may have at most 5% carbides dispersed in the overmaterial region (figures 20a and 20b).

Figure 20a - Typical microstructure at the center (VERSABAR® FE 50007) Figure 20b - Typical microstructure at the periphery (VERSABAR® FE 50007)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 50007 are specified in table 26.

Table 26 - Mechanical properties VERSABAR® FE 50007

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ₁ (HB)	Tensile ₁ (MPa)	Flow ₁ (MPa)	Elongation ₁ (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	170 to 240	500	320	7
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		450	300	7
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		420	290	5
>400 ₂	> 15.7480		410	280	4

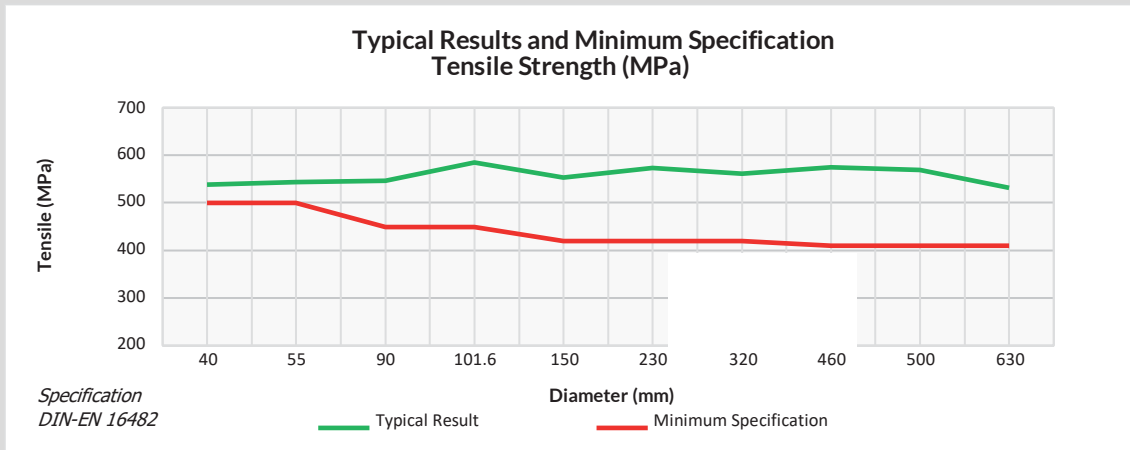
1) DIN-EN 16482 Specification. | 2) Tupy Specification. | 3) ASTM A536 does not define the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN-EN 16482.

Cast iron

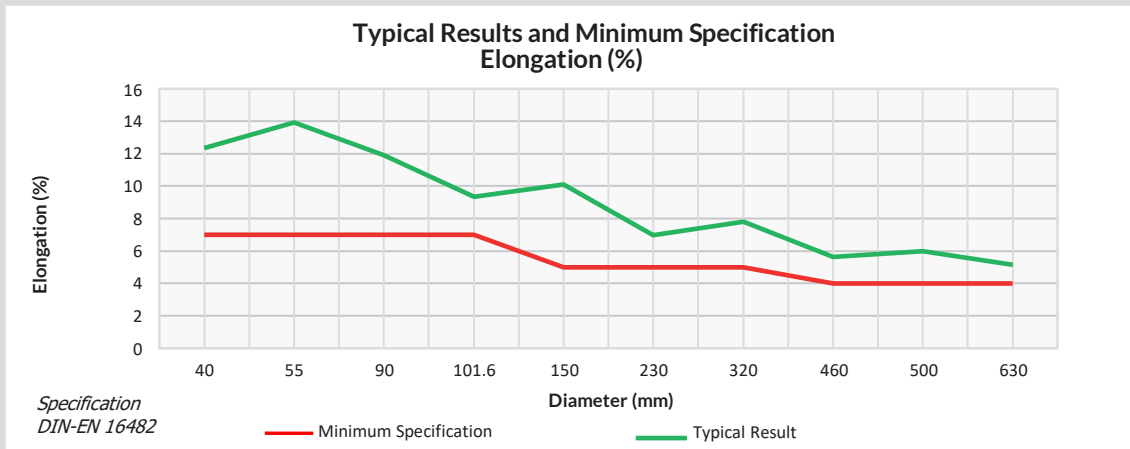
Nodular

Typical tensile strength, elongation and hardness results are presented in graphs 21, 22 and 23:

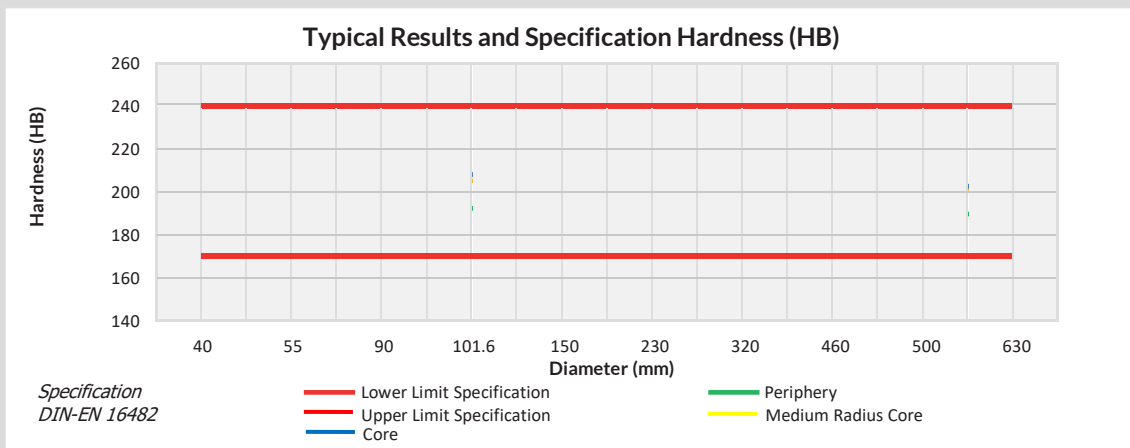
Graphs 21: Tensile strength - VERSABAR® FE 50007



Graphs 22: Elongation - VERSABAR® FE 50007



Graphs 23: Hardness - VERSABAR® FE 50007



Cast Iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® FE 50007 is subordinate to mechanical properties and is shown in table 27. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 27 - VERSABAR® FE 50007 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Heat Treatment

The matrix of the VERSABAR® FE 50007 provides good hardenability, allowing the use of most conventional surface hardening methods, such as induction or flame hardening and oil quenching, thus achieving a wide range of combinations of mechanical properties; i.e., increasing hardness, tensile strength, and wear resistance. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® FE 50007, the process of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements can be made to achieve the mechanical properties.

Typical applications

The mechanical properties enable the application of VERSABAR® FE 50007 in components for the hydraulic and pneumatic industries, as well as for machinery and machine tools that require wear resistance and surface heat treatments, such as gears, shafts, keys, nuts, grinding bodies, piston rods, spindles, pulleys, talisca shafts, flanged shafts, control shafts, valve seats, gear wheels, etc., as shown in figure 21.

Profile and size range

Table 28 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 50007. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 28 - Sizing produced in VERSABAR® FE 50007

Round	Square	Rectangular	Special
30.0 mm to 630 mm	55 mm x 55 mm 470 mm x 470 mm	30 mm x 90 mm 370 mm x 410 mm	Customer design sizes and continuous cast bar available upon request.
1.1811" to 24.8031"	2.1653" - 2.1653" 18.5039" - 18.5039"	1.1811" - 3.5433" 14.5669" - 16.1417"	

Figure 21 - Parts produced with VERSABAR® FE 50007



Cast iron

Nodular

VERSABAR® FE 55006 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 55006 is a nodular cast iron that provides high mechanical properties, good surface finish, and excellent hardenability, allowing its use in parts that require high tensile strength and/or wear resistance, thermal fatigue resistance, and dimensional stability at high temperatures.

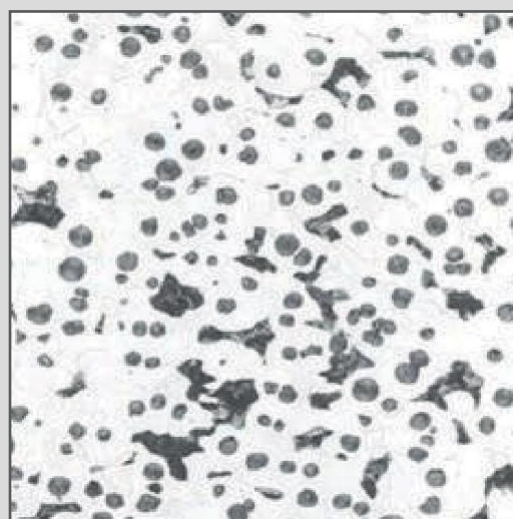
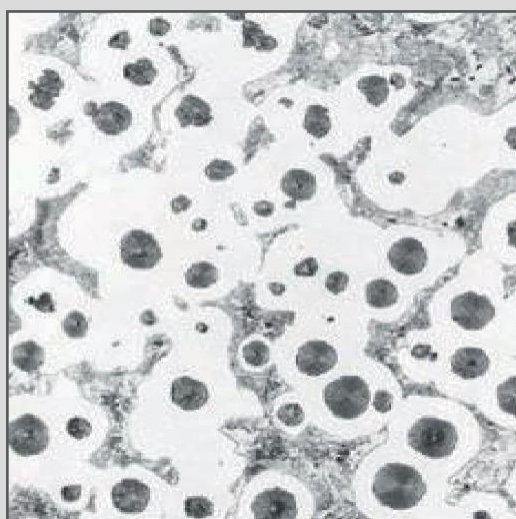
The specifications follow the standards ABNT NBR 15850 - class FE 55006, DIN EN 16482 – class GJS 550-6 and ASTM A 536 - class 80-55-06.

Microstructure

The typical microstructure of VERSABAR® FE-55006 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form VI predominantly, size 4 - 8.

The matrix is predominantly pearlitic, with a maximum of 5% of carbides dispersed in the overmaterial region (figures 22a and 22b).

Figure 22a - Typical microstructure at the center (VERSABAR® FE 55006) Figure 22b - Typical microstructure at the periphery (VERSABAR® FE 55006)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 55006 are specified in table 29.

Table 29 - Mechanical properties VERSABAR® FE 55006

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ^{1,2} (HB)	Tensile ^{1,2} (MPa)	Flow ^{1,2} (MPa)	Elongation ^{1,2} (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	190 to 255	550	340	6
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		540	330	5
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		520	320	4
>400 ¹	> 15.7480		510	320	4

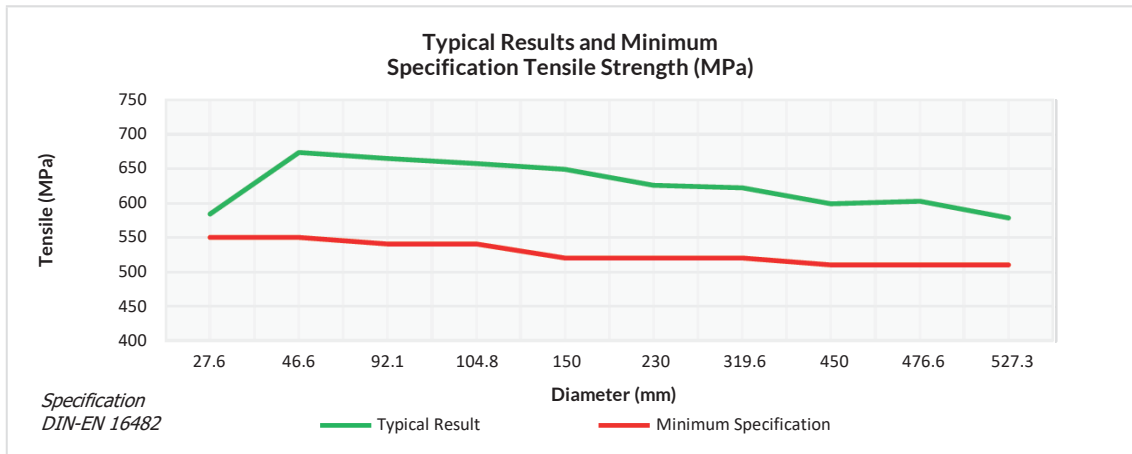
1) Specification DIN EN 16482. | 2) ASTM A536 defines the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN EN 16482. | 3) Tupy Specification.

Cast Iron

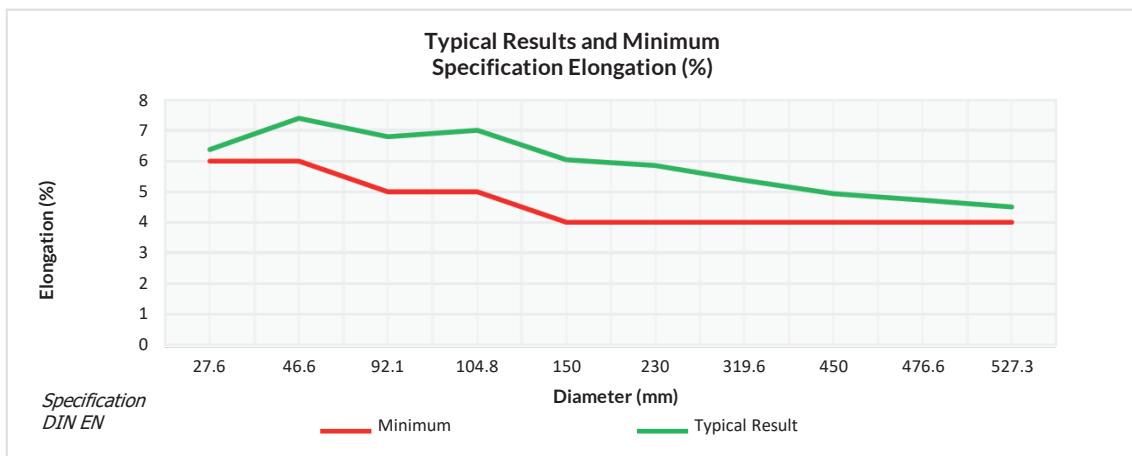
Nodular

Typical tensile strength, elongation and hardness results are presented in graphs 24, 25 and 26:

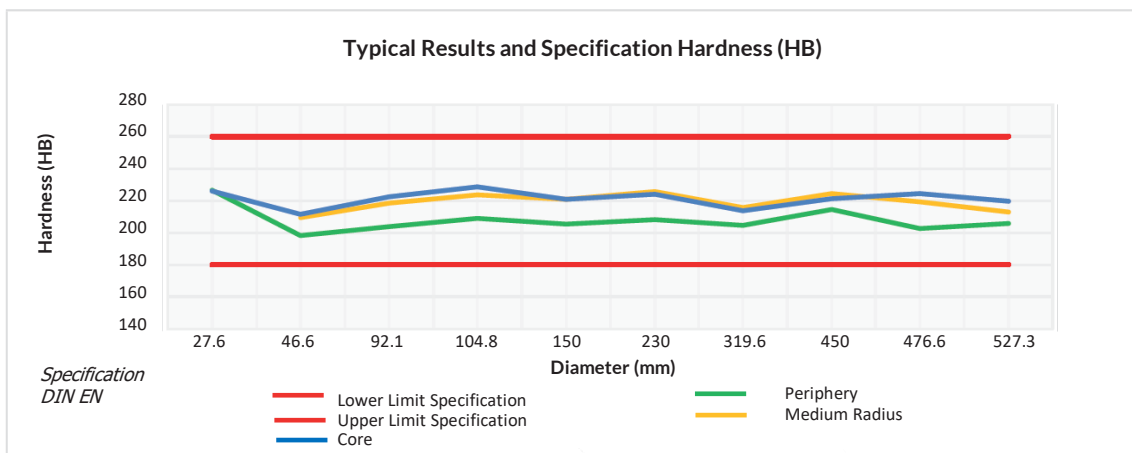
Graph 24 - Tensile strength - VERSABAR® FE 55006



Graph 25 - Elongation - VERSABAR® FE 55006



Graph 26 - Hardness - VERSABAR® FE 55006



Cast iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® FE 55006 is subordinate to mechanical properties and is shown in table 30. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 30 - VERSABAR® FE 55006 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.40 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.05

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements can be made to meet the mechanical properties, depending on the size of the bar.

Heat Treatment

The matrix of VERSABAR® FE 55006 provides good hardenability, allowing the execution of most conventional surface hardening methods, such as oil quenching and surface hardening by induction or flame, thus achieving a wide range of mechanical property combinations; i.e., increasing hardness, tensile strength, and wear resistance. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® FE 55006, the processes of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed, as shown in image 23. Other types of protection available upon request.

Applications

The mechanical properties enable the application of VERSABAR® FE 55006 in components for the hydraulic and pneumatic industries, as well as for machinery and machine tools that require wear resistance and surface heat treatments, such as gears, shafts, keys, nuts, grinding bodies, piston rods, spindles, pulleys, talisca shafts, flanged shafts, control shafts, valve seats, gear wheels, etc.

Profile and size range

Table 31 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 55006. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 31 - Sizing produced in VERSABAR® FE 55006

● Round	■ Square	■ Rectangular	■ Special
27.6 mm to 527.3 mm	82.5 mm x 82.5 mm 311.1 mm x 311.1 mm	107.9 mm x 133.3 mm 431.8 mm x 558.8 mm	Customer design sizes and continuous cast bar available upon request.
1.0866" to 20.7598"	3.2480" - 3.2480" 12.2480" - 12.2480"	4.2480" - 5.2480" 17.0000" - 22.0000"	

Figure 23 - Shaft and nut produced with VERSABAR® FE 55006 that underwent the surface protection process of chrome plating.



Cast Iron

Nodular

VERSABAR® FE 60003 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 60003 is a nodular cast iron that offers reasonable machinability, combined with high wear resistance and elevated mechanical properties, good surface finish, and good hardenability, allowing its use in parts that require high tensile strength and/or wear resistance. Noise damping and vibration are good in this degree.

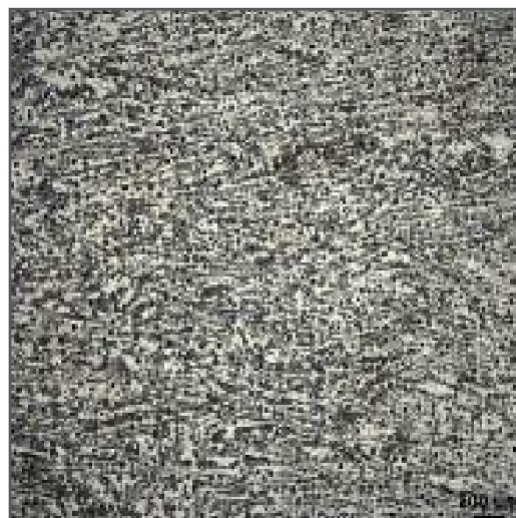
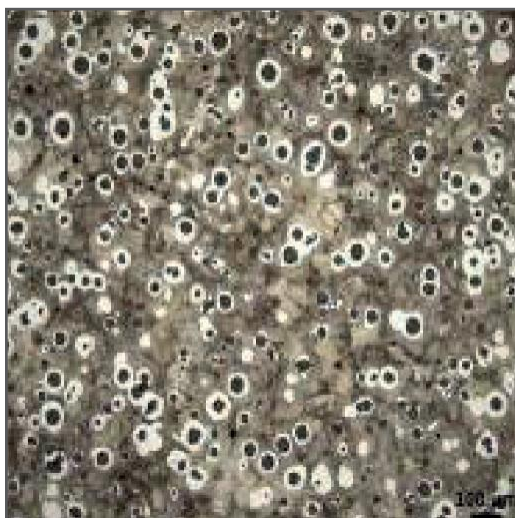
The specifications follow the standards ABNT NBR 15850 - class FE 60003, DIN-EN 16482 - class GJS 600-3 and ASTM A 536 - class 80-60-03.

Microstructure

The typical microstructure of VERSABAR® FE-60003 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

The matrix is predominantly pearlitic, with a maximum of 5% of carbides dispersed in the overmaterial region (figures 24a and 24b).

Figure 24a - Typical microstructure at the center (VERSABAR® FE 60003) Figure 24b - Typical microstructure at the periphery (VERSABAR® FE 60003)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 60003 are specified in table 32.

Table 32 - Mechanical properties VERSABAR® FE 60003

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ^{1,3} (HB)	Tensile ^{1,3} (MPa)	Flow ^{1,3} (MPa)	Elongation ^{1,3} (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	200 to 290	600	370	3
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		600	360	2
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		550	340	1
>400 ²	> 15.7480		540	330	1

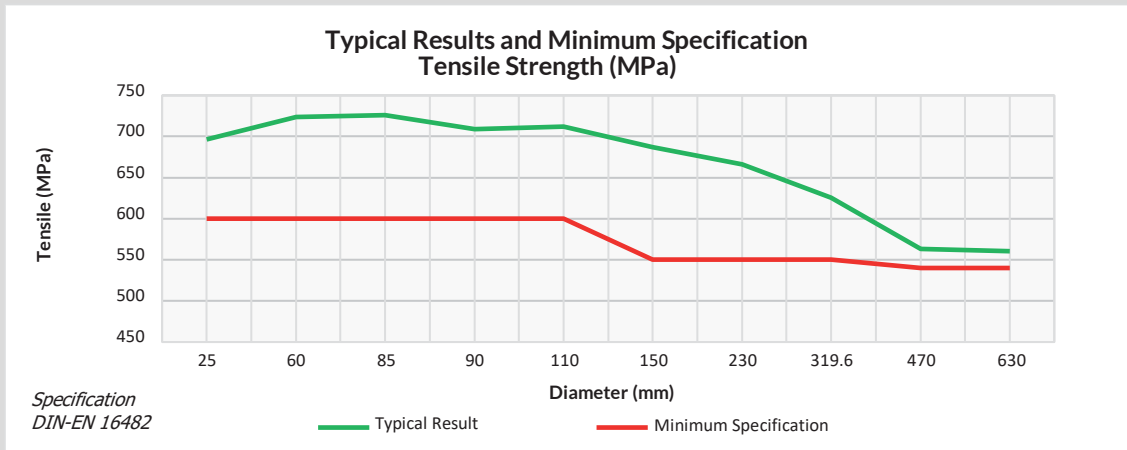
1) DIN-EN 16482 Specification. | 2) Tupy Specification. | 3) ASTM A536 defines the mechanical properties of the cast material; however, VERSABAR® is produced according to DIN-EN 16482.

Cast iron

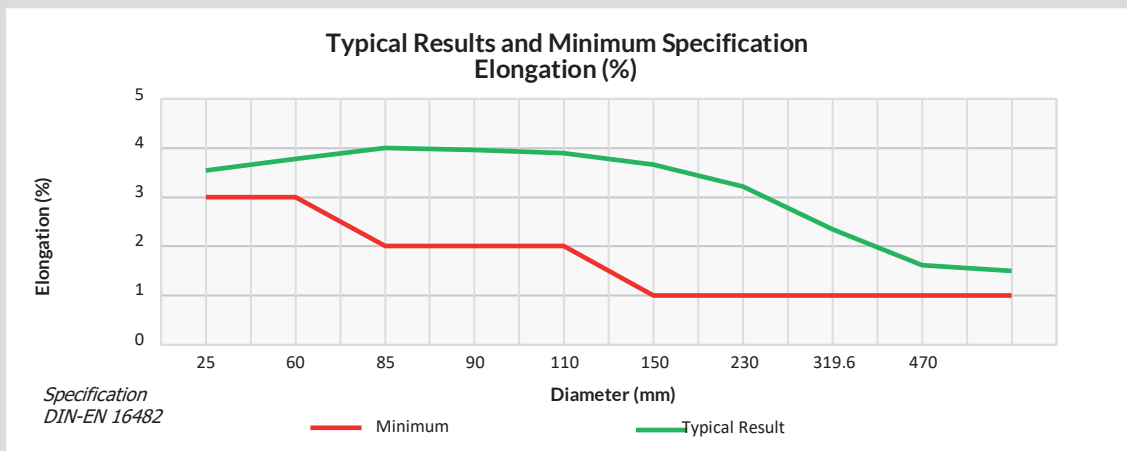
Nodular

Typical tensile strength, elongation and hardness results are presented in graphs 27, 28 and 29:

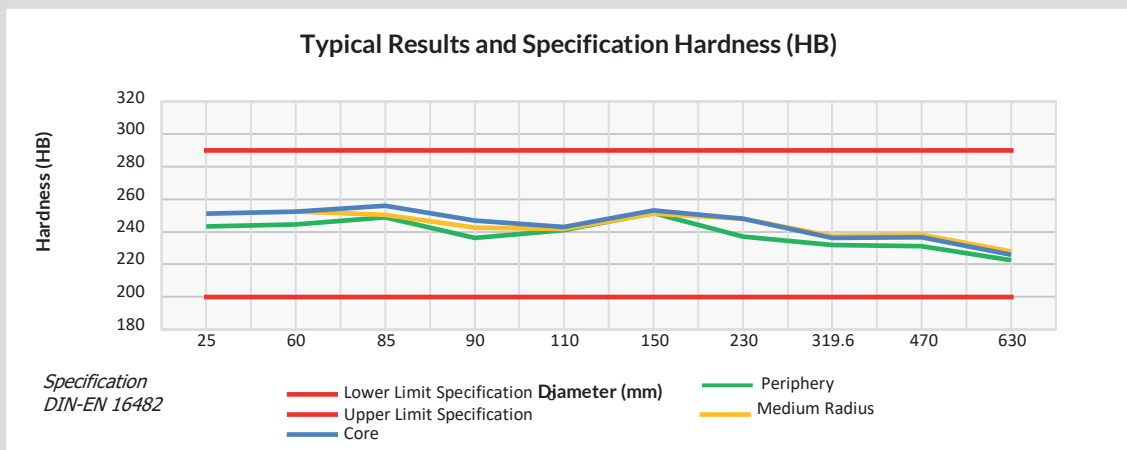
Graph 27: Tensile strength - VERSABAR® FE 60003



Graph 28: Elongation - VERSABAR® FE 60003



Graph 29: Hardness - VERSABAR® FE 60003



Cast Iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® FE 60003 is subordinate to mechanical properties and is shown in table 33. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 33 - VERSABAR® FE 60003 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.40 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.05

Heat Treatment

The matrix of VERSABAR® FE 60003 provides good hardenability, allowing for most conventional surface hardening methods, such as oil quenching, surface hardening by induction or flame, thus achieving a wide range of mechanical property combinations; i.e., increasing hardness, tensile strength, and wear resistance. For more details, please consult our engineering department.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® FE 60003, the processes of hot-dip galvanizing or electroplating, chroming, and carburizing can be performed. Other types of protection available upon request.

Applications

The mechanical properties make it possible to use

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements can be made to meet the mechanical properties.

VERSABAR® FE 60003 in hydraulic and pneumatic applications, in the automotive industry, as well as in the machine and machine tool sectors. In addition, VERSABAR® FE 60003 can also be used in the production of pumps and compressors, for steelmaking machines, in the oil and gas industry, as well as in renewable energy applications. Other applications where wear resistance and surface heat treatments are required can also be made, such as in the production of pumps and compressors, in steelmaking machinery, in the oil and gas industry, as well as in applications for renewable energy, gears, shafts, keys, nuts, grinding bodies, piston rods, spindles, pulleys, tailstock shafts, flanged shafts, control shafts, valve seats, gear wheels, etc., as shown in figure 25.

Profile and size range Table 34 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 60003. The standard cutting length of our cast iron products is 1880 mm (74.0157"), other dimensions and lengths consult our engineering department.

Table 34 - Sizing produced in VERSABAR® FE 60003

Round	Square	Rectangular	Special
25.0 mm to 630 mm	85 mm x 85 mm 470 mm x 470 mm	25 mm x 40 mm 530 mm x 570 mm	Customer design sizes and continuous cast bar available upon request.
0.9842" to 24.8031"	3.3464" - 3.3464" 18.5039" - 18.5039"	0.9842" - 1.5748" 20.8661" - 22.4409"	

Figure 25 - Parts produced with VERSABAR® FE 60003



Cast iron

Nodular

VERSABAR® FE 70002 - FERRITIC NODULAR IRON

Description

VERSABAR® FE 70002 is a nodular cast iron with a predominantly pearlitic matrix, obtained as a casting by the addition of pearlitizing alloying elements. This matrix provides high mechanical properties, good surface finish, and good hardenability (with a superior response to heat treatment compared to other VERSABARs), allowing its use in parts that require high tensile strength, yield strength, hardness, and/or wear resistance.

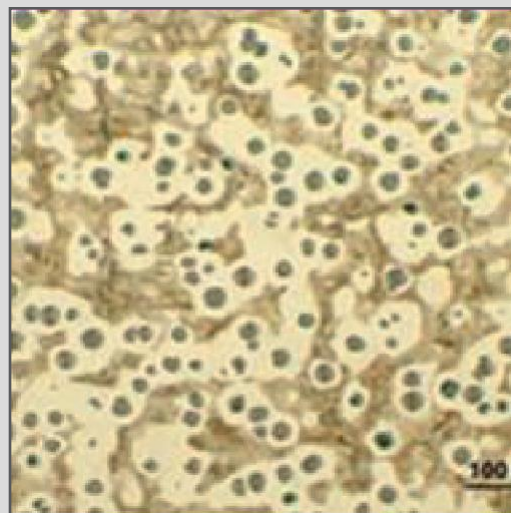
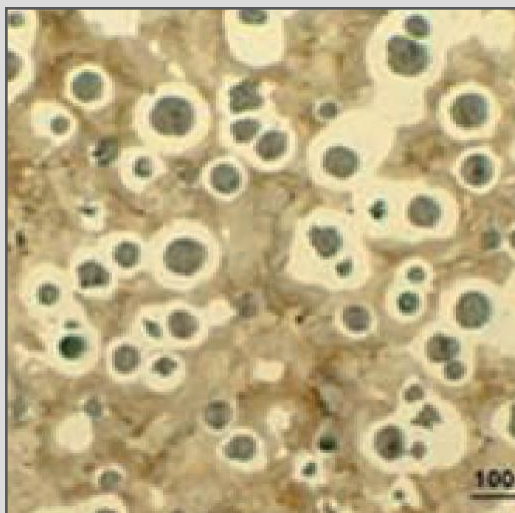
The specifications follow the standards ABNT NBR 15850 - class FE 70002, DIN-EN 16482 - class GLS 700-2.

Microstructure

The typical microstructure of VERSABAR® FE 70002 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

The matrix is predominantly pearlitic, may contain a maximum of 5% of carbides dispersed in the overmaterial region (figures 26a and 26b).

Figure 26a - Typical microstructure at the center VERSABAR® FE 70002 Figure 26b - Typical microstructure at the periphery (VERSABAR® FE 70002)



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® FE 70002 are specified in table 35.

Table 35 - Mechanical properties VERSABAR® FE 70002

Gross Dimensions (mm)	Nominal Dimensions (inch)	Hardness ^{1,3} (HB)	Tensile ^{1,3} (MPa)	Flow ^{1,3} (MPa)	Elongation ^{1,3} (%)
20 < D ≤ 60 ¹	0.7874 < D ≤ 2.3622	210 to 305	700	420	2
60 < D ≤ 120 ¹	2.3622 < D ≤ 4.7244		700	400	2
120 < D ≤ 400 ¹	4.7244 < D ≤ 15.7480		650	380	1
>400 ²	> 15.7480		650	370	1

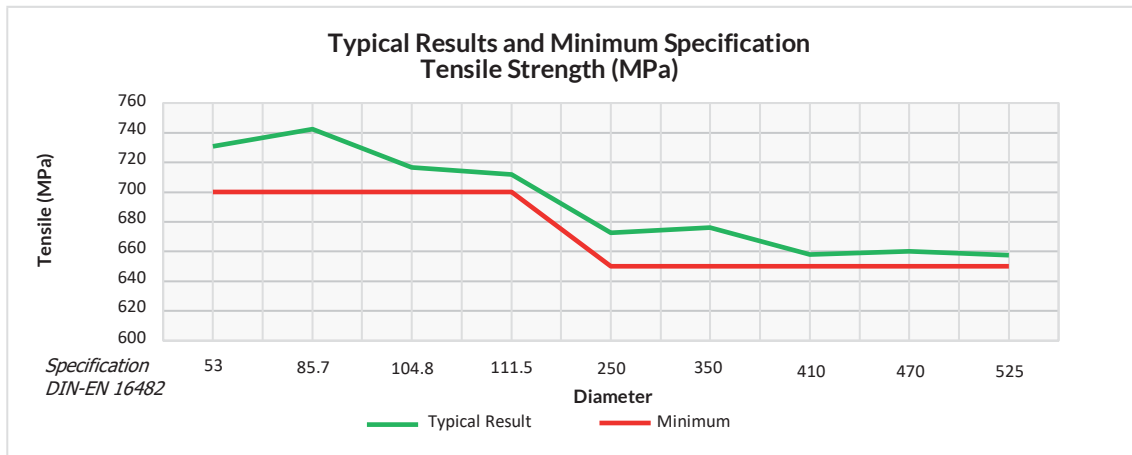
1) DIN EN 16482 Specification. | 2) Tupy Specification. | 3) For this class of material, ASTM A536 does not define the mechanical properties of the molten material; however, VERSABAR® is produced in accordance with DIN EN 16482.

Cast Iron

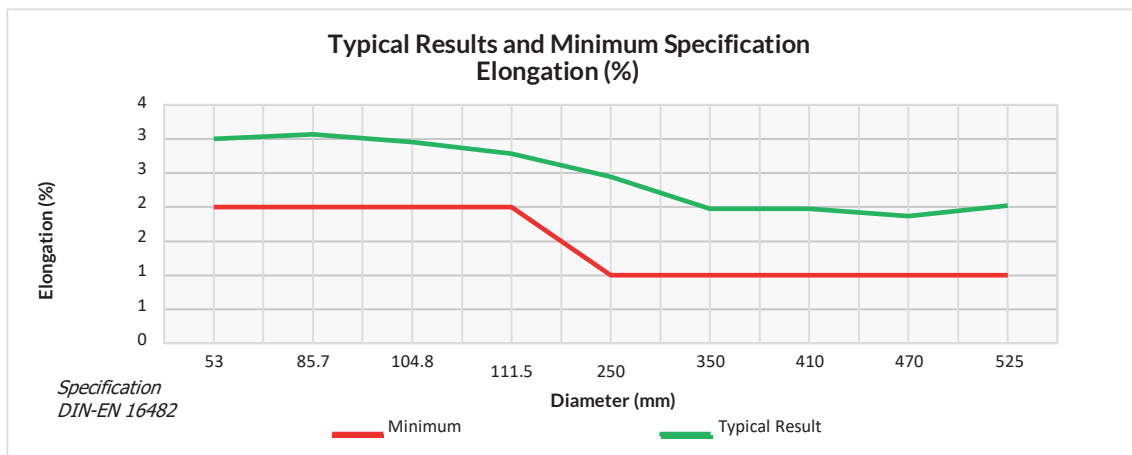
Nodular

Typical tensile strength, elongation and hardness results are presented in graphs 30, 31 and 32:

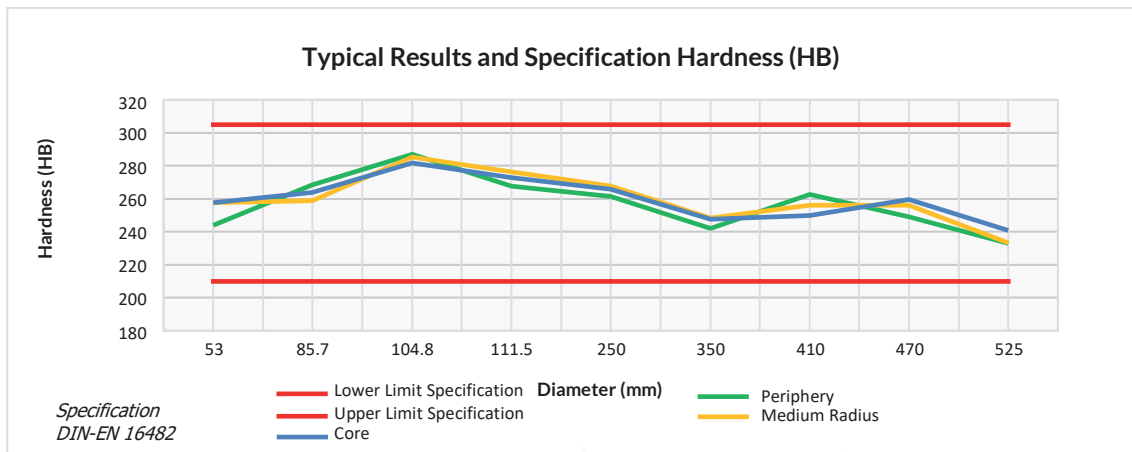
Graph 30: Tensile strength - VERSABAR® FE 70002



Graph 31: Elongation - VERSABAR® FE 70002



Graph 32: Hardness - VERSABAR® FE 70002



Cast iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® FE 70002 is subordinate to mechanical properties and is shown in table 36. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 36 - VERSABAR® FE 70002 chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.65 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements are made to meet the mechanical properties.

Heat Treatment

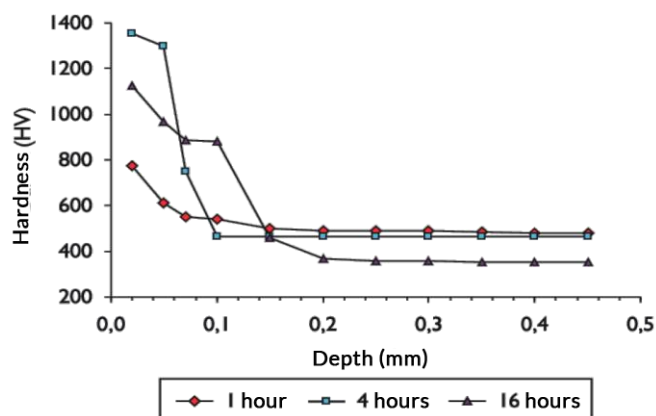
VERSABAR® FE 70002 is more responsive to thermal treatments, particularly hardening and quenching, making it the ideal material for austempering. The predominantly pearlitic matrix provides good hardenability, allowing the application of most conventional surface hardening methods, such as oil quenching, surface hardening, and induction or flame hardening, thus achieving a wide range of combinations of mechanical properties; that is, increasing hardness, tensile strength, and wear resistance.

Protection

In VERSABAR® FE 70002, the processes of hot-dip galvanizing or electroplating, chroming, nitriding and carburizing can be performed. Other types of protection available upon request.

Typical results of the nitriding treatment are shown in graph 33.

Graph 33: Surface hardness results in samples of pearlitic nodular iron. Plasma nitriding at 520°C



Source: https://www.researchgate.net/figure/Figura-2-Perfis-de-dureza-determinados-apos-a-nitretacao-sob-plasma-a-520-o-C_fig2_287034070

Cast Iron

Nodular

Applications

The mechanical properties enable the use of VERSABAR® FE 70002 in hydraulic and pneumatic applications, the automotive industry, as well as in the machinery and machine tool sector, including mining activities. In addition, VERSABAR® FE 70002 can be used in the production of pumps and compressors, for steelmaking machines, in the oil and gas industry, as well as in renewable energy applications. This allows its application in machine components that require wear resistance and surface heat treatments, such as gears, flanges, shafts, keys, nuts, grinding bodies, mill rods, piston rods, spindles, control shafts, valve seats, crawler tracks, and blasting machine parts, etc., as shown in figures 27a and 27b.

Profile and size range

Table 37 demonstrates the dimensions and geometric shapes produced with VERSABAR® FE 70002. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 37 – Sizing produced in VERSABAR® FE 70002

Round	Square	Rectangular	Special
40.3 mm to 525 mm	85.7 mm x 85.7 mm 420 mm x 420 mm	90 mm x 575 mm 410 mm x 610 mm	Customer design sizes and continuous cast bar available upon request.
1.5866" to 20.6692"	3.3740" – 3.3740" 16.5354" – 16.5354"	3.5433" – 22.6377" 16.1417" – 24.0157"	

Figure 27a – Mill bar made with VERSABAR® FE 70002



Figure 27b – Control shaft made with VERSABAR® FE 70002



Cast iron

Nodular

VERSABAR® NPE-60 and NPE-60 TT

Description

VERSABAR® NPE-60 and NPE-60 TT are nodular cast iron materials that feature high mechanical properties, high thermal conductivity, and dimensional stability when heating and cooling the material. They are produced in a variety of geometric shapes, developed for the glass industry.

The specifications follow as defined by Tupy.

Microstructure

The typical microstructure of VERSABAR® NPE-60 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

It has a predominantly pearlitic matrix, which may contain up to 5% of carbides dispersed in the overmaterial region (figure 29a), providing high tensile strength and wear resistance, as well as increased hardness.

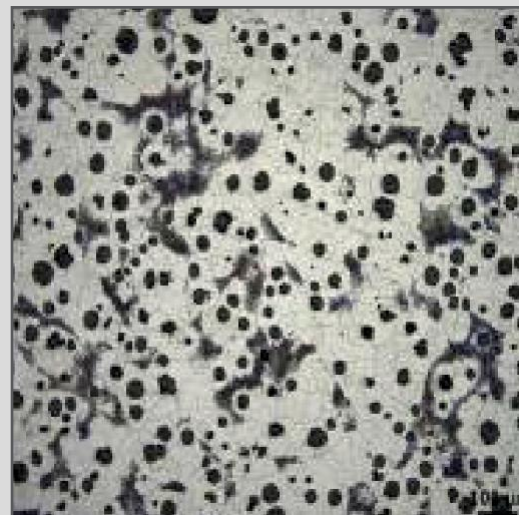
VERSABAR® NPE-60 TT has a typical microstructure which consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

It features a predominantly ferritic matrix obtained through a ferritization heat treatment, homogenizing the hardness throughout the entire part and maximizing ductility (figures 28a and 28b).

Figure 28a - Typical microstructure at the center VERSABAR® NPE-60



Figure 28b - Typical microstructure at the core VERSABAR® NPE-60TT



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® NPE-60 and NPE-60 TT are specified in table 38.

Cast Iron Nodular

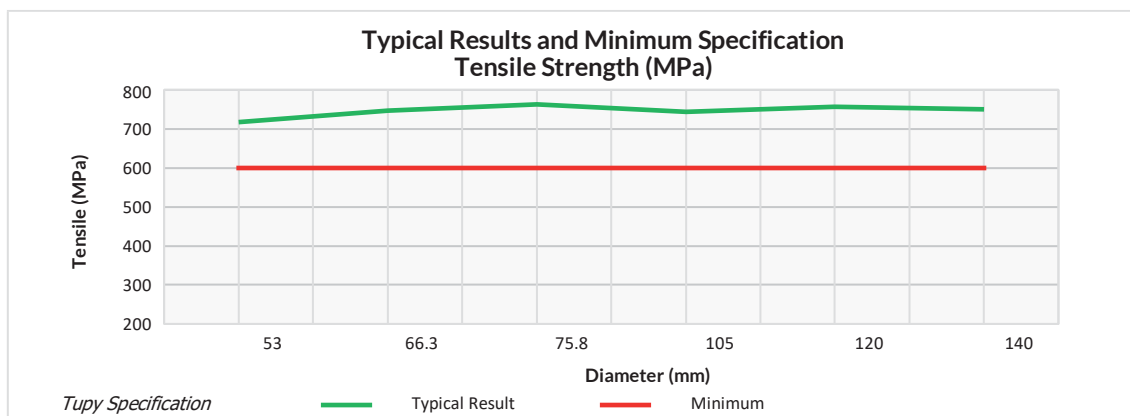
Table 38 - Mechanical properties VERSABAR® NPE-60 and NPE-60 TT

Geometric Format	Gross Dimensions (mm)	Material	Nominal Dimensions (inch)	Hardness (HB)	Tensile (MPa)	Flow (MPa)	Elongation (%)
Round	53.0 - 140.0	NPE-60	2.0866 - 5.5118	187 - 285	600	415	3
Half-moon	R 61.0 - H 65.0		2.4015 - 2.5590				
	R 70.8 - H 75.0		2.7874 - 2.9527				
	R 80.7 - H 85.0		3.1496 - 3.3464				
Mold Double	B 104 - H 71	NPE-60	4.0944 - 2.7952	187 - 285	600	415	3
	B 104.2 - H 80		4.1023 - 3.1496				

Geometric Format	Gross Dimensions (mm)	Material	Nominal Dimensions (inch)	Hardness (HB)	Tensile (MPa)	Flow (MPa)	Elongation (%)
Half-moon	R 28.0 x H 30.0 to R 110.0 x H 65.5	NPE-60 TT	1.1023 - 1.1811 to 4.0945 - 4.3307	131 - 217	400	200	15
Mold Double	B 66.0 x H 54.0 to B 126.0 x H 83.5		2.5987 - 2.1260 to 4.9606 - 3.2874				
Triple Mold	51.6 x H 52.4 to 70.6 x H 71.0		2.0315 - 2.0630 to 2.7795 - 2.7953				

Typical tensile strength, elongation and hardness results of VERSABAR® NPE-60 are presented in graphs 34, 35 and 36:

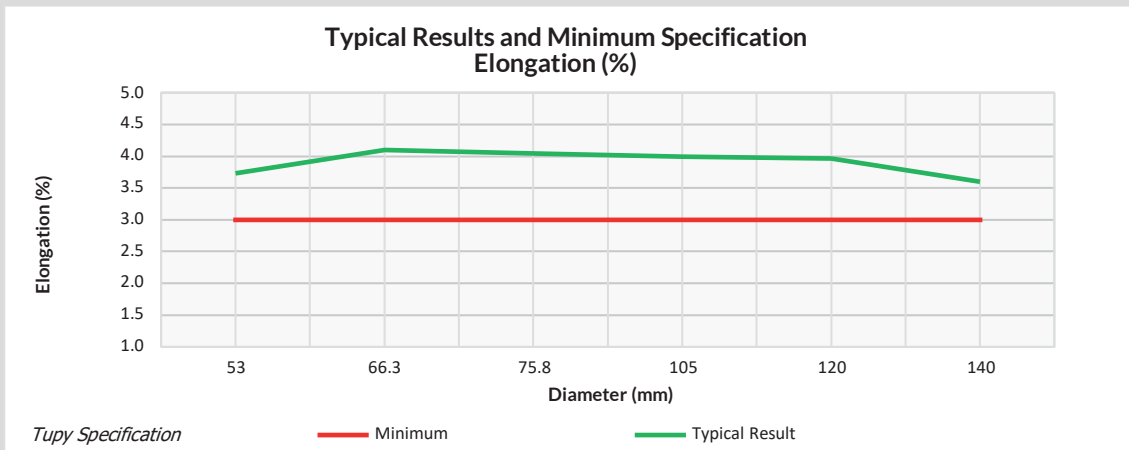
Graph 34: Tensile strength - VERSABAR® NPE-60



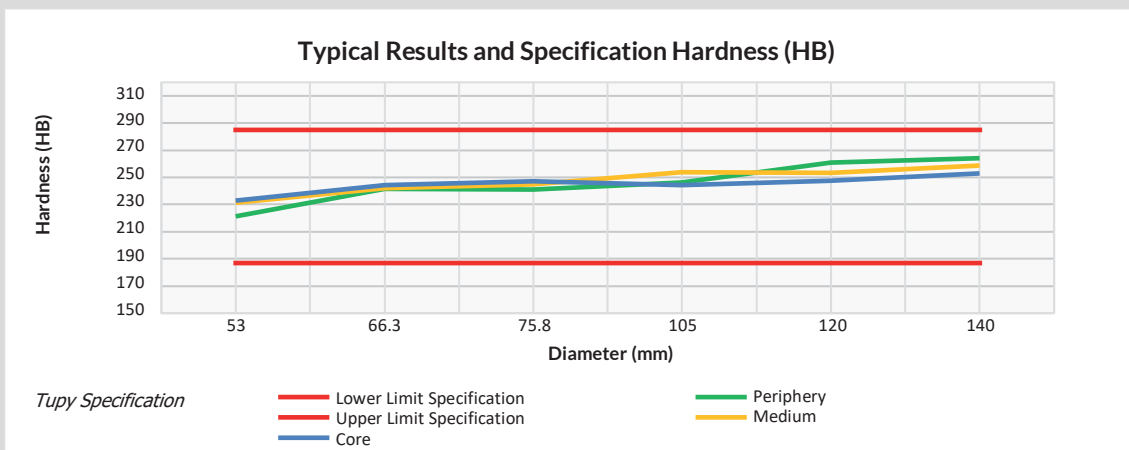
Cast iron

Nodular

Graph 35: Elongation- VERSABAR® NPE-60

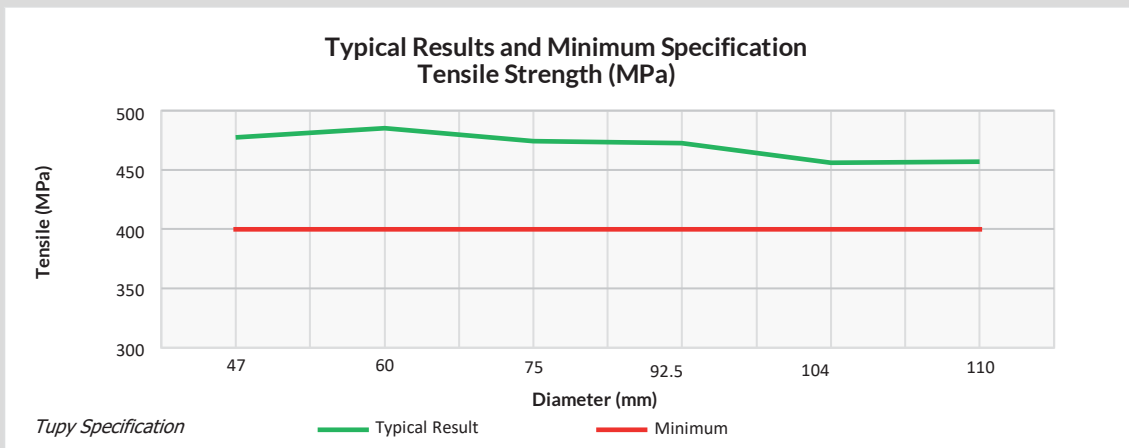


Graph 36: Hardness - VERSABAR® NPE-60



Typical tensile strength, elongation and hardness results of VERSABAR® NPE-60 TT are presented in graphs 37, 38 and 39:

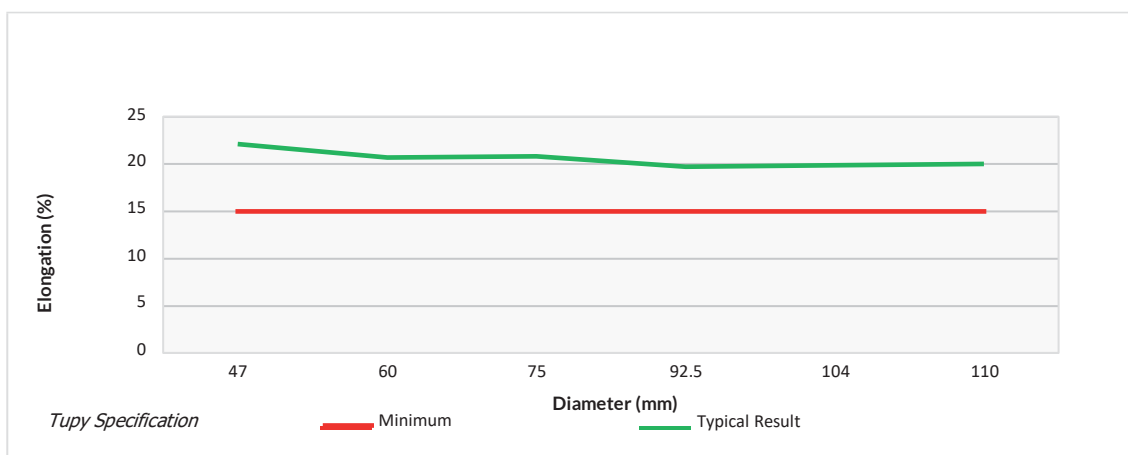
Graph 37: Tensile strength - VERSABAR® NPE-60 TT



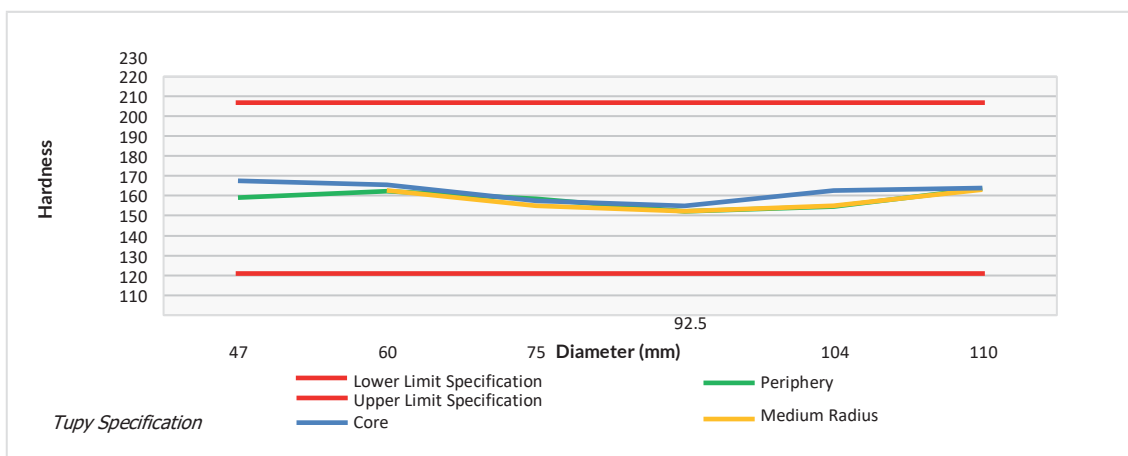
Cast Iron

Nodular

Graph 38: Elongation - VERSABAR® NPE-60 TT



Graph 39: Hardness - VERSABAR® NPE-60 TT



Chemical Composition

The overall chemical composition of VERSABAR® NPE 60 and NPE 60 TT is subordinate to mechanical properties and is shown in the table 39. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 39 - VERSABAR® NPE 60 and NPE 60 TT chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.50 - 3.10
Mn	0.25 max.
P	0.08 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements are made to meet the mechanical properties.

