



## Gray Iron in ASTM A48

Gray Iron castings in ASMT A48 are intended for general engineering use where tensile strength is a major consideration. It's different use against to ASMT A126 or ASTM A278. [www.castingquality.com](http://www.castingquality.com)

*Reference Casting Standards:*

**ASTM A48-03 Standard Specification for Gray Iron Castings**

**Gray Iron castings can be produced in Casting Quality Industrial:**

- n Sand Casting
- n Shell Casting
- n Lost Form Casting
- n Centrifugal casting

**Gray iron standard grades in ASTM A48:**

castings ordered and produced in accordance with this specification are classified into a number of grades based on the properties of separately cast test bars. A, B, C and S

### Requirements for Tensile Strength of Gray Cast Irons in Separately Cast Test Bar (Inch-Pound)

Casting Grade	Tensile Strength, min, ksi	Nominal Test Bar Diameter, inch
ASTM A48 Class No. 20 A	20	0.8
ASTM A48 Class No. 20 B		1.2
ASTM A48 Class No. 20 C		2.0
ASTM A48 Class No. 20 S		Bar S
ASTM A48 Class No. 25 A	25	0.88
ASTM A48 Class No. 25 B		1.2
ASTM A48 Class No. 25 C		2.0
ASTM A48 Class No. 25 S		Bar S
ASTM A48 Class No. 30 A	30	0.88
ASTM A48 Class No. 30 B		1.2
ASTM A48 Class No. 30 C		2.0
ASTM A48 Class No. 30 S		Bar S
ASTM A48 Class No. 35 A	35	0.88
ASTM A48 Class No. 35 B		1.2
ASTM A48 Class No. 35 C		2.0
ASTM A48 Class No. 35 S		Bar S
ASTM A48 Class No. 40 A	40	0.88
ASTM A48 Class No. 40 B		1.2
ASTM A48 Class No. 40 C		2.0
ASTM A48 Class No. 40 S		Bar S
ASTM A48 Class No. 45 A	45	0.88
ASTM A48 Class No. 45 B		1.2



ASTM A48 Class No. 45 C		2.0
ASTM A48 Class No. 45 S		Bar S
ASTM A48 Class No. 50 A	50	0.88
ASTM A48 Class No. 50 B		1.2
ASTM A48 Class No. 50 C		2.0
ASTM A48 Class No. 50 S		Bar S
ASTM A48 Class No. 55 A	55	0.88
ASTM A48 Class No. 55 B		1.2
ASTM A48 Class No. 55 C		2.0
ASTM A48 Class No. 55 S		Bar S
ASTM A48 Class No. 60 A	60	0.88
ASTM A48 Class No. 60 B		1.2
ASTM A48 Class No. 60 C		2.0
ASTM A48 Class No. 60 S		Bar S

### Requirements for Tensile Strength of Gray Cast Irons in Separately Cast Test Bar (Metric)

Casting Grade	Tensile Strength, min, MPa	Nominal Test Bar diameter, mm
ASTM A48 Class No. 150 A	150	20 to 22
ASTM A48 Class No. 150 B		30
ASTM A48 Class No. 150 C		50
ASTM A48 Class No. 150 S		Bar S
ASTM A48 Class No. 175 A	175	20 to 22
ASTM A48 Class No. 175 B		30
ASTM A48 Class No. 175 C		50
ASTM A48 Class No. 175 S		Bar S
ASTM A48 Class No. 200 A	200	20 to 22
ASTM A48 Class No. 200 B		30
ASTM A48 Class No. 200 C		50
ASTM A48 Class No. 200 S		Bar S
ASTM A48 Class No. 225 A	225	20 to 22
ASTM A48 Class No. 225 B		30
ASTM A48 Class No. 225 C		50
ASTM A48 Class No. 225 S		Bar S
ASTM A48 Class No. 250 A	250	20 to 22
ASTM A48 Class No. 250 B		30
ASTM A48 Class No. 250 C		50
ASTM A48 Class No. 250 S		Bar S
ASTM A48 Class No. 275 A	275	20 to 22
ASTM A48 Class No. 275 B		30
ASTM A48 Class No. 275 C		50
ASTM A48 Class No. 275 S		Bar S
ASTM A48 Class No. 300 A	300	20 to 22
ASTM A48 Class No. 300 B		30
ASTM A48 Class No. 300 C		50



