

Iron Casting Information And The Process Of Iron Casting

Iron castings can be referred to as products made out of melted iron molecules. These molecules are, first, poured into mold and allowed to cool. They are then extracted. The casting properties depend a great deal on the foundry practice. They also depend on the cooling rate. Iron contains huge carbon concentrations. This content facilitates melting, simplicity of casting, and machining. Iron casting designs have a great variation owing to the property of iron to resist shrinkage during the process of cooling. The end product attains a great reputation for its strength and durability. Tensile strength ranges between 20,000 psi and over 60,000 psi. The values of hardness (without heat treatment) range between 100 and 300 BHN.

Some factors need to be considered while buying iron castings. The first thing on the agenda should be, checking the quality of foundry used in products and procedures. This should be done because foundry practices determine the casting properties. The consumer might have a tough time in finding the apt one. Secondly, the concentration of carbon should be looked into. The percentage of carbon commonly ranges between 2.5 and 4%. An addition of even 0.1% would cause the tensile strength to decrease by around 2700 psi. Casting procedures differ from foundry to foundry.

Green sand molding is the most commonly used type of casting. Normally, small and medium sized products are produced using this type of casting. Shell molding is preferred for bigger applications. Shell molding facilitates cooling of the mold containing heated metal. This process gives a better finishing to the final product as compared to all the other processes. Centrifugal casting is used for producing big cylinders and pipes. Both, producer and consumer would get highly satisfied if a proper blend of correct casting process and reputed foundry is made.

Iron castings are utilized extensively in machinery, automotive, and agricultural industry. Parts such as turbine and pump housings, dynamometer bases, compressors are made out of iron castings. Majority of manufacturers have the caliber to go for high and low production outputs. They are also entitled to go for short order runs. There are standard prototypes ensuring customer satisfaction and accuracy. Some manufacturers provide finishing services like galvanizing, painting, and machining as well. In general, iron castings include alloy casting, ductile castings, and malleable castings. There are some terms relating to iron castings. They need to be known in order to get a fair idea of iron.

Brinell Hardness Number (BHN): It can be defined as the method used for measuring the hardness of iron. For iron castings, a metal ball of 3000Kg is put on a flat iron piece. After the removal of ball, indentation observed is recorded. This measurement indicates the value of hardness.

Tensile Strength: Tensile strength can be defined as the quantity of bending and stretching undergone by a material before tearing or breaking. Here the metal is iron.

Modulus of Elasticity: It can be defined as the ratio of stress to strain. This value determines the elasticity as well as the stiffness of the concerned material.

About the Author

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