Cast iron

Nodular

Features of VERSABAR® NPE-60 and VERSABAR® NPE-60 TT

- High mechanical properties;
- High thermal conductivity;
- Good surface finish;
- Good resistance to wear, oxidation and corrosion;
- Good adhesion for surface coatings;
- High resistance to thermal fatigue and thermal shock;
- Excellent dimensional stability at high temperatures;
- Excellent machinability with low wear of cutting tools;
- Excellent finish of the machined surface.

Heat Treatment

The ferritization heat treatment is the most common treatment for VERSABAR® NPE 60 TT, which can also be quenched in oil. The goal of quenching is to increase hardness and mechanical strength, and consequently, wear resistance.

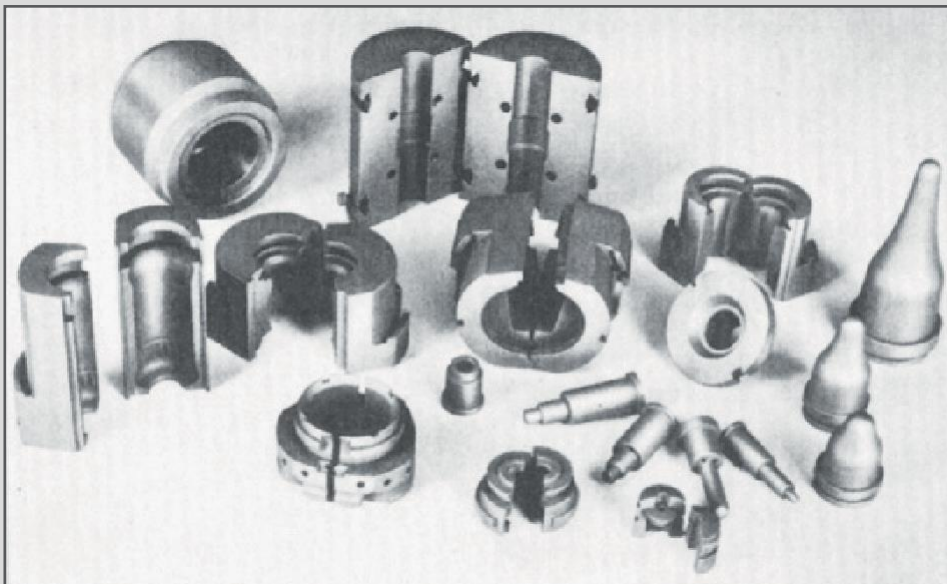
Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In the case of glassware, the molds are generally chrome plated. Other types of protection available upon request.

Applications

VERSABAR® NPE 60 and NPE 60 TT were developed with properties that allow glass manufacturing industries to use them in their molds, forms, pins, punches, cores, and neck rings, as shown in Figure 29.

Figure 29: Applications of VERSABAR® NPE 60 and NPE 60 TT through the continuous casting process for glassware.



Cast Iron

Nodular

Profile and size range

Table 39 demonstrates the dimensions, and Figure 30 shows the geometric shapes produced with VERSABAR® NPE 60 and NPE 60 TT. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 39 – Sizing produced in VERSABAR® NPE 60 and NPE 60 TT

Round	Special
53 mm to 140 mm	Customer design sizes and continuous cast bar available upon request.
2.0866" to 5.5118"	

Figure 30: Examples of special formats produced for the glass industry.



Working temperature and service life VERSABAR® NPE-60 and VERSABAR® NPE-60 TT

Some applications of the main alloys VERSABAR® GMI used in the glassware are listed in table 40 with the respective working temperature and service life according to the glass manufacturing process. This information was published at the 2nd Meeting of the Tool, Mold, and Die Chain held in 2004 under the title 'Cast Iron Molds for Glass Parts Production.

Table 40 - Working temperature and application of VERSABAR® NPE-60 and VERSABAR® NPE-60 TT. Estimate according to the glassware consulted.

VERSABAR® alloy	Application	Average temperature (°C) *	Manufacturing process	Parts produced using molds *
NPE-60	Molds	500	Blowing	145,000 – 150,000
NPE-60	Cup Molds	400	Press	900,000
NPE-60 TT	Cup Molds	250	Press	420,000
NPE-60 TT	Neck Ring	350 - 400	Press - Blowing	36,000

Source: <https://abmproceedings.com.br/ptbr/article/aplicaes-dos-ferros-fundidos-obtidos-atravs-do-processo-de-fundio-continua-nas-vidrarias>

Cast iron

Nodular

VERSABAR® WRI-100 - WEAR RESISTANT IRON 100,000 PSI

Description

VERSABAR® WRI-100 (Wear Resistant Iron 100,000 PSI) is a ductile cast iron with a correlation to Steel P20 2738 and the VERSABAR® FE 70002 class, featuring a refined structure. It has excellent mechanical properties, high resistance to thermal fatigue and thermal shock with high integrity, making VERSABAR® an economical and high-performance material, allowing its use in the manufacture of various metal components where the application requires high resistance to wear and abrasion.

The specifications of the VERSABAR® WRI-100 properties are Tupy.

Microstructure

The typical microstructure of VERSABAR® WRI-100 consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8.

The matrix is predominantly pearlitic, and may contain up to 5% of carbides dispersed in the overmaterial region (figures 31a and 31b).

Figure 31a: Typical VERSABAR® WRI-100 core microstructure

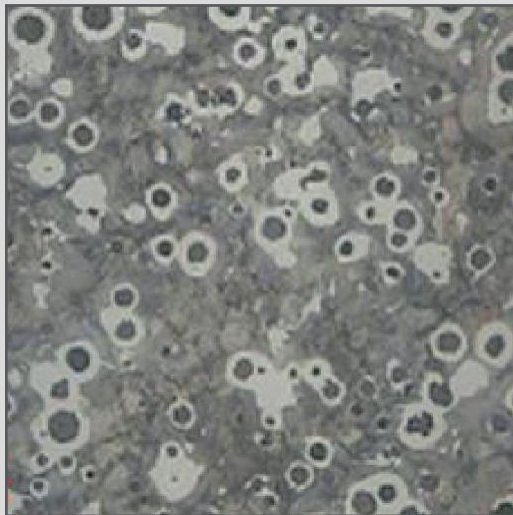
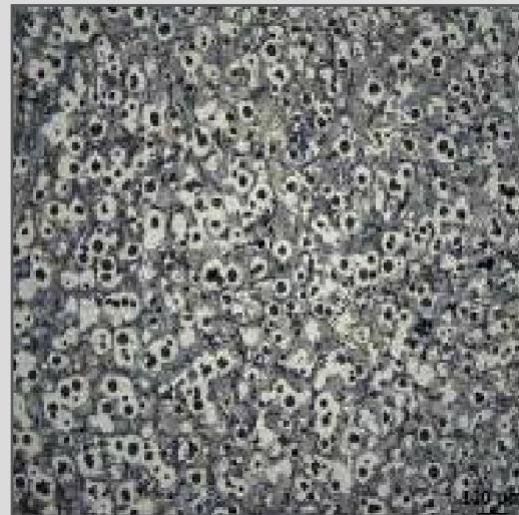


Figure 31b: Typical VERSABAR® WRI-100 periphery microstructure



Mechanical Properties

The hardness, tensile strength, yield and elongation values of VERSABAR® WRI are specified in table 41.

Table 41 - Mechanical properties VERSABAR® WRI

Hardness ₁ (HB)	Tensile ₁ (MPa)		Flow ₁ (MPa)		Elongation ₁ (%)
200 to 300	688	10000	482	70000	2

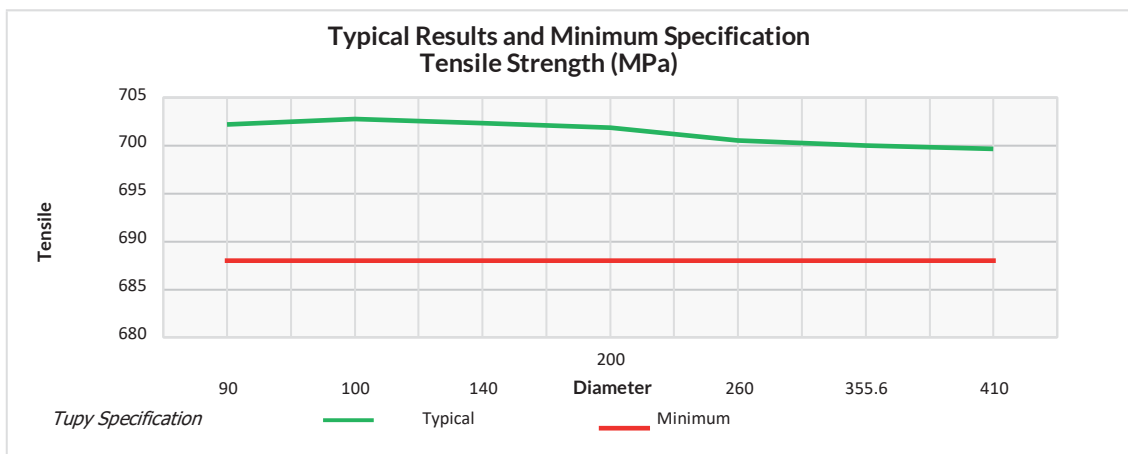
1) Tupy Specification.

Cast Iron

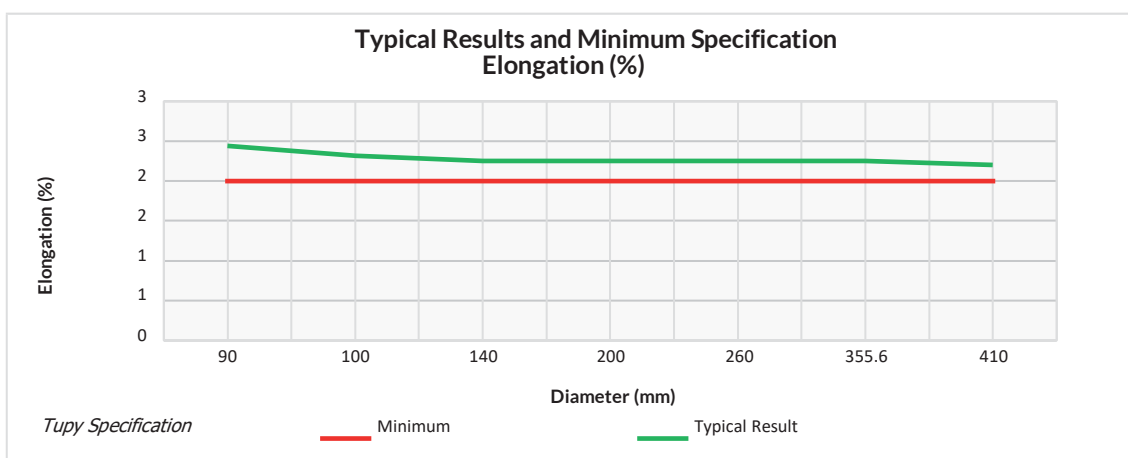
Nodular

Typical tensile strength, elongation and hardness results of VERSABAR® WRI-100 are presented in graphs 40, 41 and 42:

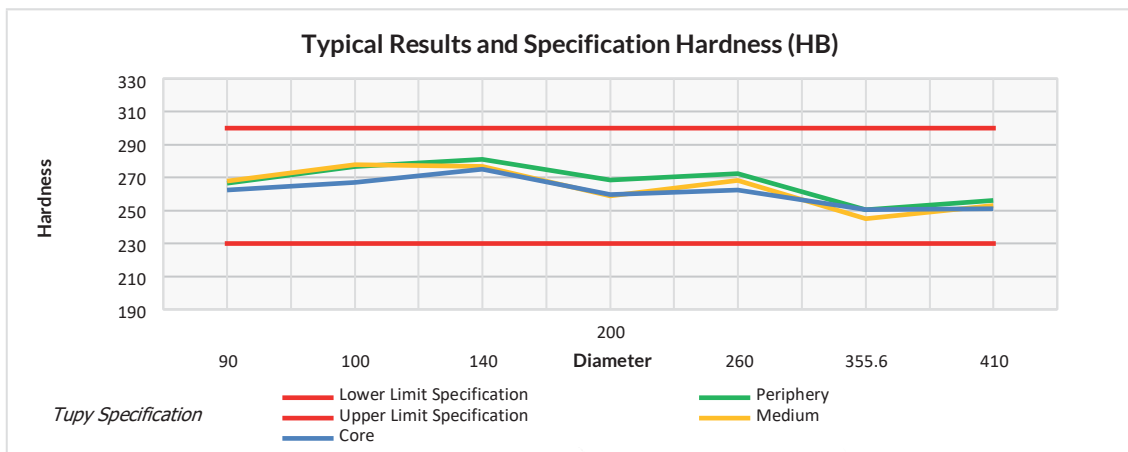
Graph 40: Tensile strength - VERSABAR® WRI-100



Graph 41: Elongation- VERSABAR® WRI-100



Graph 42: Hardness - VERSABAR® WRI-100



Cast iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® WRI is subordinate to mechanical properties and is shown in table 42. The chemical analysis refers to the sample taken from the liquid iron, and may vary if compared with the analysis performed on the bar.

Table 42 - VERSABAR® WRI chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.65 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements are made to meet the mechanical properties.

Heat Treatment

VERSABAR® WRI-100 is more responsive to thermal treatments, particularly hardening and quenching, making it the ideal material for austempering. The predominantly pearlitic matrix provides good hardenability, allowing the application of most conventional surface hardening methods, such as induction or flame hardening, thus achieving a wide range of mechanical property combinations.

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® WRI-100, the processes of galvanizing or electroplating, chroming, nitriding and carburizing can be performed. Other types of protection available upon request.

Features of the VERSABAR® WRI-100

- High mechanical properties;
- High thermal conductivity;
- Good surface finish (high polishability);
- Good wear and abrasion resistance;
- Good adhesion for surface coatings;
- High resistance to thermal fatigue and thermal shock;
- Excellent dimensional stability at high temperatures;
- Excellent machinability with low wear of cutting tools;
- Excellent finish of the machined surface;
- Low cost benefit compared to steel.

Cast Iron

Nodular

Profile and size range

Table 43 demonstrates the dimensions and geometric shapes produced with VERSABAR® WRI-100. The standard cutting length of our cast iron products is 2050 mm (80.7086"). For other dimensions and lengths, please consult our engineering department.

Table 43 – Sizing produced in VERSABAR® WRI-100

Rectangular (mm)	Rectangular (in)	Special
90 mm x 575 mm	3.5433" x 22.6377"	Customer design sizes and continuous cast bar available upon request.
100 mm x 500 mm	3.9370" x 19.6850"	
100 mm x 650 mm	3.9370" x 25.5906"	
140 mm x 650 mm	5.5118" x 25.5906"	
200 mm x 650 mm	7.8740" x 25.5906"	
260 mm x 380 mm	10.2362" x 14.9606"	
355.6 mm x 558.2 mm	10.2362" x 14.9606"	
410 mm x 610 mm	16.1417" x 24.0157"	

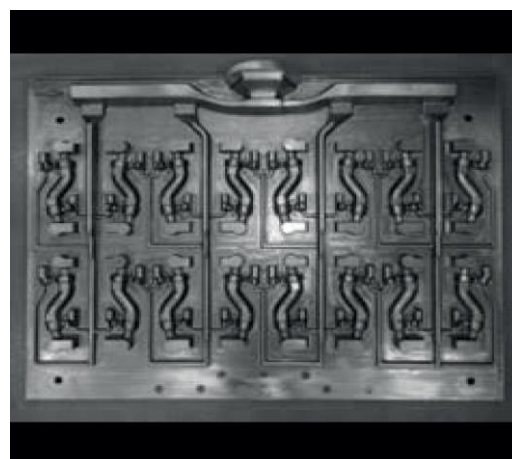
Applications

The mechanical properties and characteristics of VERSABAR® WRI allow large molds to be manufactured in a much more practical way, with less tool wear compared to SAE P20 2738 steel. It is more suitable for the manufacturing of plastic injection molds, non-ferrous alloys, sand casting molds, patterns, models, and tools (figures 32a and 32b).

Figure 32a: Green sand molding tooling with VERSABAR® WRI



Figure 32b: Green sand molding tooling with VERSABAR® WRI



Cast iron

Nodular

VERSABAR® ADI - BAINITIC NODULAR IRON

Description

VERSABAR® ADI (Austempered Ductile Iron) is a ductile cast iron with additions of Cu, Ni, and Mo that, in its raw cast condition, has properties comparable to VERSABAR® 55006. After austempering heat treatment, it exhibits high hardness combined with an excellent balance of resistance properties (high resistance to abrasion and wear) along with toughness and ductility. This makes it suitable for applications traditionally using forged or cast steels, resulting in reduced final component costs in various applications.

The mechanical properties of VERSABAR® ADI are significantly improved through an austempering cycle, making austempered ductile iron a lower-cost alternative compared to forged and cast steels and aluminum.

Depending on the heat treatment parameters, a wide range of properties can be obtained, as defined in the ASTM A 897 standard (see table 44).

Table 44 – Mechanical Properties of VERSABAR® ADI Grade | Tensile Strength (MPa) ¹ | Yield Strength (MPa) ¹ | Elongation (%) ¹

Grade	Tensile (MPa) ₁	Flow (MPa) ₁	Elongation (%) ₁	Hardness (HB) ₁
900/650/09	900	650	9	269 - 341
1050/750/07	1050	750	7	302 - 375
1200/850/04	1200	850	4	341 - 444
1400/1100/02	1400	1100	2	388 - 477
1600/1300/01	1600	1300	1	402 - 512

¹) ASTM A 897 Specification. * Tupy does not perform the austempering heat treatment.

Microstructure

The typical microstructure of VERSABAR® ADI consists of nodular graphite (spherical), forms I and II, size 5 - 8, evaluated according to ASTM A 247 standards. When analyzed according to EN ISO 945-1 the graphite has the form V and VI predominantly, size 4 - 8. In the as-cast condition, the matrix is predominantly pearlitic, with a maximum of 5% of carbides dispersed in the overmaterial region. After the austempering heat treatment, the matrix is bainitic (Figures 33a and 33b).

Figure 33a: Typical VERSABAR® ADI core microstructure

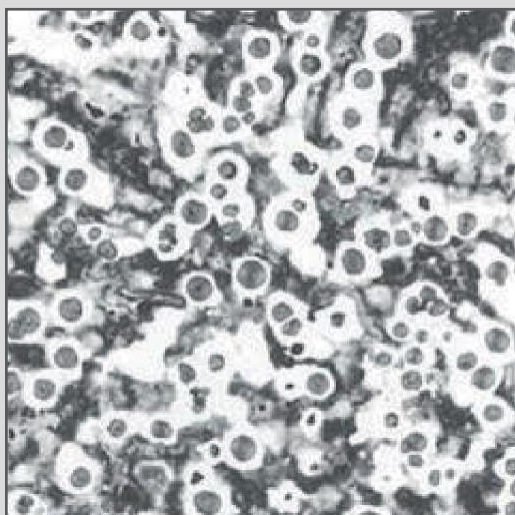
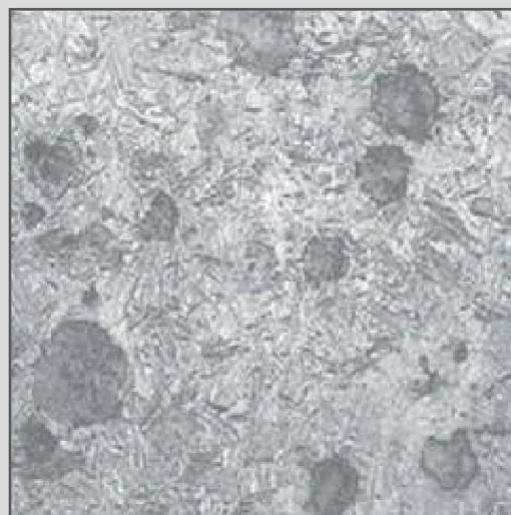


Figure 33b: Typical VERSABAR® ADI periphery microstructure



Cast Iron

Nodular

Chemical Composition

The overall chemical composition of VERSABAR® ADI is subordinate to mechanical properties and is shown in table 45. The chemical analysis refers to samples taken from the molten iron and may slightly vary when compared to the analyses performed on the bar.

Table 45 - VERSABAR® ADI chemical composition

Element	%
C ₁	3.30 - 4.00
Si	2.20 - 3.10
Mn	0.25 max.
P	0.10 max.
S	0.020 max.
Mg ₂	0.03 - 0.06

Note 1: The carbon ranges are specified for each size group, and the variation within the same range is approximately 0.20%.

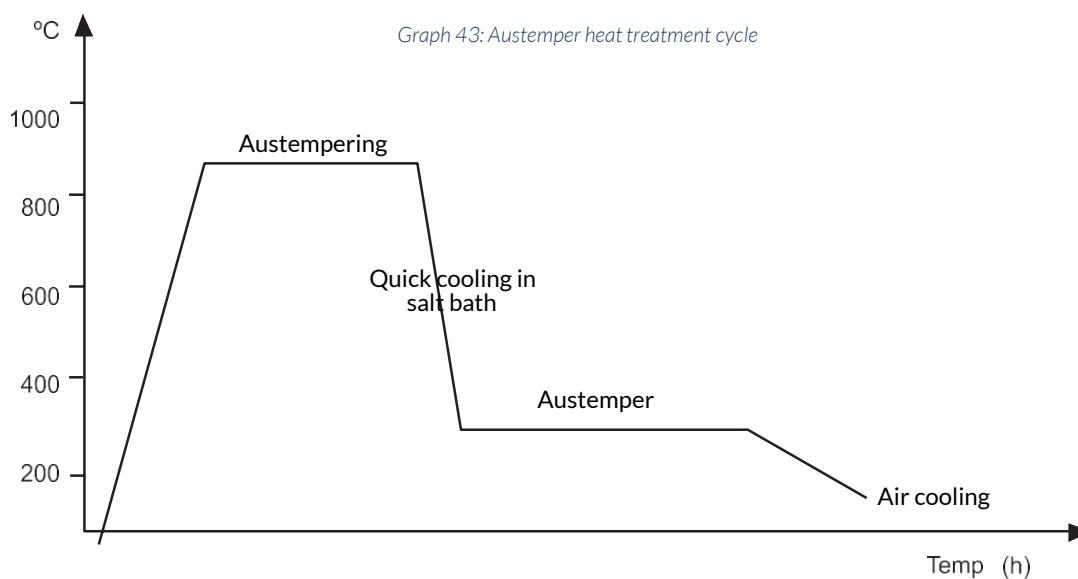
Note 2: Mg is added to promote the formation of spheroidal graphite.

Note 3: Additions of pearlitizing elements can be made to meet the mechanical properties.

Heat Treatment

In graph 43, one can observe the austempering heat treatment cycle, in which the part is heated to the range of 820°C to 930°C in a salt bath or furnace with a controlled atmosphere, and maintained at this temperature for a specific period of time. Next, the part is rapidly cooled in a salt bath with a temperature between 270°C and 500°C, where it is maintained for a certain period until almost all the austenite transforms into bainite. Subsequently, the part is air-cooled, aiming for a structure and mechanical properties similar to ultra-high-strength steels, with lower energy consumption during production.

* Tupy does not perform the austempering heat treatment.



Cast iron

Nodular

Protection

Surface treatment is essential for the protection and durability of the parts. By applying specific coatings, it is possible to increase resistance to corrosion, abrasion and other damage, extending the life of parts and reducing maintenance costs. In VERSABAR® ADI, the processes of galvanizing or electroplating, chroming, nitriding and carburizing can be performed. Other types of protection available upon request.

Advantages and Characteristics

- Excellent mechanical properties, maintaining ductility;
- Excellent abrasion resistance and fatigue resistance.
- High hardness, resistance to wear, oxidation and corrosion;
- Excellent vibration damping capacity, which reduces noise;
- Reduction of the noise level of the gears when in operation;
- Lower machining cost and lower energy consumption to obtain the final product;
- Lower component weight due to lower iron density.

Typical applications

Due to its high values of mechanical strength, ductility, impact resistance, and wear resistance, ADI is recommended for use in the structures of automotive, agricultural, mining components, and construction equipment. Examples include gears, rings, crowns, pinions for motor vehicles, and annular gear wheels for satellite assemblies in trucks. Examples of VERSABAR® ADI applications as a substitute for steels (Figures 34, 35, 36, and 37):

Cast Iron

Nodular

Profile and size range

Table 46 demonstrates the dimensions and geometric shapes produced with FUCOFUCO® ADI. The standard cutting length of our cast iron products is 1880 mm (74.0157"). For other dimensions and lengths, please consult our engineering department.

Table 46 – Sizing produced in VERSABAR® ADI

● Round	□ Rectangular	▤ Special
37.1 mm to 395.8 mm	45.5 mm x 51.0 mm	Customer design sizes and continuous cast bar available upon request.
1.4606" to 15.5826"	1.7913" x 2.0078"	

Figure 34 - One of the most typical applications is in the manufacture of gears, crown and pinion of motor vehicles.

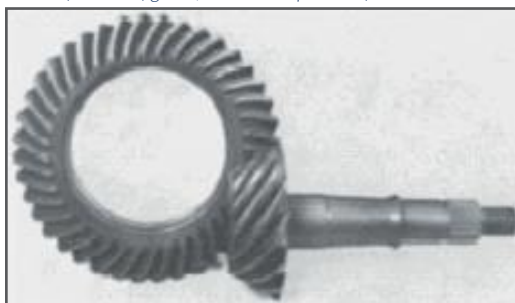


Figure 35 - Steering gears made of class 4 nodular ADI, machined in the ferritic state, with a hardness of 160 HB.



Figure 36 - Example of replacement of SAE 1022 steel, forged and cemented, by nodular ADI in diesel engines. Reduction of total manufacturing cost by 30%.



Figure 37 - Examples of gears made of VERSABAR® ADI as a replacement for AISI 8620 steel.



Properties Additional

OTHER PROPERTIES

Typically, gray and nodular cast iron is commercially specified by the tensile strength and hardness limit. The main justification for using these properties is the relative ease in determining them.

Depending on the application, other properties may be decisive in choosing the suitable material, and in most cases, they can be related to the tensile strength (LR) and/or hardness, as shown in table 47.

Table 47: Other properties by class

Properties	Unit	FC 200 ⁽¹⁾	FC 250 ⁽¹⁾	FC 300 ⁽¹⁾	GJS 40018 ⁽²⁾	FE 50007 ⁽²⁾	FE 60003 ⁽²⁾	FE 70002 ⁽²⁾
		GJL 200 ⁽¹⁾	GJL 250 ⁽¹⁾	GJL 300 ⁽¹⁾		GJS 500-7 ⁽²⁾	GJS 600-3 ⁽²⁾	GJS 700-2 ⁽²⁾
Shear Strength	MPa	230	290	345	LR*0.9	LR*0.9	LR*0.9	LR*0.9
Torsional Resistance	MPa	LR*1.36	LR*1.36	LR*1.36	LR*0.9	LR*0.9	LR*0.9	LR*0.9
Fatigue Resistance (without notches)	MPa	0.35 to 0.50 *LR ⁽³⁾			195	224	248	280
Compressive Strength	MPa	LR*3.18	LR*3.01	LR*2.87	700	800	870	1000
Flexural Strength	MPa	LR*1.73	LR*1.66	LR*1.60	0.275	0.275	0.275	0.275
Poisson's ratio	-	0.26			0.275	0.275	0.275	0.275
Thermal Conductivity (100°C)	W/(K.m)	50.0	48.5	47.5	38.5 ⁽³⁾	36.0 ⁽³⁾	32.9 ⁽³⁾	29.8 ⁽³⁾
Thermal Conductivity (200°C)	W/(K.m)	49.0	47.5	46.0	41.5 ⁽³⁾	38.3 ⁽³⁾	35.4 ⁽³⁾	32.0 ⁽³⁾
Thermal Conductivity (300°C)	W/(K.m)	48.0	46.5	45.0	36.2	35.2	32.5	31.1
Thermal Conductivity (400°C)	W/(K.m)	47.0	45.0	44.0	37.4 ⁽³⁾	35.3 ⁽³⁾	32.8 ⁽³⁾	30.3 ⁽³⁾
Thermal Conductivity (500°C)	W/(K.m)	46.0	44.5	43.0	35.0 ⁽³⁾	33.5 ⁽³⁾	31.6 ⁽³⁾	29.8 ⁽³⁾
Specific Heat Capacity (20 to 100°C)	J/(Kg.K)	515 ⁽³⁾			515 ⁽³⁾			
Specific Heat Capacity (20 to 200°C)	J/(Kg.K)	460			530 ⁽³⁾			
Specific Heat Capacity (20 to 500°C)	J/(Kg.K)	595 ⁽³⁾			515			
Specific Heat Capacity (20 to 600°C)	J/(Kg.K)	535			625 ⁽³⁾			
Linear Expansion Coefficient (20 to 400°C)	µm/m.K	13			12.5			
Modulus of Elasticity	GPa	88 to 103	103 to 118	103 to 118	169	169	174	176
Resistivity	Ω.mm ² /m	0.77	0.73	0.77	0.5	0.51	0.53	0.54

Note: (1) DIN EN 1561: 2012; (2) DIN EN 1563: 2019; (3) Mechanical Properties of Cast Iron.

Geometric Tolerances

The measurements of the parts have variability and, within certain limits, the quality of the part is not impaired. Tolerance is the acceptable variation in a specific measure from the base measure or assigned dimensions.

MACHINING TOLERANCES

Machining Tolerance is a surface layer of material on a cast product that needs to be machined to remove specific characteristics, including ovalization or expansion, peripheral zone or surface layer, and surface imperfections resulting from the casting process.

For continuous cast bars, the minimum machining tolerances based on the dimensions and shapes of the bars are provided in Table 48.

Table 48: Minimum machining tolerance (On material)

Minimum machining tolerance (On Material) ^{1,2,3}				
Diameter "D" or Base "B" ¹	Gray		Nodular	
	Round	Rectangular	Round	Rectangular
20 < (D or B) ≤ 50	1.5	2.0	2.0	3.0
50 < (D or B) ≤ 100	2.5	3.0	3.0	4.0
100 < (D or B) ≤ 200	3.5	4.5	4.0	5.0
200 < (D or B) ≤ 300	5.5	6.5	6.0	7.0
300 < (D or B) ≤ 400	6.5	7.5	7.5	8.5
400 < (D or B) ≤ 500	7.5	8.5	9.0	10.0
500 < (D or B) ≤ 700	10.0	12.0	12.0	14.0

Note: 1) Dimension in (mm). | 2) For rectangular bars, consider the "base" as the width, which is the longest dimension of the cross-section. | 3) The machining tolerance refers to the radius or half the width of the bar.

OVALIZATION AND SWELLING TOLERANCES

For continuous cast bars, the maximum and minimum tolerances for the dimensions and shapes of the bars are provided in Table 49.

Table 49: Maximum and Minimum Tolerance in part sizing

Minimum machining tolerance (On Material) ^{1,2,3}					
Diameter "D" or Base "B" ^{1,3}	Gray ^{1,3}		Nodular ^{1,3}		Length ^{2,3}
	Round	Rectangular	Round	Rectangular	
20 < (D or B) ≤ 50	0/+1	0/+1	0/+1	0/+1	-0 / +100
50 < (D or B) ≤ 100	0/+2	0/+2	0/+2	0/+2	
100 < (D or B) ≤ 200	0/+3	0/+2	-0.5/+3	-0.5/+3	
200 < (D or B) ≤ 300	-1/+3	-1/+3	-1/+3	-1/+3	
300 < (D or B) ≤ 400	-1/+4	-1/+4	-1/+4	-1/+4	
400 < (D or B) ≤ 500	-1/+5	-1/+5	-1/+6	-1/+6	
500 < (D or B) ≤ 700	-3/+7	-3/+7	-3/+7	-3/+7	

Note: 1) DIN EN 16482 Specification. | 2) Tupy Specification. | 3) Dimension in (mm). | 4) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross-section.

Geometric Tolerances

DIMENSIONAL TOLERANCES

The linearity/warping of the gray and ductile cast iron bars, non-machined and with a diameter greater than 50 mm, must comply with the requirements of Table 50.

For diameters smaller and lengths different from those in Table 50, the linearity/camber must be agreed upon between the manufacturer and the buyer at the time of order acceptance. For more information, consult our engineering department.

Table 50: Maximum allowable tolerance for warping

Dimensional Tolerance ¹		
Diameter "D" or Base "B" ^{1,2}	Dimensão ³	Comprimento ³
1000	2.0	3.0
2000	4.0	6.0
3000	6.0	9.0

Note: 1) Dimension in (mm). | 2) Specification DIN EN 16482.

GENERAL MECHANICAL PROPERTIES

For rectangular bars, the corresponding diameter "D", the determination of properties must be calculated using the following formula:

$$D = \frac{2 \times (H \times B)}{(H + B)}$$

Where:

D= Corresponds to the diameter of the Bar (mm); H= Corresponds to the height of the bar (mm);

B= Corresponds to the base of the bar (mm).

Example: Calculate the "D" of the rectangular bar 50 x 250 mm

$$D = \frac{2 \times (50 \times 250)}{(50 + 250)} \quad D = \frac{83.3}{\text{mm}}$$

Therefore, use as a reference the range $60 < D \leq 120$ for determining the specification of the bar.

Standardized Dimensions

Tupy supplies a variety of VERSABAR® in dimensions, shapes, alloys, and special materials made to order, aiming to meet the needs of our customers. Below is the ratio of sizing by shape and alloy types. For more information, consult our engineering development department.

ROUND CONTINUOUS CAST BAR - GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ⁴		Overmetal for machining	dimensional tolerance ^{2,3}	Theoretical weight ²	FC 200	FC 250	FC 300	GMI
(mm) ¹	(inch)	(mm)	(inch)	Min. (mm)	(mm)	(kg/m)	GJL 200	GJL 250	GJL 300	
25.0	0.9843	24.0	0.9449	2.0	± 0.5	3.5		X	X	
25.5	1.0039	24.5	0.9646	2.0	± 0.5	3.7			X	
27.6	1.0866	26.6	1.0472	2.0	± 0.5	4.3		X	X	
30.0	1.1811	29.0	1.1417	2.0	± 0.5	5.1		X		
30.7	1.2087	29.7	1.1693	2.0	± 0.5	5.3			X	
33.0	1.2992	32.0	1.2598	2.0	± 0.5	6.2			X	
33.9	1.3346	32.9	1.2953	2.0	± 0.5	6.5			X	
35.0	1.3780	34.0	1.3386	2.0	± 0.5	6.9		X		
37.1	1.4606	36.1	1.4213	2.0	± 0.5	7.8	x		X	X
40.0	1.5748	39.0	1.5354	2.0	± 0.5	9.0		X		
40.3	1.5866	39.3	1.5472	2.0	± 0.5	9.2	X		X	
42.0	1.6535	41.0	1.6142	2.0	± 0.5	10.0				X
43.4	1.7087	42.4	1.6693	2.0	± 0.5	10.7			X	X
45.0	1.7717	44.0	1.7323	2.0	± 0.5	11.5		X		
46.6	1.8346	45.6	1.7953	2.0	± 0.5	12.3	X		X	
49.8	1.9606	48.8	1.9213	2.0	± 0.5	14.0			X	
50.0	1.9685	49.0	1.9291	2.0	± 0.5	14.1		X		
51.5	2.0276	50.0	1.9685	3.0	± 0.5	15.0		X		
53.0	2.0866	51.5	2.0276	3.0	± 0.5	15.9			X	X
55.0	2.1654	53.5	2.1063	3.0	± 0.5	17.1		X		
56.8	2.2362	55.3	2.1772	3.0	± 1.0	18.2			X	X
59.9	2.3583	58.4	2.2992	3.0	± 1.0	20.3			X	X
60.0	2.3622	58.5	2.3031	3.0	± 1.0	20.4		X	X	
61.5	2.4213	60.0	2.3622	3.0	± 1.0	21.4		X		
63.1	2.4843	61.6	2.4252	3.0	± 1.0	22.5			X	X
65.0	2.5591	63.5	2.5000	3.0	± 1.0	23.9		X		
66.3	2.6102	64.8	2.5512	3.0	± 1.0	24.9			X	X
69.5	2.7362	68.0	2.6772	3.0	± 1.0	27.3			X	X
70.0	2.7559	68.5	2.6969	3.0	± 1.0	27.7		X		
71.5	2.8150	70.0	2.7559	3.0	± 1.0	28.9		X		
72.6	2.8583	71.1	2.7992	3.0	± 1.0	29.8			X	X
75.0	2.9528	73.5	2.8937	3.0	± 1.0	31.8		X		
75.8	2.9843	74.3	2.9252	3.0	± 1.0	32.5			X	X
76.5	3.0118	75.0	2.9528	3.0	± 1.0	33.1		X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ⁴		Overmetal for machining	dimensional tolerance ^{2,3}	Theoretical weight ²	FC 200	FC 250	FC 300	GMI
(mm) ¹	(inch)	(mm)	(inch)	Min. (mm)	(mm)	(kg/m)	GJL 200	GJL 250	GJL 300	
79.0	3.1102	77.5	3.0512	3.0	± 1.0	35.3			X	X
80.0	3.1496	78.5	3.0906	3.0	± 1.0	36.2		X		
82.0	3.2283	80.5	3.1693	3.0	± 1.0	38.0		X		
82.6	3.2520	81.1	3.1929	3.0	± 1.0	38.6			X	
85.0	3.3465	83.5	3.2874	3.0	± 1.0	40.9		X		
85.7	3.3740	84.2	3.3150	3.0	± 1.0	41.5			X	X
88.9	3.5000	87.4	3.4409	3.0	± 1.0	44.7			X	
91.0	3.5827	89.5	3.5236	3.0	± 1.0	46.8		X		
92.1	3.6260	90.6	3.5669	3.0	± 1.0	48.0			X	X
95.0	3.7402	93.5	3.6811	3.0	± 1.0	51.0		X		
95.3	3.7520	93.8	3.6929	3.0	± 1.0	51.4			X	X
98.4	3.8740	96.9	3.8150	3.0	± 1.0	54.8			X	
100.0	3.9370	98.5	3.8780	3.0	± 1.0	56.6		X		
101.6	4.0000	99.6	3.9213	4.0	± 1.0	58.4		X	X	X
104.8	4.1260	102.8	4.0472	4.0	± 1.0	62.1			X	X
105.0	4.1339	103.0	4.0551	4.0	± 1.0	62.3		X		
107.0	4.2126	105.0	4.1339	4.0	± 1.5	64.7		X		
110.0	4.3307	108.0	4.2520	4.0	± 1.5	68.4		X		
111.5	4.3898	109.5	4.3110	4.0	± 1.5	70.3			X	X
113.6	4.4724	111.6	4.3937	4.0	± 1.5	73.0			X	
115.0	4.5276	113.0	4.4488	4.0	± 1.5	74.8		X		
117.9	4.6417	115.9	4.5630	4.0	± 1.5	78.6			X	
120.0	4.7244	118.0	4.6457	4.0	± 1.5	81.4		X		
124.2	4.8898	122.2	4.8110	4.0	± 1.5	87.2			X	
125.0	4.9213	123.0	4.8425	4.0	± 1.5	88.4		X		
130.0	5.1181	128.0	5.0394	4.0	± 1.5	95.6		X		
130.6	5.1417	128.6	5.0630	4.0	± 1.5	96.5			X	X
135.0	5.3150	133.0	5.2362	4.0	± 1.5	103.1		X		
137.3	5.4055	135.3	5.3268	4.0	± 1.5	106.6			X	
140.0	5.5118	138.0	5.4331	4.0	± 1.5	110.8		X		
143.6	5.6535	141.6	5.5748	4.0	± 1.5	116.6			X	
145.0	5.7087	143.0	5.6299	4.0	± 1.5	118.9		X		
150.0	5.9055	148.0	5.8268	4.0	± 1.5	127.2		X	X	X
155.0	6.1024	153.0	6.0236	4.0	± 1.5	135.9		X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR - GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ⁴		Overmetal for machining	dimensional tolerance ^{2,3}	Theoretical weight ²	FC 200	FC 250	FC 300	GMI
(mm) ¹	(inch)	(mm)	(inch)	Min. (mm)	(mm)	(kg/m)	GJL 200	GJL 250	GJL 300	
156.3	6.1535	154.3	6.0748	4.0	± 1.5	138.1			X	
160.0	6.2992	158.0	6.2205	4.0	± 1.5	144.8		X	X	
163.0	6.4173	161.0	6.3386	4.0	± 2.0	150.2			X	
163.1	6.4213	161.1	6.3425	4.0	± 2.0	150.4			X	
165.0	6.4961	163.0	6.4173	4.0	± 2.0	154.0		X		
166.0	6.5354	164.0	6.4567	4.0	± 2.0	155.8			X	
169.4	6.6693	167.4	6.5906	4.0	± 2.0	162.3			X	
170.0	6.6929	168.0	6.6142	4.0	± 2.0	163.4		X		
175.8	6.9213	173.8	6.8425	4.0	± 2.0	174.8			X	
180.0	7.0866	178.0	7.0079	4.0	± 2.0	183.2		X		
182.1	7.1693	180.1	7.0906	4.0	± 2.0	187.5			X	
189.0	7.4409	187.0	7.3622	4.0	± 2.5	202.0			X	
190.0	7.4803	188.0	7.4016	4.0	± 2.5	204.1		X		
195.3	7.6890	193.3	7.6102	4.0	± 2.5	215.7			X	
197.8	7.7874	195.8	7.7087	4.0	± 2.5	221.3			X	
200.0	7.8740	198.0	7.7953	4.0	± 2.5	226.2		X		
201.7	7.9409	198.7	7.8228	6.0	± 2.5	230.1			X	
208.0	8.1890	205.0	8.0709	6.0	± 2.5	244.7			X	
210.0	8.2677	207.0	8.1496	6.0	± 2.5	249.4		X		
220.0	8.6614	217.0	8.5433	6.0	± 3.0	273.7		X		
221.4	8.7165	218.4	8.5984	6.0	± 3.0	277.2			X	
227.7	8.9646	224.7	8.8465	6.0	± 3.0	293.2			X	
230.0	9.0551	227.0	8.9370	6.0	± 3.0	299.1		X		
234.1	9.2165	231.1	9.0984	6.0	± 3.0	309.9			X	
236.1	9.2953	233.1	9.1772	6.0	± 3.0	315.2			X	
240.0	9.4488	237.0	9.3307	6.0	± 3.0	325.7		X		
241.4	9.5039	238.4	9.3858	6.0	± 3.5	329.5			X	
247.8	9.7559	244.8	9.6378	6.0	± 3.5	347.2			X	
250.0	9.8425	247.0	9.7244	6.0	± 3.5	353.4		X		
254.1	10.0039	251.1	9.8858	6.0	± 3.5	365.1			X	
260.0	10.2362	257.0	10.1181	6.0	± 3.5	382.3		X		
260.5	10.2559	257.5	10.1378	6.0	± 3.5	383.7			X	
270.0	10.6299	267.0	10.5118	6.0	± 4.0	412.2		X		
270.5	10.6496	267.5	10.5315	6.0	± 4.0	413.8			X	
276.9	10.9016	273.9	10.7835	6.0	± 4.0	433.6			X	
280.0	11.0236	277.0	10.9055	6.0	± 4.0	443.4		X		
289.6	11.4016	286.6	11.2835	6.0	± 4.0	474.3			X	
290.0	11.4173	287.0	11.2992	6.0	± 4.0	475.6		X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR – GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ⁴		Overmetal for machining	dimensional tolerance ^{2,3}	Theoretical weight ²	FC 200	FC 250	FC 300	GMI
(mm) ¹	(inch)	(mm)	(inch)	Min. (mm)	(mm)	(kg/m)	GJL 200	GJL 250	GJL 300	
300.0	11.8110	297.0	11.6929	6.0	± 4.0	509.0		X		
306.9	12.0827	303.4	11.9449	7.0	± 5.2	532.6			X	
310.0	12.2047	306.5	12.0669	7.0	± 5.2	543.4		X		
319.6	12.5827	316.1	12.4449	7.0	5±2	577.6			X	
320.0	12.5984	316.5	12.4606	7.0	± 5.2	579.1		X		
330.0	12.9921	326.5	12.8543	7.0	± 5.2	615.8		X		
332.3	13.0827	328.8	12.9449	7.0	± 5.2	624.4			X	
340.0	13.3858	336.5	13.2480	7.0	± 5.2	653.7		X		
345.0	13.5827	341.5	13.4449	7.0	± 5.2	673.1			X	
350.0	13.7795	346.5	13.6417	7.0	± 5.2	692.7		X		
360.0	14.1732	356.5	14.0354	7.0	± 5.2	732.9		X		
370.0	14.5669	366.5	14.4291	7.0	± 5.2	774.2		X		
370.4	14.5827	366.9	14.4449	7.0	± 5.2	775.8			X	
380.0	14.9606	376.5	14.8228	7.0	± 5.2	816.6		X		
390.0	15.3543	386.5	15.2165	7.0	± 5.2	860.1		X		
395.8	15.5827	392.3	15.4449	7.0	± 5.2	885.9			X	
400.0	15.7480	396.5	15.6102	7.0	± 5.2	904.8		X		
410.0	16.1417	405.5	15.9646	9.0	± 5.2	950.6		X		
420.0	16.5354	415.5	16.3583	9.0	± 5.2	997.5		X		
421.2	16.5827	416.7	16.4055	9.0	± 5.2	1,003.3			X	
430.0	16.9291	425.5	16.7520	9.0	± 7.0	1,045.6		X		
440.0	17.3228	435.5	17.1457	9.0	± 7.0	1,094.8		X		
450.0	17.7165	445.5	17.5394	9.0	7±0	1,145.1		X		
451.2	17.7638	446.7	17.5866	9.0	± 7.0	1,151.3			X	
460.0	18.1102	455.5	17.9331	9.0	± 7.0	1,196.6		X		
470.0	18.5039	465.5	18.3268	9.0	± 7.0	1,249.2		X		
476.6	18.7638	472.1	18.5866	9.0	± 7.0	1,284.5			X	
480.0	18.8976	475.5	18.7205	9.0	± 7.0	1,302.9		X		
500.0	19.6850	495.5	19.5079	9.0	± 7.0	1,413.8		X		
510.0	20.0787	504.5	19.8622	11.0	± 7.0	1,470.9		X		
520.0	20.4724	514.5	20.2559	11.0	± 7.0	1,529.1		X		
527.3	20.7598	521.8	20.5433	11.0	± 7.0	1,572.3			X	
530.0	20.8661	524.5	20.6496	11.0	± 7.0	1,588.5		X		
550.0	21.6535	544.5	21.4370	11.0	± 7.0	1,710.6		X		
575.0	22.6378	569.5	22.4213	11.0	± 7.0	1,869.7		X		
600.0	23.6220	594.5	23.4055	11.0	± 7.0	2,035.8		X		
630.0	24.8031	624.5	24.5866	11.0	± 7.0	2,244.5		X	X	
635.0	25.0000	629.5	24.7835	11.0	± 7.0	2,280.2		X	X	