ASTM A48 Class No. 300 S		Bar S
ASTM A48 Class No. 325 A	325	20 to 22
ASTM A48 Class No. 325 B		30
ASTM A48 Class No. 325 C		50
ASTM A48 Class No. 325 S		Bar S
ASTM A48 Class No. 350 A	350	20 to 22
ASTM A48 Class No. 350 B		30
ASTM A48 Class No. 350 C		50
ASTM A48 Class No. 350 S		Bar S
ASTM A48 Class No. 375 A	375	20 to 22
ASTM A48 Class No. 375 B		30
ASTM A48 Class No. 375 C		50
ASTM A48 Class No. 375 S		Bar S
ASTM A48 Class No. 400 A	400	20 to 22
ASTM A48 Class No. 400 B		30
ASTM A48 Class No. 400 C		50
ASTM A48 Class No. 400 S		Bar S

Separately Cast Test Bar for use when a specific correlation has not been established between the Test Bar and the Casting for ASMT A48.

Thickness of the wall of controlling section of the casting, in[mm]	Test Bar
Under 0.25 [under 5]	S
0.25 to 0.50 [5 to 14]	A
0.51 to 1.00 [15 to 25]	B
1.01 to 2 [26 to 50]	C
Over 2 [over 50]	S

### Diameter and lengths of Cast Test Bars for ASTM A48:

Test Bar	As-Cast Diameter, in.[mm]			Length, in.[mm]	
	Nominal	Minimum	Maximum	Minimum	Maximum
A	0.88 [22.4]	0.85 [21.6]	0.96 [24.4]	5.0 [125]	6.0 [150]
B	1.20 [30.5]	1.14 [29.0]	1.32 [33.5]	6.0 [150]	9.0 [230]
C	2.00 [50.8]	1.90 [48.3]	2.10 [53.3]	7.0 [175]	10.0 [255]
S	All dimensions shall be as agreed upon by the manufacture and the purchaser				

### What means of ASTM A48 Class 30B?

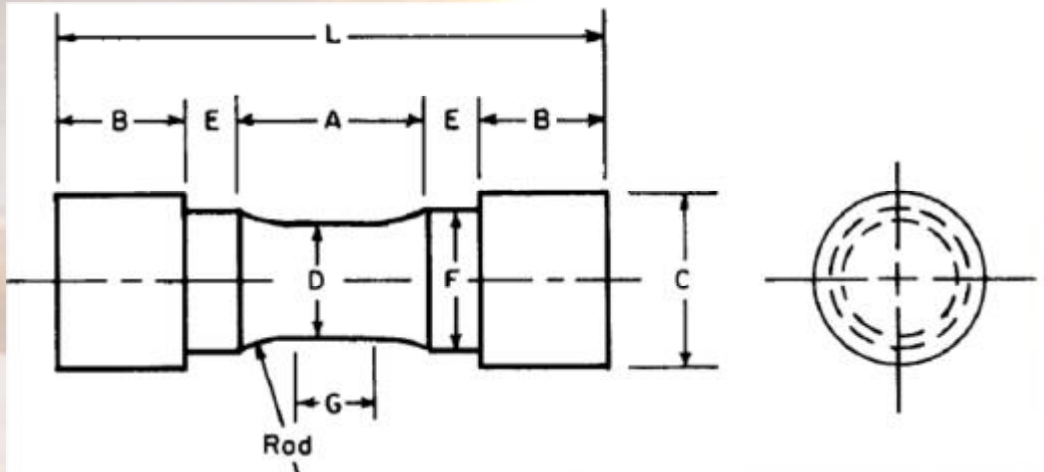
Each class is designated by a number followed by a letter in ASTM A48 standard. The number indicate the minimum tensile strength of the separately cast test bar, and the letter indicates the size of the test bar. 30 mean 30 KSI tensile strength in Test Bar B type.

