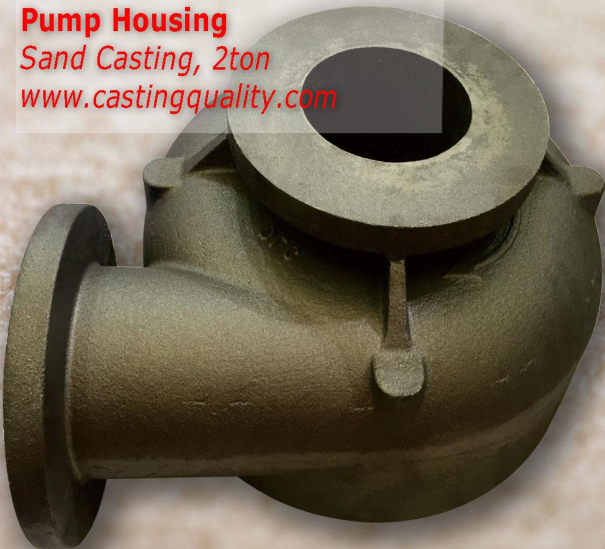




Alloy Steel G20Mn5 (EN 1.6220)

G20Mn5 is one type low alloy cast steel for low temperature application, it's listed in casting standard of EN 10293, EN 10340 and EN 10213-3. It's similar as ASTM A148 Grade 80-50.

Pump Housing
Sand Casting, 2ton
www.castingquality.com



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Casting Methods in Casting Quality Industrial:

- n Sand Casting
- n Investment Casting (Lost Wax Casting, Precision Casting)

Similar Stainless Steel Grade: www.castingquality.com

ASTM A148 Gr 80-50

DIN 17182 GS-20Mn5 (WNR 1.1120)

Chinese casting grade: ZG20SiMn

Reference Casting Standards:

BS EN 10293:2015 Steel castings. Steel castings for general engineering uses

DIN EN 10293:2015-04 Steel castings - Steel castings for general engineering uses

EN 10213-1: Technical delivery conditions for steel castings for pressure purposes – Part 1. General

EN 10213-3: Technical delivery conditions for steel castings for pressure purposes – Part 3: Steel grades for use at low temperatures

EN 10340: Steel castings for structural uses.

G20Mn5 (EN 1.6220) Physical Properties:

Density: 7.8 kgs/dm³

Specific heat: 460 J(kg-k) at 20 °C

Thermal conductivity: 45 W/(m-K) at 50 °C

Mean thermal expansion: 13.0 10⁻⁶k⁻¹ from 20°C up to 100°C

13.8 10⁻⁶k⁻¹ from 20°C up to 100°C

15 10⁻⁶k⁻¹ from 20°C up to 100°C

G20Mn5 (EN 1.6220) Chemistry Property:

Steel Grade		G20Mn5 (EN 1.6220) Chemical Composition / Physical Properties % (max, except where range is given)							
Name	Number	Carbon	Manganese	Silicon	Sulfur	Phosphorus	Chromium	Molybdenum	Ni
EN 10293 G20Mn5	1.6220	0.17-0.23	1.00-1.60	0.60	0.020	0.020	-	-	0.80
EN 10340 G20Mn5	1.6220	0.17-0.23	1.00-1.60	0.60	0.020	0.020	0.3	0.12	0.8
EN 10213	1.6220	0.17-	1.00-1.60	0.60	0.020	0.020	-	-	0.80



G20Mn5		0.23							
For Casings of ruling Thickness <28mm, 0.030% S is permitted									
EN 10240 G20Mn5 required: V ≤0.03, Cu ≤0.30; total Cr+Mo+Ni+V+Cu ≤1%									

G20Mn5 (EN 1.6220) Heat treatment process:

Normalizing, or Quenching and Temper

G20Mn5 (EN 1.6220) Steel Mechanical Property www.castingquality.com

Steel Grade	Heat Treatment			Thickness mm, max	Test At room temperature			Impact Test	
	Symbol	Quenching (+Q)	Tempering (+T)		Tensile Test, min			KVJ min	Temperature At ° C
					Rp0.2 MPa	Rm MPa	A %		
EN 10293 G20Mn5	+ N	900-980	-	30	300	480-620	20	27	-30
	+ QT	900-940	610-660	100	300	500-650	22	50	RT
EN 10240 G20Mn5	+ N	900-980	-	30	300	480-620	20	27	-30
	+ QT	900-940	610-660	100	300	500-650	22	50	RT
EN 10213 G20Mn5	+ N	900-980		30	300	480-620	20	27	-30
	+ QT	900-940	610-660	100	300	500-650	22	27	-40

- +Q means: Quenching in air or liquid.
- +N means: Normalizing.
- 1MPa = 1 N/MM².
- RT: Room Temperature.

G20Mn5 (EN 1.6220) Welding conditions:

Preheated temperature 20 to 150 °C, max interpass temperature 350°C, no post weld heat treatment requirement.

G20Mn5 (EN 1.6220) Typical Casting Application

- I Pump Castings.
- I Valve Castings.
- I Turbines Castings: Francis Blade, Runner Crown, and Wicket Gates.
- I Steam Boilers
- I Heat Exchanger System.

Impeller/Propeller
Sand Casting, 1 Ton
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 doing 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.

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**
- I CAD/CAM DESIGN**