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter		Overmetal machining	Dimensional tolerance	Theoretical weight	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	ADI	NPE 60	NPE 60 TT
mm ¹	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m) ²				GJS 45012		GJS 500-7	FE 550-06	GJS 600-3	GJS 700-2			
25.0	0.9843	23.8	0.9350	2.5	± 0.5	3.5								X				
25.5	1.0039	24.3	0.9547	2.5	± 0.5	3.7				X								
27.6	1.0866	26.4	1.0374	2.5	± 0.5	4.3		X		X			X					
28.2	1.1102	27.0	1.0610	2.5	± 0.5	4.5				X								
30.0	1.1811	28.8	1.1319	2.5	± 0.5	5.1	X		X			X		X				
30.7	1.2087	29.5	1.1594	2.5	± 0.5	5.3		X		X								
33.9	1.3346	32.7	1.2854	2.5	± 0.5	6.5		X		X			X					
35.0	1.3780	33.8	1.3287	2.5	± 0.5	6.9	X		X					X				
37.1	1.4606	35.9	1.4114	2.5	± 0.5	7.8		X		X			X			X		
40.0	1.5748	38.8	1.5256	2.5	± 0.5	9.0	X					X		X				
40.3	1.5866	39.1	1.5374	2.5	± 0.5	9.2		X		X			X		X			
43.4	1.7087	42.2	1.6594	2.5	± 0.5	10.7		X		X			X					
45.0	1.7717	43.8	1.7224	2.5	± 0.5	11.5	X							X				
46.6	1.8346	45.4	1.7854	2.5	± 0.5	12.3			X	X	X		X					
49.8	1.9606	48.6	1.9114	2.5	± 0.5	14.0				X			X					
50.0	1.9685	48.8	1.9193	2.5	± 0.5	14.1		X				X		X				
53.0	2.0866	51.3	2.0177	3.5	± 0.5	15.9		X		X			X		X			
53.5	2.1063	51.8	2.0374	3.5	± 0.5	16.2				X								
55.0	2.1654	53.3	2.0965	3.5	± 0.5	17.1	X					X		X				
56.8	2.2362	55.1	2.1673	3.5	± 1.0	18.2		X		X			X					
59.9	2.3583	58.2	2.2894	3.5	± 1.0	20.3		X		X			X					
60.0	2.3622	58.3	2.2933	3.5	± 1.0	20.4	X					X		X				
63.1	2.4843	61.4	2.4154	3.5	± 1.0	22.5		X	X	X			X		X			
65.0	2.5591	63.3	2.4902	3.5	± 1.0	23.9	X		X			X		X				
66.3	2.6102	64.6	2.5413	3.5	± 1.0	24.9		X		X			X					
69.5	2.7362	67.8	2.6673	3.5	± 1.0	27.3				X			X					
70.0	2.7559	68.3	2.6870	3.5	± 1.0	27.7	X		X			X		X				
72.6	2.8583	70.9	2.7894	3.5	± 1.0	29.8		X		X			X					
75.0	2.9528	73.3	2.8839	3.5	± 1.0	31.8	X							X				
75.8	2.9843	74.1	2.9154	3.5	± 1.0	32.5				X			X		X			
76.2	3.0000	74.5	2.9311	3.5	± 1.0	32.8									X			
79.0	3.1102	77.3	3.0413	3.5	± 1.0	35.3		X		X			X					X
80.0	3.1496	78.3	3.0807	3.5	± 1.0	36.2	X					X		X				
82.6	3.2520	80.9	3.1831	3.5	± 1.0	38.6		X		X			X					
85.0	3.3465	83.3	3.2776	3.5	± 1.0	40.9	X					X		X				
85.7	3.3740	84.0	3.3051	3.5	± 1.0	41.5		X		X			X					
88.9	3.5000	87.2	3.4311	3.5	± 1.0	44.7		X		X			X		X			
90.0	3.5433	88.3	3.4744	3.5	± 1.0	45.8	X					X		X				
92.1	3.6260	90.4	3.5571	3.5	± 1.0	48.0		X	X	X			X					
95.0	3.7402	93.3	3.6713	3.5	± 1.0	51.0	X					X		X				

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter		Overmetal machining	Dimensional tolerance	Theoretical weight	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	ADI	NPE 60	NPE 60 TT
(mm) ₁	inch	(mm)	inch	Min. (mm)	(mm) _{2,3}	(kg/m) ₂				GJS 45012		GJS 500-7	FE 550-06	GJS 600-3	GJS 700-2			
95.2	3.7480	93.5	3.6791	3.5	± 1.0	51.3				X								
95.3	3.7520	93.6	3.6831	3.5	± 1.0	51.4				X			X					
98.4	3.8740	96.7	3.8051	3.5	± 1.0	54.8		X		X			X					
100.0	3.9370	98.3	3.8681	3.5	± 1.0	56.6	X		X			X		X				
101.6	4.0000	99.4	3.9114	4.5	± 1.0	58.4		X	X	X		X	X					
104.8	4.1260	102.6	4.0374	4.5	± 1.0	62.1		X	X	X	X	X	X		X			
105.0	4.1339	102.8	4.0453	4.5	± 1.0	62.3	X					X		X				
108.3	4.2650	106.1	4.1764	4.5	± 1.5	66.4				X								
110.0	4.3307	107.8	4.2421	4.5	± 1.5	68.4	X	X	X			X		X				
111.5	4.3898	109.3	4.3012	4.5	± 1.5	70.3		X	X	X			X		X			
113.6	4.4724	111.4	4.3839	4.5	± 1.5	73.0				X			X					
115.0	4.5276	112.8	4.4390	4.5	± 1.5	74.8	X					X		X				
117.9	4.6417	115.7	4.5531	4.5	± 1.5	78.6		X	X	X			X					
120.0	4.7244	117.8	4.6358	4.5	± 1.5	81.4	X		X			X		X	X		X	
121.0	4.7638	118.8	4.6752	4.5	± 1.5	82.8				X								
124.2	4.8898	122.0	4.8012	4.5	± 1.5	87.2		X		X			X					
125.0	4.9213	122.8	4.8327	4.5	± 1.5	88.4	X		X					X				
128.0	5.0394	125.8	4.9508	4.5	± 1.5	92.7		X										
130.0	5.1181	127.8	5.0295	4.5	± 1.5	95.6	X	X	X			X		X				
130.6	5.1417	128.4	5.0531	4.5	± 1.5	96.5		X	X	X			X		X			
135.0	5.3150	132.8	5.2264	4.5	± 1.5	103.1	X		X					X				
137.3	5.4055	135.1	5.3169	4.5	± 1.5	106.6		X	X	X			X					
140.0	5.5118	137.8	5.4232	4.5	± 1.5	110.8	X	X	X	X	X			X	X		X	
143.6	5.6535	141.4	5.5650	4.5	± 1.5	116.6		X	X	X			X		X			
145.0	5.7087	142.8	5.6201	4.5	± 1.5	118.9	X		X					X				
150.0	5.9055	147.8	5.8169	4.5	± 1.5	127.2	X	X	X	X		X	X	X	X			
155.0	6.1024	152.8	6.0138	4.5	± 1.5	135.9	X											
156.3	6.1535	154.1	6.0650	4.5	± 1.5	138.1		X		X			X					
160.0	6.2992	157.8	6.2106	4.5	± 1.5	144.8	X		X			X		X	X			
163.1	6.4213	160.9	6.3327	4.5	± 2.0	150.4		X	X	X			X					
165.0	6.4961	162.8	6.4075	4.5	± 2.0	154.0								X				
169.4	6.6693	167.2	6.5807	4.5	± 2.0	162.3		X		X	X		X					
170.0	6.6929	167.8	6.6043	4.5	± 2.0	163.4	X		X		X	X		X	X			
175.0	6.8898	172.8	6.8012	4.5	± 2.0	173.2						X		X				
175.8	6.9213	173.6	6.8327	4.5	± 2.0	174.8			X	X			X					
180.0	7.0866	177.8	6.9980	4.5	± 2.0	183.2	X		X			X		X	X			
182.1	7.1693	179.9	7.0807	4.5	± 2.0	187.5			X	X			X			X		
182.8	7.1969	180.6	7.1083	4.5	± 2.0	189.0				X								
189.0	7.4409	186.8	7.3524	4.5	± 2.5	202.0		X		X			X					
190.0	7.4803	187.8	7.3917	4.5	± 2.5	204.1	X		X			X		X	X			
195.0	7.6772	192.8	7.5886	4.5	± 2.5	215.0						X						

Note:1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter		Overmetal machining	Dimensional tolerance	Theoretical weight	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	ADI	NPE 60	NPE 60 TT
mm ¹	inch	mm	inch	Min. (mm)	(mm) ²⁻³	(kg/m) ²				GJS 45012		GJS 500-7	FE 550-06	GJS 600-3	GJS 700-2			
195.3	7.6890	193.1	7.6004	4.5	± 2.5	215.7			X	X			X					
198.5	7.8150	196.3	7.7264	4.5	± 2.5	222.8				X								
200.0	7.8740	197.8	7.7854	4.5	± 2.5	226.2	X		X	X		X		X				
201.7	7.9409	198.5	7.8130	6.5	± 2.5	230.1			X	X			X					
205.0	8.0709	201.8	7.9429	6.5	± 2.5	237.7						X						
208.0	8.1890	204.8	8.0610	6.5	± 2.5	244.7		X		X			X			X		
210.0	8.2677	206.8	8.1398	6.5	± 2.5	249.4	X		X	X		X		X	X			
215.0	8.4646	211.8	8.3366	6.5	± 3.0	261.4			X	X			X					
220.0	8.6614	216.8	8.5335	6.5	± 3.0	273.7	X		X			X		X				
221.4	8.7165	218.2	8.5886	6.5	± 3.0	277.2		X		X			X					
227.7	8.9646	224.5	8.8366	6.5	± 3.0	293.2				X			X					
230.0	9.0551	226.8	8.9272	6.5	± 3.0	299.1	X		X			X		X	X			
234.1	9.2165	230.9	9.0886	6.5	± 3.0	309.9			X	X			X					
240.0	9.4488	236.8	9.3209	6.5	± 3.0	325.7	X		X			X		X	X			
241.4	9.5039	238.2	9.3760	6.5	± 3.5	329.5	X			X								
247.8	9.7559	244.6	9.6280	6.5	± 3.5	347.2		X		X			X					
250.0	9.8425	246.8	9.7146	6.5	± 3.5	353.4	X		X			X		X	X			
254.1	10.0039	250.9	9.8760	6.5	± 3.5	365.1		X		X			X					
260.0	10.2362	256.8	10.1083	6.5	± 3.5	382.3	X		X			X		X	X			
260.5	10.2559	257.3	10.1280	6.5	± 3.5	383.7				X			X		X			
270.0	10.6299	266.8	10.5020	6.5	± 4.0	412.2	X		X			X		X	X			
270.5	10.6496	267.3	10.5217	6.5	± 4.0	413.8			X	X			X					
276.9	10.9016	273.7	10.7736	6.5	± 4.0	433.6		X		X			X					
280.0	11.0236	276.8	10.8957	6.5	± 4.0	443.4	X		X			X		X	X			
289.6	11.4016	286.4	11.2736	6.5	± 4.0	474.3		X	X	X	X		X					
290.0	11.4173	286.8	11.2894	6.5	± 4.0	475.6	X		X			X		X	X			
300.0	11.8110	296.8	11.6831	6.5	± 4.0	509.0	X		X			X		X				
306.9	12.0827	303.2	11.9350	7.5	± 5.2	532.6				X			X					
310.0	12.2047	306.3	12.0571	7.5	± 5.2	543.4	X		X			X		X	X			
319.6	12.5827	315.9	12.4350	7.5	± 5.2	577.6			X	X			X		X			
320.0	12.5984	316.3	12.4508	7.5	± 5.2	579.1	X		X			X		X	X			
330.0	12.9921	326.3	12.8445	7.5	± 5.2	615.8	X		X			X		X				
332.3	13.0827	328.6	12.9350	7.5	± 5.2	624.4			X	X			X					
340.0	13.3858	336.3	13.2382	7.5	± 5.2	653.7	X		X			X		X	X			
345.0	13.5827	341.3	13.4350	7.5	± 5.2	673.1			X	X			X					
350.0	13.7795	346.3	13.6319	7.5	± 5.2	692.7	X		X		X	X		X	X			
360.0	14.1732	356.3	14.0256	7.5	± 5.2	732.9	X		X	X		X		X	X			
370.0	14.5669	366.3	14.4193	7.5	± 5.2	774.2	X		X			X		X	X			
370.4	14.5827	366.7	14.4350	7.5	± 5.2	775.8		X		X			X					
380.0	14.9606	376.3	14.8130	7.5	± 5.2	816.6	X		X			X		X	X			

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

ROUND CONTINUOUS CAST BAR – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter		Overmetal machining	Dimensional tolerance	Theoretical weight	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	ADI	NPE 60	NPE 60 TT
mm ²	inch	mm	inch	Min. (mm)	(mm) ²⁻³	(kg/m) ²				GJS 45012		GJS 500-7	FE 550-06	GJS 600-3	GJS 700-2			
390.0	15.3543	386.3	15.2067	7.5	± 5.2	860.1	X		X			X		X	X			
395.8	15.5827	392.1	15.4350	7.5	± 5.2	885.9			X	X			X					
400.0	15.7480	396.3	15.6004	7.5	± 5.2	904.8	X		X			X		X	X			
410.0	16.1417	405.3	15.9547	9.5	± 5.2	950.6	X		X			X		X	X			
420.0	16.5354	415.3	16.3484	9.5	± 5.2	997.5	X		X			X		X	X			
421.2	16.5827	416.5	16.3957	9.5	± 5.2	1,003.3				X			X					
430.0	16.9291	425.3	16.7421	9.5	± 7.0	1,045.6	X		X			X		X	X			
440.0	17.3228	435.3	17.1358	9.5	± 7.0	1,094.8	X				X	X		X	X			
450.0	17.7165	445.3	17.5295	9.5	± 7.0	1,145.1	X		X			X		X	X			
451.2	17.7638	446.5	17.5768	9.5	± 7.0	1,151.3				X			X					
460.0	18.1102	455.3	17.9232	9.5	± 7.0	1,196.6	X		X			X		X	X			
470.0	18.5039	465.3	18.3169	9.5	± 7.0	1,249.2	X					X		X				
476.6	18.7638	471.9	18.5768	9.5	± 7.0	1,284.5		X		X			X					
480.0	18.8976	475.3	18.7106	9.5	± 7.0	1,302.9	X		X			X		X	X			
498.8	19.6378	494.1	19.4508	9.5	± 7.0	1,407.0				X								
500.0	19.6850	495.3	19.4980	9.5	± 7.0	1,413.8	X		X			X		X	X			
510.0	20.0787	504.3	19.8524	11.5	± 7.0	1,470.9			X			X		X	X			
525.0	20.6693	519.3	20.4429	11.5	± 7.0	1,558.7	X		X			X		X	X			
527.3	20.7598	521.6	20.5335	11.5	± 7.0	1,572.3				X			X					
530.0	20.8661	524.3	20.6398	11.5	± 7.0	1,588.5	X							X				
550.0	21.6535	544.3	21.4272	11.5	± 7.0	1,710.6	X		X			X		X				
552.7	21.7598	547.0	21.5335	11.5	± 7.0	1,727.5				X								
570.1	22.4449	564.4	22.2185	11.5	± 7.0	1,838.0				X								
575.0	22.6378	569.3	22.4114	11.5	± 7.0	1,869.7	X		X	X		X		X				
578.1	22.7598	572.4	22.5335	11.5	± 7.0	1,889.9				X								
600.0	23.6220	594.3	23.3957	11.5	± 7.0	2,035.8	X		X			X		X				
630.0	24.8031	624.3	24.5768	11.5	± 7.0	2,244.5				X	X	X		X				
635.0	25.0000	629.3	24.7736	11.5	± 7.0	2,280.2	X			X	X							

Note: 1) Gross dimension in mm already includes the overmetal. | 2) Tupy specification. | 3) Dimensional tolerance refers to the radius. | 4) Final dimension of the part after removing the overmetal.

Standardized Dimensions

SQUARE CONTINUOUS CAST BAR - GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal for machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300
(mm) ¹	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300
30.0	1.1811	26.0	1.0236	2.0	± 1.0	6.5	X	
31.7	1.2480	27.7	1.0906	2.0	± 1.0	7.2		X
35.0	0.3472	31.0	1.2205	2.0	± 1.0	8.8	X	
38.1	0.4115	34.1	1.3425	2.0	± 1.0	10.5		X
40.0	0.4535	36.0	1.4173	2.0	± 1.0	11.5	X	
41.3	0.4835	37.3	1.4685	2.0	± 1.0	12.3		X
44.4	0.5588	40.4	1.5906	2.0	± 1.0	14.2		X
50.0	1.9685	46.0	1.8110	2.0	± 1.0	18.0	X	
50.8	2.0000	44.8	1.7638	3.0	± 1.0	18.6		X
55.0	2.1654	49.0	1.9291	3.0	± 1.0	21.8	X	
57.1	2.2480	51.1	2.0118	3.0	± 1.0	23.5		X
60.0	2.3622	54.0	2.1260	3.0	± 1.0	25.9	X	
63.5	2.5000	57.5	2.2638	3.0	± 1.0	29.0		X
65.0	2.5591	59.0	2.3228	3.0	± 1.0	30.4	X	
69.8	2.7480	63.8	2.5118	3.0	± 1.0	35.1		X
70.0	2.7559	64.0	2.5197	3.0	± 1.0	35.3	X	
75.0	2.9528	69.0	2.7165	3.0	± 1.0	40.5	X	
76.0	2.9921	70.0	2.7559	3.0	± 1.0	41.6	X	
76.2	3.0000	70.2	2.7638	3.0	± 1.0	41.8		X
77.0	3.0315	71.0	2.7953	3.0	± 1.0	42.7	X	
80.0	3.1496	74.0	2.9134	3.0	± 1.0	46.1	X	
82.5	3.2480	76.5	3.0118	3.0	± 1.0	49.0		X
85.0	3.3465	79.0	3.1102	3.0	± 1.0	52.0	X	
88.9	3.5000	82.9	3.2638	3.0	± 1.0	56.9		X
90.0	3.5433	84.0	3.3071	3.0	± 1.0	58.3	X	
92.1	3.6260	86.1	3.3898	3.0	± 1.0	61.1		X
95.2	3.7480	89.2	3.5118	3.0	± 1.0	65.3		X
100.0	3.9370	94.0	3.7008	3.0	± 1.0	72.0	X	
107.9	4.2480	99.9	3.9331	4.0	± 1.5	83.8		X
110.0	4.3307	102.0	4.0157	4.0	± 1.5	87.1	X	
115.0	4.5276	107.0	4.2126	4.0	± 1.5	95.2	X	
120.0	4.7244	112.0	4.4094	4.0	± 1.5	103.7	X	
120.6	4.7480	112.6	4.4331	4.0	± 1.5	104.7		X
125.0	4.9213	117.0	4.6063	4.0	± 1.5	112.5	X	
130.0	5.1181	122.0	4.8031	4.0	± 1.5	121.7	X	
133.3	5.2480	125.3	4.9331	4.0	± 1.5	127.9		X
140.0	5.5118	132.0	5.1969	4.0	± 1.5	141.1	X	
150.0	5.9055	142.0	5.5906	4.0	± 1.5	162.0	X	
158.7	6.2480	150.7	5.9331	4.0	± 1.5	181.3		X
160.0	6.2992	152.0	5.9843	4.0	± 1.5	184.3	X	
170.0	6.6929	162.0	6.3780	4.0	± 1.5	208.1	X	

Note: 1) Gross dimension in mm already includes the overmetal. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmetal.

Standardized Dimensions

SQUARE CONTINUOUS CAST BAR - GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal for machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300
(mm) ¹	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300
30.0	1.1811	26.0	1.0236	2.0	± 1.0	6.5	X	
31.7	1.2480	27.7	1.0906	2.0	± 1.0	7.2		X
35.0	0.3472	31.0	1.2205	2.0	± 1.0	8.8	X	
38.1	0.4115	34.1	1.3425	2.0	± 1.0	10.5		X
40.0	0.4535	36.0	1.4173	2.0	± 1.0	11.5	X	
41.3	0.4835	37.3	1.4685	2.0	± 1.0	12.3		X
44.4	0.5588	40.4	1.5906	2.0	± 1.0	14.2		X
50.0	1.9685	46.0	1.8110	2.0	± 1.0	18.0	X	
50.8	2.0000	44.8	1.7638	3.0	± 1.0	18.6		X
55.0	2.1654	49.0	1.9291	3.0	± 1.0	21.8	X	
57.1	2.2480	51.1	2.0118	3.0	± 1.0	23.5		X
60.0	2.3622	54.0	2.1260	3.0	± 1.0	25.9	X	
63.5	2.5000	57.5	2.2638	3.0	± 1.0	29.0		X
65.0	2.5591	59.0	2.3228	3.0	± 1.0	30.4	X	
69.8	2.7480	63.8	2.5118	3.0	± 1.0	35.1		X
70.0	2.7559	64.0	2.5197	3.0	± 1.0	35.3	X	
75.0	2.9528	69.0	2.7165	3.0	± 1.0	40.5	X	
76.0	2.9921	70.0	2.7559	3.0	± 1.0	41.6	X	
76.2	3.0000	70.2	2.7638	3.0	± 1.0	41.8		X
77.0	3.0315	71.0	2.7953	3.0	± 1.0	42.7	X	
80.0	3.1496	74.0	2.9134	3.0	± 1.0	46.1	X	
82.5	3.2480	76.5	3.0118	3.0	± 1.0	49.0		X
85.0	3.3465	79.0	3.1102	3.0	± 1.0	52.0	X	
88.9	3.5000	82.9	3.2638	3.0	± 1.0	56.9		X
90.0	3.5433	84.0	3.3071	3.0	± 1.0	58.3	X	
92.1	3.6260	86.1	3.3898	3.0	± 1.0	61.1		X
95.2	3.7480	89.2	3.5118	3.0	± 1.0	65.3		X
100.0	3.9370	94.0	3.7008	3.0	± 1.0	72.0	X	
107.9	4.2480	99.9	3.9331	4.0	± 1.5	83.8		X
110.0	4.3307	102.0	4.0157	4.0	± 1.5	87.1	X	
115.0	4.5276	107.0	4.2126	4.0	± 1.5	95.2	X	
120.0	4.7244	112.0	4.4094	4.0	± 1.5	103.7	X	
120.6	4.7480	112.6	4.4331	4.0	± 1.5	104.7		X
125.0	4.9213	117.0	4.6063	4.0	± 1.5	112.5	X	
130.0	5.1181	122.0	4.8031	4.0	± 1.5	121.7	X	
133.3	5.2480	125.3	4.9331	4.0	± 1.5	127.9		X
140.0	5.5118	132.0	5.1969	4.0	± 1.5	141.1	X	
150.0	5.9055	142.0	5.5906	4.0	± 1.5	162.0	X	
158.7	6.2480	150.7	5.9331	4.0	± 1.5	181.3		X
160.0	6.2992	152.0	5.9843	4.0	± 1.5	184.3	X	
170.0	6.6929	162.0	6.3780	4.0	± 1.5	208.1	X	

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

SQUARE CONTINUOUS CAST BAR - NODULAR CAST IRON

Gross Dimension		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002
(mm) ¹	inch	mm	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)				GJS 450-12		GJS 500-7	GJS 5500-6	GJS 600-3	GJS 700-2
30.0	1.1811	23.0	0.9055	3.5	± 1.0	6.5	X								
31.7	1.2480	24.7	0.9724	3.5	± 1.0	7.2		X		X					
38.1	0.4115	31.1	1.2244	3.5	± 1.0	10.5				X					
40.0	0.4535	33.0	1.2992	3.5	± 1.0	11.5		X							
41.3	0.4835	34.3	1.3504	3.5	± 1.0	12.3		X		X					
44.4	0.5588	37.4	1.4724	3.5	± 1.0	14.2		X		X					
50.0	0.7087	43.0	1.6929	3.5	± 1.0	18.0	X								
50.8	0.7315	41.8	1.6457	4.5	± 1.0	18.6		X		X					
55.0	2.1654	46.0	1.8110	4.5	± 1.0	21.8						X			
57.1	2.2480	48.1	1.8937	4.5	± 1.0	23.5				X					
60.0	2.3622	51.0	2.0079	4.5	± 1.0	25.9	X		X			X			
63.0	2.4803	54.0	2.1260	4.5	± 1.0	28.6		X							
63.5	2.5000	54.5	2.1457	4.5	± 1.0	29.0		X		X					
66.7	2.6260	57.7	2.2717	4.5	± 1.0	32.0				X					
69.8	2.7480	60.8	2.3937	4.5	± 1.0	35.1				X					
70.0	2.7559	61.0	2.4016	4.5	± 1.0	35.3	X		X			X			
75.0	2.9528	66.0	2.5984	4.5	± 1.0	40.5		X		X		X			
76.2	3.0000	67.2	2.6457	4.5	± 1.0	41.8				X					
80.0	3.1496	71.0	2.7953	4.5	± 1.0	46.1	X	X	X						
82.5	3.2480	73.5	2.8937	4.5	± 1.0	49.0				X			X		
85.0	3.3465	76.0	2.9921	4.5	± 1.0	52.0	X		X					X	
85.7	3.3740	76.7	3.0197	4.5	± 1.0	52.9									X
88.9	3.5000	79.9	3.1457	4.5	± 1.0	56.9				X					
90.0	3.5433	81.0	3.1890	4.5	± 1.0	58.3	X	X	X	X		X		X	
92.1	3.6260	83.1	3.2717	4.5	± 1.0	61.1				X					
95.0	3.7402	86.0	3.3858	4.5	± 1.0	65.0						X			
95.2	3.7480	86.2	3.3937	4.5	± 1.0	65.3	X		X	X					
100.0	3.9370	91.0	3.5827	4.5	± 1.0	72.0	X		X	X		X		X	
101.6	4.0000	90.6	3.5669	5.5	± 1.5	74.3			X	X					
107.9	4.2480	96.9	3.8150	5.5	± 1.5	83.8		X		X		X			
110.0	4.3307	99.0	3.8976	5.5	± 1.5	87.1	X		X			X			
114.3	4.5000	103.3	4.0669	5.5	± 1.5	94.1				X					
115.0	4.5276	104.0	4.0945	5.5	± 1.5	95.2		X		X					
116.0	4.5669	105.0	4.1339	5.5	± 1.5	96.9		X		X					
117.5	4.6260	106.5	4.1929	5.5	± 1.5	99.4				X					
120.0	4.7244	109.0	4.2913	5.5	± 1.5	103.7	X	X	X			X			
120.6	4.7480	109.6	4.3150	5.5	± 1.5	104.7	X	X	X	X					
129.0	5.0787	118.0	4.6457	5.5	± 1.5	119.8				X					
130.0	5.1181	119.0	4.6850	5.5	± 1.5	121.7	X	X	X	X		X			
131.0	5.1575	120.0	4.7244	5.5	± 1.5	123.6				X					
133.3	5.2480	122.3	4.8150	5.5	± 1.5	127.9			X	X			X		

Note: 1) Gross dimension in mm already includes the overmetal. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmetal.

Standardized Dimensions

SQUARE CONTINUOUS CAST BAR - NODULAR CAST IRON

Gross Dimension		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002
(mm) ¹	inch	(mm)	inch	Min. (mm)	mm ^{2,3}	(kg/m)				GJS 450-12		GJS 500-7	GJS 5500-6	GJS 600-3	GJS 700-2
139.7	5.5000	128.7	5.0669	5.5	± 1.5	140.5				X					
140.0	5.5118	129.0	5.0787	5.5	± 1.5	141.1	X		X			X			
145.0	5.7087	134.0	5.2756	5.5	± 1.5	151.4				X					
150.0	5.9055	139.0	5.4724	5.5	± 1.5	162.0	X		X			X			
152.4	6.0000	141.4	5.5669	5.5	± 1.5	167.2				X					
158.7	6.2480	147.7	5.8150	5.5	± 1.5	181.3	X			X	X		X		
160.0	6.2992	149.0	5.8661	5.5	± 1.5	184.3	X		X						
165.0	6.4961	154.0	6.0630	5.5	± 1.5	196.0		X		X					
165.1	6.5000	154.1	6.0669	5.5	± 1.5	196.3				X					
169.7	6.6811	158.7	6.2480	5.5	± 1.5	207.3				X					
170.0	6.6929	159.0	6.2598	5.5	± 1.5	208.1	X								
171.4	6.7480	160.4	6.3150	5.5	± 1.5	211.5				X					
178.0	7.0079	167.0	6.5748	5.5	± 1.5	228.1				X					
180.0	7.0866	169.0	6.6535	5.5	± 1.5	233.3	X		X			X			
184.1	7.2480	173.1	6.8150	5.5	± 1.5	244.0	X			X	X	X	X		
185.5	7.3031	174.5	6.8701	5.5	± 1.5	247.8				X					
190.5	7.5000	179.5	7.0669	5.5	± 1.5	261.3				X					
196.8	7.7480	185.8	7.3150	5.5	± 1.5	278.9				X			X		
200.0	7.8740	189.0	7.4409	5.5	± 1.5	288.0	X		X						
203.2	8.0000	188.2	7.4094	7.5	± 2.0	297.3				X					
206.0	8.1102	191.0	7.5197	7.5	± 2.0	305.5					X				
209.5	8.2480	194.5	7.6575	7.5	± 2.0	316.0	X		X	X			X		
210.0	8.2677	195.0	7.6772	7.5	± 2.0	317.5	X	X	X						
215.9	8.5000	200.9	7.9094	7.5	± 2.0	335.6				X					
220.0	8.6614	205.0	8.0709	7.5	± 2.0	348.5	X		X						
234.9	9.2480	219.9	8.6575	7.5	± 2.0	397.3		X		X					
240.0	9.4488	225.0	8.8583	7.5	± 2.0	414.7	X	X	X						
241.3	9.5000	226.3	8.9094	7.5	± 2.0	419.2				X					
255.0	10.0394	240.0	9.4488	7.5	± 2.0	468.2				X					
260.0	10.2362	245.0	9.6457	7.5	± 2.0	486.7		X	X						
260.3	10.2480	245.3	9.6575	7.5	± 2.0	487.8	X			X			X		
266.7	10.5000	251.7	9.9094	7.5	± 2.0	512.1	X		X	X					
268.0	10.5512	253.0	9.9606	7.5	± 2.0	517.1		X							
280.0	11.0236	265.0	10.4331	7.5	± 2.0	564.5	X		X						
300.0	11.8110	285.0	11.2205	7.5	± 2.0	648.0	X								
310.0	12.2047	293.0	11.5354	8.5	± 2.0	691.9	X								
311.1	12.2480	294.1	11.5787	8.5	± 2.0	696.8				X			X		
314.3	12.3740	297.3	11.7047	8.5	± 2.0	711.2				X					
315.0	12.4016	298.0	11.7323	8.5	± 2.0	714.4	X		X						
317.5	12.5000	300.5	11.8307	8.5	± 2.0	725.8			X	X					
320.0	12.5984	303.0	11.9291	8.5	± 2.0	737.3				X					

Note: 1) Gross dimension in mm already includes the overmetal. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmetal.

Standardized Dimensions

SQUARE CONTINUOUS CAST BARS - NODULAR CAST IRON

Gross Dimension		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002
(mm) ¹	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)				GJS 450-12		GJS 500-7	GJS 5500-6	GJS 600-3	GJS 700-2
330.0	12.9921	313.0	12.3228	8.5	± 2.0	784.1	X								
340.0	13.3858	323.0	12.7165	8.5	± 2.0	832.3	X		X						
360.0	14.1732	343.0	13.5039	8.5	± 2.0	933.1	X		X						
362.0	14.2520	345.0	13.5827	8.5	± 2.0	943.5				X					
368.3	14.5000	351.3	13.8307	8.5	± 2.0	976.6				X					
380.0	14.9606	363.0	14.2913	8.5	± 2.0	1,039.7		X							
406.0	15.9843	385.0	15.1575	10.5	± 2.0	1,186.8				X					
406.4	16.0000	385.4	15.1732	10.5	± 2.0	1,189.2				X					
410.0	16.1417	389.0	15.3150	10.5	± 2.0	1,210.3	X					X		X	
420.0	16.5354	399.0	15.7087	10.5	± 2.0	1,270.1			X			X		X	X
470.0	18.5039	449.0	17.6772	10.5	± 2.0	1,590.5	X		X	X		X		X	

Note:1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹					Post-machining part diameter ^{4,5}					Overmetal machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300	GMI	
(mm)			(inch)			(mm)			(inch)			Min. (mm)	(mm) ^{2,3}	(kg/m)		GJL 250
25.0	x	40.0	0.9843	x	1.5748	20.0	x	35.0	0.7874	x	1.3780	2.5	± 1.0	7.2	X	
25.0	x	45.0	0.9843	x	1.7717	20.0	x	40.0	0.7874	x	1.5748	2.5	± 1.0	8.1	X	
25.0	x	75.0	0.9843	x	2.9528	18.0	x	68.0	0.7087	x	2.6772	3.5	± 1.0	13.5	X	
25.0	x	100.0	0.9843	x	3.9370	18.0	x	93.0	0.7087	x	3.6614	3.5	± 1.0	18.0	X	
25.0	x	120.0	0.9843	x	4.7244	16.0	x	111.0	0.6299	x	4.3701	4.5	± 1.0	21.6	X	
25.0	x	130.0	0.9843	x	5.1181	16.0	x	121.0	0.6299	x	4.7638	4.5	± 1.0	23.4	X	
26.0	x	205.0	1.0236	x	8.0709	13.0	X	192.0	0.5118	X	7.5591	6.5	± 1.0	38.4	X	
28.6	x	54.0	1.1260	x	2.1260	21.6	X	47.0	0.8504	X	1.8504	3.5	± 1.0	11.1		X
30.0	x	40.0	1.1811	x	1.5748	25.0	x	35.0	0.9843	x	1.3780	2.5	± 1.0	8.6	X	X
30.0	x	50.0	1.1811	x	1.9685	25.0	x	45.0	0.9843	x	1.7717	2.5	± 1.0	10.8	X	
30.0	x	60.0	1.1811	x	2.3622	23.0	x	53.0	0.9055	x	2.0866	3.5	± 1.0	13.0	X	
30.0	x	70.0	1.1811	x	2.7559	23.0	x	63.0	0.9055	x	2.4803	3.5	± 1.0	15.1	X	
30.0	x	80.0	1.1811	x	3.1496	23.0	x	73.0	0.9055	x	2.8740	3.5	± 1.0	17.3	X	
30.0	x	90.0	1.1811	x	3.5433	23.0	x	83.0	0.9055	x	3.2677	3.5	± 1.0	19.4	X	
30.0	x	100.0	1.1811	x	3.9370	23.0	x	93.0	0.9055	x	3.6614	3.5	± 1.0	21.6	X	
30.0	x	110.0	1.1811	x	4.3307	21.0	x	101.0	0.8268	x	3.9764	4.5	± 1.0	23.8	X	
30.0	x	150.0	1.1811	x	5.9055	21.0	x	141.0	0.8268	x	5.5512	4.5	± 1.0	32.4	X	
30.0	x	160.0	1.1811	x	6.2992	21.0	x	151.0	0.8268	x	5.9449	4.5	± 1.0	34.6	X	
30.0	x	170.0	1.1811	x	6.6929	21.0	x	161.0	0.8268	x	6.3386	4.5	± 1.0	36.7	X	
30.0	x	200.0	1.1811	x	7.8740	21.0	x	191.0	0.8268	x	7.5197	4.5	± 1.0	43.2	X	
30.0	x	230.0	1.1811	x	9.0551	17.0	x	217.0	0.6693	x	8.5433	6.5	± 1.0	49.7	X	
30.0	x	350.0	1.1811	x	13.7795	15.0	x	335.0	0.5906	x	13.1890	7.5	± 1.0	75.6	X	
31.7	x	57.1	1.2480	x	2.2480	24.7	x	50.1	0.9724	x	1.9724	3.5	± 1.0	13.0		X
31.7	x	82.5	1.2480	x	3.2480	24.7	x	75.5	0.9724	x	2.9724	3.5	± 1.0	18.8		X
31.7	x	107.9	1.2480	x	4.2480	22.7	x	98.9	0.8937	x	3.8937	4.5	± 1.0	24.6		X
31.7	x	133.3	1.2480	x	5.2480	22.7	x	124.3	0.8937	x	4.8937	4.5	± 1.0	30.4		X
31.7	x	158.7	1.2480	x	6.2480	22.7	x	149.7	0.8937	x	5.8937	4.5	± 1.0	36.2		X
31.7	x	190.5	1.2480	x	7.5000	22.7	x	181.5	0.8937	x	7.1457	4.5	± 1.0	43.5		X
31.7	x	241.3	1.2480	x	9.5000	18.7	x	228.3	0.7362	x	8.9882	6.5	± 1.0	55.1		X
31.7	x	260.3	1.2480	x	10.2480	18.7	x	247.3	0.7362	x	9.7362	6.5	± 1.0	59.4		X
35.0	x	55.0	1.3780	x	2.1654	28.0	x	48.0	1.1024	x	1.8898	3.5	± 1.0	13.9	X	X
35.0	x	70.0	1.3780	x	2.7559	28.0	x	63.0	1.1024	x	2.4803	3.5	± 1.0	17.6		X
38.0	x	120.0	1.4961	x	4.7244	29.0	x	111.0	1.1417	x	4.3701	4.5	± 1.0	32.8		X
38.1	x	57.1	1.5000	x	2.2480	31.1	x	50.1	1.2244	x	1.9724	3.5	± 1.0	15.7		X
38.1	x	82.5	1.5000	x	3.2480	31.1	x	75.5	1.2244	x	2.9724	3.5	± 1.0	22.6		X
38.1	x	107.9	1.5000	x	4.2480	29.1	x	98.9	1.1457	x	3.8937	4.5	± 1.0	29.6		X
38.1	x	133.3	1.5000	x	5.2480	29.1	x	124.3	1.1457	x	4.8937	4.5	± 1.0	36.6		X
38.1	x	158.7	1.5000	x	6.2480	29.1	x	149.7	1.1457	x	5.8937	4.5	± 1.0	43.5		X
40.0	x	50.0	1.5748	x	1.9685	35.0	x	45.0	1.3780	x	1.7717	2.5	± 1.0	14.4	X	
40.0	x	60.0	1.5748	x	2.3622	33.0	x	53.0	1.2992	x	2.0866	3.5	± 1.0	17.3	X	
40.0	x	70.0	1.5748	x	2.7559	33.0	x	63.0	1.2992	x	2.4803	3.5	± 1.0	20.2	X	
40.0	x	80.0	1.5748	x	3.1496	33.0	x	73.0	1.2992	x	2.8740	3.5	± 1.0	23.0	X	

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300	GMI
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300	
40.0 x 90.0	1.5748 x 3.5433	33.0 x 83.0	1.2992 x 3.2677	3.5	± 1.0	25.9	X		
40.0 x 100.0	1.5748 x 3.9370	33.0 x 93.0	1.2992 x 3.6614	3.5	± 1.0	28.8	X		
40.0 x 110.0	1.5748 x 4.3307	31.0 x 101.0	1.2205 x 3.9764	4.5	± 1.0	31.7	X		
40.0 x 120.0	1.5748 x 4.7244	31.0 x 111.0	1.2205 x 4.3701	4.5	± 1.0	34.6	X		
40.0 x 130.0	1.5748 x 5.1181	31.0 x 121.0	1.2205 x 4.7638	4.5	± 1.0	37.4	X		
40.0 x 160.0	1.5748 x 6.2992	31.0 x 151.0	1.2205 x 5.9449	4.5	± 1.0	46.1	X		
40.0 x 350.0	1.5748 x 13.7795	25.0 x 335.0	0.9843 x 13.1890	7.5	± 1.0	100.8	X		
41.3 x 190.5	1.6260 x 7.5000	32.3 x 181.5	1.2717 x 7.1457	4.5	± 1.0	56.6		X	
41.3 x 241.3	1.6260 x 9.5000	28.3 x 228.3	1.1142 x 8.9882	6.5	± 1.0	71.8		X	
42.7 x 49.0	1.6811 x 1.9291	37.7 x 44.0	1.4843 x 1.7323	2.5	± 1.0	15.1			X
44.4 x 50.8	1.7480 x 2.0000	37.4 x 43.8	1.4724 x 1.7244	3.5	± 1.0	16.2		X	
44.4 x 107.9	1.7480 x 4.2480	35.4 x 98.9	1.3937 x 3.8937	4.5	± 1.0	34.5		X	
44.4 x 114.3	1.7480 x 4.5000	35.4 x 105.3	1.3937 x 4.1457	4.5	± 1.0	36.5		X	
44.4 x 158.7	1.7480 x 6.2480	35.4 x 149.7	1.3937 x 5.8937	4.5	± 1.0	50.7		X	
45.0 x 50.0	1.7717 x 1.9685	40.0 x 45.0	1.5748 x 1.7717	2.5	± 1.0	16.2	X		
45.0 x 55.0	1.7717 x 2.1654	38.0 x 48.0	1.4961 x 1.8898	3.5	± 1.0	16.5	X		
45.0 x 55.0	1.7717 x 2.1654	38.0 x 48.0	1.4961 x 1.8898	3.5	± 1.0	17.8	X		
50.0 x 60.0	1.9685 x 2.3622	43.0 x 53.0	1.6929 x 2.0866	3.5	± 1.0	21.6	X		
50.0 x 65.0	1.9685 x 2.5591	43.0 x 58.0	1.6929 x 2.2835	3.5	± 1.0	23.4	X		
50.0 x 70.0	1.9685 x 2.7559	43.0 x 63.0	1.6929 x 2.4803	3.5	± 1.0	25.2	X		
50.0 x 80.0	1.9685 x 3.1496	43.0 x 73.0	1.6929 x 2.8740	3.5	± 1.0	28.8	X		
50.0 x 90.0	1.9685 x 3.5433	43.0 x 83.0	1.6929 x 3.2677	3.5	± 1.0	32.4	X		
50.0 x 100.0	1.9685 x 3.9370	43.0 x 93.0	1.6929 x 3.6614	3.5	± 1.0	36.0	X		
50.0 x 110.0	1.9685 x 4.3307	41.0 x 101.0	1.6142 x 3.9764	4.5	± 1.0	39.6	X		
50.0 x 120.0	1.9685 x 4.7244	41.0 x 111.0	1.6142 x 4.3701	4.5	± 1.0	43.2	X		
50.0 x 130.0	1.9685 x 5.1181	41.0 x 121.0	1.6142 x 4.7638	4.5	± 1.0	46.8	X		
50.0 x 140.0	1.9685 x 5.5118	41.0 x 131.0	1.6142 x 5.1575	4.5	± 1.0	50.4	X	X	
50.0 x 150.0	1.9685 x 5.9055	41.0 x 141.0	1.6142 x 5.5512	4.5	± 1.0	54.0	X		
50.0 x 160.0	1.9685 x 6.2992	41.0 x 151.0	1.6142 x 5.9449	4.5	± 1.0	57.6	X		
50.0 x 180.0	1.9685 x 7.0866	41.0 x 171.0	1.6142 x 6.7323	4.5	± 1.0	64.8	X		
50.0 x 210.0	1.9685 x 8.2677	37.0 x 197.0	1.4567 x 7.7559	6.5	± 1.0	75.6	X		
50.0 x 250.0	1.9685 x 9.8425	37.0 x 237.0	1.4567 x 9.3307	6.5	± 1.0	90.0	X		
50.0 x 320.0	1.9685 x 12.5984	35.0 x 305.0	1.3780 x 12.0079	7.5	± 1.0	115.2	X		
50.0 x 350.0	1.9685 x 13.7795	35.0 x 335.0	1.3780 x 13.1890	7.5	± 1.0	126.0	X		
50.8 x 63.5	2.0000 x 2.5000	43.8 x 56.5	1.7244 x 2.2244	3.5	± 1.0	23.2		X	
50.8 x 92.1	2.0000 x 3.6260	43.8 x 85.1	1.7244 x 3.3504	3.5	± 1.0	33.7		X	
50.8 x 158.7	2.0000 x 6.2480	41.8 x 149.7	1.6457 x 5.8937	4.5	± 1.0	58.0		X	
55.0 x 75.0	2.1654 x 2.9528	48.0 x 68.0	1.8898 x 2.6772	3.5	± 1.0	29.7	X		
57.1 x 82.5	2.2480 x 3.2480	50.1 x 75.5	1.9724 x 2.9724	3.5	± 1.0	33.9		X	
57.1 x 107.9	2.2480 x 4.2480	48.1 x 98.9	1.8937 x 3.8937	4.5	± 1.0	44.4		X	
57.1 x 133.3	2.2480 x 5.2480	48.1 x 124.3	1.8937 x 4.8937	4.5	± 1.0	54.8		X	
57.1 x 158.7	2.2480 x 6.2480	48.1 x 149.7	1.8937 x 5.8937	4.5	± 1.0	65.2		X	