### What means of ASTM A48 Class No. 200 A?

200 means 200MPa, letter "A" means Test Bar A type.



## ASTM A48 Cast Gray Iron Test Specimen details:



Dimensions, in [mm]	Tension Test Specimen A	Tension Test Specimen B	Tension Test Specimen C
G-Length of parallel, min	0.50 [13]	0.75 [19]	1.25 [32]
D-Diameter	$0.500 \pm 0.010$ [13±0.25]	$0.750 \pm 0.015$ [20±0.4]	$1.25 \pm 0.025$ [30±0.6]
R-Radius of fillet, min	1 [25]	1 [25]	2 [50]
A-Length of reduced section, min	1-1/4 [32]	1-1/2 [38]	2-1/4 [57]
L-Over all length, min	3-3/4 [95]	4 [100]	6-3/8 [160]
C-Diameter of end section, approx.	7/8 [22.2]	1-1/4 [31.8]	1 7/8 [47]
E-Length of shoulder, min	1/4 [6]	1/4 [6]	5/16 [8]
F-Diameter of shoulder	$5/8 \pm 1/64$ [16±0.4]	$15/16 \pm 1/64$ [24±0.4]	$1-7/16 \pm 1/64$ [36±0.4]
B-Length of end section	Optional to fit holders on testing machine. If threaded, root diameter shall not be less than dimension F.		

## ASTM A48 Gray Iron Heat treatment requirement: [www.castingquality.com](http://www.castingquality.com)



no requirement in standard, but strength relief can be processed if necessary.

### ASTM A48 Gray Iron Typical Casting Application

Machinery parts, building, oil, equipment.

### ASTM A48 Chemical Requirements:

No detailed requirement about chemistry in ASTM A48 Standards, but we will suggest the chemistry as our experience in Casting industry, pls visit our web page of [grey iron](http://www.castingquality.com).

[www.castingquality.com](http://www.castingquality.com)



As a professional casting manufacture, Qingdao Casting Quality Industrial pay much attention to the quality and technology, our products are much more casting and forging parts. We are mainly do Sand Casting, Investment Casting (Lost Wax Casting or Precision Casting) and Die Casting .Today, its products are marketed globally through many countries.

## Our Services

Casting Quality focus on Metal Parts industry, we provide professional service in Metal Casting field.

Sand Casting  
Investment Casting  
Shell Casting  
CNC Machining  
CAD Design  
Tools/Mold Design

Many buyers from all over the world purchase products from China. But do you know the quality of products in China? Maybe you only pay the surface and price, but the inner quality is lost .

Housing Casting Design in Solidworks

## What makes Casting Quality the best?

### Innovation

Our engineers are more than just designers....they're pioneers. Our team use CAD/CAM to do the simulation of casting parts .Through the advanced technology, we can know the weight and structure . We also visited so many factories to know their difference and improve our products every year.

### Quality

We're obsessed with quality. Casting Quality constantly strives to exceed our customers' expectations in durability and performance. In fact, we will control the whole process from the original material to the finished parts , include the technology .Uniquely-designed Quality Control System focuses on ensuring four product goals: 1) Eligible Chemistry , 2) Hardness 3) Property and 4) Affordable Pricing. The result is the best casting products value in the industry.

### Service

We're in Qingdao,China, It has convenient transportation of road and sea. Courteous service is part of who we are, and we do it better than anyone in the industry. With Casting Quality you can expect friendly, knowledgeable, and prompt customer service.

### Fulfillment

Shipping orders complete and on-time is of paramount importance to our customers. We will count the delivery date and result before accept your order. Casting Quality consistently ranks as one of the best in speed of delivery and fill rates.

### **SERVICE IN QINGDAO CASTING QUALITY INDUSTRIAL**

- I SAND CASTING
- I INVESTMENT CASTING
- I SHELL CASTING
- I PERMANENT MOLD CASTING
- I CNC MACHINING
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