



## Casting Material: Carbon Steel BS3100 Gr. A3

Carbon steel Grade A3 is one British steel casting material, which is a popular steel material in casting purpose.

BS3100 standard which is superseded by BS EN10293:2005.

Similar Casting Steel: ZG270-450; ASTM A27 Gr.70-40[485-275]; SC450(SC46); GS-52; GS60;GE300

BS 3100:1991 Specification for steel castings for general engineering purposes



### BS 3100 Grade A3 Casting Chemical Requirements and Mechanical Property:

Carbon: 0.45max  
Manganese: 1.00 max  
Silicon: 0.60 max  
Sulfur: 0.050 max  
Phosphorus: 0.050 max

### Grade A3 TENSILE REQUIREMENT IN STANDARD.

Tensile Strength: 540Mpa min  
Yield Strength: 295Mpa min  
Elongation: 14.0% min  
Charpy V-notch: 18J @ 20° C.

**BS3100 Gr A3 Casting Heat treatment process:** Generally all castings need to be annealed or normalized; or N+T; or OQ+T; or WQ+T

*A - For anneal by heating to a temperature above the  $AC_3$  and cool in the furnace.*

*N - For normalize by heating to a temperature above  $AC_3$  and cool in the still air.*

*OQ - For quench into oil from a temperature above  $AC_3$*

*WQ - For Quench into water from a temperature above  $AC_3$*

*AH - For air harden by heating to a temperature above  $AC_3$  and cool in air at a rate fast enough to produce a hardened microstructure*

*T - For temper by heating to a temperature below  $AC_1$ .*

*ST - For solution treat by heating to a temperature high enough to dissolve carbides and any intermetallic phases followed by a rapid cool.*

**Steel Manufacture Process: Sand Casting, Precision Lost Wax Investment Casting.**

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

- I SAND CASTING
- I INVESTMENT CASTING
- I SHELL CASTING



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.

1. Sand Casting
2. Investment Casting
3. Shell Casting
4. CNC Machining
5. CAD Design
6. 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.



## Sand Casting

Sand casting is divided into many types: GREEN SAND CASTING, RESIN SAND CASTING AND SODIUM SILICATE BONDED SAND CASTING. Green sand casting is the lowest cost method to get a product, whose surface finish is not good too. Resin sand casting will get a good surface and precision dimensions, so it is widely used in automobile industry.

Casting Quality Industrial mainly cast Gray Iron, Ductile Iron, Malleable Iron, Wear Resistant Cast Iron, Carbon Steel, Stainless Steel, Brass/Bronze and Aluminum.

Unit weight range from 100g to 20tons.



## Investment Casting

As highly versatile casting process, Investment Casting has for some time been perceived as a comparatively expensive process. But when compared to alternative processes which require extensive welding or machining, an investment cast component can often dramatically reduce overall part production costs.

Casting Quality Industrial would adapt three investment casting methods to reach our clients' quality requirement: Water Glass (Colloidal Silica-sodium), Silica Sol technology; or Colloidal Silica-sodium Silicate Compound. Water Glass technology is the worst quality but cheapest. Silica Sol technology is the best quality but most expensive. We will analyze the usage and drawings tolerance to choose an economic method.

Unit weight range from 1g to 100Kgs.







## Centrifugal Casting

Centrifugal Casting mainly produce the pipes or pipe figure products , such as ductile iron pipe , cast iron soil pipe , glass roller , Furnace Roller and radiant



## Lost Foam Casting

Lost-foam casting (LFC) is a type of evaporative-pattern casting process that is similar to investment casting except foam is used for the pattern instead of wax. This process takes advantage of the low boiling point of foam to simplify the investment casting process by removing the need to melt the wax out of the mold. Casting Quality Industrial only supply ductile iron or steel parts by lost foam casting method, such as valve body, impeller, pipe fittings, electrode and simply figure parts .



## Die Casting

Die casting is a metal casting process that is characterized by forcing molten metal under high pressure into a mold cavity. Die Casting is generally use to make aluminum and zinc alloy parts.



## Permanent Casting

permanent casting and low pressure casting, Casting Quality only used to make aluminum castings, permanent casting can get a better surface and dimensions than sand castings, low pressure casting can get a stably structure which are suitable to the endure pressure parts.







## Quality Control

Experienced inspection team of Casting Quality conducts the entire quality control procedure from raw material to finished products. All inspectors are well trained and have rich product knowledge & inspection experiences.

- \* Raw Material Control.
- \* Chemistry Spectrum Analysis
- \* Mechanical Property
- \* Metallographic Analysis
- \* Ultrasonic Testing
- \* Magnetic Testing.
- \* Radiographic Testing.
- \* Dimension Inspection.
- \* Visual Inspection
- \* Dimension Checking
- \* Chemical Analysis
- \* Penetrant Testing
- \* Leak Testing
- \* Hardness Test

