

Answers

[Engineering](#)



**ASSIGN
BUSTER**

Engineering works Engineering works Q How is iron made? Iron ore is mined then refined. The ore is then converted into different types of iron such as pig iron. Manufacturers use blast furnaces to produce pig iron 92-94% iron and 3-5% carbon and traces of other elements. Manufacturers use reducing agents such as Carbon to reduce iron ore to iron metal.

Q 2. How is steel made?

Steel is made from pig iron. The product that comes from iron refining stage is taken to a steel mill for conversion into steel alloys by reducing its carbon content. Manufacturer then adds other elements such as nickel and manganese to provide particular stiff characteristics to the steel.

Q 3. What is aluminum made from?

Aluminum is made by extracting alumina or aluminum oxide (Al_2O_3) from bauxite ores. The bauxite ores exist naturally on the earth's crust

Q 4. What does an alloy do?

Alloy consist of a mixture of two elements, one of which is a metal. It improves the quality of the metal in terms of melting point, boiling point and prevents corrosion.

Q 5. Hot rolling vs. Cold rolling

Hot rolling is a metal processing process that occurs above the material's recrystallization temperature. It uses large pieces of metals in the process, such as slabs. On the other hand, cold rolling entails metal processing below the material's recrystallization temperatures. It involves passing small pieces of metals through rollers.

Q 6. What effect does " bright annealing" have?

Bright annealing is an integral that serves to ensure that materials such as glass become less brittle and durable. It is a slow cooling process of material

after refining process.

Q 7. What is a ferrous metal?

Ferrous metal is an alloy of iron or with traces of iron. Ferrous metal has magnetic properties.

Q 8. What is a non-ferrous metal?

Non-Ferrous metal has no traces of iron. Non-ferrous metals rarely rust.

Q 9. Describe the characteristics of Hardwood

Hardwood has straighter and cleaner grain patterns. They possess higher density and are more fire resistant compared to softwoods. Hardwood is more applicable for engineering works, making of floors and high-quality furniture. They also have slower growth rates.

Q 5. Describe the characteristics of Softwood.

Softwoods have a lower density and relatively cheap to in terms of cost. Softwoods have reduced fire resistance capacity. The woods also possess rugged grain patterns. Soft woods use is limited to low-quality furniture and is not preferred for engineering works (Bawa, 2009).

Q 11. Define OSB & MDF

By definition, OSB is a material of high mechanical properties, such that it becomes particularly suitable for use in heavy load-bearing applications especially in construction works and industries. On the other hand, MDF is a wood product that is engineered by breaking down softwood or hardwood residuals to make wood fibers. The process often takes place in a defibrator, where it gets combined with resin and binder. The product has a higher density than plywood.

Q 12. Definitions.

Stress is pressure or tension exerted on a material object. Strain is a force

<https://assignbuster.com/answers-essay-samples-3/>

that tends to pull or stretch an object to an extreme degree, usually, damaging levels. By definition, elastic modulus is the ratio of force exerted on an object to the resultant deformation it undergoes. Plastic deformation is a process whereby force is exerted to a metal or plastic object to change its shape permanently. For the yield strength, it is a stress point where it is possible to produce a given particular plastic deformation amount.

Toughness is the actual ability of any material to absorb energy without fracturing but undergoing plastic deformity (Bawa, 2009).

Q 13. How is wire made?

The first process involves mining the right ore which is then molten and refined to get pure metal that conduct electricity. Then the pieces of metal are drawn into different sizes and coated with plastic insulations.

Q 14. Describe convergent and divergent thinking

Convergent thinking entails finding a single solution to a problem out of several options. Divergent thinking involves generating several creative ideas out of critical and creative thinking process.

Reference

Bawa, H. S. (2009). Workshop practice. New Delhi: Tata McGraw-Hill.