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300	GMI
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300	
57.1 x 209.5	2.2480 x 8.2480	44.1 x 196.5	1.7362 x 7.7362	6.5	± 1.0	86.1		X	
57.1 x 412.7	2.2480 x 16.2480	38.1 x 393.7	1.5000 x 15.5000	9.5	± 1.0	169.7			X
60.0 x 65.0	2.3622 x 2.5591	53.0 x 58.0	2.0866 x 2.2835	3.5	± 1.0	28.1	X		
60.0 x 70.0	2.3622 x 2.7559	53.0 x 63.0	2.0866 x 2.4803	3.5	± 1.0	30.2	X		
60.0 x 80.0	2.3622 x 3.1496	53.0 x 73.0	2.0866 x 2.8740	3.5	± 1.0	34.6	X		
60.0 x 90.0	2.3622 x 3.5433	53.0 x 83.0	2.0866 x 3.2677	3.5	± 1.0	38.9	X		
60.0 x 100.0	2.3622 x 3.9370	53.0 x 93.0	2.0866 x 3.6614	3.5	± 1.0	43.2	X		
60.0 x 110.0	2.3622 x 4.3307	51.0 x 101.0	2.0079 x 3.9764	4.5	± 1.0	47.5	X		
60.0 x 120.0	2.3622 x 4.7244	51.0 x 111.0	2.0079 x 4.3701	4.5	± 1.0	51.8	X		
60.0 x 130.0	2.3622 x 5.1181	51.0 x 121.0	2.0079 x 4.7638	4.5	± 1.0	56.2	X		
60.0 x 140.0	2.3622 x 5.5118	51.0 x 131.0	2.0079 x 5.1575	4.5	± 1.0	60.5	X		
60.0 x 150.0	2.3622 x 5.9055	51.0 x 141.0	2.0079 x 5.5512	4.5	± 1.0	64.8	X		
60.0 x 160.0	2.3622 x 6.2992	51.0 x 151.0	2.0079 x 5.9449	4.5	± 1.0	69.1	X		
60.0 x 180.0	2.3622 x 7.0866	51.0 x 171.0	2.0079 x 6.7323	4.5	± 1.0	77.8	X		
60.0 x 220.0	2.3622 x 8.6614	47.0 x 207.0	1.8504 x 8.1496	6.5	± 1.0	95.0	X		
60.0 x 260.0	2.3622 x 10.2362	47.0 x 247.0	1.8504 x 9.7244	6.5	± 1.0	112.3	X		
60.0 x 320.0	2.3622 x 12.5984	45.0 x 305.0	1.7717 x 12.0079	7.5	± 1.0	138.2	X		
60.0 x 350.0	2.3622 x 13.7795	45.0 x 335.0	1.7717 x 13.1890	7.5	± 1.0	151.2	X		
60.0 x 480.0	2.3622 x 18.8976	41.0 x 461.0	1.6142 x 18.1496	9.5	± 1.0	207.4	X		
63.5 x 107.9	2.5000 x 4.2480	54.5 x 98.9	2.1457 x 3.8937	4.5	± 1.0	49.3		X	
63.5 x 158.7	2.5000 x 6.2480	54.5 x 149.7	2.1457 x 5.8937	4.5	± 1.0	72.6		X	
63.5 x 184.1	2.5000 x 7.2480	54.5 x 175.1	2.1457 x 6.8937	4.5	± 1.0	84.2		X	
63.5 x 209.5	2.5000 x 8.2480	50.5 x 196.5	1.9882 x 7.7362	6.5	± 1.0	95.8		X	
65.0 x 80.0	2.5591 x 3.1496	58.0 x 73.0	2.2835 x 2.8740	3.5	± 1.0	37.4	X		
70.0 x 80.0	2.7559 x 3.1496	63.0 x 73.0	2.4803 x 2.8740	3.5	± 1.0	40.3	X		
70.0 x 85.0	2.7559 x 3.3465	63.0 x 78.0	2.4803 x 3.0709	3.5	± 1.0	42.8		X	
70.0 x 90.0	2.7559 x 3.5433	63.0 x 83.0	2.4803 x 3.2677	3.5	± 1.0	45.4	X		
70.0 x 100.0	2.7559 x 3.9370	63.0 x 93.0	2.4803 x 3.6614	3.5	± 1.0	50.4	X		
70.0 x 110.0	2.7559 x 4.3307	61.0 x 101.0	2.4016 x 3.9764	4.5	± 1.0	55.4	X		
70.0 x 120.0	2.7559 x 4.7244	61.0 x 111.0	2.4016 x 4.3701	4.5	± 1.0	60.5	X		
70.0 x 130.0	2.7559 x 5.1181	61.0 x 121.0	2.4016 x 4.7638	4.5	± 1.0	65.5	X		
70.0 x 140.0	2.7559 x 5.5118	61.0 x 131.0	2.4016 x 5.1575	4.5	± 1.0	70.6	X	X	
70.0 x 650.0	2.7559 x 25.5906	47.0 x 627.0	1.8504 x 24.6850	11.5	± 1.0	327.6	X		
76.2 x 101.6	3.0000 x 4.0000	67.2 x 92.6	2.6457 x 3.6457	4.5	± 1.0	55.7		X	
76.2 x 209.5	3.0000 x 8.2480	63.2 x 196.5	2.4882 x 7.7362	6.5	± 1.0	114.9		X	
79.0 x 118.0	3.1102 x 4.6457	70.0 x 109.0	2.7559 x 4.2913	4.5	± 1.0	67.1		X	
80.0 x 90.0	3.1496 x 3.5433	73.0 x 83.0	2.8740 x 3.2677	3.5	± 1.0	51.8	X		
80.0 x 100.0	3.1496 x 3.9370	73.0 x 93.0	2.8740 x 3.6614	3.5	± 1.0	57.6	X		
80.0 x 110.0	3.1496 x 4.3307	71.0 x 101.0	2.7953 x 3.9764	4.5	± 1.0	63.4	X		
80.0 x 120.0	3.1496 x 4.7244	71.0 x 111.0	2.7953 x 4.3701	4.5	± 1.0	69.1	X		
80.0 x 130.0	3.1496 x 5.1181	71.0 x 121.0	2.7953 x 4.7638	4.5	± 1.0	74.9	X		
80.0 x 140.0	3.1496 x 5.5118	71.0 x 131.0	2.7953 x 5.1575	4.5	± 1.0	80.6	X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300	GMI
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300	
80.0 x 150.0	3.1496 x 5.9055	71.0 x 141.0	2.7953 x 5.5512	4.5	± 1.0	86.4	X		
80.0 x 160.0	3.1496 x 6.2992	71.0 x 151.0	2.7953 x 5.9449	4.5	± 1.0	92.2	X		
80.0 x 180.0	3.1496 x 7.0866	71.0 x 171.0	2.7953 x 6.7323	4.5	± 1.0	103.7	X		
80.0 x 320.0	3.1496 x 12.5984	65.0 x 305.0	2.5591 x 12.0079	7.5	± 1.0	184.3	X		
80.0 x 420.0	3.1496 x 16.5354	61.0 x 401.0	2.4016 x 15.7874	9.5	± 1.0	241.9	X		
80.0 x 650.0	3.1496 x 25.5906	57.0 x 627.0	2.2441 x 24.6850	11.5	± 1.0	374.4	X		
82.5 x 107.9	3.2480 x 4.2480	73.5 x 98.9	2.8937 x 3.8937	4.5	± 1.0	64.1		X	
82.5 x 260.3	3.2480 x 10.2480	69.5 x 247.3	2.7362 x 9.7362	6.5	± 1.0	154.6		X	
85.0 x 90.0	3.3465 x 3.5433	78.0 x 83.0	3.0709 x 3.2677	3.5	± 1.0	55.1		X	
85.0 x 105.0	3.3465 x 4.1339	76.0 x 96.0	2.9921 x 3.7795	4.5	± 1.0	64.3	X		
85.0 x 110.0	3.3465 x 4.3307	76.0 x 101.0	2.9921 x 3.9764	4.5	± 1.0	67.3		X	
85.0 x 125.0	3.3465 x 4.9213	76.0 x 116.0	2.9921 x 4.5669	4.5	± 1.0	76.5		X	
85.0 x 205.0	3.3465 x 8.0709	72.0 x 192.0	2.8346 x 7.5591	6.5	± 1.0	125.5	X		
90.0 x 100.0	3.5433 x 3.9370	83.0 x 93.0	3.2677 x 3.6614	3.5	± 1.0	64.8	X		
90.0 x 110.0	3.5433 x 4.3307	81.0 x 101.0	3.1890 x 3.9764	4.5	± 1.0	71.3	X		
90.0 x 120.0	3.5433 x 4.7244	81.0 x 111.0	3.1890 x 4.3701	4.5	± 1.0	77.8	X		
90.0 x 130.0	3.5433 x 5.1181	81.0 x 121.0	3.1890 x 4.7638	4.5	± 1.0	84.2	X		
90.0 x 140.0	3.5433 x 5.5118	81.0 x 131.0	3.1890 x 5.1575	4.5	± 1.0	90.7	X		
90.0 x 150.0	3.5433 x 5.9055	81.0 x 141.0	3.1890 x 5.5512	4.5	± 1.0	97.2	X		
90.0 x 650.0	3.5433 x 25.5906	67.0 x 627.0	2.6378 x 24.6850	11.5	± 1.0	421.2	X		
95.0 x 115.0	3.7402 x 4.5276	86.0 x 106.0	3.3858 x 4.1732	4.5	± 1.0	78.7		X	
95.0 x 125.0	3.7402 x 4.9213	86.0 x 116.0	3.3858 x 4.5669	4.5	± 1.0	85.5	X		
95.0 x 128.0	3.7402 x 5.0394	86.0 x 119.0	3.3858 x 4.6850	4.5	± 1.0	87.6		X	
95.0 x 135.0	3.7402 x 5.3150	86.0 x 126.0	3.3858 x 4.9606	4.5	± 1.0	92.3		X	
95.0 x 155.0	3.7402 x 6.1024	86.0 x 146.0	3.3858 x 5.7480	4.5	± 1.0	106.0		X	
95.0 x 175.0	3.7402 x 6.8898	86.0 x 166.0	3.3858 x 6.5354	4.5	± 1.0	119.7		X	
100.0 x 120.0	3.9370 x 4.7244	91.0 x 111.0	3.5827 x 4.3701	4.5	± 1.0	86.4	X		
100.0 x 130.0	3.9370 x 5.1181	91.0 x 121.0	3.5827 x 4.7638	4.5	± 1.0	93.6	X		
100.0 x 140.0	3.9370 x 5.5118	91.0 x 131.0	3.5827 x 5.1575	4.5	± 1.0	100.8	X		
100.0 x 150.0	3.9370 x 5.9055	91.0 x 141.0	3.5827 x 5.5512	4.5	± 1.0	108.0	X		
100.0 x 180.0	3.9370 x 7.0866	91.0 x 171.0	3.5827 x 6.7323	4.5	± 1.0	129.6	X		
100.0 x 200.0	3.9370 x 7.8740	91.0 x 191.0	3.5827 x 7.5197	4.5	± 1.0	144.0	X		
100.0 x 320.0	3.9370 x 12.5984	85.0 x 305.0	3.3465 x 12.0079	7.5	± 1.0	230.4	X		
100.0 x 420.0	3.9370 x 16.5354	81.0 x 401.0	3.1890 x 15.7874	9.5	± 1.0	302.4	X		
100.0 x 520.0	3.9370 x 20.4724	77.0 x 497.0	3.0315 x 19.5669	11.5	± 1.0	374.4	X		
100.0 x 650.0	3.9370 x 25.5906	77.0 x 627.0	3.0315 x 24.6850	11.5	± 1.0	468.0	X		
107.9 x 133.3	4.2480 x 5.2480	98.9 x 124.3	3.8937 x 4.8937	4.5	± 1.5	103.6		X	
110.0 x 120.0	4.3307 x 4.7244	101.0 x 111.0	3.9764 x 4.3701	4.5	± 1.5	95.0	X		
110.0 x 130.0	4.3307 x 5.1181	101.0 x 121.0	3.9764 x 4.7638	4.5	± 1.5	103.0	X		
110.0 x 140.0	4.3307 x 5.5118	101.0 x 131.0	3.9764 x 5.1575	4.5	± 1.5	110.9	X		
110.0 x 150.0	4.3307 x 5.9055	101.0 x 141.0	3.9764 x 5.5512	4.5	± 1.5	118.8	X		
110.0 x 650.0	4.3307 x 25.5906	87.0 x 627.0	3.4252 x 24.6850	11.5	± 1.5	514.8	X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

Gross dimension ¹					Post-machining part diameter ^{4,5}					Overmetal machining	Dimensional tolerance	Theoretical weight ²	FC 250	FC 300	GMI	
(mm)		inch			(mm)		inch			Min. (mm)	(mm) ^{2,3}	(kg/m)	GJL 250	GJL 300		
115.0	x	360.0	4.5276	x	14.1732	100.0	x	345.0	3.9370	x	13.5827	7.5	± 1.5	298.1	X	
120.0	x	170.0	4.7244	x	6.6929	111.0	x	161.0	4.3701	x	6.3386	4.5	± 1.5	146.9	X	
120.0	x	180.0	4.7244	x	7.0866	111.0	x	171.0	4.3701	x	6.7323	4.5	± 1.5	155.5	X	
120.0	x	420.0	4.7244	x	16.5354	101.0	x	401.0	3.9764	x	15.7874	9.5	± 1.5	362.9	X	
120.0	x	520.0	4.7244	x	20.4724	97.0	x	497.0	3.8189	x	19.5669	11.5	± 1.5	449.3	X	
120.0	x	650.0	4.7244	x	25.5906	97.0	x	627.0	3.8189	x	24.6850	11.5	± 1.5	561.6	X	
130.0	x	150.0	5.1181	x	5.9055	121.0	x	141.0	4.7638	x	5.5512	4.5	± 1.5	140.4		X
130.0	x	210.0	5.1181	x	8.2677	117.0	x	197.0	4.6063	x	7.7559	6.5	± 1.5	196.6	X	
130.0	x	650.0	5.1181	x	25.5906	107.0	x	627.0	4.2126	x	24.6850	11.5	± 1.5	608.4	X	
135.0	x	165.0	5.3150	x	6.4961	126.0	x	156.0	4.9606	x	6.1417	4.5	± 1.5	160.4	X	
139.7	x	165.1	5.5000	x	6.5000	130.7	x	156.1	5.1457	x	6.1457	4.5	± 1.5	166.1		X
142.8	x	361.9	5.6220	x	14.2480	127.8	x	346.9	5.0315	x	13.6575	7.5	± 1.5	372.1		X
145.0	x	320.0	5.7087	x	12.5984	130.0	x	305.0	5.1181	x	12.0079	7.5	± 1.5	334.1	X	
146.0	x	361.9	5.7480	x	14.2480	131.0	x	346.9	5.1575	x	13.6575	7.5	± 1.5	380.4		X
149.2	x	190.5	5.8740	x	7.5000	140.2	x	181.5	5.5197	x	7.1457	4.5	± 1.5	204.6		X
150.0	x	300.0	5.9055	x	11.8110	137.0	x	287.0	5.3937	x	11.2992	6.5	± 1.5	324.0	X	
150.0	x	650.0	5.9055	x	25.5906	127.0	x	627.0	5.0000	x	24.6850	11.5	± 1.5	702.0	X	
160.0	x	209.5	6.2992	x	8.2480	147.0	x	196.5	5.7874	x	7.7362	6.5	± 1.5	241.3	X	
165.0	x	245.0	6.4961	x	9.6457	152.0	x	232.0	5.9843	x	9.1339	6.5	± 1.5	291.1	X	
170.0	x	220.0	6.6929	x	8.6614	157.0	x	207.0	6.1811	x	8.1496	6.5	± 1.5	269.3	X	
177.8	x	406.4	7.0000	x	16.0000	158.8	x	387.4	6.2520	x	15.2520	9.5	± 1.5	520.3		X
177.8	x	533.4	7.0000	x	21.0000	154.8	x	510.4	6.0945	x	20.0945	11.5	± 1.5	682.8		X
180.0	x	230.0	7.0866	x	9.0551	167.0	x	217.0	6.5748	x	8.5433	6.5	± 1.5	298.1	X	
220.0	x	370.0	8.6614	x	14.5669	205.0	x	355.0	8.0709	x	13.9764	7.5	± 2.0	586.1	X	
240.0	x	340.0	9.4488	x	13.3858	225.0	x	325.0	8.8583	x	12.7953	7.5	± 2.0	587.5	X	
266.7	x	609.6	10.5000	x	24.0000	243.7	x	586.6	9.5945	x	23.0945	11.5	± 2.0	1,170.6		X
317.5	x	457.2	12.5000	x	18.0000	298.5	x	438.2	11.7520	x	17.2520	9.5	± 2.0	1,045.2		X
355.6	x	558.8	14.0000	x	22.0000	332.6	x	535.8	13.0945	x	21.0945	11.5	± 2.0	1,430.7		X
410.0	x	610.0	16.1417	x	24.0157	387.0	x	587.0	15.2362	x	23.1102	11.5	± 2.0	1,800.7	X	X
480.0	x	520.0	18.8976	x	20.4724	457.0	x	497.0	17.9921	x	19.5669	11.5	± 2.0	1,797.1	X	
530.0	x	570.0	20.8661	x	22.4409	507.0	x	547.0	19.9606	x	21.5354	11.5	± 2.0	2,175.1	X	

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)				GJS 450-12		GJS 500-7	GJS 550-6	GJS 600-3	GJS 700-2	
25.0 x 40.0	0.9843 x 1.5748	18.0 x 33.0	0.7087 x 1.2992	3.5	±1.0	7.2				X				X		
25.4 x 52.0	1.0000 x 2.0472	16.4 x 43.0	0.6457 x 1.6929	4.5	±1.0	9.5				X						
26.8 x 37.8	1.0551 x 1.4882	19.8 x 30.8	0.7795 x 1.2126	3.5	±1.0	7.3		X								
30.0 x 80.0	1.1811 x 3.1496	21.0 x 71.0	0.8268 x 2.7953	4.5	±1.0	17.3								X		
30.0 x 90.0	1.1811 x 3.5433	21.0 x 81.0	0.8268 x 3.1890	4.5	±1.0	19.4						X		X		
30.0 x 500.0	1.1811 x 19.6850	9.0 x 479.0	0.3543 x 18.8583	10.5	±1.0	108.0				X						
31.7 x 40.0	1.2480 x 1.5748	24.7 x 33.0	0.9724 x 1.2992	3.5	±1.0	9.1				X						
31.7 x 57.1	1.2480 x 2.2480	22.7 x 48.1	0.8937 x 1.8937	4.5	±1.0	13.0		X		X			X			
31.7 x 63.5	1.2480 x 2.5000	22.7 x 54.5	0.8937 x 2.1457	4.5	±1.0	14.5				X						
31.7 x 82.5	1.2480 x 3.2480	22.7 x 73.5	0.8937 x 2.8937	4.5	±1.0	18.8				X			X			
31.7 x 107.9	1.2480 x 4.2480	20.7 x 96.9	0.8150 x 3.8150	5.5	±1.0	24.6				X			X			
31.7 x 133.3	1.2480 x 5.2480	20.7 x 122.3	0.8150 x 4.8150	5.5	±1.0	30.4				X			X			
31.7 x 139.7	1.2480 x 5.5000	20.7 x 128.7	0.8150 x 5.0669	5.5	±1.0	31.9							X			
31.7 x 158.7	1.2480 x 6.2480	20.7 x 147.7	0.8150 x 5.8150	5.5	±1.0	36.2				X			X			
31.7 x 260.3	1.2480 x 10.2480	16.7 x 245.3	0.6575 x 9.6575	7.5	±1.0	59.4				X			X			
32.0 x 160.0	1.2598 x 6.2992	21.0 x 149.0	0.8268 x 5.8661	5.5	±1.0	36.9				X						
33.0 x 63.0	1.2992 x 2.4803	24.0 x 54.0	0.9449 x 2.1260	4.5	±1.0	15.0				X						
34.5 x 95.2	1.3583 x 3.7480	25.5 x 86.2	1.0039 x 3.3937	4.5	±1.0	23.6				X						
38.0 x 70.0	1.4961 x 2.7559	29.0 x 61.0	1.1417 x 2.4016	4.5	±1.0	19.2				X						
38.1 x 57.1	1.5000 x 2.2480	29.1 x 48.1	1.1457 x 1.8937	4.5	±1.0	15.7		X		X			X			
38.1 x 63.5	1.5000 x 2.5000	29.1 x 54.5	1.1457 x 2.1457	4.5	±1.0	17.4				X						
38.1 x 69.8	1.5000 x 2.7480	29.1 x 60.8	1.1457 x 2.3937	4.5	±1.0	19.1				X						
38.1 x 82.5	1.5000 x 3.2480	29.1 x 73.5	1.1457 x 2.8937	4.5	±1.0	22.6		X		X			X			
38.1 x 107.9	1.5000 x 4.2480	27.1 x 96.9	1.0669 x 3.8150	5.5	±1.0	29.6		X		X			X			
38.1 x 133.3	1.5000 x 5.2480	27.1 x 122.3	1.0669 x 4.8150	5.5	±1.0	36.6				X			X			
38.1 x 158.7	1.5000 x 6.2480	27.1 x 147.7	1.0669 x 5.8150	5.5	±1.0	43.5				X			X			
38.5 x 54.0	1.5157 x 2.1260	29.5 x 45.0	1.1614 x 1.7717	4.5	±1.0	15.0				X						
39.0 x 345.0	1.5354 x 13.5827	22.0 x 328.0	0.8661 x 12.9134	8.5	±1.0	96.9		X								
40.0 x 45.0	1.5748 x 1.7717	33.0 x 38.0	1.2992 x 1.4961	3.5	±1.0	13.0	X									
40.0 x 60.0	1.5748 x 2.3622	31.0 x 51.0	1.2205 x 2.0079	4.5	±1.0	17.3	X									
40.0 x 65.0	1.5748 x 2.5591	31.0 x 56.0	1.2205 x 2.2047	4.5	±1.0	18.7						X				
40.0 x 100.0	1.5748 x 3.9370	31.0 x 91.0	1.2205 x 3.5827	4.5	±1.0	28.8					X					
40.0 x 110.0	1.5748 x 4.3307	29.0 x 99.0	1.1417 x 3.8976	5.5	±1.0	31.7	X			X						
40.0 x 160.0	1.5748 x 6.2992	29.0 x 149.0	1.1417 x 5.8661	5.5	±1.0	46.1				X						
40.0 x 180.0	1.5748 x 7.0866	29.0 x 169.0	1.1417 x 6.6535	5.5	±1.0	51.8						X				
41.0 x 93.0	1.6142 x 3.6614	32.0 x 84.0	1.2598 x 3.3071	4.5	±1.0	27.5				X						
44.0 x 69.0	1.7323 x 2.7165	35.0 x 60.0	1.3780 x 2.3622	4.5	±1.0	21.9		X		X						
44.4 x 50.8	1.7480 x 2.0000	35.4 x 41.8	1.3937 x 1.6457	4.5	±1.0	16.2		X		X			X			
44.4 x 69.8	1.7480 x 2.7480	35.4 x 60.8	1.3937 x 2.3937	4.5	±1.0	22.3		X								
44.4 x 81.0	1.7480 x 3.1890	35.4 x 72.0	1.3937 x 2.8346	4.5	±1.0	25.9		X		X						
44.4 x 82.5	1.7480 x 3.2480	35.4 x 73.5	1.3937 x 2.8937	4.5	±1.0	26.4				X						
44.4 x 107.9	1.7480 x 4.2480	33.4 x 96.9	1.3150 x 3.8150	5.5	±1.0	34.5							X			
44.4 x 114.3	1.7480 x 4.5000	33.4 x 103.3	1.3150 x 4.0669	5.5	±1.0	36.5							X			
44.4 x 133.3	1.7480 x 5.2480	33.4 x 122.3	1.3150 x 4.8150	5.5	±1.0	42.6				X						
44.4 x 158.7	1.7480 x 6.2480	33.4 x 147.7	1.3150 x 5.8150	5.5	±1.0	50.7				X			X			

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ²³	(kg/m)										
45.0 x 50.0	1.7717 x 1.9685	38.0 x 43.0	1.4961 x 1.6929	3.5	± 1.0	16.2	X									
45.0 x 51.0	1.7717 x 2.0079	36.0 x 42.0	1.4173 x 1.6535	4.5	± 1.0	16.5				X						
45.0 x 75.0	1.7717 x 2.9528	36.0 x 66.0	1.4173 x 2.5984	4.5	± 1.0	24.3				X						
47.0 x 50.0	1.8504 x 1.9685	40.0 x 43.0	1.5748 x 1.6929	3.5	± 1.0	16.9	X									
48.0 x 90.0	1.8898 x 3.5433	39.0 x 81.0	1.5354 x 3.1890	4.5	± 1.0	31.1		X								
50.0 x 60.0	1.9685 x 2.3622	41.0 x 51.0	1.6142 x 2.0079	4.5	± 1.0	21.6	X									
50.0 x 65.0	1.9685 x 2.5591	41.0 x 56.0	1.6142 x 2.2047	4.5	± 1.0	23.4	X									
50.0 x 70.0	1.9685 x 2.7559	41.0 x 61.0	1.6142 x 2.4016	4.5	± 1.0	25.2	X					X				
50.0 x 85.0	1.9685 x 3.3465	41.0 x 76.0	1.6142 x 2.9921	4.5	± 1.0	30.6	X									
50.0 x 90.0	1.9685 x 3.5433	41.0 x 81.0	1.6142 x 3.1890	4.5	± 1.0	32.4			X	X		X				
50.0 x 120.0	1.9685 x 4.7244	39.0 x 109.0	1.5354 x 4.2913	5.5	± 1.0	43.2				X						
50.0 x 140.0	1.9685 x 5.5118	39.0 x 129.0	1.5354 x 5.0787	5.5	± 1.0	50.4				X				X		
50.0 x 170.0	1.9685 x 6.6929	39.0 x 159.0	1.5354 x 6.2598	5.5	± 1.0	61.2			X							
50.0 x 222.0	1.9685 x 8.7402	35.0 x 207.0	1.3780 x 8.1496	7.5	± 1.0	79.9			X							
50.0 x 250.0	1.9685 x 9.8425	35.0 x 235.0	1.3780 x 9.2520	7.5	± 1.0	90.0	X									
50.0 x 400.0	1.9685 x 15.7480	33.0 x 383.0	1.2992 x 15.0787	8.5	± 1.0	144.0						X		X		
50.0 x 500.0	1.9685 x 19.6850	29.0 x 479.0	1.1417 x 18.8583	10.5	± 1.0	180.0				X						
50.8 x 57.2	2.0000 x 2.2500	41.8 x 48.2	1.6457 x 1.8957	4.5	± 1.0	20.9				X						
50.8 x 63.5	2.0000 x 2.5000	41.8 x 54.5	1.6457 x 2.1457	4.5	± 1.0	23.2		X		X			X			
50.8 x 92.1	2.0000 x 3.6260	41.8 x 83.1	1.6457 x 3.2717	4.5	± 1.0	33.7				X			X			
50.8 x 165.1	2.0000 x 6.5000	39.8 x 154.1	1.5669 x 6.0669	5.5	± 1.0	60.4							X			
53.5 x 525.0	2.1063 x 20.6693	28.5 x 500.0	1.1220 x 19.6850	12.5	± 1.0	202.2				X						
54.0 x 93.0	2.1260 x 3.6614	45.0 x 84.0	1.7717 x 3.3071	4.5	± 1.0	36.2				X						
54.6 x 74.5	2.1496 x 2.9331	45.6 x 65.5	1.7953 x 2.5787	4.5	± 1.0	29.3				X						
55.0 x 65.0	2.1654 x 2.5591	46.0 x 56.0	1.8110 x 2.2047	4.5	± 1.0	25.7				X						
55.0 x 70.0	2.1654 x 2.7559	46.0 x 61.0	1.8110 x 2.4016	4.5	± 1.0	27.7								X		
55.0 x 95.0	2.1654 x 3.7402	46.0 x 86.0	1.8110 x 3.3858	4.5	± 1.0	37.6				X						
55.0 x 160.0	2.1654 x 6.2992	44.0 x 149.0	1.7323 x 5.8661	5.5	± 1.0	63.4		X								
55.5 x 65.6	2.1850 x 2.5827	46.5 x 56.6	1.8307 x 2.2283	4.5	± 1.0	26.2				X						
56.0 x 70.0	2.2047 x 2.7559	47.0 x 61.0	1.8504 x 2.4016	4.5	± 1.0	28.2						X				
56.0 x 212.0	2.2047 x 8.3465	41.0 x 197.0	1.6142 x 7.7559	7.5	± 1.0	85.5				X						
56.0 x 430.0	2.2047 x 16.9291	35.0 x 409.0	1.3780 x 16.1024	10.5	± 1.0	173.4				X						
57.1 x 82.5	2.2480 x 3.2480	48.1 x 73.5	1.8937 x 2.8937	4.5	± 1.0	33.9		X		X						
57.1 x 92.5	2.2480 x 3.6417	48.1 x 83.5	1.8937 x 3.2874	4.5	± 1.0	38.0							X			
57.1 x 104.7	2.2480 x 4.1220	46.1 x 93.7	1.8150 x 3.6890	5.5	± 1.0	43.0				X						
57.1 x 107.5	2.2480 x 4.2323	46.1 x 96.5	1.8150 x 3.7992	5.5	± 1.0	44.2		X								
57.1 x 107.9	2.2480 x 4.2480	46.1 x 96.9	1.8150 x 3.8150	5.5	± 1.0	44.4				X			X			
57.1 x 120.6	2.2480 x 4.7480	46.1 x 109.6	1.8150 x 4.3150	5.5	± 1.0	49.6							X			
57.1 x 133.3	2.2480 x 5.2480	46.1 x 122.3	1.8150 x 4.8150	5.5	± 1.0	54.8				X						
57.1 x 152.4	2.2480 x 6.0000	46.1 x 141.4	1.8150 x 5.5669	5.5	± 1.0	62.7				X						
57.1 x 158.7	2.2480 x 6.2480	46.1 x 147.7	1.8150 x 5.8150	5.5	± 1.0	65.2				X			X			
57.1 x 260.0	2.2480 x 10.2362	42.1 x 245.0	1.6575 x 9.6457	7.5	± 1.0	106.9				X			X			
57.7 x 158.7	2.2717 x 6.2480	46.7 x 147.7	1.8386 x 5.8150	5.5	± 1.0	65.9				X						
60.0 x 90.0	2.3622 x 3.5433	51.0 x 81.0	2.0079 x 3.1890	4.5	± 1.0	38.9	X									
60.0 x 100.0	2.3622 x 3.9370	51.0 x 91.0	2.0079 x 3.5827	4.5	± 1.0	43.2						X				

Note:1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Dimensional tolerance	Theoretical weight ²	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)										
60.0x110.0	2.3622 x 4.3307	49.0 x 99.0	1.9291 x 3.8976	5.5	± 1.0	47.5	X									
60.0x130.0	2.3622 x 5.1181	49.0 x 119.0	1.9291 x 4.6850	5.5	± 1.0	56.2						X				
60.0x140.0	2.3622 x 5.5118	49.0 x 129.0	1.9291 x 5.0787	5.5	± 1.0	60.5	X			X				X		
60.0x205.0	2.3622 x 8.0709	45.0 x 190.0	1.7717 x 7.4803	7.5	± 1.0	88.6	X									
60.0x250.0	2.3622 x 9.8425	45.0 x 235.0	1.7717 x 9.2520	7.5	± 1.0	108.0	X									
60.0x290.0	2.3622 x 11.4173	45.0 x 275.0	1.7717 x 10.8268	7.5	± 1.0	125.3	X									
60.0 x 520.0	2.3622 x 20.4724	35.0 x 495.0	1.3780 x 19.4882	12.5	± 1.0	224.6				X						
60.3 x 79.3	2.3740 x 3.1220	51.3 x 70.3	2.0197 x 2.7677	4.5	± 1.0	34.4							X			
61.0 x 86.0	2.4016 x 3.3858	52.0 x 77.0	2.0472 x 3.0315	4.5	± 1.0	37.8		X		X						
61.5 x 71.5	2.4213 x 2.8150	52.5 x 62.5	2.0669 x 2.4606	4.5	± 1.0	31.7				X						
63.0 x 105.0	2.4803 x 4.1339	52.0 x 94.0	2.0472 x 3.7008	5.5	± 1.0	47.6		X								
63.0x158.0	2.4803 x 6.2205	52.0 x 147.0	2.0472 x 5.7874	5.5	± 1.0	71.7		X					X			
63.5x101.6	2.5000x4.0000	52.5 x 90.6	2.0669 x 3.5669	5.5	± 1.0	46.5							X			
63.5x107.9	2.5000x4.2480	52.5 x 96.9	2.0669 x 3.8150	5.5	± 1.0	49.3				X						
63.5x158.0	2.5000x6.2205	52.5 x 147.0	2.0669 x 5.7874	5.5	± 1.0	72.2				X						
63.5 x 158.7	2.5000x6.2480	52.5 x 147.7	2.0669 x 5.8150	5.5	± 1.0	72.6				X						
63.5x209.5	2.5000x8.2480	48.5 x 194.5	1.9094 x 7.6575	7.5	± 1.0	95.8				X						
64.0 x 96.0	2.5197x3.7795	55.0 x 87.0	2.1654 x 3.4252	4.5	± 1.0	44.2		X		X						
65.0 x 85.0	2.5591 x 3.3465	56.0 x 76.0	2.2047 x 2.9921	4.5	± 1.0	39.8	X	X		X						
65.0 x 95.0	2.5591 x 3.7402	56.0 x 86.0	2.2047 x 3.3858	4.5	± 1.0	44.5	X									
65.0 x 160.0	2.5591 x 6.2992	54.0 x 149.0	2.1260 x 5.8661	5.5	± 1.0	74.9		X						X		
65.0 x 200.0	2.5591 x 7.8740	54.0 x 189.0	2.1260 x 7.4409	5.5	± 1.0	93.6			X							
66.8 x 133.3	2.6299 x 5.2480	55.8 x 122.3	2.1969 x 4.8150	5.5	± 1.0	64.1				X						
69.8 x 82.5	2.7480 x 3.2480	60.8 x 73.5	2.3937 x 2.8937	4.5	± 1.0	41.5				X						
69.8 x 88.9	2.7480 x 3.5000	60.8 x 79.9	2.3937 x 3.1457	4.5	± 1.0	44.7				X						
69.8 x 95.2	2.7480 x 3.7480	60.8 x 86.2	2.3937 x 3.3937	4.5	± 1.0	47.8				X						
69.8 x 114.3	2.7480 x 4.5000	58.8 x 103.3	2.3150 x 4.0669	5.5	± 1.0	57.4				X						
69.8 x 165.1	2.7480 x 6.5000	58.8 x 154.1	2.3150 x 6.0669	5.5	± 1.0	83.0				X						
69.85x108.0	2.7500 x 4.2500	58.9 x 97.0	2.3169 x 3.8169	5.5	± 1.0	54.3				X						
70.0 x 80.0	2.7559 x 3.1496	61.0 x 71.0	2.4016 x 2.7953	4.5	± 1.0	40.3								X		
70.0 x 90.0	2.7559 x 3.5433	61.0 x 81.0	2.4016 x 3.1890	4.5	± 1.0	45.4	X		X	X						
70.0 x 100.0	2.7559 x 3.9370	61.0 x 91.0	2.4016 x 3.5827	4.5	± 1.0	50.4	X					X				
70.0 x 110.0	2.7559 x 4.3307	59.0 x 99.0	2.3228 x 3.8976	5.5	± 1.0	55.4						X				
70.0 x 120.0	2.7559 x 4.7244	59.0 x 109.0	2.3228 x 4.2913	5.5	± 1.0	60.5	X									
70.0 x 150.0	2.7559 x 5.9055	59.0 x 139.0	2.3228 x 5.4724	5.5	± 1.0	75.6		X								
70.0 x 490.0	2.7559 x 19.2913	49.0 x 469.0	1.9291 x 18.4646	10.5	± 1.0	247.0				X						
70.0 x 650.0	2.7559 x 25.5906	45.0 x 625.0	1.7717 x 24.6063	12.5	± 1.0	327.6	X									
71.5 x 92.0	2.8150 x 3.6220	62.5 x 83.0	2.4606 x 3.2677	4.5	± 1.0	47.4		X		X						
72.0 x 182.0	2.8346 x 7.1654	61.0 x 171.0	2.4016 x 6.7323	5.5	± 1.0	94.3				X						
73.0 x 165.1	2.8752 x 6.5000	62.0 x 154.1	2.4421 x 6.0669	5.5	± 1.0	86.8				X						
75.0 x 95.0	2.9528 x 3.7402	66.0 x 86.0	2.5984 x 3.3858	4.5	± 1.0	51.3		X								
75.0 x 105.0	2.9528 x 4.1339	64.0 x 94.0	2.5197 x 3.7008	5.5	± 1.0	56.7		X								
75.0 x 127.0	2.9528 x 5.0000	64.0 x 116.0	2.5197 x 4.5669	5.5	± 1.0	68.6		X								
75.0 x 230.0	2.9528 x 9.0551	60.0 x 215.0	2.3622 x 8.4646	7.5	± 1.0	124.2							X			
75.0 x 550.0	2.9528 x 21.6535	50.0 x 525.0	1.9685 x 20.6693	12.5	± 1.0	297.0				X						

Note:1) Gross dimension in mm already includes the overmetal. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmetal.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance limensional	Weight ² _{theoretical}	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)										
76.2 x101.6	3.0000x 4.0000	65.2 x 90.6	2.5669 x 3.5669	5.5	± 1.0	55.7				X						
76.2 x104.8	3.0000x 4.1260	65.2 x 93.8	2.5669 x 3.6929	5.5	± 1.0	57.5				X						
76.2 x165.0	3.0000x 6.4961	65.2 x 154.0	2.5669 x 6.0630	5.5	± 1.0	90.5				X						
76.2 x209.5	3.0000x 8.2480	61.2 x 194.5	2.4094 x 7.6575	7.5	± 1.0	114.9				X			X			
79.0 x305.0	3.1102 x 12.0079	62.0 x 288.0	2.4409x11.3386	8.5	± 1.0	173.5							X			
79.4 x133.3	3.1260 x 5.2480	68.4 x 122.3	2.6929 x 4.8150	5.5	± 1.0	76.2				X						
80.0 x100.0	3.1496 x 3.9370	71.0 x 91.0	2.7953 x 3.5827	4.5	± 1.0	57.6						X				
80.0 x110.0	3.1496 x 4.3307	69.0 x 99.0	2.7165 x 3.8976	5.5	± 1.0	63.4	X					X				
80.0 x130.0	3.1496 x 5.1181	69.0x119.0	2.7165 x 4.6850	5.5	± 1.0	74.9	X							X		
80.0 x140.0	3.1496 x 5.5118	69.0x129.0	2.7165 x 5.0787	5.5	± 1.0	80.6	X									
80.0 x150.0	3.1496 x 5.9055	69.0x139.0	2.7165 x 5.4724	5.5	± 1.0	86.4	X									
80.0 x160.0	3.1496 x 6.2992	69.0 x 149.0	2.7165 x 5.8661	5.5	± 1.0	92.2								X		
80.0 x410.0	3.1496x16.1417	59.0 x 389.0	2.3228 x 15.3150	10.5	± 1.0	236.2				X						
80.0 x 415.0	3.1496x 16.3386	59.0 x 394.0	2.3228 x 15.5118	10.5	± 1.0	239.0		X								
80.0 x565.0	3.1496 x 22.2441	55.0 x 540.0	2.1654 x 21.2598	12.5	± 1.0	325.4				X						
80.0 x 650.0	3.1496x25.5906	55.0 x 625.0	2.1654 x 24.6063	12.5	± 1.0	374.4	X									
82.0 x108.0	3.2283 x 4.2520	71.0 x 97.0	2.7953 x 3.8189	5.5	± 1.0	63.8			X							
82.5 x 95.2	3.2480 x 3.7480	73.5 x 86.2	2.8937 x 3.3937	4.5	± 1.0	56.5				X						
82.5 x107.9	3.2480 x 4.2480	71.5 x 96.9	2.8150 x 3.8150	5.5	± 1.0	64.1			X	X			X			
82.5 x120.6	3.2480 x 4.7480	71.5 x109.6	2.8150 x 4.3150	5.5	± 1.0	71.6				X						
82.5 x133.3	3.2480 x 5.2480	71.5 x122.3	2.8150 x 4.8150	5.5	± 1.0	79.2				X						
82.5 x174.6	3.2480 x 6.8740	71.5 x163.6	2.8150 x 6.4409	5.5	± 1.0	103.7				X						
82.5 x209.5	3.2480 x 8.2480	67.5 x194.5	2.6575 x 7.6575	7.5	± 1.0	124.4				X			X			
85.0 x316.0	3.3465 x 12.4409	68.0x299.0	2.6772 x11.7717	8.5	± 1.0	193.4				X						
86.0 x320.0	3.3858 x 12.5984	69.0x303.0	2.7165 x 11.9291	8.5	± 1.0	198.1				X						
88.0 x118.0	3.4646 x 4.6457	77.0 x 107.0	3.0315 x 4.2126	5.5	± 1.0	74.8						X				
88.9 x120.6	3.5000x 4.7480	77.9 x 109.6	3.0669 x 4.3150	5.5	± 1.0	77.2	X			X						
88.9 x158.7	3.5000x 6.2480	77.9 x 147.7	3.0669 x5.8150	5.5	± 1.0	101.6				X						
90.0 x100.0	3.5433 x 3.9370	81.0 x 91.0	3.1890 x 3.5827	4.5	± 1.0	64.8	X					X				
90.0 x110.0	3.5433 x 4.3307	79.0x 99.0	3.1102 x 3.8976	5.5	± 1.0	71.3	X									
90.0 x120.0	3.5433 x 4.7244	79.0 x 109.0	3.1102 x 4.2913	5.5	± 1.0	77.8	X	X	X			X				
90.0 x135.0	3.5433 x 5.3150	79.0 x 124.0	3.1102 x 4.8819	5.5	± 1.0	87.5		X								
90.0 x140.0	3.5433 x 5.5118	79.0 x 129.0	3.1102 x 5.0787	5.5	± 1.0	90.7						X				
90.0 x145.0	3.5433 x 5.7087	79.0 x 134.0	3.1102 x 5.2756	5.5	± 1.0	94.0		X	X	X						
90.0 x150.0	3.5433 x 5.9055	79.0 x 139.0	3.1102 x 5.4724	5.5	± 1.0	97.2	X		X					X		
90.0 x180.0	3.5433 x 7.0866	79.0 x 169.0	3.1102 x 6.6535	5.5	± 1.0	116.6	X									
90.0 x 575.0	3.5433 x 22.6378	65.0 x 550.0	2.5591 x21.6535	12.5	± 1.0	372.6									X	X
90.0 x 650.0	3.5433x25.5906	65.0 x 625.0	2.5591 x 24.6063	12.5	± 1.0	421.2	X									
92.1 x 95.2	3.6260 x 3.7480	83.1 x 86.2	3.2717 x 3.3937	4.5	± 1.0	63.1				X						
92.1 x120.6	3.6260 x 4.7480	81.1 x 109.6	3.1929 x 4.3150	5.5	± 1.0	80.0				X						
93.0 x108.0	3.6614 x 4.2520	82.0 x 97.0	3.2283 x 3.8189	5.5	± 1.0	72.3		X	X	X						
95.0 x115.0	3.7402 x 4.5276	84.0 x 104.0	3.3071 x 4.0945	5.5	± 1.0	78.7	X									
95.0 x125.0	3.7402 x 4.9213	84.0x114.0	3.3071 x 4.4882	5.5	± 1.0	85.5				X						
95.0 x135.0	3.7402 x 5.3150	84.0 x 124.0	3.3071 x 4.8819	5.5	± 1.0	92.3	X									
95.0 x155.0	3.7402 x 6.1024	84.0x 144.0	3.3071 x 5.6693	5.5	± 1.0	106.0	X									

