



## Manganese Steel ASTM A128 GR E-1

ASMT A128 Grade E-1 is Manganese steel for abrasive casting application. Some website define it as "UNS J91249" 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 E-1:

GB/T 5680 Grade ZGMn13-5

ISO 13521 Grade GX110MnMo13-1

### Reference Casting Standards:

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



### ASMT A128 Grade E-1 Casting Chemical Composition Requirements and Mechanical Property:

Carbon: 0.7-1.3

Manganese: 11.5-14.0

Molybdenum: 0.9-1.2

Silicon: 1.00 max

Phosphorus: 0.070 max

### No Mechanical Property required in ASTM A128 standard.

### ASTM A128 Grade E-1 Heat treatment Requirement:

Grade E-1 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 E-1 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. [www.castingquality.com](http://www.castingquality.com)

### ASTM A128 Grade E-1 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.

*Contact with Us Immediately:*

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