



## Casting Material: Carbon Steel WCC

Grade WCC is covered by ASTM A216 standard, which specification covers carbon steel castings for valves, fittings, flanges and other pressure-containing parts for high temperature service and the quality required for assembly with other castings or wrought steel parts by fusion welding.

### **ASTM A216 / A216M - 18 Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service**

#### **WCC Casting Chemical Composition Requirements and Mechanical Property:**

Carbon: 0.25max

Manganese: 1.20 max

Silicon: 0.60 max

Sulfur: 0.045 max

Phosphorus: 0.040 max

Copper: 0.30 max

Nickel: 0.50 max

Chromium: 0.50 max

Molybdenum: 0.20 max

Vanadium: 0.03 max

*All total of those specified residual elements (Cu, Ni, Cr, Mo, V) 1.00 max*

Tensile Strength: 70-95ksi(485-655Mpa)

Yield Strength: 40ksi (275Mpa) min

Elongation in 2in. or 50mm: min 22.0%

Reduction of area: 35% min

Hardness: 137HB min.

**Carbon Equivalent: 0.55 max**

**$CE=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15$**

**WCC Casting Heat treatment process:** generally all castings need to be anneal or normalization.

Anneal at 890-910°C

Normalization at 870-890 °C

**Manufacture Process:** sand casting, precision lost wax investment casting.

#### **WCC Casting Application:**

Valve body

Valve bonnet

Valve disc



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## WELDABILITY

WCC may be welded  
Preheat Not required.

### Similar carbon steel:

WCC is also indicated In China standard of GB/T 12229 General Purpose Industrial Valve Specification of Carbon Steel Casting. The chemistry and mechanical property are same as A216 WCC. It is same as Chinese casting material of ZG250-485; no UNS code is defined in ASTM A216 standard.

ASTM A27 Grade 70-40[485-275] (UNS Code: J02501)

GB/T 12229 Grade ZG275-485/WCC

GB/T 11352 Grade ZG270-500

DIN 1681 Grade GS52

EN10213 Grade GP280GH, EN Number. 1.0625

JIS 5101 Grade SC480

ISO 3755 Grade 270-480W

### What means of WCC:

WCC stands for "Wrought Carbon" with Grade C. Sometimes you can think first letter "C" as casting.

There are 3 kind of Grade A, B & C which define the ductility & tensile strength.

Grade WCC is having very good yield strength as compare to Grade WCA and Grade WCB.

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

- I SAND CASTING
- I INVESTMENT CASTING
- I SHELL CASTING
- I PERMANENT MOLD CASTING
- I CNC MACHINING
- I CAD/CAM DESIGN

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.