



Manganese Steel ASTM A128 GR B-4

ASMT A128 Grade B-4 is Manganese steel for abrasive casting application. Some website define it as "UNS J91149" but we cannot find this number in standard.

Casting Methods in Casting Quality Industrial

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

Equivalent alloy steel with ASTM A128 GR B-4:

GB/T 5680 Grade ZGMn13-1
JIS 5131 Grade SCMnH1
ISO 13521 Grade GX120Mn13

Reference Casting Standards:

ASTM A128 / A128M - 93(2017) Standard Specification for Steel Castings, Austenitic Manganese

ASMT A128 Grade B-4 Casting Chemical Composition Requirements and Mechanical Property:

Carbon: 1.2-1.35
Manganese: 11.5-14.0
Silicon: 1.00 max
Phosphorus: 0.070 max

No Mechanical Property required in ASTM A128 standard.

ASTM A128 Grade B-4 Heat treatment Requirement:

Grade B4 shall be suitably heat treated to achieve toughness and ductility. This heat treatment shall consist of uniformly heating the castings to a temperature applicable for grade of steel produced, at least 1800°F [1000°C], and holding until the temperature is uniform throughout and quenching in an applicable medium, normally water.

For further machining, anneal is recommended at the temperature from 900 to 1100°F [500 to 600°C].

ASTM A128 Grade B-4 Casting Application:

the material is mainly used as wear-resistant steel castings, such as impact curtain, crushing chamber, crushers, blow bars, impact plates, side liners.

ASTM A128 Grade B-4 WELDABILITY

Manganese steel do not have good welding performance. No preheat required and control the temperature in 300 °C to avoid brittle, welded after quenching.

Manganese steel Machinability:

Bad. Must be operated with high quality ceramic cutting tools





As a professional manufacturer in China, We Casting Quality focus on Metal Parts OEM industry, and provide solutions and services in Metal Casting field as following:

1. **Sand Casting**
2. **Investment Casting, Lost Wax process**
3. **Shell Casting**
4. **Lost Form Casting**
5. **CNC Machining**
6. **CAD Design**
7. **Tools/Mold Design**

Material Supplied

- Cast Iron Castings (Grey Iron, Malleable Iron, Ductile Iron)
- Carbon Steel and Alloy Steel Castings
- Stainless Steel and Duplex Stainless Steel Castings
- Aluminum Castings
- Bronze and Brass Castings
- Titanium and Cobalt Alloy Castings

What We Can Do

➤ **Design Ability**

Our engineers will help you to improve the designs based on casting technology, then The simulation software will be processed to verify the casting pouring system. Pro/E, Solidworks, AutoCAD and ProCast are available in Casting Quality Industrial.

➤ **Saving Cost**

Some manufacture processes may lead high cost. We will analyze the designs and advise the suitable methods for our customers. The best solution will be adopted.

➤ **Quality Control**

From the raw material selecting to bulk production processing, all procedures will follow PPAP program if necessary. The certificates will be provided including chemistry, hardness, mechanical property or NDT testing.

➤ **Production Capacity**

The max iron/steel castings can reach 30tons in weight, meanwhile the minus casting is around 1gram only.

We also have prototyping and 3D scanning ability for sample plan.

➤ **Logistic Service**

The products can be delivered directly to customer's workshop, which will save plenty of work for clients.

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