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machin	ing part diameter ^{4,5}	Overmetal machining	Tolerance dimensional	Weight ² (theoretical)	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ²³	(kg/m)										
95.0 x 175.0	3.7402 x 6.8898	84.0 x 164.0	3.3071 x 6.4567	5.5	± 1.0	119.7	X									
95.2 x 120.6	3.7480 x 4.7480	84.2 x 109.6	3.3150 x 4.3150	5.5	± 1.0	82.7				X						
95.2 x 133.3	3.7480 x 5.2480	84.2 x 122.3	3.3150 x 4.8150	5.5	± 1.0	91.4				X						
95.3 x 107.9	3.7520 x 4.2480	84.3 x 96.9	3.3189 x 3.8150	5.5	± 1.0	74.0				X						
100.0 x 110.0	3.9370 x 4.3307	89.0 x 99.0	3.5039 x 3.8976	5.5	± 1.0	79.2	X					X				
100.0 x 120.0	3.9370 x 4.7244	89.0 x 109.0	3.5039 x 4.2913	5.5	± 1.0	86.4		X	X			X				
100.0 x 140.0	3.9370 x 5.5118	89.0 x 129.0	3.5039 x 5.0787	5.5	± 1.0	100.8	X									
100.0 x 190.0	3.9370 x 7.4803	89.0 x 179.0	3.5039 x 7.0472	5.5	± 1.0	136.8		X								
100.0 x 200.0	3.9370 x 7.8740	89.0 x 189.0	3.5039 x 7.4409	5.5	± 1.0	144.0								X		
100.0 x 500.0	3.9370 x 19.6850	79.0 x 479.0	3.1102 x 18.8583	10.5	± 1.0	360.0									X	X
100.0 x 650.0	3.9370 x 25.5906	75.0 x 625.0	2.9528 x 24.6063	12.5	± 1.0	468.0								X		X
101.6 x 114.3	4.0000 x 4.5000	90.6 x 103.3	3.5669 x 4.0669	5.5	± 1.5	83.6				X						
101.6 x 127.0	4.0000 x 5.0000	90.6 x 116.0	3.5669 x 4.5669	5.5	± 1.5	92.9				X						
101.6 x 152.4	4.0000 x 6.0000	90.6 x 141.4	3.5669 x 5.5669	5.5	± 1.5	111.5				X						
101.6 x 406.4	4.0000 x 16.0000	80.6 x 385.4	3.1732 x 15.1732	10.5	± 1.5	297.3				X			X			
103.6 x 129.0	4.0787 x 5.0787	92.6 x 118.0	3.6457 x 4.6457	5.5	± 1.5	96.2				X						
103.6 x 154.4	4.0787 x 6.0787	92.6 x 143.4	3.6457 x 5.6457	5.5	± 1.5	115.2				X						
104.8 x 209.5	4.1260 x 8.2480	89.8 x 194.5	3.5354 x 7.6575	7.5	± 1.5	158.1				X			X			
105.0 x 125.0	4.1339 x 4.9213	94.0 x 114.0	3.7008 x 4.4882	5.5	± 1.5	94.5	X									
105.0 x 130.0	4.1339 x 5.1181	94.0 x 119.0	3.7008 x 4.6850	5.5	± 1.5	98.3	X									
105.0 x 135.0	4.1339 x 5.3150	94.0 x 124.0	3.7008 x 4.8819	5.5	± 1.5	102.1	X		X							
105.0 x 145.0	4.1339 x 5.7087	94.0 x 134.0	3.7008 x 5.2756	5.5	± 1.5	109.6								X		
107.0 x 135.0	4.2126 x 5.3150	96.0 x 124.0	3.7795 x 4.8819	5.5	± 1.5	104.0				X						
107.0 x 215.0	4.2126 x 8.4646	92.0 x 200.0	3.6220 x 7.8740	7.5	± 1.5	165.6		X								
107.9 x 120.6	4.2480 x 4.7480	96.9 x 109.6	3.8150 x 4.3150	5.5	± 1.5	93.7				X						
107.9 x 133.3	4.2480 x 5.2480	96.9 x 122.3	3.8150 x 4.8150	5.5	± 1.5	103.6		X		X			X			
107.9 x 146.1	4.2480 x 5.7520	96.9 x 135.1	3.8150 x 5.3189	5.5	± 1.5	113.5				X						
107.9 x 158.7	4.2480 x 6.2480	96.9 x 147.7	3.8150 x 5.8150	5.5	± 1.5	123.3			X	X			X			
107.9 x 165.1	4.2480 x 6.5000	96.9 x 154.1	3.8150 x 6.0669	5.5	± 1.5	128.3				X			X			
107.9 x 209.5	4.2480 x 8.2480	92.9 x 194.5	3.6575 x 7.6575	7.5	± 1.5	162.8				X			X			
107.9 x 215.9	4.2480 x 8.5000	92.9 x 200.9	3.6575 x 7.9094	7.5	± 1.5	167.7				X						
110.0 x 160.0	4.3307 x 6.2992	99.0 x 149.0	3.8976 x 5.8661	5.5	± 1.5	126.7	X		X							
110.0 x 170.0	4.3307 x 6.6929	99.0 x 159.0	3.8976 x 6.2598	5.5	± 1.5	134.6				X						
110.0 x 370.0	4.3307 x 14.5669	93.0 x 353.0	3.6614 x 13.8976	8.5	± 1.5	293.0				X						
110.0 x 400.0	4.3307 x 15.7480	93.0 x 383.0	3.6614 x 15.0787	8.5	± 1.5	316.8				X						
110.7 x 186.7	4.3583 x 7.3504	99.7 x 175.7	3.9252 x 6.9173	5.5	± 1.5	148.8				X						
111.0 x 116.0	4.3701 x 4.5669	100.0 x 105.0	3.9370 x 4.1339	5.5	± 1.5	92.7				X						
113.0 x 153.5	4.4488 x 6.0433	102.0 x 142.5	4.0157 x 5.6102	5.5	± 1.5	124.9				X						
114.3 x 133.3	4.5000 x 5.2480	103.3 x 122.3	4.0669 x 4.8150	5.5	± 1.5	109.7				X						
114.3 x 139.7	4.5000 x 5.5000	103.3 x 128.7	4.0669 x 5.0669	5.5	± 1.5	115.0				X						
114.3 x 165.1	4.5000 x 6.5000	103.3 x 154.1	4.0669 x 6.0669	5.5	± 1.5	135.9				X						
115.0 x 180.0	4.5276 x 7.0866	104.0 x 169.0	4.0945 x 6.6535	5.5	± 1.5	149.0	X			X						
115.0 x 500.0	4.5276 x 19.6850	94.0 x 479.0	3.7008 x 18.8583	10.5	± 1.5	414.0				X						
116.0 x 128.5	4.5669 x 5.0591	105.0 x 117.5	4.1339 x 4.6260	5.5	± 1.5	107.3				X						
116.0 x 515.0	4.5669 x 20.2756	91.0 x 490.0	3.5827 x 19.2913	12.5	± 1.5	430.1				X						
117.5 x 174.6	4.6260 x 6.8740	106.5 x 163.6	4.1929 x 6.4409	5.5	± 1.5	147.7				X						

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance dimensional	Weight ² theoretical	GJS 400 -7	FE 40015	GJS 400- 15	FE 4501 2 GJS 450- 12	GJS 400- 18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)										
118,0 x 128,0	4,6457 x 5,0394	107,0 x 117,0	4,2126 x 4,6063	5,5	± 1,5	108,7			X							
120,0 x 178,0	4,7244 x 7,0079	109,0 x 167,0	4,2913 x 6,5748	5,5	± 1,5	153,8				X						
120,0 x 185,0	4,7244 x 7,2835	109,0 x 174,0	4,2913 x 6,8504	5,5	± 1,5	159,8	X			X						
120,0 x 190,0	4,7244 x 7,4803	109,0 x 179,0	4,2913 x 7,0472	5,5	± 1,5	164,2				X						
120,0 x 650,0	4,7244 x 25,5906	95,0 x 625,0	3,7402 x 24,6063	12,5	± 1,5	561,6						X		X		
120,6 x 150,0	4,7480 x 5,9055	109,6 x 139,0	4,3150 x 5,4724	5,5	± 1,5	130,2		X								
120,6 x 158,7	4,7480 x 6,2480	109,6 x 147,7	4,3150 x 5,8150	5,5	± 1,5	137,8				X						
120,6 x 311,1	4,7480 x 12,2480	103,6 x 294,1	4,0787 x 11,5787	8,5	± 1,5	270,1				X						
124,0 x 141,0	4,8819 x 5,5512	113,0 x 130,0	4,4488 x 5,1181	5,5	± 1,5	125,9							X			
125,0 x 135,0	4,9213 x 5,3150	114,0 x 124,0	4,4882 x 4,8819	5,5	± 1,5	121,5			X							
125,0 x 140,0	4,9213 x 5,5118	114,0 x 129,0	4,4882 x 5,0787	5,5	± 1,5	126,0						X				
125,0 x 220,0	4,9213 x 8,6614	110,0 x 205,0	4,3307 x 8,0709	7,5	± 1,5	198,0		X								
125,0 x 315,0	4,9213 x 12,4016	108,0 x 298,0	4,2520 x 11,7323	8,5	± 1,5	283,5			X							
127,0 x 132,0	5,0000 x 5,1969	116,0 x 121,0	4,5669 x 4,7638	5,5	± 1,5	120,7				X				X		
127,0 x 139,7	5,0000 x 5,5000	116,0 x 128,7	4,5669 x 5,0669	5,5	± 1,5	127,7				X						
127,0 x 142,0	5,0000 x 5,5906	116,0 x 131,0	4,5669 x 5,1575	5,5	± 1,5	129,8			X							
130,0 x 135,0	5,1181 x 5,3150	119,0 x 124,0	4,6850 x 4,8819	5,5	± 1,5	126,4		X								
130,0 x 140,0	5,1181 x 5,5118	119,0 x 129,0	4,6850 x 5,0787	5,5	± 1,5	131,0	X									
130,0 x 150,0	5,1181 x 5,9055	119,0 x 139,0	4,6850 x 5,4724	5,5	± 1,5	140,4	X		X							
130,0 x 175,0	5,1181 x 6,8898	119,0 x 164,0	4,6850 x 6,4567	5,5	± 1,5	163,8		X								
130,0 x 195,0	5,1181 x 7,6772	119,0 x 184,0	4,6850 x 7,2441	5,5	± 1,5	182,5						X				
130,0 x 205,0	5,1181 x 8,0709	115,0 x 190,0	4,5276 x 7,4803	7,5	± 1,5	191,9	X									
130,0 x 505,0	5,1181 x 19,8819	105,0 x 480,0	4,1339 x 18,8976	12,5	± 1,5	472,7				X						
130,0 x 550,0	5,1181 x 21,6535	105,0 x 525,0	4,1339 x 20,6693	12,5	± 1,5	514,8				X						
130,6 x 156,3	5,1417 x 6,1551	119,6 x 145,3	4,7087 x 5,7220	5,5	± 1,5	147,1				X						
133,3 x 158,7	5,2480 x 6,2480	122,3 x 147,7	4,8150 x 5,8150	5,5	± 1,5	152,3			X	X						
133,3 x 184,1	5,2480 x 7,2480	122,3 x 173,1	4,8150 x 6,8150	5,5	± 1,5	176,7				X						
133,3 x 209,5	5,2480 x 8,2480	118,3 x 194,5	4,6575 x 7,6575	7,5	± 1,5	201,1				X						
133,3 x 260,3	5,2480 x 10,2480	118,3 x 245,3	4,6575 x 9,6575	7,5	± 1,5	249,8				X						
133,3 x 288,0	5,2480 x 11,3386	118,3 x 273,0	4,6575 x 10,7480	7,5	± 1,5	276,4				X						
133,3 x 361,9	5,2480 x 14,2480	116,3 x 344,9	4,5787 x 13,5787	8,5	± 1,5	347,3				X						
135,0 x 195,0	5,3150 x 7,6772	124,0 x 184,0	4,8819 x 7,2441	5,5	± 1,5	189,5						X				
136,5 x 171,4	5,3740 x 6,7480	125,5 x 160,4	4,9409 x 6,3150	5,5	± 1,5	168,5				X			X			
138,1 x 219,3	5,4350 x 8,6350	123,1 x 204,3	4,8445 x 8,0445	7,5	± 1,5	218,0				X						
139,7 x 165,1	5,5000 x 6,5000	128,7 x 154,1	5,0669 x 6,0669	5,5	± 1,5	166,1				X			X			
139,7 x 184,1	5,5000 x 7,2480	128,7 x 173,1	5,0669 x 6,8150	5,5	± 1,5	185,2				X						
139,7 x 190,5	5,5000 x 7,5000	128,7 x 179,5	5,0669 x 7,0669	5,5	± 1,5	191,6				X						
140,0 x 160,0	5,5118 x 6,2992	129,0 x 149,0	5,0787 x 5,8661	5,5	± 1,5	161,3	X									
140,0 x 166,0	5,5118 x 6,5354	129,0 x 155,0	5,0787 x 6,1024	5,5	± 1,5	167,3				X						
140,0 x 170,0	5,5118 x 6,6929	129,0 x 159,0	5,0787 x 6,2598	5,5	± 1,5	171,4	X		X							
140,0 x 210,0	5,5118 x 8,2677	125,0 x 195,0	4,9213 x 7,6772	7,5	± 1,5	211,7							X			
140,0 x 240,0	5,5118 x 9,4488	125,0 x 225,0	4,9213 x 8,8583	7,5	± 1,5	241,9		X		X						
140,0 x 490,0	5,5118 x 19,2913	119,0 x 469,0	4,6850 x 18,4646	10,5	± 1,5	493,9				X						
140,0 x 650,0	5,5118 x 25,5906	115,0 x 625,0	4,5276 x 24,6063	12,5	± 1,5	655,2						X		X		X
142,9 x 209,5	5,6260 x 8,2480	127,9 x 194,5	5,0354 x 7,6575	7,5	± 1,5	215,6				X						
145,0 x 190,0	5,7087 x 7,4803	134,0 x 179,0	5,2756 x 7,0472	5,5	± 1,5	198,4						X				

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance dimensional	Weight ² theoretical	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ²³	(kg/m)										
145.0 x 210.0	5.7087 x 8.2677	130.0 x 195.0	5.1181 x 7.6772	7.5	± 1.5	219.2		X								
145.0 x 240.0	5.7087 x 9.4488	130.0 x 225.0	5.1181 x 8.8583	7.5	± 1.5	250.6				X						
146.0 x 209.5	5.7480 x 8.2480	131.0 x 194.5	5.1575 x 7.6575	7.5	± 1.5	220.2				X						
146.1 x 196.9	5.7520 x 7.7520	135.1 x 185.9	5.3189 x 7.3189	5.5	± 1.5	207.1				X						
146.1 x 212.7	5.7520 x 8.3740	131.1 x 197.7	5.1614 x 7.7835	7.5	± 1.5	223.7				X						
148.0 x 163.0	5.8268 x 6.4173	137.0 x 152.0	5.3937 x 5.9843	5.5	± 1.5	173.7	X		X							
148.0 x 163.0	5.8268 x 6.4173	137.0 x 152.0	5.3937 x 5.9843	5.5	± 1.5	173.7	X		X							
150.0 x 225.0	5.9055 x 8.8583	135.0 x 210.0	5.3150 x 8.2677	7.5	± 1.5	243.0		X								
150.0 x 240.0	5.9055 x 9.4488	135.0 x 225.0	5.3150 x 8.8583	7.5	± 1.5	259.2				X						
152.4 x 177.8	6.0000 x 7.0000	141.4 x 166.8	5.5669 x 6.5669	5.5	± 1.5	195.1				X						
152.4 x 187.3	6.0000 x 7.3740	141.4 x 176.3	5.5669 x 6.9409	5.5	± 1.5	205.5				X						
152.4 x 222.2	6.0000 x 8.7480	137.4 x 207.2	5.4094 x 8.1575	7.5	± 1.5	243.8				X						
153.9 x 168.2	6.0591 x 6.6220	142.9 x 157.2	5.6260 x 6.1890	5.5	± 1.5	186.4							X			
154.4 x 179.8	6.0787 x 7.0787	143.4 x 168.8	5.6457 x 6.6457	5.5	± 1.5	199.9				X						
155.0 x 260.0	6.1024 x 10.2362	140.0 x 245.0	5.5118 x 9.6457	7.5	± 1.5	290.2		X								
155.6 x 171.4	6.1260 x 6.7480	144.6 x 160.4	5.6929 x 6.3150	5.5	± 1.5	192.0				X			X			
157.6 x 213.5	6.2051 x 8.4051	142.6 x 198.5	5.6146 x 7.8146	7.5	± 1.5	242.3				X						
158.7 x 171.4	6.2480 x 6.7480	147.7 x 160.4	5.8150 x 6.3150	5.5	± 1.5	195.8				X						
158.7 x 184.1	6.2480 x 7.2480	147.7 x 173.1	5.8150 x 6.8150	5.5	± 1.5	210.4				X						
158.7 x 196.8	6.2480 x 7.7480	147.7 x 185.8	5.8150 x 7.3150	5.5	± 1.5	224.9			X	X						
158.7 x 209.5	6.2480 x 8.2480	143.7 x 194.5	5.6575 x 7.6575	7.5	± 1.5	239.4				X			X			
158.7 x 215.9	6.2480 x 8.5000	143.7 x 200.9	5.6575 x 7.9094	7.5	± 1.5	246.7				X						
158.7 x 228.6	6.2480 x 9.0000	143.7 x 213.6	5.6575 x 8.4094	7.5	± 1.5	261.2				X						
158.7 x 234.9	6.2480 x 9.2480	143.7 x 219.9	5.6575 x 8.6575	7.5	± 1.5	268.4				X						
158.7 x 260.3	6.2480 x 10.2480	143.7 x 245.3	5.6575 x 9.6575	7.5	± 1.5	297.4				X						
158.7 x 262.9	6.2480 x 10.3504	143.7 x 247.9	5.6575 x 9.7598	7.5	± 1.5	300.4							X			
158.7 x 317.5	6.2480 x 12.5000	141.7 x 300.5	5.5787 x 11.8307	8.5	± 1.5	362.8							X			
160.0 x 170.0	6.2992 x 6.6929	149.0 x 159.0	5.8661 x 6.2598	5.5	± 1.5	195.8				X						
160.0 x 200.0	6.2992 x 7.8740	149.0 x 189.0	5.8661 x 7.4409	5.5	± 1.5	230.4						X				
160.0 x 210.0	6.2992 x 8.2677	145.0 x 195.0	5.7087 x 7.6772	7.5	± 1.5	241.9		X								
160.0 x 280.0	6.2992 x 11.0236	145.0 x 265.0	5.7087 x 10.4331	7.5	± 1.5	322.6		X								
160.0 x 650.0	6.2992 x 25.5906	135.0 x 625.0	5.3150 x 24.6063	12.5	± 1.5	748.8						X		X		
160.3 x 230.1	6.3110 x 9.0591	145.3 x 215.1	5.7205 x 8.4685	7.5	± 1.5	265.6				X						
163.5 x 233.3	6.4350 x 9.1850	148.5 x 218.3	5.8445 x 8.5945	7.5	± 1.5	274.6				X						
163.5 x 265.1	6.4350 x 10.4350	148.5 x 250.1	5.8445 x 9.8445	7.5	± 1.5	311.9				X						
165.0 x 185.0	6.4961 x 7.2835	154.0 x 174.0	6.0630 x 6.8504	5.5	± 1.5	219.8	X		X							
165.0 x 208.0	6.4961 x 8.1890	150.0 x 193.0	5.9055 x 7.5984	7.5	± 1.5	247.1		X								
165.1 x 177.8	6.5000 x 7.0000	154.1 x 166.8	6.0669 x 6.5669	5.5	± 1.5	211.4				X						
165.1 x 209.5	6.5000 x 8.2480	150.1 x 194.5	5.9094 x 7.6575	7.5	± 1.5	249.0				X						
165.1 x 215.9	6.5000 x 8.5000	150.1 x 200.9	5.9094 x 7.9094	7.5	± 1.5	256.6	X		X	X						
165.1 x 241.3	6.5000 x 9.5000	150.1 x 226.3	5.9094 x 8.9094	7.5	± 1.5	286.8				X						
170.0 x 220.0	6.6929 x 8.6614	155.0 x 205.0	6.1024 x 8.0709	7.5	± 1.5	269.3		X								
170.0 x 240.0	6.6929 x 9.4488	155.0 x 225.0	6.1024 x 8.8583	7.5	± 1.5	293.8			X							
170.0 x 290.0	6.6929 x 11.4173	155.0 x 275.0	6.1024 x 10.8268	7.5	± 1.5	355.0		X								
170.0 x 562.0	6.6929 x 22.1260	145.0 x 537.0	5.7087 x 21.1417	12.5	± 1.5	687.9		X								

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension:		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance dimensional	Weight theoretical	GJS 400-7	FE 40015	GJS 400-15	FE 45012	GJS 400-18	FE 50007	FE 55006	FE 60003	FE 70002	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)				GJS 450-12		GJS 500-7	GJS 550-6	GJS 600-3	GJS 700-2	
171.4 x 196.8	6.7480 x 7.7480	160.4 x 185.8	6.3150 x 7.3150	5.5	± 1.5	242.9				X						
171.4 x 209.5	6.7480 x 8.2480	156.4 x 194.5	6.1575 x 7.6575	7.5	± 1.5	258.5				X						
171.4 x 247.6	6.7480 x 9.7480	156.4 x 232.6	6.1575 x 9.1575	7.5	± 1.5	305.6				X						
173.0 x 287.3	6.8110 x 11.3110	158.0 x 272.3	6.2205 x 10.7205	7.5	± 1.5	357.9				X						
175.0 x 220.0	6.8898 x 8.6614	160.0 x 205.0	6.2992 x 8.0709	7.5	± 1.5	277.2				X			X			
175.0 x 240.0	6.8898 x 9.4488	160.0 x 225.0	6.2992 x 8.8583	7.5	± 1.5	302.4		X								
175.0 x 255.0	6.8898 x 10.0394	160.0 x 240.0	6.2992 x 9.4488	7.5	± 1.5	321.3				X						
177.8 x 406.4	7.0000 x 16.0000	156.8 x 385.4	6.1732 x 15.1732	10.5	± 1.5	520.3				X			X			
177.8 x 533.4	7.0000 x 21.0000	152.8 x 508.4	6.0157 x 20.0157	12.5	± 1.5	682.8				X						
177.8 x 612.1	7.0000 x 24.0984	152.8 x 587.1	6.0157 x 23.1142	12.5	± 1.5	783.6				X						
178.0 x 198.0	7.0079 x 7.7953	167.0 x 187.0	6.5748 x 7.3622	5.5	± 1.5	253.8				X						
179.8 x 235.5	7.0787 x 9.2717	164.8 x 220.5	6.4882 x 8.6811	7.5	± 1.5	304.9				X						
180.0 x 200.0	7.0866 x 7.8740	169.0 x 189.0	6.6535 x 7.4409	5.5	± 1.5	259.2					X					
180.0 x 310.0	7.0866 x 12.2047	163.0 x 293.0	6.4173 x 11.5354	8.5	± 1.5	401.8		X								
180.0 x 650.0	7.0866 x 25.5906	155.0 x 625.0	6.1024 x 24.6063	12.5	± 1.5	842.4						X		X		
183.0 x 238.6	7.2051 x 9.3949	168.0 x 223.6	6.6146 x 8.8043	7.5	± 1.5	314.4				X						
184.1 x 234.9	7.2480 x 9.2480	169.1 x 219.9	6.6575 x 8.6575	7.5	± 1.5	311.4				X						
184.1 x 361.9	7.2480 x 14.2480	167.1 x 344.9	6.5787 x 13.5787	8.5	± 1.5	479.7				X						
184.2 x 209.5	7.2520 x 8.2480	169.2 x 194.5	6.6614 x 7.6575	7.5	± 1.5	277.8				X						
184.2 x 301.6	7.2520 x 11.8740	167.2 x 284.6	6.5827 x 11.2047	8.5	± 1.5	400.0				X						
185.0 x 196.0	7.2835 x 7.7165	174.0 x 185.0	6.8504 x 7.2835	5.5	± 1.5	261.1				X						
185.0 x 215.0	7.2835 x 8.4646	170.0 x 200.0	6.6929 x 7.8740	7.5	± 1.5	286.4		X	X	X						
186.0 x 268.0	7.3228 x 10.5512	171.0 x 253.0	6.7323 x 9.9606	7.5	± 1.5	358.9		X								
187.3 x 190.5	7.3740 x 7.5000	176.3 x 179.5	6.9409 x 7.0669	5.5	± 1.5	256.9				X						
190.0 x 220.0	7.4803 x 8.6614	175.0 x 205.0	6.8898 x 8.0709	7.5	± 1.5	301.0	X		X							
190.0 x 230.0	7.4803 x 9.0551	175.0 x 215.0	6.8898 x 8.4646	7.5	± 1.5	314.6		X	X							
190.0 x 250.0	7.4803 x 9.8425	175.0 x 235.0	6.8898 x 9.2520	7.5	± 1.5	342.0	X		X							
190.0 x 280.0	7.4803 x 11.0236	175.0 x 265.0	6.8898 x 10.4331	7.5	± 1.5	383.0					X					
190.0 x 420.0	7.4803 x 16.5354	169.0 x 399.0	6.6535 x 15.7087	10.5	± 1.5	574.6				X						
190.5 x 241.3	7.5000 x 9.5000	175.5 x 226.3	6.9094 x 8.9094	7.5	± 1.5	331.0				X						
193.0 x 450.0	7.5984 x 17.7165	172.0 x 429.0	6.7717 x 16.8898	10.5	± 1.5	625.3				X						
193.0 x 452.0	7.5984 x 17.7953	172.0 x 431.0	6.7717 x 16.9685	10.5	± 1.5	628.1		X								
200.0 x 250.0	7.8740 x 9.8425	185.0 x 235.0	7.2835 x 9.2520	7.5	± 1.5	360.0		X								
200.0 x 300.0	7.8740 x 11.8110	185.0 x 285.0	7.2835 x 11.2205	7.5	± 1.5	432.0		X								
200.0 x 650.0	7.8740 x 25.5906	175.0 x 625.0	6.8898 x 24.6063	12.5	± 1.5	936.0						X		X		X
203.2 x 304.8	8.0000 x 12.0000	186.2 x 287.8	7.3307 x 11.3307	8.5	± 2.0	445.9				X						
203.2 x 533.4	8.0000 x 21.0000	178.2 x 508.4	7.0157 x 20.0157	12.5	± 2.0	780.4				X						
205.0 x 210.0	8.0709 x 8.2677	190.0 x 195.0	7.4803 x 7.6772	7.5	± 2.0	310.0				X						
209.5 x 244.5	8.2480 x 9.6260	194.5 x 229.5	7.6575 x 9.0354	7.5	± 2.0	368.8				X						
209.5 x 260.3	8.2480 x 10.2480	194.5 x 245.3	7.6575 x 9.6575	7.5	± 2.0	392.6				X						
209.5 x 311.1	8.2480 x 12.2480	192.5 x 294.1	7.5787 x 11.5787	8.5	± 2.0	469.3				X						
209.5 x 361.9	8.2480 x 14.2480	192.5 x 344.9	7.5787 x 13.5787	8.5	± 2.0	545.9				X						
210.0 x 292.1	8.2677 x 11.5000	195.0 x 277.1	7.6772 x 10.9094	7.5	± 2.0	441.7				X						
215.0 x 245.0	8.4646 x 9.6457	200.0 x 230.0	7.8740 x 9.0551	7.5	± 2.0	379.3						X				
215.0 x 365.0	8.4646 x 14.3701	198.0 x 348.0	7.7953 x 13.7008	8.5	± 2.0	565.0		X								

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance dimensional	Weight ² theoretical	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)										
215.9 x 266.7	8.5000x10.5000	200.9x251.7	7.9094x9.9094	7.5	±2.0	414.6	X		X	X						
215.9 x 298.5	8.5000x11.7520	200.9x283.5	7.9094x11.1614	7.5	±2.0	464.0				X						
215.9 x 368.3	8.5000x14.5000	198.9x351.3	7.8307x13.8307	8.5	±2.0	572.5				X						
215.9 x 431.8	8.5000x17.0000	194.9x410.8	7.6732x16.1732	10.5	±2.0	671.2				X						
220.0x270.0	8.6614x10.6299	205.0x255.0	8.0709x10.0394	7.5	±2.0	427.7				X						
220.0x370.0	8.6614x14.5669	203.0x353.0	7.9921x13.8976	8.5	±2.0	586.1	X					X		X		
225.0x275.0	8.8583x10.8268	210.0x260.0	8.2677x10.2362	7.5	±2.0	445.5				X						
225.0x280.0	8.8583x11.0236	210.0x265.0	8.2677x10.4331	7.5	±2.0	453.6		X								
228.6 x 400.0	9.0000x15.7480	211.6 x 383.0	8.3307x15.0787	8.5	±2.0	658.4				X						
234.9x285.7	9.2480x11.2480	219.9 x 270.7	8.6575 x 10.6575	7.5	±2.0	483.2				X						
234.9x311.1	9.2480x12.2480	217.9 x 294.1	8.5787 x 11.5787	8.5	±2.0	526.2				X			X			
234.9x381.0	9.2480 x 15.0000	217.9 x 364.0	8.5787 x 14.3307	8.5	±2.0	644.4				X						
241.3 x 317.5	9.5000x12.5000	224.3 x 300.5	8.8307x11.8307	8.5	±2.0	551.6				X						
250.0x300.0	9.8425 x 11.8110	235.0x285.0	9.2520 x 11.2205	7.5	±2.0	540.0		X								
250.0x405.0	9.8425 x 15.9449	229.0x384.0	9.0157 x 15.1181	10.5	±2.0	729.0		X								
250.0x500.0	9.8425 x 19.6850	229.0x479.0	9.0157 x 18.8583	10.5	±2.0	900.0		X								
250.0x550.0	9.8425 x 21.6535	225.0x525.0	8.8583 x 20.6693	12.5	±2.0	990.0	X				X					
250.0x555.0	9.8425 x 21.8504	225.0 x 530.0	8.8583 x 20.8661	12.5	±2.0	999.0	X									
257.0 x 311.1	10.1181x12.2480	240.0x294.1	9.4488x11.5787	8.5	±2.0	575.7				X						
257.0 x 571.5	10.1181x22.5000	232.0x546.5	9.1339 x 21.5157	12.5	±2.0	1,057.5				X						
260.0x380.0	10.2362 x 14.9606	243.0x363.0	9.5669x14.2913	8.5	±2.0	711.4									X	X
260.3 x 311.1	10.2480x12.2480	243.3x294.1	9.5787 x 11.5787	8.5	±2.0	583.1				X						
260.3 x 317.5	10.2480x12.5000	243.3 x 300.5	9.5787 x 11.8307	8.5	±2.0	595.0				X						
260.3 x 336.5	10.2480x13.2480	243.3x319.5	9.5787 x 12.5787	8.5	±2.0	630.7				X						
266.7x317.5	10.5000x12.5000	249.7 x 300.5	9.8307x11.8307	8.5	±2.0	609.7				X						
266.7x342.9	10.5000x13.5000	249.7 x 325.9	9.8307x12.8307	8.5	±2.0	658.5				X						
266.7x419.1	10.5000x16.5000	245.7 x 398.1	9.6732 x 15.6732	10.5	±2.0	804.8				X						
266.7x609.6	10.5000x24.0000	241.7 x 584.6	9.5157 x 23.0157	12.5	±2.0	1,170.6				X			X			
266.7x635.0	10.5000x25.0000	241.7 x 610.0	9.5157 x 24.0157	12.5	±2.0	1,219.4				X			X			
270.0x520.0	10.6299x20.4724	245.0x495.0	9.6457x19.4882	12.5	±2.0	1,010.9	X									
280.0x350.0	11.0236x13.7795	263.0x333.0	10.3543x13.1102	8.5	±2.0	705.6		X								
300.0x380.0	11.8110x14.9606	283.0x363.0	11.1417 x 14.2913	8.5	±2.0	820.8		X								
300.0x530.0	11.8110x20.8661	275.0x505.0	10.8268x19.8819	12.5	±2.0	1,144.8	X									
305.0x325.0	12.0079 x 12.7953	288.0x308.0	11.3386 x 12.1260	8.5	±2.0	713.7	X									
311.1 x 387.3	12.2480 x 15.2480	294.1 x 370.3	11.5787 x 14.5787	8.5	±2.0	867.5		X		X						
311.1 x 463.5	12.2480x18.2480	290.1 x 442.5	11.4213 x 17.4213	10.5	±2.0	1,038.2		X		X						
317.5x368.3	12.5000x14.5000	300.5x 351.3	11.8307 x 13.8307	8.5	±2.0	841.9				X						
317.5x465.6	12.5000x18.3307	296.5x444.6	11.6732 x 17.5039	10.5	±2.0	1,064.4				X						
320.0x470.0	12.5984x18.5039	299.0x449.0	11.7717 x 17.6772	10.5	±2.0	1,082.9		X								
336.5 x 495.3	13.2480x19.5000	315.5 x 474.3	12.4213 x 18.6732	10.5	±2.0	1,200.0				X						
350.0x590.0	13.7795 x 23.2283	325.0x565.0	12.7953 x 22.2441	12.5	±2.0	1,486.8			X							
355.6x558.8	14.0000x22.0000	330.6x533.8	13.0157 x 21.0157	12.5	±2.0	1,430.7		X	X	X			X			X
360.0x 410.0	14.1732 x 16.1417	339.0x389.0	13.3465x15.3150	10.5	±2.0	1,062.7				X						
370.0x410.0	14.5669x16.1417	349.0x389.0	13.7402x15.3150	10.5	±2.0	1,092.2			X			X		X	X	
380.0x490.0	14.9606x19.2913	359.0x469.0	14.1339 x 18.4646	10.5	±2.0	1,340.6			X					X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Standardized Dimensions

RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

Gross dimension ¹		Post-machining part diameter ^{4,5}		Overmetal machining	Tolerance dimensional	Weight ² theoretical	GJS 400-7	FE 40015	GJS 400-15	FE 45012 GJS 450-12	GJS 400-18	FE 50007 GJS 500-7	FE 55006 GJS 550-6	FE 60003 GJS 600-3	FE 70002 GJS 700-2	WRI 100
(mm)	inch	(mm)	inch	Min. (mm)	(mm) ^{2,3}	(kg/m)										
406.4 x 558.8	16.0000 x 22.0000	381.4 x 533.8	15.0157 x 21.0157	12.5	± 2.0	1,635.1	X			X				X	X	
410.0 x 610.0	16.1417 x 24.0157	385.0 x 585.0	15.1575 x 23.0315	12.5	± 2.0	1,800.7	X		X		X	X		X	X	X
431.8 x 558.8	17.0000 x 22.0000	406.8 x 533.8	16.0157 x 21.0157	12.5	± 2.0	1,737.3							X			
469.0 x 559.0	18.4646 x 22.0079	444.0 x 534.0	17.4803 x 21.0236	12.5	± 2.0	1,887.6			X							
469.9 x 558.8	18.5000 x 22.0000	444.9 x 533.8	17.5157 x 21.0157	12.5	± 2.0	1,890.6				X						
470.0 x 585.0	18.5039 x 23.0315	445.0 x 560.0	17.5197 x 22.0472	12.5	± 2.0	1,979.6			X					X		
480.0 x 520.0	18.8976 x 20.4724	455.0 x 495.0	17.9134 x 19.4882	12.5	± 2.0	1,797.1			X	X	X					
530.0 x 570.0	20.8661 x 22.4409	505.0 x 545.0	19.8819 x 21.4567	12.5	± 2.0	2,175.1	X		X					X		

Note: 1) Gross dimension in mm already includes the overmaterial. | 2) Tupy specification. | 3) For rectangular bars, consider "base" as the width, which is the longest dimension of the cross section. | 4) Machining tolerance refers to half the width of the bar. | 5) Final dimension of the part after removing the overmaterial.

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - GRAY CAST IRON

FC 200 / GJL 200 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
710261204	37.1	2,350	Round 37.1 X 2350
710241004	40.3	2,500	Round 40.3 X 2500
710251004	40.3	2,830	Round 40.3 X 2830
710231704	46.6	2,530	Round 46.6 X 2530

FC 250 / GJL 250 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7A0260604	25.0	3,100	Round 25.0 X 3100
7A0270604	25.0	2,100	Round 25.0 X 2100
7A0240504	30.0	3,100	Round 30.0 X 3100
7A0250504	30.0	2,100	Round 30.0 X 2100
7A0251104	35.0	3,100	Round 35.0 X 3100
7A0261104	35.0	2,100	Round 35.0 X 2100
7A0241304	40.0	3,100	Round 40.0 X 3100
7A0261304	40.0	2,100	Round 40.0 X 2100
7A0291804	45.0	3,100	Round 45.0 X 3100
7A0200104	50.0	2,100	Round 50.0 X 2100
7A0251304	50.0	3,100	Round 50.0 X 3100
7A0200204	51.5	3,100	Round 51.5 X 3100
7A0232304	55.0	3,100	Round 55.0 X 3100
7A0252404	60.0	3,100	Round 60.0 X 3100
7A0273104	61.5	3,100	Round 61.5 X 3100
7A0273204	65.0	3,100	Round 65.0 X 3100
7A0243004	70.0	3,100	Round 70.0 X 3100
7A0273304	71.5	3,100	Round 71.5 X 3100
7A0283304	75.0	3,100	Round 75.0 X 3100
7A0223404	76.5	3,100	Round 76.5 X 3100
7A0233404	80.0	3,100	Round 80.0 X 3100
7A0200304	82.0	3,100	Round 82.0 X 3100
7A0251904	85.0	3,100	Round 85.0 X 3100
7A0234504	91.0	3,100	Round 91.0 X 3100
7A0284504	95.0	3,100	Round 95.0 X 3100
7A0224604	100.0	3,100	Round 100.0 X 3100
7A0234604	101.6	3,710	Round 101.6 X 3710
7A0273404	105.0	3,100	Round 105.0 X 3100
7A0213004	107.0	3,100	Round 107.0 X 3100
7A0245204	110.0	3,100	Round 110.0 X 3100
7A0273504	115.0	3,100	Round 115.0 X 3100
7A0232604	120.0	3,100	Round 120.0 X 3100
7A0226104	125.0	3,100	Round 125.0 X 3100
7A0272504	130.0	3,100	Round 130.0 X 3100
7A0226404	135.0	3,100	Round 135.0 X 3100
7A0273604	140.0	3,100	Round 140.0 X 3100

FC 250 / GJL 250 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7A0283604	145.0	3,100	Round 145.0 X 3100
7A0256904	150.0	3,100	Round 150.0 X 3100
7A0273704	155.0	3,100	Round 155.0 X 3100
7A0273804	160.0	3,100	Round 160.0 X 3100
7A0273904	165.0	3,100	Round 165.0 X 3100
7A0254604	170.0	3,100	Round 170.0 X 3100
7A0238104	180.0	3,100	Round 180.0 X 3100
7A0203204	190.0	3,100	Round 190.0 X 3100
7A0283704	200.0	3,100	Round 200.0 X 3100
7A0254104	210.0	3,100	Round 210.0 X 3100
7A0238004	220.0	3,100	Round 220.0 X 3100
7A0229304	230.0	3,100	Round 230.0 X 3100
7A0285204	240.0	3,100	Round 240.0 X 3100
7A0229904	250.0	3,100	Round 250.0 X 3100
7A0274004	260.0	3,100	Round 260.0 X 3100
7A0274104	270.0	3,100	Round 270.0 X 3100
7A0274204	280.0	3,100	Round 280.0 X 3100
7A0274304	290.0	3,100	Round 290.0 X 3100
7A0274404	300.0	3,100	Round 300.0 X 3100
7A0285004	310.0	3,100	Round 310.0 X 3100
7A0274504	320.0	3,100	Round 320.0 X 3100
7A0274604	330.0	3,100	Round 330.0 X 3100
7A0244504	340.0	3,100	Round 340.0 X 3100
7A0274704	350.0	3,100	Round 350.0 X 3100
7A0274804	360.0	3,100	Round 360.0 X 3100
7A0284804	370.0	3,100	Round 370.0 X 3100
7A0254704	380.0	3,100	Round 380.0 X 3100
7A0241404	390.0	3,100	Round 390.0 X 3100
7A0254904	400.0	3,100	Round 400.0 X 3100
7A0203004	410.0	2,100	Round 410.0 X 2100
7A0223004	410.0	3,100	Round 410.0 X 3100
7A0231604	420.0	2,100	Round 420.0 X 2100
7A0251604	420.0	3,100	Round 420.0 X 3100
7A0264804	430.0	3,100	Round 430.0 X 3100
7A0294804	430.0	2,100	Round 430.0 X 2100
7A0239904	440.0	3,100	Round 440.0 X 3100
7A0209904	440.0	2,100	Round 440.0 X 2100
7A0274904	450.0	3,100	Round 450.0 X 3100
7A0284904	450.0	2,100	Round 450.0 X 2100
7A0294904	450.0	1,050	Round 450.0 X 1050
7A0221704	460.0	1,050	Round 46.00 X 1050
7A0231704	460.0	2,100	Round 460.0 X 2100
7A0241704	470.0	2,100	Round 470.0 X 2100
7A0251704	470.0	1,050	Round 470.0 X 1050
7A0275004	480.0	2,100	Round 480.0 X 2100
7A0295004	480.0	1,050	Round 480.0 X 1050

For more information, consult our engineering department.

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - GRAY CAST IRON

FC 250 / G.JL 250 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7A0275104	500.0	2,100	Round 500.0 X 2100
7A0275604	500.0	1,050	Round 500.0 X 1050
7A0265904	510.0	1,050	Round 510.0 X 1050
7A0275904	510.0	2,100	Round 510.0 X 2100
7A0265804	520.0	1,050	Round 520.0 X 1050
7A0275804	520.0	2,100	Round 520.0 X 2100
7A0275204	530.0	2,100	Round 530.0 X 2100
7A0275704	530.0	1,050	Round 530.0 X 1050
7A0225604	550.0	1,050	Round 550.0 X 1050
7A0275304	550.0	2,100	Round 550.0 X 2100
7A0275404	575.0	2,100	Round 575.0 X 2100
7A0285404	575.0	1,050	Round 575.0 X 1050
7A0275504	600.0	2,100	Round 600.0 X 2100
7A0285504	600.0	1,050	Round 600.0 X 1050
7A0209604	630.0	2,100	Round 630.0 X 2100
7A0209704	635.0	2,100	Round 635.0 X 2100

FC 300 / G.JL 300 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
720228604	25.0	3,100	Round 25.0 X 3100
720218604	25.5	1,880	Round 25.5 X 1880
720200304	27.6	1,880	Round 27.6 X 1880
720220304	27.6	2,850	Round 27.6 X 2850
720210304	28.2	1,880	Round 28.2 X 1880
720200404	30.7	1,880	Round 30.7 X 1880
720220504	33.0	3,100	Round 33.0 X 3100
720200504	33.9	1,880	Round 33.9 X 1880
720200604	37.1	1,880	Round 37.1 X 1880
720200704	40.3	1,880	Round 40.3 X 1880
720210704	40.3	3,100	Round 40.3 X 3100
720240704	40.3	470	Round 40.3 X 470
720200804	43.4	1,880	Round 43.4 X 1880
720270804	43.4	2,300	Round 43.4 X 2300
720200904	46.6	1,880	Round 46.6 X 1880
720250904	46.6	470	Round 46.6 X 470
720201004	49.8	1,880	Round 49.8 X 1880
720201104	53.0	1,880	Round 53.0 X 1880
720211104	53.0	470	Round 53.0 X 470
720221104	53.0	1,880	Round 53.0 X 1880
720231104	53.0	3,710	Round 53.0 X 3710
720201204	56.8	1,880	Round 56.8 X 1880
720211204	56.8	3,710	Round 56.8 X 3710
720201304	59.9	1,880	Round 59.9 X 1880
720271304	59.9	156	Round 59.9 X 156
720252404	60.0	3,100	Round 60.0 X 3100
720201404	63.1	1,880	Round 63.1 X 1880

FC 300 / G.JL 300 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
720201504	66.3	1,880	Round 66.3 X 1880
720231504	66.3	2,330	Round 66.3 X 2330
720261504	66.3	2,058	Round 66.3 X 2058
720201604	69.5	1,880	Round 69.5 X 1880
720201704	72.6	1,880	Round 72.6 X 1880
720241704	72.6	1,880	Round 72.6 X 1880
720251704	72.6	470	Round 72.6 X 470
720201804	75.8	1,880	Round 75.8 X 1880
720231804	75.8	2,640	Round 75.8 X 2640
720241804	75.8	235	Round 75.8 X 235
720251804	75.8	1,880	Round 75.8 X 1880
720201904	79.0	1,880	Round 79.0 X 1880
720241904	79.0	156	Round 79.0 X 156
720202004	82.6	1,880	Round 82.6 X 1880
720242004	82.6	1,880	Round 82.6 X 1880
720202104	85.7	1,880	Round 85.7 X 1880
720202204	88.9	1,880	Round 88.9 X 1880
720232204	88.9	1,880	Round 88.9 X 1880
720202304	92.1	1,880	Round 92.1 X 1880
720232304	92.1	1,880	Round 92.1 X 1880
720252304	92.1	470	Round 92.1 X 470
720202404	95.3	1,880	Round 95.3 X 1880
720232404	95.3	1,880	Round 95.3 X 1880
720242404	95.3	470	Round 95.3 X 470
720202504	98.4	1,880	Round 98.4 X 1880
720222504	98.4	1,880	Round 98.4 X 1880
720242504	98.4	470	Round 98.4 X 470
720202604	101.6	1,880	Round 101.6 X 1880
720202704	104.8	1,880	Round 104.8 X 1880
720232704	104.8	1,880	Round 104.8 X 1880
720252704	104.8	470	Round 104.8 X 470
720262704	104.8	3,710	Round 104.8 X 3710
720272704	104.8	2,000	Round 104.8 X 2000
720207204	111.5	1,880	Round 111.5 X 1880
720257204	111.5	3,710	Round 111.5 X 3710
720202804	113.6	1,880	Round 113.6 X 1880
720202904	117.9	1,880	Round 117.9 X 1880
720212904	117.9	940	Round 117.9 X 940
720203004	124.2	1,880	Round 124.2 X 1880
720203104	130.6	1,880	Round 130.6 X 1880
720203204	137.3	1,880	Round 137.3 X 1880
720203304	143.6	1,880	Round 143.6 X 1880
720203404	150.0	1,880	Round 150.0 X 1880
720203504	156.3	1,880	Round 156.3 X 1880
720273504	156.3	3,710	Round 156.3 X 3710
720273604	160.0	470	Round 160.0 X 470

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - GRAY CAST IRON

FC 300 / GJL 300 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
720283604	163.0	3,710	Round 163.0 X 3710
720203604	163.1	1,880	Round 163.1 X 1880
720209404	166.0	235	Round 166.0 X 235
720203704	169.4	1,880	Round 169.4 X 1880
720203804	175.8	1,880	Round 175.8 X 1880
720243804	175.8	235	Round 175.8 X 235
720203904	182.1	1,880	Round 182.1 X 1880
720204004	189.0	1,880	Round 189.0 X 1880
720204104	195.3	1,880	Round 195.3 X 1880
720254104	195.3	3,710	Round 195.3 X 3710
720209504	197.8	1,930	Round 197.8 X 1930
720244104	197.8	1,880	Round 197.8 X 1880
720204204	201.7	1,880	Round 201.7 X 1880
720204304	208.0	1,880	Round 208.0 X 1880
720214304	208.0	940	Round 208.0 X 940
720224304	208.0	470	Round 208.0 X 470
720204504	221.4	1,880	Round 221.4 X 1880
720204604	227.7	1,880	Round 227.7 X 1880
720254604	227.7	235	Round 227.7 X 235
720204704	234.1	1,880	Round 234.1 X 1880
720244704	234.1	235	Round 234.1 X 235
720264704	234.1	1,956	Round 234.1 X 1956
720274704	234.1	1,930	Round 234.1 X 1930
720284704	234.1	470	Round 234.1 X 470
720254704	236.1	2,000	Round 236.1 X 2000
720204804	241.4	1,880	Round 241.4 X 1880
720204904	247.8	1,880	Round 247.8 X 1880
720205004	254.1	1,880	Round 254.1 X 1880
720205104	260.5	1,880	Round 260.5 X 1880
720215104	260.5	940	Round 260.5 X 940
720225104	260.5	470	Round 260.5 X 470
720205204	270.5	1,880	Round 270.5 X 1880
720225204	270.5	470	Round 270.5 X 470
720205304	276.9	1,880	Round 276.9 X 1880
720215304	276.9	940	Round 276.9 X 940
720225304	276.9	470	Round 276.9 X 470
720205404	289.6	1,880	Round 289.6 X 1880
720215404	289.6	940	Round 289.6 X 940
720225404	289.6	470	Round 289.6 X 470
720205504	306.9	1,880	Round 306.9 X 1880
720215504	306.9	940	Round 306.9 X 940
720225504	306.9	470	Round 306.9 X 470
720205604	319.6	1,880	Round 319.6 X 1880
720215604	319.6	940	Round 319.6 X 940
720225604	319.6	470	Round 319.6 X 470
720205704	332.3	1,880	Round 332.3 X 1880
720225604	319.6	470	Round 319.6 X 470
720225704	332.3	470	Round 332.3 X 470
720205804	345.0	1,880	Round 345.0 X 1880

FC 300 / GJL 300 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
720215804	345.0	940	Round 345.0 X 940
720225804	345.0	470	Round 345.0 X 470
720205904	370.4	1,880	Round 370.4 X 1880
720215904	370.4	940	Round 370.4 X 940
720225904	370.4	470	Round 370.4 X 470
720235904	370.4	700	Round 370.4 X 700
720245904	370.4	695	Round 370.4 X 695
720255904	370.4	705	Round 370.4 X 705
720206004	395.8	1,880	Round 395.8 X 1880
720226004	395.8	470	Round 395.8 X 470
720206104	421.2	1,880	Round 421.2 X 1880
720216104	421.2	940	Round 421.2 X 940
720226104	421.2	470	Round 421.2 X 470
720206204	451.2	1,880	Round 451.2 X 1880
720216204	451.2	940	Round 451.2 X 940
720226204	451.2	470	Round 451.2 X 470
720206504	476.6	1,880	Round 476.6 X 1880
720216504	476.6	940	Round 476.6 X 940
720208404	527.3	1,420	Round 527.3 X 1420
720218404	527.3	470	Round 527.3 X 470
720228404	527.3	1,050	Round 527.3 X 1050
720248404	527.3	940	Round 527.3 X 940
720258404	527.3	1,880	Round 527.3 X 1880
720209604	630.0	980	Round 630.0 X 980
720209704	635.0	980	Round 635.0 X 980

