

# Top 20 Steel Production Interview Questions & Answers

## 1) What is the raw material needed for steel production?

Steel is made when iron is combined with carbon and other elements like-

- Water
- Flux ( Limestone and Dolomite)
- Refractories
- Silica or Sand
- Water
- Ferro alloys

## 2) How molten iron or base material for steel is made?

To prepare molten iron you use limestone and coke, and you put into the top of a blast furnace. After that, you expose the base material to the air until its very hot, out of which the molten iron is prepared, and ultimately this iron is used to make steel.

## 3) What are the types of steel?

- Stainless Steel
- Carbide Steel
- Carbon Steel
- High-speed Steel
- Cobalt Steel

## 4) Explain what is the difference between hot rolled steel and cold rolled steel?

Hot Rolled Steel Cold Rolled Steel

- Hot rolling involves steel at a temperature (1700\* F) above the steel's recrystallization temperature
- Cold rolled steel is manufactured at temperature below its recrystallization temperature
- It is cheaper to make • It is not as cheaper as hot rolled steel
- Hot rolled steel will shrink while cooling process and the shape and size are predictable, unlike cold rolled steel. • There is no worry about the steel shrinking or changing shape of steel.
- Hot rolled finishing is not as smooth as Cold Rolled steel • Cold rolled steel has smoother finishing and has a square corner and more accurate in dimension
- It is used for welding purpose and construction trades such as making rail road tracks, I-beams, etc.
- It is used for the purpose where quality of steel matters like steel used for the suspension bridge

## 5) What is the amount of steel does BOS (Basic Oxygen Steelmaking) Vessel can take?

BOS is the central bulk production process for refining iron into steel. It can take up to 350 tonnes of molten iron at a time and convert it into steel in less than 30 minutes.



## **6) Explain what is Blast furnace?**

Blast furnace is a technique used to raise the temperature up to 2200 degree C in the furnace. This high temperature is required for the chemical reduction, as well as for melting of the sinter and iron ore.

## **7) What is the use of Tundish in the steel plant?**

In steel production plant, tundish is a reservoir that enables the steel to flow at a regulated rate through gas tight refractory tubes and into a series of water-cooled copper moulds.

## **8) What are the different shapes or forms does steel are prepared?**

Steel is prepared into various sections like

- Plates and Tubes
- Strip and Profiles
- Rails
- Rods
- Wire and Bar

## **9) What are the main challenges does steel industry is facing now?**

The main challenges that steel industry is facing now is

- Overcapacity
- High raw material cost
- Price volatility

## **10) What are alloying agents?**

To change the chemical structure of steel and, to enhance its properties over carbon steel or to alter them to meet the requirements of a particular application alloying agents are used. For instance, if you have a chromium about 12% of the content, chromium significantly improves corrosion resistance. Such corrosion resistance steel is referred as stainless steel.

## **11) What are the impurities added in the steel?**

Impurities percentage is very minimal, and it is added according to the requirements

- Silicon
- Sulphur

- Carbon
- Phosphorous
- Manganese, etc.

### **12) What are PCI stands for?**

PCI stands for Pulverized Coal Injection Method.

### **13) Mention what is the melting point of steel?**

Melting point of steel is approximately, 1370 degree C, although its melting point differs according to the type of alloy mixed in it, which gives the strength, corrosion free and other properties to the steel.

### **14) What does “tool steel” contains?**

Tool steels contain molybdenum, tungsten, cobalt and vanadium in different quantities to increase the heat resistance and the durability, making them ideal for cutting and drilling equipment.

### **15) Explain what is the thermal lance?**

Thermal lance is a tool that heats and melts iron in the presence of pressurized oxygen to produce high temperatures required for cutting.

### **16) What is the main hazardous thing in Steel Plant?**

The hazardous thing that one have to take care while working in Steel Plant is

- Heat
- Dust
- Noise
- Liquid metal and Slag
- Gas Poisoning
- Moving equipment's
- Moving locomotives
- Fire and Explosion

### **17) What are the types of Stainless Steel?**

The main types of stainless steel are

- Ferritic
- Austenitic
- Martensitic

### **18) What forms of corrosion you will see in stainless steel?**

The type of corrosion you will see in stainless steel are

- Pitting Corrosion
- Crevice Corrosion
- General Corrosion
- Stress Corrosion
- Intergranular Corrosion
- Galvanic Corrosion

## 19) What are the factors that matter for choosing stainless steel?

The factors that matter before choosing stainless steel are

- Temperature of the operation
- How corrosive is the surrounding
- Type of welding carried out
- Cost and Availability
- What type of strength is required
- Costing

## 20) What are different ways of doing QC(Quality Control) for steel?

There are various methods for doing QC for steel

- Using Microscope: A cross section of highly polished sample is observed under 100-500 magnification diameters. It will reveal the presence of alloy metals in it and help to determine the strength and behaviour of steel under set condition
- Rockwell and Brinell hardness tests: This test is done to check the hardness of steel by impressing into the test specimen.
- Charpy and Izod test: In this test, a metal pendulum of specific weight is allowed to strike the testing sample and after that the energy absorbed by the specimen is measured. This test is done to measure the material behaviour on exposing high rate of loading, bending, tension or torsion
- Salt Bath Immersion techniques: This technique is used to check chemical, electrochemical or metallurgical interaction between the environment and the material
- Magnetic particle inspection: To detect crack, tears, seams and inclusion
- Ultrasonic sound Waves: It is used to detect porosity, internal cracks, shrinkage voids and large non-metallic inclusions

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