GMI LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
750202404	37.1	1,880	Round 37.1 X 1880
750201004	42.0	2,000	Round 42.0 X 2000
750202604	43.4	1,880	Round 43.4 X 1880
750201904	53.0	1,880	Round 53.0 X 1880
750201504	56.8	1,880	Round 56.8 X 1880
750202004	59.9	1,880	Round 59.9 X 1880
750201804	63.1	1,880	Round 63.1 X 1880
750200204	66.3	1,880	Round 66.3 X 1880
750201304	69.5	1,880	Round 69.5 X 1880
750200604	72.6	1,880	Round 72.6 X 1880
750202504	75.8	1,880	Round 75.8 X 1880
750200504	79.0	1,880	Round 79.0 X 1880
750201404	85.7	1,880	Round 85.7 X 1880
750202304	92.1	1,880	Round 92.1 X 1880
750201604	95.3	1,880	Round 95.3 X 1880
750201704	101.6	1,880	Round 101.6 X 1880
750200304	104.8	1,880	Round 104.8 X 1880
750200704	111.5	1,880	Round 111.5 X 1880
750200804	130.6	1,880	Round 130.6 X 1880
750200404	150.0	1,880	Round 150.0 X 1880

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 40015 - ROUND CONTINUOUS CAST BARS				GJS 400-7 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description	Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7B0200304	27.6	1,880	Round 27.6 X 1880	7B0240404	30.0	3,100	Round 30.0 X 3100
7B0200404	30.7	1,880	Round 30.7 X 1880	7B0210704	35.0	3,100	Round 35.0 X 3100
7B0200504	33.9	1,880	Round 33.9 X 1880	7B0270704	40.0	3,100	Round 40.0 X 3100
7B0230604	37.1	1,880	Round 37.1 X 1880	7B0250804	45.0	3,100	Round 45.0 X 3100
7B0260704	40.3	1,880	Round 40.3 X 1880	7B0261004	50.0	3,100	Round 50.0 X 3100
7B0200804	43.4	1,880	Round 43.4 X 1880	7B0261104	55.0	3,100	Round 55.0 X 3100
7B0200904	46.6	1,880	Round 46.6 X 1880	7B0221304	60.0	3,100	Round 60.0 X 3100
7B0251104	53.0	1,880	Round 53.0 X 1880	7B0251404	65.0	3,100	Round 65.0 X 3100
7B0201204	56.8	1,880	Round 56.8 X 1880	7B0241604	70.0	3,100	Round 70.0 X 3100
7B0201304	59.9	1,880	Round 59.9 X 1880	7B0211804	75.0	3,100	Round 75.0 X 3100
7B0231404	63.1	1,880	Round 63.1 X 1880	7B0241904	80.0	3,100	Round 80.0 X 3100
7B0251504	66.3	1,880	Round 66.3 X 1880	7B0222104	85.0	3,100	Round 85.0 X 3100
7B0201704	72.6	1,880	Round 72.6 X 1880	7B0252304	90.0	3,100	Round 90.0 X 3100
7B0201904	79.0	1,880	Round 79.0 X 1880	7B0242404	95.0	3,100	Round 95.0 X 3100
7B0202004	82.6	1,880	Round 82.6 X 1880	7B0222604	100.0	3,100	Round 100.0 X 3100
7B0202104	85.7	1,880	Round 85.7 X 1880	7B0232604	105.0	3,100	Round 105.0 X 3100
7B0202204	88.9	1,880	Round 88.9 X 1880	7B0246504	110.0	3,100	Round 110.0 X 3100
7B0202304	92.1	1,880	Round 92.1 X 1880	7B0242804	115.0	3,100	Round 115.0 X 3100
7B0202504	98.4	1,880	Round 98.4 X 1880	7B0216804	120.0	3,100	Round 120.0 X 3100
7B0202604	101.6	1,880	Round 101.6 X 1880	7B0226804	120.0	3,120	Round 120.0 X 3120
7B0252704	104.8	1,880	Round 104.8 X 1880	7B0263004	125.0	3,100	Round 125.0 X 3100
7B0292804	110.0	80	Round 110.0 X 80	7B0253104	130.0	3,100	Round 130.0 X 3100
7B0207904	111.5	1,880	Round 111.5 X 1880	7B0263104	130.0	3,120	Round 130.0 X 3120
7B0202904	117.9	1,880	Round 117.9 X 1880	7B0253204	135.0	3,100	Round 135.0 X 3100
7B0243004	124.2	1,880	Round 124.2 X 1880	7B0243304	140.0	3,100	Round 140.0 X 3100
7B0213004	128.0	2,080	Round 128.0 X 2080	7B0253304	145.0	3,100	Round 145.0 X 3100
7B0213104	130.6	1,270	Round 130.6 X 1270	7B0253404	150.0	3,100	Round 150.0 X 3100
7B0223104	130.6	1,194	Round 130.6 X 1194	7B0293304	155.0	3,100	Round 155.0 X 3100
7B0203204	137.3	1,880	Round 137.3 X 1880	7B0263504	160.0	3,100	Round 160.0 X 3100
7B0233304	140.0	2,450	Round 140.0 X 2450	7B0223704	170.0	3,100	Round 170.0 X 3100
7B0203304	143.6	1,880	Round 143.6 X 1880	7B0243804	180.0	3,100	Round 180.0 X 3100
7B0203404	150.0	1,880	Round 150.0 X 1880	7B0244004	190.0	3,100	Round 190.0 X 3100
7B0203504	156.3	1,880	Round 156.3 X 1880	7B0214204	200.0	3,100	Round 200.0 X 3100
7B0253604	163.1	1,880	Round 163.1 X 1880	7B0244304	210.0	3,100	Round 210.0 X 3100
7B0203704	169.4	1,880	Round 169.4 X 1880	7B0244504	220.0	3,100	Round 220.0 X 3100
7B0203904	182.1	1,880	Round 182.1 X 1880	7B0270804	230.0	3,100	Round 230.0 X 3100
7B0204004	189.0	1,880	Round 189.0 X 1880	7B0234804	240.0	3,100	Round 240.0 X 3100
7B0204104	195.3	1,880	Round 195.3 X 1880	7B0204804	241.4	1,880	Round 241.4 X 1880
7B0204204	201.7	1,880	Round 201.7 X 1880	7B0254904	250.0	3,100	Round 250.0 X 3100
7B0204304	208.0	1,880	Round 208.0 X 1880	7B0255104	260.0	3,100	Round 260.0 X 3100
7B0204504	221.4	1,880	Round 221.4 X 1880	7B0245204	270.0	3,100	Round 270.0 X 3100
7B0204704	234.1	1,880	Round 234.1 X 1880	7B0245304	280.0	3,100	Round 280.0 X 3100
7B0204904	247.8	1,880	Round 247.8 X 1880	7B0265404	290.0	3,100	Round 290.0 X 3100
7B0205004	254.1	1,880	Round 254.1 X 1880	7B0207604	300.0	2,000	Round 300.0 X 2000
7B0205304	276.9	1,880	Round 276.9 X 1880	7B0217604	300.0	1,100	Round 300.0 X 1100
7B0205404	289.6	1,880	Round 289.6 X 1880	7B0227604	300.0	3,100	Round 300.0 X 3100
7B0205604	319.6	1,880	Round 319.6 X 1880	7B0208904	310.0	3,100	Round 310.0 X 3100
7B0205704	332.2	1,880	Round 332.2 X 1880	7B0245604	320.0	3,100	Round 320.0 X 3100
7B0225904	370.4	1,880	Round 370.4 X 1880	7B0209004	330.0	3,100	Round 330.0 X 3100
7B0203104	421.2	1,880	Round 421.2 X 1880	7B0209104	340.0	3,100	Round 340.0 X 3100
7B0206904	476.6	1,880	Round 476.6 X 1880	7B0235804	350.0	3,100	Round 350.0 X 3100
				7B0208604	360.0	3,100	Round 360.0 X 3100

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

GJS 400-7 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7B0245904	370.0	3,100	Round 370.0 X 3100
7B0271004	380.0	3,100	Round 380.0 X 3100
7B0211404	390.0	2,000	Round 390.0 X 2000
7B0221404	390.0	1,100	Round 390.0 X 1100
7B0241404	390.0	3,100	Round 390.0 X 3100
7B0246004	400.0	3,100	Round 400.0 X 3100
7B0226104	410.0	3,100	Round 410.0 X 3100
7B0236104	420.0	3,100	Round 420.0 X 3100
7B0236404	430.0	2,100	Round 430.0 X 2100
7B0246104	430.0	3,100	Round 430.0 X 3100
7B0236504	440.0	2,100	Round 440.0 X 2100
7B0236204	450.0	2,100	Round 450.0 X 2100
7B0236604	460.0	2,100	Round 460.0 X 2100
7B0216904	470.0	2,100	Round 470.0 X 2100
7B0236904	480.0	2,100	Round 480.0 X 2100
7B0216704	500.0	2,100	Round 500.0 X 2100
7B0226704	500.0	1,050	Round 500.0 X 1050
7B0208504	525.0	2,100	Round 525.0 X 2100
7B0218504	525.0	1,050	Round 525.0 X 1050
7B0238404	530.0	2,100	Round 530.0 X 2100
7B0248404	530.0	1,050	Round 530.0 X 1050
7B0226304	550.0	2,100	Round 550.0 X 2100
7B0236304	550.0	1,050	Round 550.0 X 1050
7B0208704	575.0	2,100	Round 575.0 X 2100
7B0208804	600.0	2,100	Round 600.0 X 2100
7B0218804	600.0	1,050	Round 600.0 X 1050
7B0209604	635.0	2,100	Round 635.0 X 2100

GJS 400-15 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7G0240404	30.0	2,300	Round 30.0X 2300
7G0210704	35.0	2,300	Round 35.0 X 2300
7G0200904	46.6	1,880	Round 46.6 X 1880
7G0201404	63.1	1,880	Round 63.1 X 1880
7G0207404	65.0	2,300	Round 65.0 X 2300
7G0241604	70.0	2,000	Round 70.0 X 2000
7G0202304	92.1	1,880	Round 92.1 X 1880
7G0292304	92.1	73	Round 92.1 X 73
7G0222604	100.0	2,050	Round 100.0 X 2050
7G0232604	100.0	2,050	Round 100.0 X 2050
7G0202604	101.6	1,880	Round 101.6 X 1880
7G0292604	101.6	82	Round 101.6 X 82
7G0262704	104.8	1,880	Round 104.8 X 1880
7G0246504	110.0	2,300	Round 110.0 X 2300
7G0207904	111.5	1,880	Round 111.5 X 1880
7G0292804	111.5	85	Round 111.5 X 85
7G0212904	117.9	1,880	Round 117.9 X 1880
7G0204004	120.0	3,100	Round 120.0 X 3100
7G0263004	125.0	3,100	Round 125.0 X 3100
7G0253104	130.0	3,100	Round 130.0 X 3100
7G0203104	130.6	1,880	Round 130.6 X 1880
7G0253204	135.0	3,100	Round 135.0 X 3100
7G0203204	137.3	1,880	Round 137.3 X 1880
7G0293204	137.3	101	Round 137.3 X 101
7G0243304	140.0	3,100	Round 140.0 X 3100
7G0213304	143.6	1,880	Round 143.6 X 1880
7G0253304	145.0	3,100	Round 145.0 X 3100
7G0213404	150.0	1,880	Round 150.0 X 1880
7G0223404	150.0	2,000	Round 150.0 X 2000
7G0253404	150.0	3,100	Round 150.0 X 3100
7G0253504	160.0	3,100	Round 160.0 X 3100
7G0263504	160.0	2,000	Round 160.0 X 2000
7G0273504	163.1	1,880	Round 163.1 X 1880
7G0223704	170.0	3,100	Round 170.0 X 3100
7G0203804	175.8	1,880	Round 175.8 X 1880
7G0204304	180.0	3,100	Round 180.0 X 3100
7G0203904	182.1	1,880	Round 182.1 X 1880
7G0244004	190.0	3,100	Round 190.0X 3100
7G0204104	195.3	1,880	Round 195.3 X 1880
7G0214204	200.0	2,000	Round 200.0 X 2000
7G0224204	200.0	3,100	Round 200.0 X 3100
7G0204204	201.7	1,880	Round 201.7 X 1880
7G0244304	210.0	3,100	Round 210.0 X 3100
7G0204404	215.0	1,880	Round 215.0 X 1880
7G0244504	220.0	3,100	Round 220.0 X 3100
7G0203504	230.0	3,100	Round 230.0 X 3100
7G0270804	230.0	2,000	Round 230.0 X 2000
7G0204704	234.1	1,880	Round 234.1 X 1880
7G0234804	240.0	3,100	Round 240.0 X 3100
7G0254904	250.0	2,000	Round 250.0 X 2000
7G0264904	250.0	3,100	Round 250.0 X 3100
7G0235104	260.0	3,100	Round 260.0 X 3100
7G0255104	260.0	2,000	Round 260.0 X 2000

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

GJS 400-15 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7G0245204	270.0	3,100	Round 270.0 X 3100
7G0205204	270.5	1,880	Round 270.5 X 1880
7G0235304	280.0	3,100	Round 280.0 X 3100
7G0245304	280.0	2,000	Round 280.0 X 2000
7G0215404	289.6	1,880	Round 289.6 X 1880
7G0265404	290.0	2,000	Round 290.0 X 2000
7G0275404	290.0	3,100	Round 290.0 X 3100
7G0227604	300.0	3,100	Round 300.0 X 3100
7G0208904	310.0	2,000	Round 310.0 X 2000
7G0218904	310.0	3,150	Round 310.0 X 3150
7G0205604	319.6	1,880	Round 319.6 X 1880
7G0245604	320.0	3,100	Round 320.0 X 3100
7G0203604	330.0	3,100	Round 330.0 X 3100
7G0205704	332.3	1,880	Round 332.3 X 1880
7G0209104	340.0	3,100	Round 340.0 X 3100
7G0205804	345.0	1,880	Round 345.0 X 1880
7G0235804	350.0	3,100	Round 350.0 X 3100
7G0208604	360.0	3,100	Round 360.0 X 3100
7G0245904	370.0	3,100	Round 370.0 X 3100
7G0271004	380.0	3,100	Round 380.0 X 3100
7G0241404	390.0	3,150	Round 390.0 X 3150
7G0206004	395.8	1,880	Round 395.8 X 1880
7G0246004	400.0	3,150	Round 400.0 X 3150
7G0256104	410.0	2,100	Round 410.0 X 2100
7G0236104	420.0	2,100	Round 420.0 X 2100
7G0203704	430.0	3,100	Round 430.0 X 3100
7G0236404	430.0	2,100	Round 430.0 X 2100
7G0236204	450.0	2,100	Round 450.0 X 2100
7G0236604	460.0	2,100	Round 460.0 X 2100
7G0236904	480.0	2,100	Round 480.0 X 2100
7G0216704	500.0	2,100	Round 500.0 X 2100
7G0275904	510.0	2,100	Round 510.0 X 2100
7G0208504	525.0	2,100	Round 525.0 X 2100
7G0226304	550.0	2,100	Round 550.0 X 2100
7G0208704	575.0	2,100	Round 575.0 X 2100
7G0208804	600.0	2,100	Round 600.0 X 2100

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730200304	27.6	1,880	Round 27.6 X 1880
730210304	28.2	1,880	Round 28.2 X 1880
730200404	30.7	1,880	Round 30.7 X 1880
730200504	33.9	1,880	Round 33.9 X 1880
730200604	37.1	1,880	Round 37.1 X 1880
730200704	40.3	1,880	Round 40.3 X 1880
730240704	40.3	3,710	Round 40.3 X 3710
730200804	43.4	1,880	Round 43.4 X 1880
730260804	43.4	2,300	Round 43.4 X 2300
730200904	46.6	1,880	Round 46.6 X 1880
730230904	46.6	3,710	Round 46.6 X 3710
730201004	49.8	1,880	Round 49.8 X 1880
730201104	53.0	1,880	Round 53.0 X 1880

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730231104	53.0	3,710	Round 53.0 X 3710
730291104	53.0	2,058	Round 53.0 X 2058
730209304	53.5	1,880	Round 53.5 X 1880
730201204	56.8	1,880	Round 56.8 X 1880
730211204	56.8	3,820	Round 56.8 X 3820
730201304	59.9	1,880	Round 59.9 X 1880
730231304	59.9	3,710	Round 59.9 X 3710
730201404	63.1	1,880	Round 63.1 X 1880
730241404	63.1	3,710	Round 63.1 X 3710
730201504	66.3	1,880	Round 66.3 X 1880
730231504	66.3	3,710	Round 66.3 X 3710
730241504	66.3	3,820	Round 66.3 X 3820
730291504	66.3	2,058	Round 66.3 X 2058
730201604	69.5	1,880	Round 69.5 X 1880
730201704	72.6	1,880	Round 72.6 X 1880
730261704	72.6	3,710	Round 72.6 X 3710
730281704	72.6	3,820	Round 72.6 X 3820
730291704	72.6	2,058	Round 72.6 X 2058
730201804	75.8	1,880	Round 75.8 X 1880
730221804	75.8	12	Round 75.8 X 12
730231804	75.8	3,710	Round 75.8 X 3710
730241804	75.8	3,820	Round 75.8 X 3820
730201904	79.0	1,880	Round 79.0 X 1880
730231904	79.0	3,710	Round 79.0 X 3710
730261904	79.0	3,820	Round 79.0 X 3820
730291904	79.0	2,058	Round 79.0 X 2058
730202004	82.6	1,880	Round 82.6 X 1880
730242104	82.6	3,820	Round 82.6 X 3820
730202104	85.7	1,880	Round 85.7 X 1880
730232104	85.7	3,710	Round 85.7 X 3710
730252104	85.7	2,060	Round 85.7 X 2060
730202204	88.9	1,880	Round 88.9 X 1880
730242204	88.9	3,710	Round 88.9 X 3710
730262204	88.9	3,820	Round 88.9 X 3820
730272204	88.9	2,058	Round 88.9 X 2058
730202304	92.1	1,880	Round 92.1 X 1880
730242304	92.1	3,710	Round 92.1 X 3710
730262304	92.1	3,820	Round 92.1 X 3820
730292404	95.2	2,058	Round 95.2 X 2058
730202404	95.3	1,880	Round 95.3 X 1880
730202504	98.4	1,880	Round 98.4 X 1880
730232504	98.4	3,710	Round 98.4 X 3710
730242504	98.4	3,820	Round 98.4 X 3820
730252504	98.4	2,160	Round 98.4 X 2160
730292504	98.4	2,058	Round 98.4 X 2058
730202604	101.6	1,880	Round 101.6 X 1880
730212604	101.6	3,710	Round 101.6 X 3710
730212604	101.6	3,710	Round 101.6 X 3710
730202704	104.8	1,880	Round 104.8 X 1880
730219704	104.8	3,820	Round 104.8 X 3820
730242704	104.8	3,710	Round 104.8 X 3710
730272704	104.8	2,185	Round 104.8 X 2185
730289704	104.8	2,058	Round 104.8 X 2058
730257504	108.3	2,058	Round 108.3 X 2058

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730207904	111.5	1,880	Round 111.5 X 1880
730217904	111.5	3,710	Round 111.5 X 3710
730227904	111.5	3,820	Round 111.5 X 3820
730247904	111.5	2,210	Round 111.5 X 2210
730257904	111.5	2,060	Round 111.5 X 2060
730202804	113.6	1,880	Round 113.6 X 1880
730202904	117.9	1,880	Round 117.9 X 1880
730232904	117.9	3,710	Round 117.9 X 3710
730242904	117.9	414	Round 117.9 X 414.34
730252904	117.9	2,160	Round 117.9 X 2160
730217804	121.0	1,880	Round 121.0 X 1880
730203004	124.2	1,880	Round 124.2 X 1880
730233004	124.2	2,000	Round 124.2 X 2000
730253004	124.2	3,710	Round 124.2 X 3710
730273004	124.2	3,820	Round 124.2 X 3820
730283004	124.2	2,060	Round 124.2 X 2060
730203104	130.6	1,880	Round 130.6 X 1880
730213104	130.6	940	Round 130.6 X 940
730223104	130.6	470	Round 130.6 X 470
730223204	130.6	2,430	Round 130.6 X 2430
730233104	130.6	3,710	Round 130.6 X 3710
730243104	130.6	2,185	Round 130.6 X 2185
730263104	130.6	2,505	Round 130.6 X 2505
730273104	130.6	2,505	Round 130.6 X 2505
730283104	130.6	2,422	Round 130.6 X 2422
730293104	130.6	3,820	Round 130.6 X 3820
730203204	137.3	1,880	Round 137.3 X 1880
730233204	137.3	3,710	Round 137.3 X 3710
730243204	137.3	3,820	Round 137.3 X 3820
730263204	137.3	2,160	Round 137.3 X 2160
730246404	140.0	2,000	Round 140.0 X 2000
730256404	140.0	4,200	Round 140 X 4200
730203304	143.6	1,880	Round 143.6 X 1880
730233304	143.6	3,710	Round 143.6 X 3710
730263304	143.6	2,160	Round 143.6 X 2160
730203404	150.0	1,880	Round 150.0 X 1880
730203504	156.3	1,880	Round 156.3 X 1880
730213504	156.3	3,710	Round 156.3 X 3710
730223504	156.3	470	Round 156.3 X 470
730273504	156.3	3,820	Round 156.3 X 3820
730243604	163.0	3,710	Round 163.1 X 3710
730203604	163.1	1,880	Round 163.1 X 1880
730263604	163.1	2,150	Round 163.1 X 2150
730203704	169.4	1,880	Round 169.4 X 1880
730213704	169.4	3,710	Round 169.4 X 3710
730203804	175.8	1,880	Round 175.8 X 1880
730233804	175.8	3,710	Round 175.8 X 3710
730253804	175.8	3,820	Round 175.8 X 3820
730203904	182.1	1,880	Round 182.1 X 1880
730263904	182.1	3,710	Round 182.1 X 3710
730263904	182.1	3,410	Round 182.1 X 3710
730208704	182.8	3,410	Round 182.8 X 3410
730204004	189.0	1,880	Round 189.0 X 1880
730214004	189.0	3,710	Round 189.0 X 3710
730234004	189.0	2,160	Round 189.0 X 2160

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730254004	189.0	3,820	Round 189.0 X 3820
730204104	195.3	1,880	Round 195.3 X 1880
730214104	195.3	940	Round 195.3 X 940
730234104	195.3	3,710	Round 195.3 X 3710
730209404	198.5	1,880	Round 198.5 X 1880
730209504	200.0	1,880	Round 200.0 X 1880
730204204	201.7	1,880	Round 201.7 X 1880
730204304	208.0	1,880	Round 208.0 X 1880
730214304	208.0	940	Round 208.0 X 940
730224304	208.0	470	Round 208.0 X 470
730254304	208.0	3,710	Round 208.0 X 3710
730204404	215.0	1,880	Round 215.0 X 1880
730224404	215.0	470	Round 215.0 X 470
730254404	215.0	3,710	Round 215.0 X 3710
730264404	215.0	3,820	Round 215.0 X 3820
730204504	221.4	1,880	Round 221.4 X 1880
730214504	221.4	3,710	Round 221.4 X 3710
730204604	227.7	1,880	Round 227.7 X 1880
730234604	227.7	3,710	Round 227.7 X 3710
730244604	227.7	3,820	Round 227.7 X 3820
730204704	234.1	1,880	Round 234.1 X 1880
730224704	234.1	470	Round 234.1 X 470
730234704	234.1	3,710	Round 234.1 X 3710
730204804	241.4	1,880	Round 241.4 X 1880
730204904	247.8	1,880	Round 247.8 X 1880
730224904	247.8	470	Round 247.8 X 470
730274904	247.8	3,710	Round 247.8 X 3710
730205004	254.1	1,880	Round 254.1 X 1880
730215004	254.1	940	Round 254.1 X 940
730225004	254.1	470	Round 254.1 X 470
730205104	260.5	1,880	Round 260.5 X 1880
730215104	260.5	940	Round 260.5 X 940
730225104	260.5	470	Round 260.5 X 470
730245104	260.5	2,260	Round 260.5 X 2260
730275104	260.5	3,710	Round 260.5 X 3710
730285104	260.5	3,820	Round 260.5 X 3820
730205204	270.5	1,880	Round 270.5 X 1880
730225204	270.5	470	Round 270.5 X 470
730205304	276.9	1,880	Round 276.9 X 1880
730225304	276.9	470	Round 276.9 X 470
730205404	289.6	1,880	Round 289.6 X 1880
730225404	289.6	470	Round 289.6 X 470
730235404	289.6	3,710	Round 289.6 X 3710
730205504	306.9	1,880	Round 306.9 X 1880
730215504	306.9	940	Round 306.9 X 940
730225504	306.9	470	Round 306.9 X 470
730205604	319.6	1,880	Round 319.6 X 1880
730215604	319.6	940	Round 319.6 X 940
730225604	319.6	470	Round 319.6 X 470
730245604	319.6	3,710	Round 319.6 X 3710
730205704	332.3	1,880	Round 332.3 X 1880
730215704	332.3	940	Round 332.3 X 940
730225704	332.3	470	Round 332.3 X 470
730205804	345.0	1,880	Round 345.0 X 1880
730215804	345.0	940	Round 345.0 X 940

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730225804	345.0	470	Round 345.0 X 470
730206404	360.0	3,100	Round 360.0 X 3100
730205904	370.4	1,880	Round 370.4 X 1880
730215904	370.4	940	Round 370.4 X 940
730235904	370.4	470	Round 370.4 X 470
730255904	370.4	2,083	Round 370.4 X 2083
730206004	395.8	1,880	Round 395.8 X 1880
730216004	395.8	940	Round 395.8 X 940
730226004	395.8	470	Round 395.8 X 470
730206104	421.2	1,880	Round 421.2 X 1880
730216104	421.2	940	Round 421.2 X 940
730226104	421.2	470	Round 421.2 X 470
730236104	421.2	3,100	Round 421.2 X 3100
730256104	421.2	1,727	Round 421.2 X 1727
730206204	451.2	1,880	Round 451.2 X 1880
730216204	451.2	940	Round 451.2 X 940
730226204	451.2	470	Round 451.2 X 470
730206904	476.6	1,880	Round 476.6 X 1880
730216904	476.6	940	Round 476.6 X 940
730226904	476.6	470	Round 476.6 X 470
730206704	498.8	1,880	Round 498.8 X 1880
730208404	527.3	1,420	Round 527.3 X 1420
730218404	527.3	470	Round 527.3 X 470
730228404	527.3	940	Round 527.3 X 940
730248404	527.3	710	Round 527.3 X 710
730258404	527.3	1,880	Round 527.3 X 1880
730206304	552.7	1,372	Round 552.7 X 1372
730216304	552.7	940	Round 552.7 X 940
730246304	552.7	1,420	Round 552.7 X 1420
730208504	570.1	1,880	Round 570.1 X 1880
730228704	575.0	1,880	Round 575.0 X 1880
730238704	575.0	940	Round 575.0 X 940
730208604	578.1	1,880	Round 578.1 X 1880
730209604	630.0	980	Round 630.0 X 980
730209704	635.0	980	Round 635.0 X 980

LINE GJS 400-18 / 60 - 40 - 18 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7H0250804	46.6	1,880	Round 46.6 X 1880
7H0202704	104.8	1,880	Round 104.8 X 1880
7H0243304	140.0	2,000	Round 140.0 X 2000
7H0203704	169.4	1,880	Round 169.4 X 1880
7H0223704	170.0	2,000	Round 170.0 X 2000
7H0265404	289.6	1,880	Round 289.6 X 1880
7H0235804	350.0	2,000	Round 350.0 X 2000
7H0236504	440.0	2,100	Round 440.0 X 2100
7H0209604	630.0	2,100	Round 630.0 X 2100
7H0209704	635.0	2,100	Round 635.0 X 2100

LINE FE 50007 / GJS 500-7 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7C0240404	30.0	3,100	Round 30.0 X 3100
7C0270704	40.0	3,100	Round 40.0 X 3100
7C0231104	50.0	3,100	Round 50.0 X 3100
7C0221104	55.0	3,100	Round 55.0 X 3100
7C0221304	60.0	3,100	Round 60.0 X 3100
7C0207404	65.0	3,100	Round 65.0 X 3100
7C0241604	70.0	3,100	Round 70.0 X 3100
7C0241904	80.0	3,100	Round 80.0 X 3100
7C0202404	85.0	3,100	Round 85.0 X 3100
7C0232304	90.0	3,100	Round 90.0 X 3100
7C0242404	95.0	3,100	Round 95.0 X 3100
7C0222604	100.0	3,100	Round 100.0 X 3100
7C0202604	101.6	1,880	Round 101.6 X 1880
7C0292604	101.6	82	Round 101.6 X 82
7C0292704	104.8	82	Round 104.8 X 82
7C0232604	105.0	3,100	Round 105.0 X 3100
7C0242304	110.0	3,100	Round 110.0 X 3100
7C0242804	115.0	3,100	Round 115.0 X 3100
7C0204004	120.0	3,100	Round 120.0 X 3100
7C0283104	130.0	3,100	Round 130.0 X 3100
7C0213404	150.0	3,100	Round 150.0 X 3100
7C0293104	160.0	3,100	Round 160.0 X 3100
7C0213704	170.0	3,100	Round 170.0 X 3100
7C0255404	175.0	5,100	Round 175.0 X 5100
7C0207304	180.0	3,100	Round 180.0 X 3100
7C0283404	190.0	3,100	Round 190.0 X 3100
7C0293404	190.0	5,100	Round 190.0 X 5100
7C0204104	195.0	3,100	Round 195.0 X 3100
7C0285404	200.0	3,100	Round 200.0 X 3100
7C0295404	200.0	5,100	Round 200.0 X 5100
7C0265404	205.0	5,100	Round 205.0 X 5100
7C0224404	210.0	3,100	Round 210.0 X 3100
7C0224504	220.0	3,100	Round 220.0 X 3100
7C0234404	220.0	5,100	Round 220.0 X 5100
7C0224904	230.0	3,100	Round 230.0 X 3100
7C0214804	240.0	3,100	Round 240.0 x 3100
7C0280404	250.0	3,100	Round 250.0 X 3100
7C0225104	260.0	3,100	Round 260.0 X 3100
7C0225204	270.0	3,100	Round 270.0 X 3100
7C0270104	280.0	3,100	Round 280.0 X 3100
7C0275404	290.0	3,100	Round 290.0 X 3100
7C0216404	300.0	3,100	Round 300.0 X 3100
7C0208004	310.0	3,100	Round 310.0 X 3100
7C0255604	320.0	3,100	Round 320.0 X 3100
7C0208104	330.0	3,100	Round 330.0 X 3100
7C0208204	340.0	3,100	Round 340.0 X 3100
7C0270204	350.0	3,100	Round 350.0 X 3100

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 50007 / GJS 500-7 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7C0218404	360.0	3,100	Round 360.0 X 3100
7C0225904	370.0	3,100	Round 370.0 X 3100
7C0271004	380.0	3,100	Round 380.0 X 3100
7C0218204	390.0	3,100	Round 390.0 X 3100
7C0208604	400.0	3,100	Round 400.0 X 3100
7C0226104	410.0	3,100	Round 410.0 X 3100
7C0236104	420.0	2,100	Round 420.0 X 2100
7C0246104	420.0	3,100	Round 420.0 X 3100
7C0246404	430.0	3,100	Round 430.0 X 3100
7C0236504	440.0	2,100	Round 440.0 X 2100
7C0236204	450.0	2,100	Round 450.0 X 2100
7C0246204	450.0	3,100	Round 450.0 X 3100
7C0256204	450.0	1,830	Round 450.0 X 1830
7C0236604	460.0	2,100	Round 460.0 X 2100
7C0236304	470.0	2,100	Round 470.0 X 2100
7C0226304	480.0	2,100	Round 480.0 X 2100
7C0216904	500.0	2,100	Round 500.0 X 2100
7C0275904	510.0	2,100	Round 510.0 X 2100
7C0208504	525.0	2,100	Round 525.0 X 2100
7C0218504	525.0	1,050	Round 525.0 X 1050
7C0207604	550.0	2,100	Round 550.0 X 2100
7C0227604	550.0	1,050	Round 550.0 X 1050
7C0207804	575.0	2,100	Round 575.0 X 2100
7C0207904	600.0	2,100	Round 600.0 X 2100
7C0217904	600.0	1,050	Round 600.0 X 1050
7C0209604	630.0	2,100	Round 630.0 X 2100
7D0209604	630.0	2,100	Round 630.0 X 2100

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
740200304	27.6	1,880	Round 27.6 X 1880
740200504	33.9	1,880	Round 33.9 X 1880
740200604	37.1	1,880	Round 37.1 X 1880
740200704	40.3	1,880	Round 40.3 X 1880
740200804	43.4	1,880	Round 43.4 X 1880
740210804	43.4	1,270	Round 43.4 X 1270
740200904	46.6	1,880	Round 46.6 X 1880
740210904	46.6	1,270	Round 46.6 X 1270
740201004	49.8	1,880	Round 49.8 X 1880
740211004	49.8	3,710	Round 49.8 X 3710
740201104	53.0	1,880	Round 53.0 X 1880
740221104	53.0	1,270	Round 53.0 X 1270
740201204	56.8	1,880	Round 56.8 X 1880
740211204	56.8	1,270	Round 56.8 X 1270
740201304	59.9	1,880	Round 59.9 X 1880
740221304	59.9	1,270	Round 59.9 X 1270
740201404	63.1	1,880	Round 63.1 X 1880
740201504	66.3	1,880	Round 66.3 X 1880

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
740201604	69.5	1,880	Round 69.5 X 1880
740201704	72.6	1,880	Round 72.6 X 1880
740201804	75.8	1,880	Round 75.8 X 1880
740201904	79.0	1,880	Round 79.0 X 1880
740231904	79.0	3,710	Round 79.0 X 3710
740202004	82.6	1,880	Round 82.6 X 1880
740202104	85.7	1,880	Round 85.7 X 1880
740212104	85.7	3,710	Round 85.7 X 3710
740202204	88.9	1,880	Round 88.9 X 1880
740202304	92.1	1,880	Round 92.1 X 1880
740202404	95.3	1,880	Round 95.3 X 1880
740202504	98.4	1,880	Round 98.4 X 1880
740202604	101.6	1,880	Round 101.6 X 1880
740202704	104.8	1,880	Round 104.8 X 1880
740212704	104.8	3,710	Round 104.8 X 3710
740206604	111.5	1,880	Round 111.5 X 1880
740202804	113.6	1,880	Round 113.6 X 1880
740202904	117.9	1,880	Round 117.9 X 1880
740222904	117.9	3,710	Round 117.9 X 3710
740203004	124.2	1,880	Round 124.2 X 1880
740203104	130.6	1,880	Round 130.6 X 1880
740243104	130.6	3,710	Round 130.6 X 3710
740203204	137.3	1,880	Round 137.3 X 1880
740203304	143.6	1,880	Round 143.6 X 1880
740263304	143.6	3,710	Round 143.6 X 3710
740203404	150.0	1,880	Round 150.0 X 1880
740203504	156.3	1,880	Round 156.3 X 1880
740283504	156.3	3,710	Round 156.3 X 3710
740203604	163.1	1,880	Round 163.1 X 1880
740203704	169.4	1,880	Round 169.4 X 1880
740213704	169.4	3,710	Round 169.4 X 3710
740203804	175.8	1,880	Round 175.8 X 1880
740203904	182.1	1,880	Round 182.1 X 1880
740263904	182.1	3,710	Round 182.1 X 3710
740204004	189.0	1,880	Round 189.0 X 1880
740224004	189.0	3,710	Round 189.0 X 3710
740204104	195.3	1,880	Round 195.3 X 1880
740214104	195.3	3,710	Round 195.3 X 3710
740204204	201.7	1,880	Round 201.7 X 1880
740214204	201.7	3,710	Round 201.7 X 3710
740204304	208.0	1,880	Round 208.0 X 1880
740234304	208.0	3,710	Round 208.0 X 3710
740204404	215.0	1,880	Round 215.0 X 1880
740204504	221.4	1,880	Round 221.4 X 1880
740214504	221.4	3,710	Round 221.4 X 3710
740204604	227.7	1,880	Round 227.7 X 1880
740204704	234.1	1,880	Round 234.1 X 1880
740204904	247.8	1,880	Round 247.8 X 1880
740214904	247.8	3,710	Round 247.8 X 3710
740205004	254.1	1,880	Round 254.1 X 1880

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
740205104	260.5	1,880	Round 260.5 X 1880
740205204	270.5	1,880	Round 270.5 X 1880
740205304	276.9	1,880	Round 276.9 X 1880
740205404	289.6	1,880	Round 289.6 X 1880
740205504	306.9	1,880	Round 306.9 X 1880
740205604	319.6	1,880	Round 319.6 X 1880
740215604	319.6	3,710	Round 319.6 X 3710
740225604	319.6	3,150	Round 319.6 X 3150
740245604	319.6	3,915	Round 319.6 X 3915
740205704	332.3	1,880	Round 332.3 X 1880
740205804	345.0	1,880	Round 345.0 X 1880
740205904	370.4	1,880	Round 370.4 X 1880
740215904	370.4	940	Round 370.4 X 940
740225904	370.4	3,710	Round 370.4 X 3710
740255904	370.4	310	Round 370.4 X 310
740206004	395.8	1,880	Round 395.8 X 1880
740236004	395.8	310	Round 395.8 X 310
740206104	421.2	1,880	Round 421.2 X 1880
740206204	451.2	1,880	Round 451.2 X 1880
740206304	476.6	1,880	Round 476.6 X 1880
740296304	476.6	4,191	Round 476.6 X 4191
740207004	527.3	1,420	Round 527.3 X 1420
740243504	527.3	1,880	Round 527.3 X 1880

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7D0200204	25.0	3,100	Round 25.0 X 3100
7D0210304	30.0	3,100	Round 30.0 X 3100
7D0210704	35.0	3,100	Round 35.0 X 3100
7D0230704	40.0	3,100	Round 40.0 X 3100
7D0207504	45.0	3,100	Round 45.0 X 3100
7D0241104	55.0	3,100	Round 55.0 X 3100
7D0231304	60.0	3,100	Round 60.0 X 3100
7D0207404	65.0	3,100	Round 65.0 X 3100
7D0207204	70.0	3,100	Round 70.0 X 3100
7D0217204	70.0	2,100	Round 70.0 X 2100
7D0221804	75.0	3,100	Round 75.0 X 3100
7D0212004	80.0	3,100	Round 80.0 X 3100
7D0232004	80.0	2,300	Round 80.0 X 2250
7D0212104	85.0	3,100	Round 85.0 X 3100
7D0222104	85.0	2,300	Round 85.0 X 2300
7D0232204	90.0	3,100	Round 90.0 X 3100
7D0212404	95.0	3,100	Round 95.0 X 3100
7D0222604	100.0	3,100	Round 100.0 X 3100
7D0232604	100.0	2,100	Round 100.0 X 2100
7D0212604	105.0	3,100	Round 105 X 3100
7D0212804	110.0	3,100	Round 110.0 X 3100
7D0222804	110.0	2,300	Round 110.0 X 2300

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - ROUND CONTINUOUS CAST BARS

Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7D0212904	115.0	3,100	Round 115 X 3100
7D0223004	120.0	3,100	Round 120.0 X 3100
7D0243004	120.0	2,300	Round 120.0 X 2300
7D0233004	125.0	3,100	Round 125 X 3100
7D0263104	130.0	3,100	Round 130.0 X 3100
7D0273104	135.0	3,100	Round 135 X 3100
7D0243304	140.0	3,100	Round 140.0 X 3100
7D0223304	145.0	3,100	Round 145 X 3100
7D0213404	150.0	3,100	Round 150.0 X 3100
7D0208304	160.0	3,100	Round 160.0 X 3100
7D0200304	165.0	3,100	Round 165 X 3100
7D0213704	170.0	3,100	Round 170.0 X 3100
7D0209904	175.0	3,100	Round 175 X 3100
7D0217304	180.0	3,100	Round 180.0 X 3100
7D0214004	190.0	3,100	Round 190.0 X 3100
7D0270304	200.0	3,100	Round 200.0 X 3100
7D0214404	210.0	3,100	Round 210.0 X 3100
7D0214504	220.0	3,100	Round 220.0 X 3100
7D0214904	230.0	3,100	Round 230.0 X 3100
7D0224804	240.0	3,100	Round 240.0 X 3100
7D0270404	250.0	3,100	Round 250.0 X 3100
7D0235104	260.0	3,100	Round 260.0 X 3100
7D0215204	270.0	3,100	Round 270.0 X 3100
7D0270504	280.0	3,100	Round 280.0 X 3100
7D0265404	290.0	3,100	Round 290.0 X 3100
7D0226404	300.0	3,100	Round 300.0 X 3100
7D0218004	310.0	3,100	Round 310.0 X 3100
7D0265604	320.0	3,100	Round 320.0 X 3100
7D0218104	330.0	3,100	Round 330.0 X 3100
7D0218204	340.0	3,100	Round 340.0 X 3100
7D0270604	350.0	3,100	Round 350.0 X 3100
7D0208404	360.0	3,100	Round 360.0 X 3100
7D0225904	370.0	3,100	Round 370.0 X 3100
7D0235904	370.0	2,410	Round 370.0 X 2410
7D0271004	380.0	3,100	Round 380.0 X 3100
7D0241404	390.0	3,100	Round 390.0 X 3100
7D0208504	400.0	3,100	Round 400.0 X 3100
7D0256104	410.0	3,100	Round 410.0 X 3100
7D0236104	420.0	2,100	Round 420.0 X 2100
7D0266104	420.0	3,100	Round 42.0 X 3100
7D0246404	430.0	3,100	Round 430.0 X 3100
7D0236504	440.0	2,100	Round 440.0 X 2100
7D0246204	450.0	2,100	Round 450.0 X 2100
7D0256204	450.0	3,100	Round 450.0 X 3100
7D0206604	460.0	2,100	Round 460.0 X 2100
7D0216604	470.0	2,100	Round 470.0 X 2100
7D0236304	480.0	2,100	Round 480.0 X 2100
7D0226904	500.0	2,100	Round 500.0 X 2100
7D0236904	500.0	228	Round 500.0 X 228

Tupy Codes

RATIO CODES ROUND CONTINUOUS CAST BARS - NODULAR CAST IRON

FE 60003 / GJS 600-3 LINE - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7D0246904	500.0	528	Round 500.0 X 528
7D0275904	510.0	2,100	Round 510.0 X 2100
7D0218504	525.0	2,100	Round 525.0 X 2100
7D0227004	530.0	2,100	Round 530.0 X 2100
7D0207604	550.0	1,050	Round 550.0 X 1050
7D0217604	550.0	2,100	Round 550.0 X 2100
7D0207804	575.0	2,100	Round 575.0 X 2100
7D0217904	600.0	2,100	Round 600.0 X 2100
7D0227904	600.0	1,050	Round 600.0 X 1050

TUPY LINE - NPE 60 - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7E0206804	120.0	2,000	Round 120.0 X 2000
7E0206704	140.0	2,000	Round 140.0 X 2000

TUPY LINE - ADI - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
760200704	37.1	1,880	Round 37.1 X 1880
760200304	182.1	2,030	Round 182.1 X 2030
760204304	208.0	1,880	Round 208.0 X 1880

LINE FE 70002 / GJS 700-2 - ROUND CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
770210404	40.3	1,020	Round 40.3 X 1020
770200604	53.0	2,120	Round 53.0 X 2120
770210604	53.0	2,850	Round 53.0 X 2850
770220604	53.0	1,880	Round 53.0 X 1880
770201404	63.1	1,880	Round 63.1 X 1880
770201804	75.8	1,880	Round 75.8 X 1880
770221104	76.2	3,300	Round 76.2 X 3300
770220904	88.9	4,650	Round 88.9 X 4650
770202704	104.8	2,900	Round 104.8 X 2900
770222704	104.8	3,050	Round 104.8 X 3050
770207904	111.5	1,880	Round 111.5 X 1880
770223004	120.0	3,100	Round 120.0 X 3100
770203004	124.2	1,880	Round 124.2 X 1880
770203104	130.6	1,880	Round 130.6 X 1880
770203304	143.6	1,880	Round 143.6 X 1880
770213404	150.0	3,100	Round 150.0 X 3100
770208304	160.0	3,100	Round 160.0 X 3100
770213704	170.0	3,100	Round 170.0 X 3100
770217304	180.0	3,100	Round 180.0 X 3100
770214004	190.0	3,100	Round 190.0 X 3100
770214404	210.0	3,100	Round 210.0 X 3100
770270804	230.0	3,100	Round 230.0 X 3100
770224804	240.0	3,100	Round 240.0 X 3100
770270404	250.0	3,100	Round 250.0 X 3100
770235104	260.0	3,100	Round 260.0 X 3100
770205104	260.5	1,880	Round 260.5 X 1880
770215204	270.0	3,100	Round 270.0 X 3100
770270504	280.0	3,100	Round 280.0 X 3100
770265404	290.0	3,100	Round 290.0 X 3100
770255604	310.0	3,100	Round 310.0 X 3100
770235604	319.6	3,790	Round 319.6 X 3790
770265604	320.0	3,100	Round 320.0 X 3100
770209104	340.0	3,100	Round 340.0 X 3100
770270604	350.0	3,100	Round 350.0 X 3100
770208404	360.0	3,100	Round 360.0 X 3100
770225904	370.0	3,100	Round 370.0 X 3100
770271004	380.0	3,100	Round 380.0 X 3100
770241404	390.0	3,150	Round 390.0 X 3150
770208504	400.0	3,100	Round 400.0 X 3100
770226104	410.0	3,100	Round 410.0 X 3100
770254104	420.0	3,100	Round 420.0 X 3100
770246404	430.0	3,100	Round 430.0 X 3100
770236504	440.0	2,100	Round 440.0 X 2100
770226204	450.0	2,100	Round 450.0 X 2100
770236204	450.0	3,100	Round 450.0 X 3100
770236604	460.0	2,100	Round 460.0 X 2100
770236904	480.0	2,100	Round 480.0 X 2100
770216904	500.0	2,100	Round 500.0 X 2100
770275904	510.0	2,150	Round 510.0 X 2150
770207004	525.0	2,100	Round 525.0 X 2100

Tupy Codes

CODES LIST SQUARE CONTINUOUS CAST BARS - GRAY CAST IRON

FC 250 / GJL 250 LINE - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7A0340204	30.0	3,100	Square 30.0 X 3100
7A0350204	30.0	2,000	Square 30.0 X 2000
7A0360204	30.0	1,800	Square 30.0 X 1800
7A0303704	35.0	3,100	Square 35.0 X 3100
7A0350304	40.0	3,100	Square 40.0 X 3100
7A0302104	50.0	3,100	Square 50.0 X 3100
7A0303804	55.0	3,100	Square 55.0 X 3100
7A0301904	60.0	3,100	Square 60.0 X 3100
7A0301804	65.0	3,100	Square 65.0 X 3100
7A0302704	70.0	3,100	Square 70.0 X 3100
7A0302204	75.0	3,100	Square 75.0 X 3100
7A0300204	76.0	3,100	Square 76.0 X 3100
7A0300104	77.0	3,100	Square 77.0 X 3100
7A0302004	80.0	3,100	Square 80.0 X 3100
7A0312004	85.0	3,100	Square 85.0 X 3100
7A0302804	90.0	3,100	Square 90.0 X 3100
7A0303604	100.0	3,100	Square 100.0 X 3100
7A0304204	110.0	3,100	Square 110.0 X 3100
7A0305004	115.0	3,100	Square 115.0 X 3100
7A0303904	120.0	3,100	Square 120.0 X 3100
7A0302604	125.0	3,100	Square 125.0 X 3100
7A0302404	130.0	3,100	Square 130.0 X 3100
7A0304004	140.0	3,100	Square 140.0 X 3100
7A0302904	150.0	3,100	Square 150.0 X 3100
7A0304304	160.0	3,100	Square 160.0 X 3100
7A0304704	170.0	3,100	Square 170.0 X 3100
7A0303004	180.0	3,100	Square 180.0 X 3100
7A0304104	190.0	3,100	Square 190.0 X 3100
7A0303104	200.0	3,100	Square 200.0 X 3100
7A0313104	210.0	3,100	Square 210.0 X 3100
7A0303404	220.0	3,100	Square 220.0 X 3100
7A0304404	230.0	3,100	Square 230.0 X 3100
7A0303504	240.0	2,670	Square 240.0 X 2670
7A0313504	240.0	3,100	Square 240.0 X 3100
7A0303204	250.0	3,100	Square 250.0 X 3100

FC 300 / GJL 300 LINE - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
720300104	31.7	1,880	Square 31.7 X 1880
720300204	38.1	1,880	Square 38.1 X 1880
720300304	41.3	1,880	Square 41.3 X 1880
720300404	44.4	1,880	Square 44.4 X 1880
720300504	50.8	1,880	Square 50.8 X 1880
720300604	57.1	1,880	Square 57.1 X 1880
720300704	63.5	1,880	Square 63.5 X 1880
720300804	69.8	1,880	Square 69.8 X 1880
720330804	69.8	1,880	Square 69.8 X 1880
720300904	76.2	1,880	Square 76.2 X 1880
720330904	76.2	2,050	Square 76.2 X 2050
720301004	82.5	1,880	Square 82.5 X 1880
720301104	88.9	1,880	Square 88.9 X 1880
720301204	92.1	1,880	Square 92.1 X 1880
720302204	95.2	1,880	Square 95.2 X 1880
720301304	107.9	1,880	Square 107.9 X 1880
720331304	107.9	1,880	Square 107.9 X 1880
720301404	120.6	1,880	Square 120.6 X 1880
720301504	133.3	1,880	Square 133.3 X 1880
720301604	158.7	1,880	Square 158.7 X 1880
720301704	184.1	1,880	Square 184.1 X 1880
720301804	209.5	1,880	Square 209.5 X 1880
720301904	234.9	1,880	Square 234.9 X 1880
720303004	250.0	700	Square 250 X 700
720303104	250.0	720	Square 250 X 720
720302004	260.3	1,880	Square 260.3 X 1880
720302104	311.1	1,880	Square 311.1 X 1880
720302704	362.0	1,880	Square 362 X 1880
720306104	406.4	1,880	Square 406.4 X 1880
720316104	406.4	2,743	Square 406.4 X 2743

Tupy Codes

CODES LIST SQUARE CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 40015 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7B0300104	31.7	1,880	Square 31.7 X 1880
7B0340104	31.7	1,800	Square 31.7 X 1800
7B0360104	31.7	1,150	Square 31.7 X 1150
7B0326004	40.0	1,500	Square 40 X 1500
7B0336004	40.0	2,150	Square 40 X 2150
7B0346004	40.0	1,170	Square 40 X 1170
7B0340304	41.3	1,520	Square 41.3 X 1520
7B0370304	41.3	1,880	Square 41.3 X 1880
7B0310404	44.4	2,000	Square 44.4 X 2000
7B0320504	50.8	1,880	Square 50.8 X 1880
7B0300704	63.0	1,500	Square 63 X 1500
7B0310704	63.0	2,000	Square 63 X 2000
7B0320704	63.0	1,170	Square 63 X 1170
7B0330704	63.5	1,880	Square 63.5 X 1880
7B0304504	75.0	2,000	Square 75 X 2000
7B0304204	80.0	1,880	Square 80 X 1880
7B0304604	90.0	2,000	Square 90 X 2000
7B0311304	107.9	1,880	Square 107.9 X 1880
7B0304704	115.0	2,000	Square 115 X 2000
7B0303904	116.0	1,880	Square 116 X 1880
7B0302704	120.0	2,000	Square 120 X 2000
7B0311404	120.6	1,880	Square 120.6 X 1880
7B0304804	130.0	2,000	Square 130 X 2000
7B0305004	165.0	2,000	Square 165 X 2000
7B0312304	210.0	2,000	Square 210 X 2000
7B0301904	234.9	2,000	Square 234.9 X 2000
7B0302404	240.0	2,000	Square 240 X 2000
7B0305104	260.0	2,000	Square 260 X 2000
7B0306904	268.0	2,100	Square 268 X 2100
7B0303104	380.0	2,000	Square 380 X 2000

GJS 400-7 LINE - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7B0380104	30.0	3,100	Square 30 X 3100
7B0330504	50.0	2,300	Square 50 X 2300
7B0306204	60.0	3,100	Square 60.0 X 3100
7B0330804	70.0	3,100	Square 70 X 3100
7B0306404	80.0	3,100	Square 80 X 3100
7B0306304	85.0	3,100	Square 85 X 3100
7B0314604	90.0	3,100	Square 90 X 3100
7B0303204	95.2	1,880	Square 95.2 X 1880
7B0314704	100.0	3,100	Square 100 X 3100
7B0315004	110.0	3,100	Square 110 X 3100
7B0331404	120.0	3,100	Square 120 X 3100
7B0301404	120.6	1,880	Square 120.6 X 1880
7B0324804	130.0	3,100	Square 130 X 3100
7B0315304	140.0	3,100	Square 140 X 3100
7B0306804	150.0	3,100	Square 150 X 3100
7B0316804	150.0	2,100	Square 150 X 2100
7B0301604	158.7	1,880	Square 158.7 X 1880
7B0331604	160.0	3,100	Square 160 X 3100
7B0309804	170.0	3,100	Square 170 X 3100
7B0309904	180.0	3,100	Square 180 X 3100
7B0301704	184.1	1,880	Square 184.1 X 1880
7B0313004	200.0	3,100	Square 200 X 3100
7B0301804	209.5	1,880	Square 209.5 X 1880
7B0322304	210.0	3,100	Square 210 X 3100
7B0322404	220.0	3,100	Square 220 X 3100
7B0342404	240.0	2,000	Square 240 X 2000
7B0302004	260.3	1,880	Square 260.3 X 1880
7B0312004	260.3	3,100	Square 260.3 X 3100
7B0306704	266.7	1,880	Square 266.7 X 1880
7B0313504	280.0	3,100	Square 280 X 3100
7B0323404	300.0	3,100	Square 300 X 3100
7B0312104	310.0	3,100	Square 310 X 3100
7B0316504	315.0	3,100	Square 315 X 3100
7B0326504	315.0	2,100	Square 315 X 2100
7B0303304	330.0	3,100	Square 330 X 3100
7B0333404	340.0	3,100	Square 340 X 3100
7B0313404	360.0	2,300	Square 360 X 2300
7B0326104	410.0	2,100	Square 410 X 2100
7B0307004	470.0	2,100	Square 470 X 2100
7B0317004	470.0	1,880	Square 470 X 1880

Tupy Codes

CODES LIST SQUARE CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE GJS 400-15 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7G0306204	60.0	2,300	Square 60.0 X 2300
7G0330804	70.0	2,300	Square 70 X 2300
7G0306404	80.0	2,300	Square 80 X 2300
7G0306304	85.0	2,300	Square 85 X 2300
7G0304604	90.0	2,300	Square 90 X 2300
7G0313204	95.2	1,880	Square 95.2 X 1880
7G0314704	100.0	2,300	Square 100 X 2300
7G0334704	101.6	2,300	Square 101.6 X 2300
7G0315004	110.0	2,300	Square 110 X 2300
7G0311404	120.0	2,300	Square 120 X 2300
7G0341404	120.6	1,880	Square 120.6 X 1880
7G0314804	130.0	2,300	Square 130 X 2300
7G0301504	133.3	1,880	Square 133.3 X 1880
7G0315304	140.0	2,300	Square 140 X 2300
7G0306804	150.0	2,300	Square 150 X 2300
7G0331604	160.0	2,300	Square 160 X 2300
7G0309904	180.0	2,300	Square 180 X 2300
7G0313004	200.0	2,300	Square 200 X 2300
7G0311804	209.5	1,880	Square 209.5 X 1880
7G0322304	210.0	2,250	Square 210 X 2250
7G0332404	220.0	2,300	Square 220 X 2300
7G0302404	240.0	2,300	Square 240 X 2300
7G0342404	240.0	2,000	Square 240 X 2000
7G0302004	260.0	2,300	Square 260 X 2300
7G0306704	266.7	1,880	Square 266.7 X 1880
7G0313504	280.0	2,300	Square 280 X 2300
7G0316504	315.0	2,300	Square 315 X 2300
7G0306504	317.5	1,880	Square 317.5 X 1880
7G0333404	340.0	2,300	Square 340 X 2300
7G0313404	360.0	2,300	Square 360 X 2300
7G0304904	420.0	3,150	Square 420.0 X 3150
7G0307004	470.0	2,100	Square 470 X 2100
7G0317004	470.0	1,880	Square 470 X 1880

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730300104	31.7	1,880	Square 31.7 X 1880
730300204	38.1	1,880	Square 38.1 X 1880
730310204	38.1	1,150	Square 38.1 X 1150
730320204	38.1	1,500	Square 38.1 X 1500
730300304	41.3	1,880	Square 41.3 X 1880
730300404	44.4	1,880	Square 44.4 X 1880
730300504	50.8	1,880	Square 50.8 X 1880
730300604	57.1	1,880	Square 57.1 X 1880
730300704	63.5	1,880	Square 63.5 X 1880
730304904	66.7	1,880	Square 66.7 X 1880
730300804	69.8	1,880	Square 69.8 X 1880
730304504	75.0	2,000	Square 75 X 2000
730300904	76.2	1,880	Square 76.2 X 1880
730301004	82.5	1,880	Square 82.5 X 1880
730301104	88.9	1,880	Square 88.9 X 1880
730311104	88.9	4,000	Square 88.9 X 4000

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
730304604	90.0	2,000	Square 90 X 2000
730301204	92.1	1,880	Square 92.1 X 1880
730311204	92.1	4,000	Square 92.1 X 4000
730303204	95.2	1,880	Square 95.2 X 1880
730313204	95.2	4,000	Square 95.2 X 4000
730314704	100.0	3,100	Square 100 X 3100
730307204	101.6	1,880	Square 101.6 X 1880
730317204	101.6	4,000	Square 101.6 X 4000
730301304	107.9	1,880	Square 107.9 X 1880
730311304	107.9	1,980	Square 107.9 X 1980
730303304	114.3	1,880	Square 114.3 X 1880
730304704	115.0	2,000	Square 115 X 2000
730303904	116.0	1,880	Square 116 X 1880
730304004	117.5	1,930	Square 117.5 X 1930
730301404	120.6	1,880	Square 120.6 X 1880
730391504	129.0	1,880	Square 129 X 1880
730304804	130.0	2,000	Square 130 X 2000
730334804	131.0	2,000	Square 131 X 2000
730301504	133.3	1,880	Square 133.3 X 1880
730305304	139.7	1,880	Square 139.7 X 1880
730304404	145.0	2,000	Square 145 X 2000
730307404	152.4	1,880	Square 152.4 X 1880
730301604	158.7	1,880	Square 158.7 X 1880
730311604	158.7	2,060	Square 158.7 X 1980
730341604	158.7	3,710	Square 158.7 X 3710
730325004	165.0	2,000	Square 165 X 2000
730305004	165.1	1,880	Square 165.1 X 1880
730305504	169.7	1,880	Square 169.7 X 1880
730304304	171.4	2,030	Square 171.4 X 2030
730307504	178.0	1,880	Square 178 X 1880
730301704	184.1	1,880	Square 184.1 X 1880
730321704	185.5	1,950	Square 185.5 X 1950
730315704	190.5	1,880	Square 190.5 X 1880
730305704	196.8	1,880	Square 196.8 X 1880
730307704	203.2	1,650	Square 203.2 X 1650
730301804	209.5	1,880	Square 209.5 X 1880
730307604	215.9	1,880	Square 215.9 X 1880
730301904	234.9	1,880	Square 234.9 X 1880
730302404	241.3	1,880	Square 241.3 X 1880
730342804	255.0	2,300	Square 255 X 2300
730302004	260.3	1,880	Square 260.3 X 1880
730306704	266.7	1,880	Square 266.7 X 1880
730302104	311.1	1,880	Square 311.1 X 1880
730305904	314.3	1,880	Square 314.3 X 1880
730306504	317.5	1,880	Square 317.5 X 1880
730307004	320.0	1,690	Square 320 X 1690
730303404	362.0	1,880	Square 362 X 1880
730306604	368.3	1,880	Square 368.3 X 1880
730317104	406.0	1,605	Square 406 X 1605
730327104	406.0	1,870	Square 406 X 1870
730306104	406.4	1,880	Square 406.4 X 1880
730345404	470.0	1,880	Square 470.0 X 1880

Tupy Codes

CODES LIST SQUARE CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE GJS 400-18 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7H0301604	158.7	1,880	Square 158.7 X 1880
7H0301704	184.1	1,880	Square 184.1 X 1880
7H0300104	206.0	1,880	Square 206 X 1880

LINE GJS 500-7 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7C0302804	55.0	3,100	Square 55 X 3100
7C0300104	60.0	3,100	Square 60,0,0 X 3100
7C0330804	70.0	3,100	Square 70X 3100
7C0304504	75.0	3,100	Square 75 X 3100
7C0306104	90.0	3,100	Square 90 X 3100
7C0302604	95.0	3,100	Square 95 X 3100
7C0314704	100.0	3,100	Square 100 X 3100
7C0311304	107.9	2,000	Square 107.9 X 2000
7C0306204	110.0	3,100	Square 110.0 X 3100
7C0331404	120.0	3,100	Square 120 X 3100
7C0316204	130.0	3,100	Square 130 X 3100
7C0306304	140.0	3,100	Square 140 X 3100
7C0306004	150.0	3,100	Square 150 X 3100
7C0309904	180.0	3,100	Square 180 X 3100
7C0301704	184.1	1,880	Square 184.1 X 1880
7C0326104	410.0	2,100	Square 410 X 2100
7C0304904	420.0	3,150	Square 420.0 X 3150
7C0307004	470.0	2,100	Square 470 X 2100

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
740301004	82.5	1,880	Square 82.5 X 1880
740301304	107.9	1,880	Square 107.9 X 1880
740301504	133.3	1,880	Square 133.3 X 1880
740301604	158.7	1,880	Square 158.7 X 1880
740301704	184.1	1,880	Square 184.1 X 1880
740301804	209.5	1,880	Square 209.5 X 1880
740302004	260.3	1,880	Square 260.3 X 1880
740302104	311.1	1,880	Square 311.1 X 1880

LINE FE 60003 / GJS 600-3 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
7D0300104	85.0	3,100	Square 85 X 3100
7D0300204	90.0	3,100	Square 90 X 3100
7D0314704	100.0	3,100	Square 100 X 3100
7D0326104	410.0	2,100	Square 410 X 2100
7D0304904	420.0	3,150	Square 420 X 3150
7D0307004	470.0	2,100	Square 470 X 2100

LINE FE 70002 / GJS 700-2 - SQUARE CONTINUOUS CAST BARS			
Tupy Code	Gross Dimension (mm)	Length (mm)	Tupy Description
770300104	85.7	2,770	Square 85.7 X 2770
770304904	420.0	3,150	Square 420.0 X 3150

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - GRAY CAST IRON

FC 250 / GJL 250 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7A0407904	20	40.0	3,100	Rect. 20 x 40 x 3100
7A0409704	20	35.0	3,100	Rect. 20 x 35 x 3100
7A0412904	20	150.0	2,000	Rect. 20 x 150 x 2000
7A0417904	20	40.0	3,600	Rect. 20 x 40 x 3600
7A0419704	20	30.0	3,100	Rect. 20 x 30 x 3100
7A0422904	20	55.0	3,100	Rect. 20 x 55 x 3100
7A0427904	20	40.0	3,200	Rect. 20 x 40 x 3200
7A0429704	20	30.0	2,000	Rect. 20 x 30 x 2000
7A0432904	20	50.0	3,100	Rect. 20 x 50 x 3100
7A0437904	20	40.0	3,000	Rect. 20 x 40 x 3000
7A0447904	20	40.0	2,700	Rect. 20 x 40 x 2700
7A0416304	22	42.0	2,660	Rect. 22 x 42 x 2660
7A0426304	22	42.0	2,860	Rect. 22 x 42 x 2860
7A0407204	25	40.0	3,100	Rect. 25 x 40 x 3100
7A0408004	25	75.0	3,100	Rect. 25 x 75 x 3100
7A0408504	25	100.0	3,100	Rect. 25 x 100 x 3100
7A0409004	25	120.0	3,100	Rect. 25 x 120 x 3100
7A0413204	25	130.0	3,150	Rect. 25 x 130 x 3150
7A0417204	25	45.0	3,100	Rect. 25 x 45 x 3100
7A0418004	25	75.0	2,100	Rect. 25 x 75 x 2100
7A0400104	26	205.0	2,000	Rect. 26 x 205 x 2000
7A0405104	30	90.0	3,100	Rect. 30 x 90 x 3100
7A0406104	30	60.0	3,100	Rect. 30 x 60 x 3100
7A0406204	30	70.0	3,100	Rect. 30 x 70 x 3100
7A0408104	30	200.0	3,100	Rect. 30 x 200 x 3100
7A0415104	30	50.0	3,100	Rect. 30 x 50 x 3100
7A0421004	30	230.0	3,100	Rect. 30 x 230 x 3100
7A0425104	30	80.0	3,100	Rect. 30 x 80 x 3100
7A0435104	30	40.0	3,100	Rect. 30 x 40 x 3100
7A0440904	30	350.0	3,100	Rect. 30 x 350 x 3100
7A0439704	35	55.0	3,500	Rect. 35 x 55 x 3500
7A0401404	40	90.0	3,100	Rect. 40 x 90 x 3100
7A0401504	40	160.0	3,100	Rect. 40 x 160 x 3100
7A0403004	40	70.0	3,100	Rect. 40 x 70 x 3100
7A0405504	40	50.0	3,100	Rect. 40 x 50 x 3100
7A0406304	40	110.0	3,150	Rect. 40 x 110 x 3150
7A0408204	40	130.0	3,150	Rect. 40 x 130 x 3150
7A0412304	40	120.0	3,100	Rect. 40 x 120 x 3100
7A0421404	40	60.0	3,100	Rect. 40 x 60 x 3100
7A0431404	40	100.0	3,100	Rect. 40 x 100 x 3100
7A0441404	40	80.0	3,100	Rect. 40 x 80 x 3100
7A0450904	40	350.0	3,100	Rect. 40 x 350 x 3100
7A0400604	45	55.0	3,100	Rect. 45 x 55 x 3100
7A0417304	45	50.0	3,100	Rect. 45 x 50 x 3100
7A0400204	50	210.0	3,100	Rect. 50 x 210 x 3100
7A0401004	50	110.0	3,100	Rect. 50 x 110 x 3100
7A0401604	50	150.0	3,100	Rect. 50 x 150 x 3100
7A0403204	50	120.0	3,100	Rect. 50 x 120 x 3100
7A0404404	50	80.0	3,100	Rect. 50 x 80 x 3100
7A0404504	50	90.0	3,100	Rect. 50 x 90 x 3100
7A0405604	50	60.0	3,100	Rect. 50 x 60 x 3100
7A0405804	50	250.0	3,100	Rect. 50 x 250 x 3100
7A0407504	50	80.0	2,100	Rect. 50 x 80 x 2100

FC 250 / GJL 250 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7A0408804	50	180.0	3,100	Rect. 50 x 180 x 3100
7A0410204	50	210.0	3,400	Rect. 50 x 210 x 3400
7A0411104	50	320.0	3,100	Rect. 50 x 320 x 3100
7A0411504	50	100.0	3,100	Rect. 50 x 100 x 3100
7A0412204	50	70.0	3,100	Rect. 50 x 70 x 3100
7A0415604	50	65.0	3,100	Rect. 50 x 65 x 3100
7A0420004	50	750.0	2,300	Rect. 50 x 750 x 2300
7A0420204	50	210.0	3,200	Rect. 50 x 210 x 3200
7A0420604	50	160.0	3,100	Rect. 50 x 160 x 3100
7A0433604	50	130.0	3,100	Rect. 50 x 130 x 3100
7A0436004	50	140.0	3,100	Rect. 50 x 140 x 3100
7A0441604	50	150.0	3,300	Rect. 50 x 150 x 3300
7A0460904	50	350.0	3,100	Rect. 50 x 350 x 3100
7A0461604	50	150.0	2,100	Rect. 50 x 150 x 2100
7A0471604	50	150.0	2,850	Rect. 50 x 150 x 2850
7A0410804	55	75.0	3,100	Rect. 55 x 75 x 3100
7A0402504	60	90.0	3,100	Rect. 60 x 90 x 3100
7A0403404	60	160.0	3,100	Rect. 60 x 160 x 3100
7A0403504	60	180.0	3,100	Rect. 60 x 180 x 3100
7A0404704	60	320.0	3,100	Rect. 60 x 320 x 3100
7A0406404	60	70.0	3,100	Rect. 60 x 70 x 3100
7A0406504	60	110.0	3,100	Rect. 60 x 110 x 3100
7A0406604	60	120.0	3,100	Rect. 60 x 120 x 3100
7A0408404	60	260.0	3,100	Rect. 60 x 260 x 3100
7A0408904	60	65.0	3,100	Rect. 60 x 65 x 3100
7A0410704	60	220.0	3,100	Rect. 60 x 220 x 3100
7A0412404	60	130.0	3,100	Rect. 60 x 130 x 3100
7A0412504	60	100.0	3,100	Rect. 60 x 100 x 3100
7A0413504	60	480.0	3,100	Rect. 60 x 480 x 3100
7A0420104	60	750.0	2,300	Rect. 60 x 750 x 2300
7A0422504	60	80.0	3,100	Rect. 60 x 80 x 3100
7A0432504	60	150.0	3,100	Rect. 60 x 150 x 3100
7A0442504	60	140.0	3,100	Rect. 60 x 140 x 3100
7A0470904	60	350.0	3,100	Rect. 60 x 350 x 3100
7A0424204	65	80.0	3,100	Rect. 65 x 80 x 3100
7A0403604	70	100.0	3,100	Rect. 70 x 100 x 3100
7A0403704	70	120.0	3,100	Rect. 70 x 120 x 3100
7A0404904	70	90.0	3,100	Rect. 70 x 90 x 3100
7A0405704	70	110.0	3,100	Rect. 70 x 110 x 3100
7A0409904	70	650.0	3,100	Rect. 70 x 650 x 3100
7A0410104	70	650.0	2,300	Rect. 70 x 650 x 2300
7A0410304	70	750.0	2,300	Rect. 70 x 750 x 2300
7A0412604	70	140.0	3,100	Rect. 70 x 140 x 3100
7A0413704	70	130.0	3,100	Rect. 70 x 130 x 3100
7A0414904	70	80.0	3,100	Rect. 70 x 80 x 3100
7A0422604	70	140.0	3,100	Rect. 70 x 140 x 3100
7A0403304	80	140.0	3,100	Rect. 80 x 140 x 3100
7A0404804	80	320.0	3,100	Rect. 80 x 320 x 3100
7A0405204	80	110.0	3,100	Rect. 80 x 110 x 3100
7A0405404	80	130.0	3,100	Rect. 80 x 130 x 3100
7A0406004	80	420.0	3,100	Rect. 80 x 420 x 3100
7A0406704	80	160.0	3,100	Rect. 80 x 160 x 3100
7A0410004	80	150.0	3,100	Rect. 80 x 150 x 3100

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - GRAY CAST IRON

FC 250 / G.JL 250 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7A0419904	80	650.0	3,100	Rect. 80 x 650 x 3100
7A0420304	80	750.0	2,300	Rect. 80 x 750 x 2300
7A0421804	80	650.0	2,300	Rect. 80 x 650 x 2300
7A0423304	80	140.0	3,100	Rect. 80 x 140 x 3100
7A0431804	80	100.0	3,100	Rect. 80 x 100 x 3100
7A0433304	80	140.0	2,290	Rect. 80 x 140 x 2290
7A0441804	80	120.0	3,100	Rect. 80 x 120 x 3100
7A0443304	80	90.0	3,100	Rect. 80 x 90 x 3100
7A0451804	80	180.0	3,100	Rect. 80 x 180 x 3100
7A0411904	85	205.0	3,400	Rect. 85 x 205 x 3400
7A0453304	85	105.0	3,100	Rect. 85 x 105 x 3100
7A0400504	90	150.0	3,100	Rect. 90 x 150 x 3100
7A0400704	90	100.0	3,100	Rect. 90 x 100 x 3100
7A0410404	90	750.0	2,300	Rect. 90 x 750 x 2300
7A0413104	90	650.0	2,300	Rect. 90 x 650 x 2300
7A0423104	90	110.0	3,100	Rect. 90 x 110 x 3100
7A0429904	90	650.0	3,100	Rect. 90 x 650 x 3100
7A0433104	90	120.0	3,100	Rect. 90 x 120 x 3100
7A0443104	90	130.0	3,100	Rect. 90 x 130 x 3100
7A0453104	90	140.0	3,100	Rect. 90 x 140 x 3100
7A0409604	95	730.0	3,100	Rect. 95 x 730 x 3100
7A0463104	95	125.0	3,100	Rect. 95 x 125 x 3100
7A0401904	100	320.0	3,100	Rect. 100 x 320 x 3100
7A0402004	100	520.0	3,100	Rect. 100 x 520 x 3100
7A0403804	100	150.0	3,100	Rect. 100 x 150 x 3100
7A0404304	100	420.0	3,100	Rect. 100 x 420 x 3100
7A0406804	100	180.0	3,100	Rect. 100 x 180 x 3100
7A0413804	100	140.0	3,100	Rect. 100 x 140 x 3100
7A0420404	100	750.0	2,300	Rect. 100 x 750 x 2300
7A0421104	100	200.0	3,100	Rect. 100 x 200 x 3100
7A0423804	100	130.0	3,100	Rect. 100 x 130 x 3100
7A0443804	100	120.0	3,150	Rect. 100 x 120, x 3150
7A0479904	100	650.0	2,300	Rect. 100 x 650 x 2300
7A0400404	110	140.0	3,100	Rect. 110 x 140 x 3100
7A0400804	110	120.0	3,100	Rect. 110 x 120 x 3100
7A0410504	110	750.0	2,300	Rect. 110 x 750 x 2300
7A0421904	110	650.0	2,300	Rect. 110 x 650 x 2300
7A0439904	110	650.0	3,100	Rect. 110 x 650 x 3100
7A0481904	110	150.0	3,100	Rect. 110 x 150 x 3100
7A0491904	110	130.0	3,100	Rect. 110 x 130 x 3100
7A0431904	115	360.0	1,200	Rect. 115 x 360 x 1200
7A0441904	115	360.0	3,600	Rect. 115 x 360 x 3600
7A0402104	120	420.0	3,100	Rect. 120 x 420 x 3100
7A0405004	120	520.0	3,100	Rect. 120 x 520 x 3100
7A0412104	120	180.0	3,100	Rect. 120 x 180 x 3100
7A0412804	120	650.0	2,300	Rect. 120 x 650 x 2300
7A0416004	120	170.0	3,100	Rect. 120 x 170 x 3100
7A0420504	120	750.0	2,300	Rect. 120 x 750 x 2300
7A0410604	130	750.0	2,300	Rect. 130 x 750 x 2300
7A0411604	130	210.0	3,100	Rect. 130 x 210 x 3100
7A0449904	130	650.0	3,100	Rect. 130 x 650 x 3100
7A0489904	130	650.0	2,300	Rect. 130 x 650 x 2300
7A0409804	135	165.0	3,100	Rect. 135 x 165 x 3100

FC 250 / G.JL 250 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7A0491604	145	320.0	3,100	Rect. 145 x 320 x 3100
7A0405904	150	300.0	3,100	Rect. 150 x 300 x 3100
7A0459904	150	650.0	3,100	Rect. 150 x 650 x 3100
7A0499904	150	650.0	2,300	Rect. 150 x 650 x 2300
7A0415904	160	209.5	3,100	Rect. 160 x 209.5 x 3100
7A0402204	165	245.0	3,100	Rect. 165 x 245 x 3100
7A0421204	170	220.0	3,100	Rect. 170 x 220 x 3100
7A0420704	180	230.0	3,100	Rect. 180 x 230 x 3100
7A0400304	220	370.0	4,100	Rect. 220 x 370 x 4100
7A0413904	240	340.0	3,100	Rect. 240 x 340 x 3100
7A0402404	410	610.0	1,550	Rect. 410 x 610 x 1550
7A0422404	410	610.0	2,100	Rect. 410 x 610 x 2100
7A0432404	410	610.0	1,625	Rect. 410 x 610 x 1625
7A0442404	410	610.0	1,800	Rect. 410 x 610 x 1800
7A0402304	480	520.0	1,550	Rect. 480 x 520 x 1550
7A0422304	480	520.0	2,100	Rect. 480 x 520 x 2100
7A0432304	480	520.0	1,625	Rect. 480 x 520 x 1625
7A0462804	530	570.0	2,100	Rect. 530 x 570 x 2100

FC 300 / G.JL 300 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
720405004	19	38.1	1,880	Rect. 19.0 x 38.1 x 1880
720406304	22	42.0	1,880	Rect. 22.0 x 42.0 x 1880
720417604	28.6	54.0	2,490	Rect. 28.6 x 54.0 x 2490
720419004	30	40.0	1,880	Rect. 30 x 40 x 1880
720429004	30	40.0	2,000	Rect. 30 x 40 x 2000
720400104	31.7	57.1	1,880	Rect. 31.7 x 57.1 x 1880
720400204	31.7	82.5	1,880	Rect. 31.7 x 82.5 x 1880
720400304	31.7	107.9	1,880	Rect. 31.7 x 107.9 x 1880
720400404	31.7	133.3	1,880	Rect. 31.7 x 133.3 x 1880
720400504	31.7	158.7	1,880	Rect. 31.7 x 158.7 x 1880
720400604	31.7	260.3	1,880	Rect. 31.7 x 260.3 x 1880
720409504	31.7	190.5	1,750	Rect. 31.7 x 190.5 x 1750
720410604	31.7	241.3	2,083	Rect. 31.7 x 241.3 x 2083
720410104	35	70.0	1,070	Rect. 35 x 70 x 1070
720460904	38	120.0	1,800	Rect. 38 x 120 x 1800
720400704	38.1	57.1	1,880	Rect. 38.1 x 57.1 x 1880
720400804	38.1	82.5	1,880	Rect. 38.1 x 82.5 x 1880
720400904	38.1	107.9	1,880	Rect. 38.1 x 107.9 x 1880
720401004	38.1	133.3	1,880	Rect. 38.1 x 133.3 x 1880
720401104	38.1	158.7	1,880	Rect. 38.1 x 158.7 x 1880
720420804	38.1	82.5	2,140	Rect. 38.1 x 82.5 x 2140
720410404	41.3	241.3	2,090	Rect. 41.3 x 241.3 x 2090
720410504	41.3	190.5	1,750	Rect. 41.3 x 190.5 x 1750
720401204	44.4	50.8	1,880	Rect. 44.4 x 50.8 x 1880
720401304	44.4	107.9	1,880	Rect. 44.4 x 107.9 x 1880
720401404	44.4	114.3	1,880	Rect. 44.4 x 114.3 x 1880
720401504	44.4	158.7	1,880	Rect. 44.4 x 158.7 x 1880
720409904	50	140.0	3,150	Rect. 50 x 140 x 3150
720401604	50.8	63.5	1,880	Rect. 50.8 x 63.5 x 1880
720401704	50.8	92.1	1,880	Rect. 50.8 x 92.1 x 1880
720431704	50.8	158.7	1,880	Rect. 50.8 x 158.7 x 1880

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS – GRAY CAST IRON

FC 300 / GJL 300 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
720401804	57.1	82.5	1,880	Rect. 57.1 x 82.5 x 1880
720401904	57.1	107.9	1,880	Rect. 57.1 x 107.9 x 1880
720402004	57.1	133.3	1,880	Rect. 57.1 x 133.3 x 1880
720402104	57.1	158.7	1,880	Rect. 57.1 x 158.7 x 1880
720402204	57.1	209.5	1,880	Rect. 57.1 x 209.5 x 1880
720412004	57.1	133.3	2,045	Rect. 57.1 x 133.3 x 2045
720412104	57.1	158.7	1,086	Rect. 57.1 x 158.7 x 1086
720422104	57.1	158.7	1,630	Rect. 57.1 x 158.7 x 1630
720402304	63.5	158.7	1,880	Rect. 63.5 x 158.7 x 1880
720402404	63.5	184.1	1,880	Rect. 63.5 x 184.1 x 1880
720402504	63.5	209.5	1,880	Rect. 63.5 x 209.5 x 1880
720403604	63.5	107.9	1,880	Rect. 63.5 x 107.9 x 1880
720404004	70	85.0	3,100	Rect. 70 x 85 x 3100
720402604	76.2	209.5	1,880	Rect. 76.2 x 209.5 x 1880
720409804	76.2	101.6	1,880	Rect. 76.2 x 101.6 x 1880
720422604	76.2	209.5	2,420	Rect. 76.2 x 209.5 x 2420
720411004	79	118.0	1,900	Rect. 79 x 118 x 1900
720402704	82.5	107.9	1,880	Rect. 82.5 x 107.9 x 1880
720402904	82.5	260.3	1,880	Rect. 82.5 x 260.3 x 1880
720405504	85	90.0	3,100	Rect. 85 x 90 x 3100
720410204	85	110.0	3,100	Rect. 85 x 110 x 3100
720410304	85	125.0	3,100	Rect. 85 x 125 x 3100
720411104	95	115.0	3,100	Rect. 95 x 115 x 3100

FC 300 / GJL 300 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
720411204	95	135.0	3,100	Rect. 95 x 135 x 3100
720411304	95	155.0	3,100	Rect. 95 x 155 x 3100
720411404	95	175.0	3,100	Rect. 95 x 175 x 3100
720413404	95	128.0	1,880	Rect. 95 x 128 x 1880
720403004	107.9	133.3	1,880	Rect. 107.9 x 133.3 x 1880
720403104	139.7	165.1	1,880	Rect. 139.7 x 165.1 x 1880
720423104	142.8	361.9	1,880	Rect. 142.8 x 361.9 x 1880
720433104	146	361.9	1,880	Rect. 146.0 x 361.9 x 1880
720410004	149.2	190.5	1,880	Rect. 149.2 x 190.5 x 1880
720403204	177.8	406.4	1,880	Rect. 177.8 x 406.4 x 1880
720413204	177.8	533.4	1,880	Rect. 177.8 x 533.4 x 1880
720418204	266.7	609.6	1,880	Rect. 266.7 x 609.6 x 1880
720406204	317.5	457.2	1,880	Rect. 317.5 x 457.2 x 1880
720416904	355.6	558.8	1,880	Rect. 355.6 x 558.8 x 1880
720436904	355.6	558.8	813	Rect. 355.6 x 558.8 x 813
720446904	355.6	558.8	2,300	Rect. 355.6 x 558.8 x 2300
720419704	410	610.0	1,880	Rect. 410 x 610 x 1880
720429704	410	610.0	2,100	Rect. 410 x 610 x 2100

GMI LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
750400204	42.7	49.0	1,880	Rect. 42.7 x 49 x 1880

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 40015 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7B0440104	26.8	37.8	2,000	Rect. 26.8 x 37.8 x 2000
7B0450104	26.8	37.8	1,500	Rect. 26.8 x 37.8 x 1500
7B0460104	26.8	37.8	1,170	Rect. 26.8 x 37.8 x 1170
7B0470104	26.8	37.8	2,350	Rect. 26.8 x 37.8 x 2350
7B0420104	31.7	57.1	1,880	Rect. 31.7 x 57.1 x 1880
7B0400704	38.1	57.1	1,180	Rect. 38.1 x 57.1 x 1180
7B0410704	38.1	57.1	1,500	Rect. 38.1 x 57.1 x 1500
7B0410904	38.1	107.9	2,000	Rect. 38.1 x 107.9 x 2000
7B0420704	38.1	57.1	1,880	Rect. 38.1 x 57.1 x 1880
7B0430704	38.1	57.1	900	Rect. 38.1 x 57.1 x 900
7B0421104	39	345.0	2,000	Rect. 39 x 345 x 2000
7B0424204	44	69.0	1,330	Rect. 44 x 69 x 1330
7B0434104	44	69.0	1,530	Rect. 44 x 69 x 1530
7B0484104	44	69.0	1,170	Rect. 44 x 69 x 1170
7B0404804	44.4	69.8	1,880	Rect. 44.4 x 69.8 x 1880
7B0424804	44.4	50.8	2,000	Rect. 44.4 x 50.8 x 2000
7B0434804	44.4	69.8	1,500	Rect. 44.4 x 69.8 x 1500
7B0431804	57.1	82.5	1,880	Rect. 57.1 x 82.5 x 1880
7B0441804	57.1	107.5	2,000	Rect. 57.1 x 107.5 x 2000
7B0405904	61	86.0	1,880	Rect. 61 x 86 x 1880
7B0400904	63	158.0	2,000	Rect. 63 x 158 x 2000
7B0405004	65	85.0	2,000	Rect. 65 x 85 x 2000
7B0415104	71.5	92.0	2,000	Rect. 71.5 x 92 x 2000
7B0413304	90	145.0	2,000	Rect. 90 x 145 x 2000
7B0453004	93	108.0	2,000	Rect. 93 x 108 x 2000
7B0402904	115	180.0	2,000	Rect. 115 x 180 x 2000
7B0412204	120.6	150.0	1,880	Rect. 120.6 x 150 x 1880
7B0406704	140	240.0	2,000	Rect. 140 x 240 x 2000
7B0434204	160	210.0	2,000	Rect. 160 x 210 x 2000
7B0403204	170	220.0	2,000	Rect. 170 x 220 x 2000
7B0405204	190	230.0	2,000	Rect. 190 x 230 x 2000
7B0449404	250	740.0	2,000	Rect. 250 x 740 x 2000
7B0405504	311.1	387.3	1,880	Rect. 311.1 x 387.3 x 1880
7B0406404	320	470.0	2,000	Rect. 320 x 470 x 2000
7B0416404	355.6	558.8	1,880	Rect. 355.6 x 558.8 x 1880

GJS 400-7 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7B0400604	40	60.0	3,100	Rect. 40 x 60 x 3100
7B0410604	40	110.0	3,100	Rect. 40 x 110 x 3100
7B0420604	40	45.0	2,300	Rect. 40 x 45 x 2300
7B0401204	45	50.0	3,100	Rect. 45 x 50 x 3100
7B0401404	47	50.0	3,100	Rect. 47 x 50 x 3100
7B0401104	50	65.0	3,100	Rect. 50 x 65 x 3100
7B0405404	50	60.0	3,100	Rect. 50 x 60 x 3100
7B0406904	60	205.0	3,150	Rect. 60 x 205 x 3150
7B0416904	60	90.0	3,100	Rect. 60 x 90 x 3100
7B0426904	60	110.0	3,100	Rect. 60 x 110 x 3100
7B0427204	60	140.0	3,100	Rect. 60 x 140 x 3100
7B0419504	65	95.0	3,240	Rect. 65 x 95 x 3240
7B0419704	70	100.0	3,100	Rect. 70 x 100 x 3100

GJS 400-7 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7B0429704	70	100.0	3,200	Rect. 70 x 100 x 3200
7B0439704	70	120.0	3,100	Rect. 70 x 120 x 3100
7B0449704	70	90.0	3,100	Rect. 70 x 90 x 3100
7B0405704	80	130.0	3,100	Rect. 80 x 130 x 3100
7B0405804	80	140.0	3,100	Rect. 80 x 140 x 3100
7B0419804	80	110.0	3,100	Rect. 80 x 110 x 3100
7B0408304	88.9	120.6	3,100	Rect. 88.9 x 120.6 x 3100
7B0401004	90	150.0	3,100	Rect. 90 x 150 x 3100
7B0433204	90	180.0	3,100	Rect. 90 x 180 x 3100
7B0433304	90	110.0	3,100	Rect. 90 x 110 x 3100
7B0443104	90	120.0	3,100	Rect. 90 x 120 x 3100
7B0463304	90	100.0	3,100	Rect. 90 x 100 x 3100
7B0401504	95	115.0	3,100	Rect. 95 x 115 x 3100
7B0401604	95	135.0	3,100	Rect. 95 x 135 x 3100
7B0401704	95	155.0	3,100	Rect. 95 x 155 x 3100
7B0401804	95	175.0	3,100	Rect. 95 x 175 x 3100
7B0414004	100	110.0	3,100	Rect. 100 x 110 x 3100
7B0410004	100	650.0	3,100	Rect. 100 x 650 x 3100
7B0406604	105	135.0	2,100	Rect. 105 x 135 x 2100
7B0431504	105	135.0	3,100	Rect. 105 x 135 x 3100
7B0441504	105	125.0	3,100	Rect. 105 x 125 x 3100
7B0451504	105	130.0	3,100	Rect. 105 x 130 x 3100
7B0445704	110	160.0	2,000	Rect. 110 x 160 x 2000
7B0465704	110	160.0	2,100	Rect. 110 x 160 x 2100
7B0466704	110	160.0	3,100	Rect. 110 x 160 x 3100
7B0407504	120	185.0	2,000	Rect. 120 x 185 x 2000
7B0410204	120	650.0	3,100	Rect. 120 x 650 x 3100
7B0401304	130	140.0	3,100	Rect. 130 x 140 x 3100
7B0486704	130	150.0	3,100	Rect. 130 x 150 x 3100
7B0410804	140	650.0	3,100	Rect. 140 x 650 x 3100
7B0432904	140	170.0	3,100	Rect. 140 x 170 x 3100
7B0442904	140	170.0	2,100	Rect. 140 x 170 x 2100
7B0496704	148	163.0	3,100	Rect. 148 x 163 x 3100
7B0411004	160	650.0	3,100	Rect. 160 x 650 x 3100
7B0426704	165	185.0	3,100	Rect. 165 x 185 x 3100
7B0436704	165.1	215.9	3,100	Rect. 165.1 x 215.9 x 3100
7B0411104	180	650.0	3,100	Rect. 180 x 650 x 3100
7B0410304	180	780.0	2,100	Rect. 180 x 780 x 2100
7B0415204	190	220.0	3,100	Rect. 190 x 220 x 3100
7B0446704	190	250.0	3,100	Rect. 190 x 250 x 3100
7B0411204	200	650.0	3,100	Rect. 200 x 650 x 3100
7B0456704	215.9	266.7	3,100	Rect. 215.9 x 266.7 x 3100
7B0444804	220	370.0	3,100	Rect. 220 x 370 x 3100
7B0406804	250	555.0	2,160	Rect. 250 x 555 x 2160
7B0439404	250	550.0	2,200	Rect. 250 x 550 x 2200
7B0459404	250	740.0	2,300	Rect. 250 x 740 x 2300
7B0446004	270	520.0	3,100	Rect. 270 x 520 x 3100
7B0442804	300	530.0	2,360	Rect. 300 x 530 x 2360
7B0424504	406.4	558.8	1,880	Rect. 406.4 x 558.8 x 1880
7B0439904	410	610.0	2,100	Rect. 410 x 610 x 2100
7B0452804	530	570.0	1,450	Rect. 530 x 570 x 1450
7B0462804	530	570.0	2,100	Rect. 530 x 570 x 2100

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

GJS 400-15 LINE - RECTANGULAR CONTINUOUS CAST BARS

Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7G0404504	50	90.0	2,300	Rect. 50 x 90 x 2300
7G0404604	50	170.0	2,300	Rect. 50 x 170 x 2300
7G0420004	50	750.0	2,300	Rect. 50 x 750 x 2300
7G0420104	60	750.0	2,300	Rect. 60 x 750 x 2300
7G0401804	65	200.0	1,350	Rect. 65 x 200 x 1350
7G0410304	70	750.0	2,300	Rect. 70 x 750 x 2300
7G0449704	70	90.0	2,300	Rect. 70 x 90 x 2300
7G0420304	80	750.0	2,300	Rect. 80 x 750 x 2300
7G0402004	82	108.0	2,300	Rect. 82 x 108 x 2300
7G0401904	82.5	107.9	1,880	Rect. 82.5 x 107.9 x 1880
7G0401004	90	150.0	2,300	Rect. 90 x 150 x 2300
7G0423304	90	145.0	2,000	Rect. 90 x 145 x 2000
7G0430304	90	750.0	2,300	Rect. 90 x 750 x 2300
7G0443104	90	120.0	2,300	Rect. 90 x 120 x 2300
7G0463004	93	108.0	2,000	Rect. 93 x 108 x 2000
7G0404004	100	120.0	2,300	Rect. 100 x 120 x 2300
7G0420404	100	750.0	2,300	Rect. 100 x 750 x 2300
7G0416604	105	135.0	2,000	Rect. 105 x 135 x 2000
7G0426604	105	135.0	2,300	Rect. 105 x 135 x 2300
7G0402104	107.9	158.7	1,880	Rect. 107.9 x 158.7 x 1880
7G0400104	110	750.0	2,300	Rect. 110 x 750 x 2300
7G0466704	110	160.0	2,300	Rect. 110 x 160 x 2300
7G0476704	118	128.0	2,300	Rect. 118 x 128 x 2300
7G0400204	125	315.0	2,300	Rect. 125 x 315 x 2300
7G0400904	125	135.0	2,300	Rect. 125 x 135 x 2300
7G0400504	127	142.0	2,100	Rect. 127 x 142 x 2100
7G0486704	130	150.0	2,300	Rect. 130 x 150 x 2300
7G0415804	133.3	158.7	1,880	Rect. 133.3 x 158.7 x 1880
7G0432904	140	170.0	2,300	Rect. 140 x 170 x 2300
7G0496704	148	163.0	2,300	Rect. 148 x 163 x 2300
7G0424604	158.7	196.8	1,880	Rect. 158.7 x 196.8 x 1880
7G0426704	165	185.0	2,300	Rect. 165 x 185 x 2300
7G0436704	165.1	215.9	2,300	Rect. 165.1 x 215.9 x 2300
7G0400304	170	240.0	3,100	Rect. 170 x 240 x 3100
7G0410404	185	215.0	2,000	Rect. 185 x 215 x 2000
7G04005204	190	230.0	3,100	Rect. 190 x 230 x 3100
7G0415204	190	220.0	2,300	Rect. 190 x 220 x 2300
7G0446704	190	250.0	2,300	Rect. 190 x 250 x 2300
7G0456704	215.9	266.7	2,300	Rect. 215.9 x 266.7 x 2300
7G0416304	350	590.0	2,100	Rect. 350 x 590 x 2100
7G0416404	355.6	558.8	1,880	Rect. 355.6 x 558.8 x 1880
7G0400404	370	410.0	3,100	Rect. 370 x 410 x 3100
7G0400704	380	490.0	2,300	Rect. 380 x 490 x 2300
7G0449904	410	610.0	1,880	Rect. 410 x 610 x 1880
7G0469904	410	610.0	2,100	Rect. 410 x 610 x 2100
7G0479904	410	610.0	1,625	Rect. 410 x 610 x 1625
7G0439304	469	559.0	1,524	Rect. 469 x 559 x 1524
7G0400804	470	585.0	2,300	Rect. 470 x 585 x 2300
7G0429004	480	520.0	2,100	Rect. 480 x 520 x 2100
7G0459904	480	560.0	1,880	Rect. 480 x 560 x 1880
7G0462804	530	570.0	2,100	Rect. 530 x 570 x 2100

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - RECTANGULAR CONTINUOUS CAST BARS

Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
730491804	19.1	38.1	1,880	Rect. 19.1 x 38.1 x 1880
730460304	25.4	52.0	1,880	Rect. 25.4 x 52.0 x 1880
730470304	25.4	52.0	1,480	Rect. 25.4 x 52 x 1480
730480304	25.4	52.0	1,150	Rect. 25.4 x 52.0 x 1150
730450104	30	500.0	2,100	Rect. 30 x 500 x 2100
730400104	31.7	57.1	1,880	Rect. 31.7 x 57.1 x 1880
730400204	31.7	82.5	1,880	Rect. 31.7 x 82.5 x 1880
730400404	31.7	133.3	1,880	Rect. 31.7 x 133.3 x 1880
730406204	31.7	63.5	1,880	Rect. 31.7 x 63.5 x 1880
730416604	31.7	40.0	2,140	Rect. 31.7 x 40 x 2140
730426604	31.7	40.0	1,470	Rect. 31.7 x 40 x 1470
730430404	31.7	133.3	2,450	Rect. 31.7 x 133.3 x 2450
730436604	31.7	40.0	2,300	Rect. 31.7 x 40 x 2300
730460104	31.7	57.1	1,180	Rect. 31.7 x 57.1 x 1180
730440504	32	160.0	2,000	Rect. 32 x 160 x 2000
730400704	38.1	57.1	1,880	Rect. 38.1 x 57.1 x 1880
730400804	38.1	82.5	1,880	Rect. 38.1 x 82.5 x 1880
730401004	38.1	133.3	1,880	Rect. 38.1 x 133.3 x 1880
730401104	38.1	158.7	1,880	Rect. 38.1 x 158.7 x 1880
730406004	38.1	69.8	1,880	Rect. 38.1 x 69.8 x 1880
730451004	38.1	133.3	2,100	Rect. 38.1 x 133.3 x 2100
730430704	38.5	54.0	2,500	Rect. 38.5 x 54 x 2500
730418904	40	110.0	2,100	Rect. 40 x 110 x 2100
730430504	40	160.0	2,000	Rect. 40 x 160 x 2000
730428004	41	490.0	2,000	Rect. 41.0 x 490.0 x 2000
730401204	44.4	50.8	1,880	Rect. 44.4 x 50.8 x 1880
730401304	44.4	107.9	1,880	Rect. 44.4 x 107.9 x 1880
730411504	44.4	82.5	1,880	Rect. 44.4 x 82.5 x 1880
730419204	44.4	88.9	1,880	Rect. 44.4 x 88.9 x 1880
730421204	44.4	133.3	1,880	Rect. 44.4 x 133.3 x 1880
730429204	44.4	88.9	2,083	Rect. 44.4 x 88.9 x 2083
730441304	45	75.0	1,880	Rect. 45 x 75 x 1880
730403204	50	120.0	1,880	Rect. 50.0 x 120.0 x 1880
730440204	50	140.0	3,150	Rect. 50 x 140 x 3150
730441504	50	90.0	3,100	Rect. 50 x 90 x 3100
730401604	50.8	63.5	1,880	Rect. 50.8 x 63.5 x 1880
730481604	50.8	57.2	2,337	Rect. 50.8 x 57.15 x 2337
730428504	53.5	525.0	2,000	Rect. 53.5 x 525 x 2000
730441104	54	93.0	2,000	Rect. 54 x 93 x 2000
730424804	54.6	74.5	1,880	Rect. 54.6 x 74.5 x 1880
730431604	55	65.0	1,880	Rect. 55 x 65 x 1880
730441404	55	95.0	1,880	Rect. 55 x 95 x 1880
730451604	55.5	65.6	1,880	Rect. 55.5 x 65.6 x 1880
730420004	56	430.0	2,100	Rect. 56 x 430 x 2100
730401804	57.1	82.5	1,880	Rect. 57.1 x 82.5 x 1880
730417704	57.1	133.3	2,100	Rect. 57.1 x 133.3 x 2100
730421804	57.1	107.9	1,880	Rect. 57.1 x 107.9 x 1880
730426104	57.1	104.7	1,982	Rect. 57.1 x 104.7 x 1982
730436104	57.1	104.7	1,880	Rect. 57.1 x 104.7 x 1880
730440904	57.1	158.7	1,880	Rect. 57.1 x 158.7 x 1880
730451804	57.1	82.5	3,710	Rect. 57.1 x 82.5 x 3710
730471804	57.1	107.9	1,981	Rect. 57.1 x 107.9 x 1981

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
730481804	57.1	107.9	2,083	Rect. 57.1 x 107.9 x 2083
730471604	57.15	152.4	2,718	Rect. 57.15 x 152.4 x 2718
730441804	57.7	158.7	1,880	Rect. 57.7 x 158.7 x 1880
730417104	60	140.0	2,000	Rect. 60 x 140 x 2000
730427104	60	520.0	2,100	Rect. 60.0 x 520.0 x 2100
730437204	61.5	71.5	3,000	Rect. 61.5 x 71.5 x 3000
730448604	63.5	107.9	1,930	Rect. 63.5 x 107.9 x 1930
730458604	63.5	158.0	2,000	Rect. 63.5 x 158 x 2000
730405004	65	85.0	2,000	Rect. 65 x 85 x 2000
730431204	66.8	133.3	2,490	Rect. 66.8 x 133.3 x 2490
730461204	66.8	133.3	2,083	Rect. 66.8 x 133.3 x 2083
730471204	66.8	133.3	2,718	Rect. 66.8 x 133.3 x 2718
730481204	66.8	133.3	1,880	Rect. 66.8 x 133.3 x 1880
730403004	69.8	114.3	1,880	Rect. 69.8 x 114.3 x 1880
730420604	69.8	88.9	1,880	Rect. 69.8 x 88.9 x 1880
730429604	69.8	95.2	1,880	Rect. 69.8 x 95.2 x 1880
730431504	69.8	82.5	1,980	Rect. 69.8 x 82.5 x 1980
730439604	69.8	95.2	3,710	Rect. 69.8 x 95.2 x 3710
730451504	69.8	82.5	1,880	Rect. 69.8 x 82.5 x 1880
730499604	69.85	108.0	1,880	Rect. 69.85 x 107.95 x 1880
730431104	71.5	92.0	3,000	Rect. 71.5 x 92 x 3000
730407704	72	182.0	2,000	Rect. 72 x 182 x 2000
730438604	73.03	165.1	1,880	Rect. 73.03 x 165.1 x 1880
730417004	75	550.0	2,100	Rect. 75.0 x 550.0 x 2100
730418004	76.2	209.5	1,880	Rect. 76.2 x 209.5 x 1880
730423304	76.2	101.6	1,880	Rect. 76.2 x 101.6 x 1880
730401904	82.5	107.9	1,880	Rect. 82.5 x 107.9 x 1880
730402904	82.5	209.5	1,880	Rect. 82.5 x 209.5 x 1810
730405404	82.5	133.3	1,880	Rect. 82.5 x 133.3 x 1880
730421904	82.5	158.7	1,880	Rect. 82.5 x 158.7 x 1880
730451904	82.5	120.6	1,880	Rect. 82.5 x 120.6 x 1880
730461904	82.5	95.2	1,880	Rect. 82.5 x 95.2 x 1880
730408304	88.9	120.6	2,080	Rect. 88.9 x 120.6 x 2080
730441704	88.9	158.7	1,880	Rect. 88.9 x 158.7 x 1880
730413304	90	145.0	2,000	Rect. 90 x 145 x 2000
730413504	92.1	120.6	1,880	Rect. 92.1 x 120.6 x 1880
730453004	93	108.0	3,000	Rect. 93 x 108 x 3000
730441204	95.2	133.3	1,880	Rect. 95.2 x 133.3 x 1880
730451204	95.2	120.6	1,880	Rect. 95.2 x 120.6 x 1880
730412804	95.3	107.9	1,880	Rect. 95.3 x 107.9 x 1880
730423404	101.6	127.0	1,880	Rect. 101.6 x 127 x 1880
730423504	101.6	152.4	1,880	Rect. 101.6 x 152.4 x 1880
730492004	103.6	129.0	1,880	Rect. 103.6 x 129 x 1880
730497104	103.6	154.4	1,880	Rect. 103.6 x 154.4 x 1880
730430204	107	135.0	2,000	Rect. 107 x 135 x 2000
730402004	107.9	133.3	1,880	Rect. 107.9 x 133.3 x 1880
730402104	107.9	158.7	1,880	Rect. 107.9 x 158.7 x 1880
730432104	107.9	146.1	1,880	Rect. 107.9 x 146.1 x 1880
730442104	107.9	209.5	2,060	Rect. 107.9 x 209.5 x 2060
730462104	107.9	146.1	3,710	Rect. 107.9 x 146.1 x 3710
730472104	107.9	120.6	1,880	Rect. 107.9 x 120.6 x 1880
730482104	107.9	146.1	2,032	Rect. 107.9 x 146.1 x 2032

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
730419504	110.7	186.7	1,880	Rect. 110.7 x 186.7 x 1880
730425704	111	116.0	2,000	Rect. 111 x 116 x 2000
730430804	113	153.5	3,000	Rect. 113 x 153.5 x 3000
730450804	113	153.5	14.5	Rect. 113 x 153.5 x 14.5
730431004	114.3	133.3	1,880	Rect. 114.3 x 133.3 x 1880
730441004	114.3	165.1	1,880	Rect. 114.3 x 165.13 x 1880
730471004	114.3	139.7	1,880	Rect. 114.3 x 139.7 x 1880
730412904	115	180.0	2,000	Rect. 115 x 180 x 2000
730432904	116	128.5	2,000	Rect. 116 x 128.5 x 2000
730440004	116	515.0	2,100	Rect. 116 x 515 x 2100
730461004	117.5	174.6	1,600	Rect. 117.5 x 174.6 x 1600
730407504	120	185.0	2,000	Rect. 120.0 x 185.0 x 2000
730417504	120	178.0	2,000	Rect. 120 x 178 x 2000
730443404	120	190.0	2,350	Rect. 120 x 190 x 2350
730403104	120.6	158.7	1,880	Rect. 120.6 x 158.7 x 1880
730443304	127	139.7	1,981	Rect. 127 x 139.7 x 1981
730410404	130.68	156.3	1,956	Rect. 130.68 x 156.34 x 1956
730412604	133.3	184.1	1,880	Rect. 133.3 x 184.1 x 1880
730415804	133.3	158.7	1,880	Rect. 133.3 x 158.7 x 1880
730425804	133.3	209.5	1,880	Rect. 133.3 x 209.5 x 1880
730416904	139.7	190.5	1,880	Rect. 139.7 x 190.5 x 1880
730426904	139.7	165.1	1,880	Rect. 139.7 x 165.1 x 1880
730406704	140	240.0	2,000	Rect. 140 x 240 x 2000
730427404	140	490.0	2,100	Rect. 140 x 490 x 2100
730491604	145	240.0	2,000	Rect. 145 x 240 x 2000
730434004	146	209.5	2,134	Rect. 146 x 209.5 x 2134
730441604	146.1	212.7	2,134	Rect. 146.1 x 212.7 x 2134
730433904	152.4	187.3	1,880	Rect. 152.4 x 187.3 x 1880
730443904	152.4	222.2	1,880	Rect. 152.4 x 222.2 x 1880
730492304	154.4	179.8	1,880	Rect. 154.4 x 179.8 x 1880
730444604	155.6	171.4	1,880	Rect. 155.6 x 171.4 x 1880
730402304	158.7	209.5	1,880	Rect. 158.7 x 209.5 x 1880
730411404	158.7	184.1	2,010	Rect. 158.7 x 184.1 x 2010
730412404	158.7	260.3	1,880	Rect. 158.7 x 260.3 x 1880
730421404	158.7	184.1	1,956	Rect. 158.7 x 184.1 x 1956
730422304	158.7	196.8	1,880	Rect. 158.7 x 196.8 x 1880
730431404	158.7	234.9	1,575	Rect. 158.7 x 234.9 x 1575
730432304	158.7	209.5	2,134	Rect. 158.7 x 209.5 x 2134
730442304	158.7	209.5	2,010	Rect. 158.7 x 209.5 x 2010
730444704	158.7	171.4	1,930	Rect. 158.7 x 171.4 x 1930
730451404	158.7	184.1	1,880	Rect. 158.7 x 184.1 x 1880
730430904	160	170.0	3,100	Rect. 160 x 170 x 3100
730422104	165.1	215.9	1,880	Rect. 165.1 x 215.9 x 1880
730423204	165.1	177.8	1,880	Rect. 165.1 x 177.8 x 1880
730429504	165.1	241.3	1,880	Rect. 165.1 x 241.3 x 1880
730439504	165.1	241.3	1,575	Rect. 165.1 x 241.3 x 1575
730426204	170	780.0	4,700	Rect. 170 x 780 x 4700
730422404	171.4	247.6	1,930	Rect. 171.4 x 247.6 x 1930
730428404	171.4	209.5	1,880	Rect. 171.4 x 209.5 x 1880
730432404	171.4	247.6	2,642	Rect. 171.4 x 247.6 x 2642
730402404	177.8	406.4	1,880	Rect. 177.8 x 406.4 x 1880
730430604	178	198.0	1,810	Rect. 178 x 198 x 1810

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
730440604	178	198.0	1,950	Rect. 178 x 198 x 1950
730430004	180	780.0	1,170	Rect. 180 x 780 x 1170
730440804	184.1	234.9	1,880	184.1 x 234.9 x 1880
730425004	184.2	301.6	1,880	Rect. 184.2 x 301.6 x 1880
730447504	185	196.0	2,000	Rect. 185 x 196 x 2000
730437504	185	215.0	1,880	Rect. 185 x 215 x 1880
730440404	190	420.0	2,250	Rect. 190 x 420 x 2250
730440704	190.5	241.3	1,880	190.5 x 241.3 x 1880
730435204	193	450.0	2,100	Rect. 193 x 450 x 2100
730425404	205	210.0	2,160	Rect. 205 x 210 x 2160
730412504	209.5	260.3	1,880	Rect. 209.5 x 260.3 x 1880
730422504	209.5	311.1	1,880	Rect. 209.5 x 311.1 x 1880
730439704	215.9	266.7	1,880	Rect. 215.9 x 266.7 x 1880
730449004	215.9	298.5	1,651	Rect. 215.9 x 298.5 x 1651
730402504	228	278.0	1,880	Rect. 228 x 278 x 2100
730402604	234.9	311.1	1,880	Rect. 234.9 x 311.1 x 1880
730432604	234.9	311.1	2,150	Rect. 234.9 x 311.1 x 2150
730425504	241.3	317.5	1,880	Rect. 241.3 x 317.5 x 1880
730418604	257	311.1	1,880	Rect. 257 x 311.1 x 1880
730402704	260.3	336.5	1,880	Rect. 260.3 x 336.5 x 1880
730415604	260.3	311.1	1,880	Rect. 260.3 x 311.1 x 1880
730434604	260.3	317.5	1,880	Rect. 260.3 x 317.5 x 1880
730424304	266.7	609.6	1,880	Rect. 266.7 x 609.6 x 1880
730424404	266.7	635.0	2,140	Rect. 266.7 x 635 x 2140
730424604	266.7	317.5	1,880	Rect. 266.7 x 317.5 x 1880
730424704	266.7	342.9	1,880	Rect. 266.7 x 342.9 x 1880
730454404	266.7	635.0	2,300	Rect. 266.7 x 635 x 2300
730405504	311.1	387.3	1,880	Rect. 311.1 x 387.3 x 1880
730427504	317.5	368.3	1,880	Rect. 317.5 x 368.3 x 1880
730431704	336.5	495.3	1,880	Rect. 336.5 x 495.3 x 1880
730416404	355.6	558.8	1,880	Rect. 355.6 x 558.8 x 1880
730402804	361.9	400.0	1,950	Rect. 361.9 x 400.0 x 1950
730414504	406.4	558.8	1,400	Rect. 406.4 x 558.8 x 1400
730424504	406.4	558.8	1,880	Rect. 406.4 x 558.8 x 1880
730419304	469.9	558.8	1,500	Rect. 469.9 x 558.8 x 1500
730439304	469.9	558.8	1,524	Rect. 469.9 x 558.8 x 1524

GJS 400-18 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7H0400204	40	100.0	2,200	Rect. 40 x 100 x 2200
7H0400304	180	200.0	2,000	Rect. 180 x 200 x 2000
7H0400104	190	280.0	2,000	Rect. 190 x 280 x 2000
7H0400404	250	550.0	2,200	Rect. 250.0 x 550.0 x 2200
7H0419904	410	610.0	1,550	Rect. 410 x 610 x 15500
7H0429904	410	610.0	1,625	Rect. 410 x 610 x 1625
7H0419004	480	520.0	1,550	Rect. 480 x 520 x 1550

LINE FE 50007 / GJS 500-7 - SQUARE CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7C0415404	30	90.0	3,100	Rect. 30 x 90 x 3100
7C0425304	40	180.0	2,220	Rect. 40 x 180 x 2220
7C0435304	40	65.0	3,100	Rect. 40 x 65 x 3100
7C0404504	50	90.0	3,100	Rect. 50 x 90 x 3100
7C0405304	50	70.0	3,100	Rect. 50 x 70 x 3100
7C0412504	60	100.0	3,100	Rect. 60 x 100 x 3100
7C0400204	70	110.0	3,100	Rect. 70 x 110 x 3100
7C0419704	70	100.0	3,100	Rect. 70 x 100 x 3100
7C0439804	80	110.0	3,100	Rect. 80 x 110 x 3100
7C0449804	80	100.0	3,150	Rect. 80.0 x 100.0 x 3150
7C0406104	88	118.0	3,100	Rect. 88 x 118 x 3100
7C0406204	90	140.0	3,100	Rect. 90 x 140 x 3100
7C0443104	90	120.0	3,100	Rect. 90 x 120 x 3100
7C0463304	90	100.0	3,100	Rect. 90 x 100 x 3100
7C0414004	100	110.0	3,100	Rect. 100 x 110 x 3100
7C0424004	100	120.0	3,100	Rect. 100 x 120 x 3100
7C0410204	120	650.0	3,100	Rect. 120 x 650 x 3100
7C0406004	125	140.0	3,100	Rect. 125 x 140 x 3100
7C0402204	135	195.0	2,450	Rect. 135 x 195 x 2450
7C0410804	140	650.0	3,100	Rect. 140 x 650 x 3100
7C0410904	160	200.0	3,100	Rect. 160 x 200 x 3100
7C0411004	160	650.0	3,100	Rect. 160 x 650 x 3100
7C0411104	180	650.0	3,100	Rect. 180 x 650 x 3100
7C0411204	200	650.0	3,100	Rect. 200 x 650 x 3100
7C0429804	215	245.0	3,100	Rect. 215 x 245 x 3100
7C0419804	220	370.0	3,100	Rect. 220 x 370 x 3100
7C0400904	370	410.0	3,100	Rect. 370 x 410 x 3100

LINE FE 55006 / 80 - 55 - 06 / GJS 550-6 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
740402004	107.9	133.3	1,880	Rect. 107.9 x 133.3 x 1880
740426904	139.7	165.1	1,880	Rect. 139.7 x 165.1 x 1880
740402904	155.6	171.4	1,880	Rect. 155.6 x 171.4 x 1880
740402304	158.7	209.5	1,880	Rect. 158.7 x 209.5 x 1880
740412404	177.8	406.4	2,600	Rect. 177.8 x 406.4 x 2600
740405504	266.7	635.0	2,134	Rect. 266.7 x 635 x 2134
740415504	266.7	635.0	2,300	Rect. 266.7 x 635 x 2300
740424904	266.7	609.6	1,880	Rect. 266.7 x 609.6 x 1880
740416404	355.6	558.8	1,880	Rect. 355.6 x 558.8 x 1880
740405304	431.8	558.8	1,370	Rect. 431.8 x 558.8 x 1370

Tupy Codes

CODES LIST RECTANGULAR CONTINUOUS CAST BARS – NODULAR CAST IRON

FE 60003 / GJS 600-3 LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
7D0400604	25	40.0	3,100	Rect. 25 x 40 x 3100
7D0415304	30	80.0	3,100	Rect. 30 x 80 x 3100
7D0425304	30	90.0	3,100	Rect. 30 x 90 x 3100
7D0415404	50	400.0	3,100	Rect. 50 x 400 x 3100
7D0420004	50	750.0	2,300	Rect. 50.0 x 750.0 x 2300
7D0400104	60	140.0	3,100	Rect. 60 x 140 x 3100
7D0420104	60	750.0	2,300	Rect. 60.0 x 750.0 x 2300
7D0400304	65	160.0	3,100	Rect. 65 x 160 x 3100
7D0410304	70	750.0	2,300	Rect. 70 x 750 x 2300
7D0415704	70	80.0	3,100	Rect. 70 x 80 x 3100
7D0420304	80	750.0	2,300	Rect. 80 x 750 x 2300
7D0400404	90	150.0	3,100	Rect. 90 x 150 x 3100
7D0430304	90	750.0	2,300	Rect. 90 x 750 x 2300
7D0400504	100	200.0	3,100	Rect. 100 x 200 x 3100
7D0410004	100	650.0	3,100	Rect. 100 x 650 x 3100
7D0420404	100	750.0	2,300	Rect. 100 x 750 x 2300
7D0425704	105	145.0	3,100	Rect. 105 x 145 x 3100
7D0410204	120	650.0	3,100	Rect. 120 x 650 x 3100
7D0410804	140	650.0	3,100	Rect. 140 x 650 x 3100
7D0411004	160	650.0	3,100	Rect. 160 x 650 x 3100
7D0411104	180	650.0	3,100	Rect. 180 x 650 x 3100
7D0411204	200	650.0	3,100	Rect. 200 x 650 x 3100
7D0410504	220	370.0	3,100	Rect. 220 x 370 x 3100
7D0400904	370	410.0	3,100	Rect. 370 x 410 x 3100
7D0400704	380	490.0	2,300	Rect. 380 x 490 x 2300
7D0424504	406.4	558.8	1,880	Rect. 406.4 x 558.8 x 1880
7D0405604	410	610.0	1,550	Rect. 410 x 610 x 1550
7D0415604	410	610.0	1,625	Rect. 410 x 610 x 1625
7D0425604	410	610.0	1,880	Rect. 410 x 610 x 1880
7D0435604	410	610.0	2,100	Rect. 410 x 610 x 2100
7D0445604	410	610.0	2,300	Rect. 410 x 610 x 2300
7D0400804	470	585.0	2,300	Rect. 470 x 585 x 2300
7D0462804	530	570.0	2,100	Rect. 530 x 570 x 2100

LINE FE 70002 / GJS 700-2 - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
770400404	90	575.0	2,000	Rect. 90 x 575 x 2000
770400504	100	500.0	2,000	Rect. 100 x 500 x 2000
770400304	260	380.0	2,300	Rect. 260 x 380 x 2300
770400904	370	410.0	3,100	Rect. 370 x 410 x 3100
770424504	406.4	558.8	1,880	Rect. 406.4 x 558.8 x 1880
770400204	410	610.0	2,350	Rect. 410 x 610 x 2350

WRI LINE - RECTANGULAR CONTINUOUS CAST BARS				
Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
780400404	90	575.0	2,000	Rect. 90 x 575 x 2000
780400504	100	500.0	2,000	Rect. 100 x 500 x 2000
780410004	100	650.0	2,100	Rect. 100 x 650 x 2100
780410804	140	650.0	2,100	Rect. 140 x 650 x 2100
780411204	200	650.0	2,100	Rect. 200 x 650 x 2100
780400304	260	380.0	2,100	Rect. 260 x 380 x 2100
780416404	355.6	558.8	2,100	Rect. 355.6 x 558.8 x 2100
780400204	410	610.0	2,100	Rect. 410 x 610 x 2100

CODES LIST SPECIAL CONTINUOUS CAST BARS - GRAY CAST IRON

FC 250 / GJL 250 LINE - SPECIAL GRAY CONTINUOUS CAST BARS					
Format	Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Oval	7A1111704	25	90.0	3,520	Oval 25 x 90 x 3520
Oval	7A1121704	25	90.0	2,100	Oval 25 x 90 x 2100

FC 300 / GJL 300 LINE - SPECIAL GRAY CONTINUOUS CAST BARS					
Format	Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Rail	721100704	41.5	87.6	1,956	T (5) 41.5 x 87.6 x 1956
Rail	721100904	86.87	105.2	1,880	Husco 86.87 x 105.15 x 1880
Rail	721101104	53.9	165.1	1,930	53.9 x 165.1 x 1930
Rail	721101304	66.7	266.7	1,930	MI 66.7 x 266.7 x 1930
Rail	721101504	79.2	215.9	2,540	79.2 x 215.9 x 2540
Rail	721101604	70.3	95.7	1,880	Triangle 70.3 x 95.7 x 1880

GMI LINE - SPECIAL GRAY CONTINUOUS CAST BARS					
Format	Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Half-moon	750500204	45	48.0	2,000	MC R 45 x H 48 x 2000
Half-moon	750500304	55	60.0	2,000	MC R 55 x H 60 x 2000
Half-moon	750500604	65.5	24.0	2,050	MC R 65.5 x R 24.0 x H 69.5 x 2050
Half-moon	750500904	70.8	75.0	2,000	MC R 70.8 x H 75 x 2000
Half-moon	750501804	104	110.0	2,000	MC R 104.0 x H 110.0 x 2000
Half-moon	750502604	57.5	63.0	2,000	MC R 57.5 x H 63 x 2000
Half-moon	750502704	47.5	54.0	2,000	MC R 47.5 x H 54 x 2000
Half-moon	750502804	92.5	90.0	2,000	MC R 92.5 x H 98 x 2000
Half-moon	750503004	75	80.0	2,100	MC R 75 x H 80 x 2100
Half-moon	750503504	47	52.5	470	MC R 47 x H 52.5 x 470
Half-moon	750504004	65.5	69.5	2,100	MC R 65.5 x H 69.5 x 2100
Half-moon	750511804	104	110.0	2,100	MC R 104 x H 110 x 2100
Half-moon	750512604	57.5	63.0	1,880	MC R 57.5 x H 63 x 1880
Half-moon	750512804	92.5	98.0	2,100	MC R 92.5 x H 98 x 2100
Half-moon	750513504	47	52.5	2,000	MC R 47 x H 52.5 x 2000
Half-moon	750520204	44	48.0	2,100	MC R 44 x H 48 x 2100
Half-moon	750523504	47	52.5	1,880	MC R 47 x H 52.5 x 1880
Half-moon	750530204	54	58.0	2,100	MC R 54 x H 58 x 2100

Tupy Codes

CODES LIST SPECIAL CONTINUOUS CAST BARS - NODULAR CAST IRON

LINE FE 40015 - SPECIAL NODULAR CONTINUOUS CAST BARS						
Format	Tupy Code	Diameter (mm)	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Rail	7B1100304	-	121	79.0	1,880	B 121 x H 79 x 1880

LINE FE 45012 / 65 - 45 - 12 / GJS 450-12 - SPECIAL NODULAR CONTINUOUS CAST BARS						
Format	Tupy Code	Diameter (mm)	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Half-moon	730500204	-	60	67.0	2,000	MC R 60 x H 67 x 2000
Half-moon	730500504	-	65	72.0	2,000	MC R 65.0 x R 20.0 x H 72.0 x 2000
1/4 Circular	730500704	72	-	-	2,000	1/4 CIRCULAR R 72 x 2000
Triple Mold	730700304	-	107	78.0	2,000	MT 107.0 x H 78.0 x 2000
Triple Mold	730700804	-	125	81.0	2,000	MT B 125.0 x H 81.0 x 2000
Rail	731100304	-	126	124.0	3,050	Rail 126 x 124 x 3050
Design	731100604	85	-	-	2,000	Nadir Figueiredo D85
Rail	731100804	-	200	110.0	2,000	Rail 200 x 110 x 2000
Design	731100904	-	120	190.0	4,700	Profile/ZFR 120 x 190 x 4700
Design	731101004	-	104.8	161.9	2,300	Cast Block - VITON- L535
Design	731101104	-	90	135.0	2,060	P2 - D 90 x 135 x 2060
Design	731101204	-	88	155.0	2,060	P2 - T 88 x 155 x 2060
Design	731101304	-	80	110.0	2,060	P1-D 80 x 110 x 2060
Design	731101404	-	73	133.0	2,060	P1-T 76 x 133 x 2060
Design	731101604	165.77	-	-	2,300	Tri-lobe SR T 10 x 2300
Design	731101704	208.8	-	-	2,300	Tri-lobe SR T 13 x 2300
Design	731101804	258.88	-	-	2,300	Tri-lobe SR T 16 x 2300
Design	731101904	-	177.8	192.0	1,880	Spec. 177.8 x 192 x 1880
Design	731102004	-	120.5	120.5	1,880	Flo Tork 120.5 x 120.5 x 1880
Hexagonal	731110104	63.5	-	-	2,300	Hex. 63.5 x 2300
Hexagonal	731110204	50.8	-	-	2,300	Hex. 50.8 x 2300
Special	731102104	224	-	-	1,930	Square 224.0 x 224 x 1930

GJS 400-15 LINE - SPECIAL NODULAR CONTINUOUS CAST BARS						
Format	Tupy Code	Diameter (mm)	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Design	7G1100104	167	-	-	2,000	Tri-lobe 167.0 x 2000

LINE FE 70002 / GJS 700-2 - SPECIAL NODULAR CONTINUOUS CAST BARS						
Format	Tupy Code	Diameter (mm)	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Half-moon	770500104	-	149.2	105.3	1,880	MC B149.2 x H 105.3 x 1880
Half-moon	770500204	-	81.8	66.0	1,880	MC B81.8 x H 66 x 1880
Oval	771100304	-	126.2	169.1	1,270	OV R 126.2 x R 169.1 x 1270

CODES LIST SPECIAL CONTINUOUS CAST BARS - NODULAR CAST IRON

NPE 60 TT LINE - RECTANGULAR CONTINUOUS CAST BARS					
Format	Tupy Code	Height (mm)	Width (mm)	Length (mm)	Tupy Description
Half-moon	7F0500104	47.0	52.5	2,000	MC R 47 x H 52.5 x 2000
Half-moon	7F0500304	55.0	60.0	2,000	MC R 55 x H 60 x 2000
Half-moon	7F0500404	75.0	80.0	2,100	MC R 75 x H 80 x 2100
Half-moon	7F0500504	92.5	98.0	2,100	MC R 92.5 x H 98 x 2100
Half-moon	7F0500604	104.0	110.0	2,100	MC R 104 x H 110 x 2100
Half-moon	7F0511204	45.0	48.0	2,000	MC R 45 x H 48 x 2000
Half-moon	7F0511504	29.0	34.0	2,000	MC R 29 x H 34 x 2000
Half-moon	7F0511704	28.0	30.0	406	MC R 28 x H 30 x 406
Half-moon	7F0511804	37.5	42.7	445	MC R 37.5 x H 42.7 x 445
Half-moon	7F0512104	45.0	50.2	445	MC R 45 x H 50.2 x 445
Half-moon	7F0512204	55.5	60.7	477	MC R 55.5 x H 60.7 x 477
Half-moon	7F0512304	60.0	65.2	477	MC R 60 x H 65.2 x 477
Half-moon	7F0521804	37.5	42.7	58	MC R 37.5 x H 42.7 x 58
Half-moon	7F0522104	45.0	50.2	58	MC R 45 x H 50.2 x 58
Double Mold	7F0600104	104.2	80.0	2,000	MD 4 5/8" - B104.2 x H 80 x 2000
Double Mold	7F0600204	105.0	74.5	2,000	MDF 105 x H 74.5 x 2000
Double Mold	7F0600704	66.0	54.0	2,000	MD 3" - B 66 x H 54 x 2000
Double Mold	7F0600804	105.0	65.5	2,000	MDM 3 3/8" - B105 x H 65.5 x 2000
Double Mold	7F0600904	110.0	60.0	2,000	MD 3" - B110 x H 60 x 2000
Double Mold	7F0601004	110.0	65.5	2,000	MD 3 3/8" - B110 x H 65.5 x 2000
Double Mold	7F0630104	104.2	80.0	380	MD 4 5/8" - B104.2 x H 80 x 380
Triple Mold	7F0700704	70.6	71.0	2,000	MT 3 7/8" - B70.6 x H 71 x 2000
Triple Mold	7F0710704	70.6	71.0	380	MT 3 7/8" - B70.6 x H 71 x 380
Triple Mold	7F0720604	70.6	59.5	380	MT 3" - B70.6 x H 59.5 x 380
Triple Mold	7F0730204	51.6	52.4	380	MT 2 1/4" - B51.6 x H 52.4 x 380

Additional Information

CORRESPONDING MATERIALS IN STANDARDS OF OTHER ENTITIES

The specifications of VERSABAR® follow the DIN-EN 16482 and ABNT NBR 15850 standards, with its properties correlating to the materials specified by the standards and entities, as demonstrated in Tables 51 and 52.

Table 51 – VERSABAR® Materials in gray cast iron alloys according to other standards and entities

Gray Cast Iron				
Tupy	71	7A	72	GMI
ABNT NBR 15850	FC 200	FC 250	FC 300	*
ASTM A 48	Class 30	Class 35	Class 40	*
ASTM A 159	G 2500	G 3000	G 3500	*
SAE J 431	G 2500	G 3000	G 3500	*
DIN-EN-16482	EN-GJL-200	EN-GJL-250	EN-GJL-300	*
DIN-1691	(GG-20)	(GG-25)	(GG-30)	*
Identification of the bars	White	Light Gray	Light Green	Pink

Table 52 – VERSABAR® materials in nodular cast iron alloys according to other standards and entities

Nodular Cast Iron												
Tupy	7G	7B	7H	73	7C	74	7D	77	ADI	NPE 60	NPE 60 T	WRI 100
ABNT NBR 15450	FE 40015	FE 40015		FE 45012	FE 50007	FE 55006	FE 60003	FE 70002	*	*	*	*
ASTM A 536			60-40-18	65-45-12		80-55-06	80-60-03		*	*	*	*
SAE J 434			D 4018	D 4512		D 5504			*	*	*	*
DIN-EN-16482	EN-GJS 400-15	EN-GJS 400-7	EN-GJS 400-18	ENGJS 450-12	EN-GJS 500-7	ENGJS 550-6	EN-GJS 600-3	EN-GJS 700-2	*	*	*	*
DIN-1693	GGG-40	GGG-40			GGG-50		GGG-60	GGG-70	*	*	*	*
Identification of the bars	Orange	Yellow	Beige	Dark Yellow	Red	Light Blue	Blue Yellow	Black	Brown	Purple	Lilac	Leaf Green

* Tupy specification.

Figure 38 – Identification of bars by Class and Color



Additional Information

USEFUL FORMULAS / CONVERSION FACTORS

To calculate the weight/meter in sections:

Round

$$\text{kg/m} = D^2 \times 0.005655$$

where: D = diameter in millimeters

Square

$$\text{kg/m} = W \times W \times 0.0072$$

where: L = Width in millimeters

Rectangular

$$\text{kg/m} = L \times H \times 0.0072$$

where: L = Width in millimeter

H = Height in millimeter

Table 53 - Unit conversion system

To Convert	Operation	To Get
PSI	$\times 0.00694$	N/mm ² or MPa
N/mm ² or MPa	$\times 144$	PSI
kgf/mm ²	$\times 9.80665$	N/mm ² or MPa
N/mm ² or MPa	$\times 0.10197$	kgf/mm ²
mm	$\times 0.03937$	pol
pol	$\times 25.4$	mm
mm	$\times 0.00328$	ft
ft	$\times 304.8$	mm
Lb	$\times 0.4536$	kg
kg	$\times 2.2046$	Lb
°C	$(^{\circ}\text{C} \times 1.8) + 32$	°F
°F	$(^{\circ}\text{F} - 32) \times 0.556$	°C
°C	$^{\circ}\text{C} + 273.15$	K
K	$\text{k} - 273.15$	°C

Examples of Application

SAND MIXER SHAFT

Original material: Steel 1045

VERSABAR Material: FE 55006

Dimensions: Ø 210mm x 1550mm



PULLEY

Original material: Steel 12L14

VERSABAR Material: FE 45012



BEARING (Marine Industry)

Original Material: Steel 1018/1045

VERSABAR Material: FE 45012

Diameter: 300 mm



HYDRAULIC PISTON PLUNGER

Original material: T6 6061 Aluminum

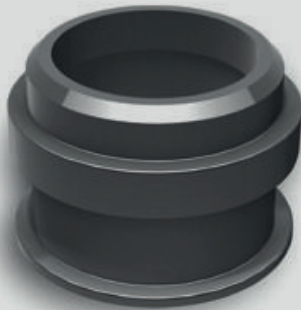
VERSABAR Material: FE 45012



Examples of Application

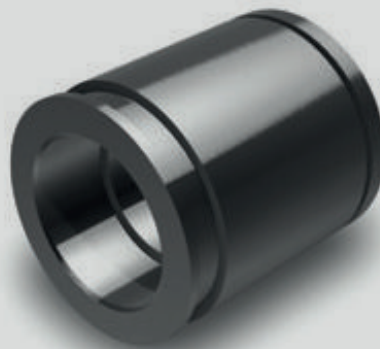
CYLINDER ROD GUIDE (Hydraulic Component)

Original material: Nodular cast iron (in sand)
VERSABAR Material: FE 45012



HYDRAULIC CYLINDER PISTON

Original material: Nodular cast iron (in sand)
VERSABAR Material: FE 45012



HYDRAULIC MANIFOLD BLOCK

Original material: Steel 1018
VERSABAR Material: FE 40015



HYDRAULIC MANIFOLD BLOCK

Original material: T6 6061 Aluminum
VERSABAR Material: FE 40015



Examples of Application

SHAFT BEARING

Original material: Steel 12L14

VERSABAR Material: FE 45012



PLUNGER (Blower for glass molds)

Original material: Gray cast iron (in sand)

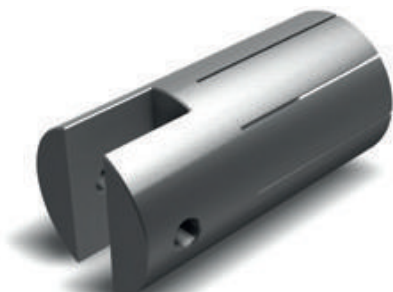
VERSABAR Material: GMI



PIN (Mechanism component of an electrical power transformer)

Original material: Gray cast iron (in sand)

VERSABAR Material: FC 300



HELICAL ROTOR

Original material: Nodular cast iron (in sand)

VERSABAR Material: FE 45012

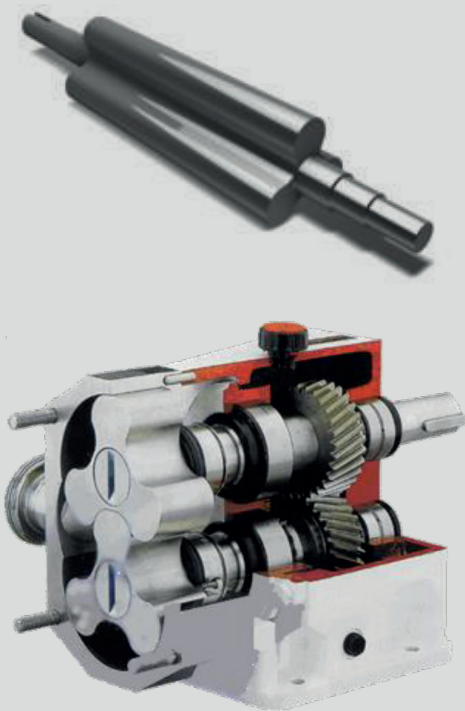


Examples of Application

TRILOBULAR

Original material: Nodular cast iron (in sand)

VERSABAR Material: FE 40015



STRUT BEARING

Original material: Graphited bronze

VERSABAR Material: FE 55006



AXIAL PISTON PUMP

VERSABAR Material: FE 40015



Other Applications

ROBOT GRIPPER

Original material: 4140 steel

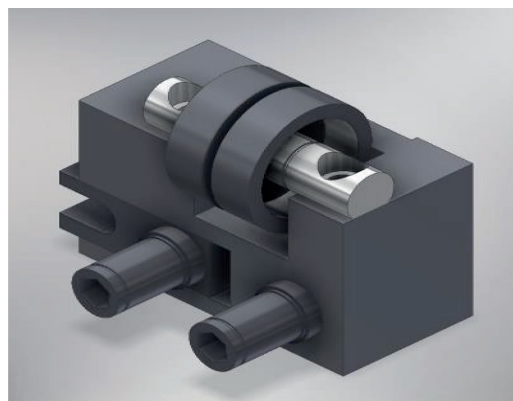
VERSABAR Material: FE 70002



GUIDE BRACKET FOR BAND SAW

Original material: Gray Cast Iron (Sand)

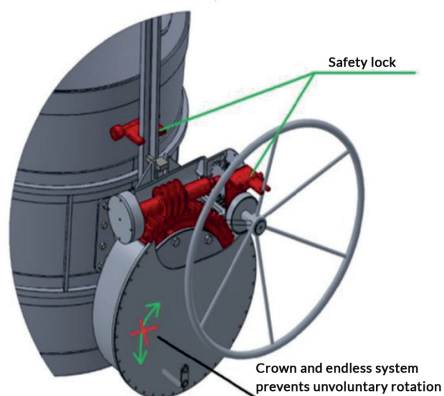
VERSABAR Material: GJS 4007



CROWN AND SHAFT ASSEMBLY

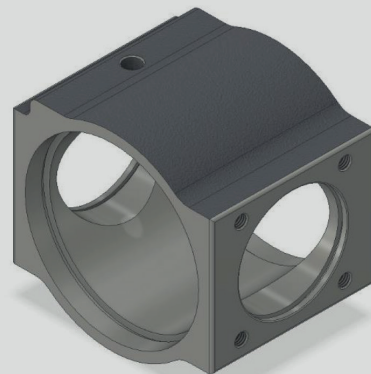
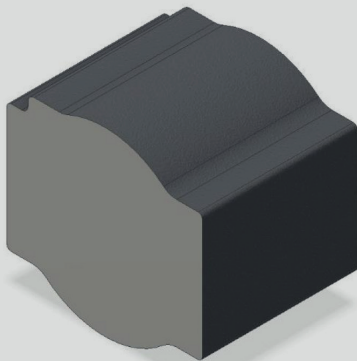
Original material: 4140 steel

VERSABAR Material: FE 454012



Other Applications

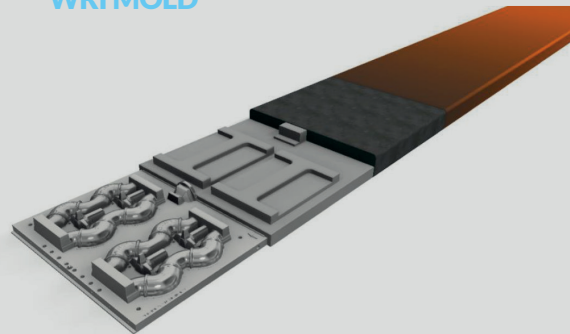
PUMP HOUSING



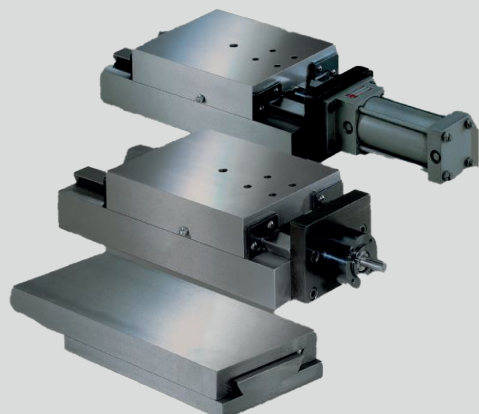
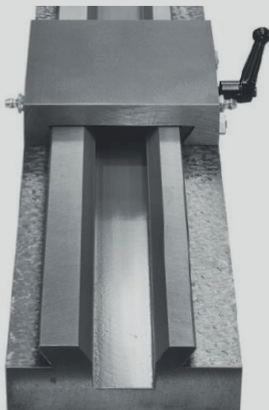
GLASSWARE MOLD



WRI MOLD



LINEAR GUIDE MILLING MACHINE TABLE



TUPY FIXING RAIL

Perfect for moving machine tools with precision and safety.



Another pioneering and exclusive application in Brazil of TUPY continuous cast bars.

Now, machine tools can be moved more easily and with complete safety.

APPLICATION:

Tupy presents, exclusively in the Brazilian market, the first continuous cast bar for fixing machines onto concrete floors. This application enables machines to be moved in a longitudinal direction through rails, facilitating layout changes and positioning adjustments.

SPECIFICATIONS:

Product produced in Ferritic Nodular Cast Iron in class 45012.

Maximum length of 2,300 mm.

Note: EThis product can be supplied in different gauges upon prior consultation with our technical team.

Clients that use this product:



tupyfittings.com
info@abmtgroup.com

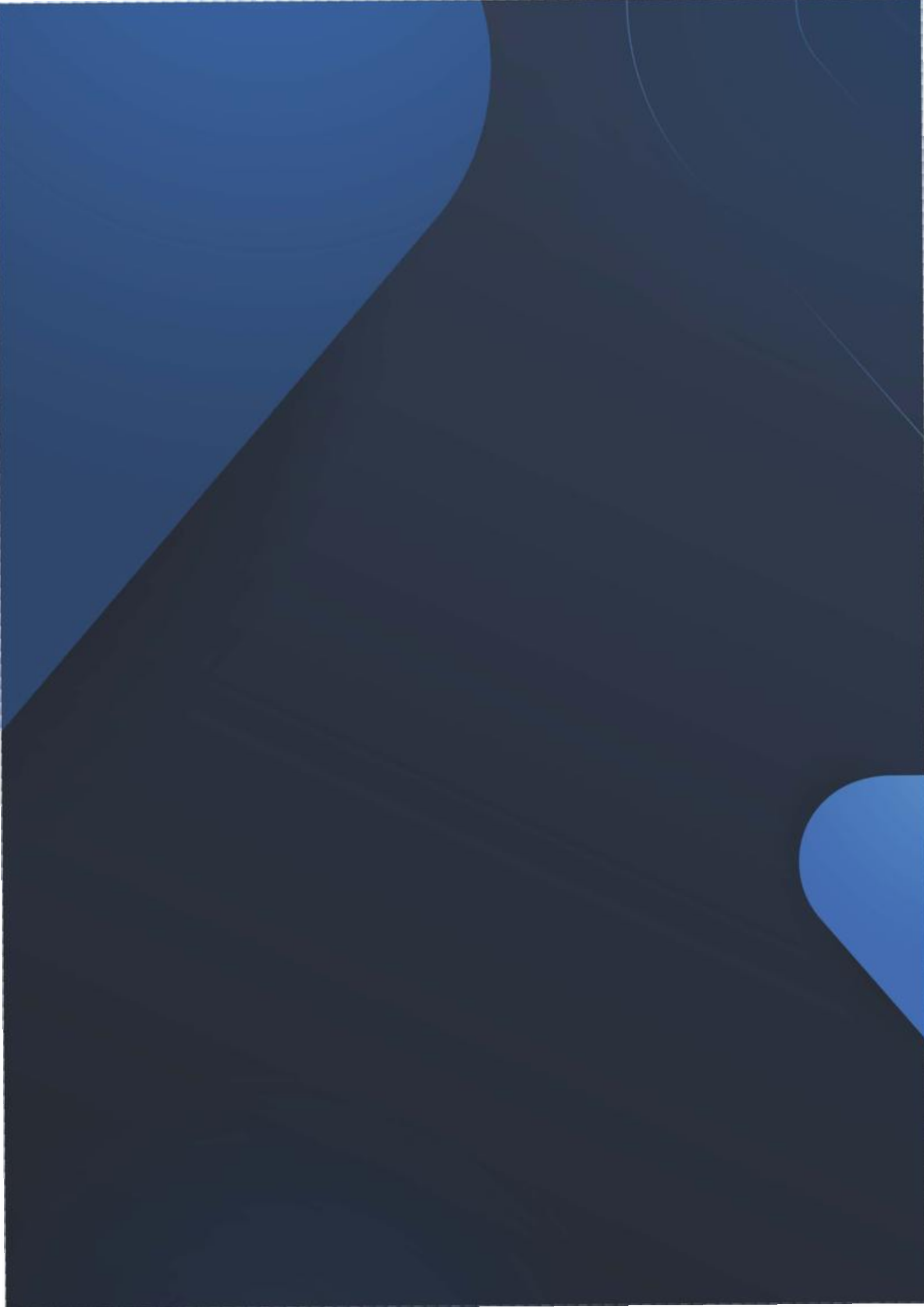


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The brand you can trust.

CERTIFICATION



EXCLUSIVE DISTRIBUTION

Amini Building Materials Trading LLC

Exclusive distributor for TUPY Brazil continuous cast iron bars across the Middle East, the Gulf, Türkiye, the Caucasus and South Asia

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