

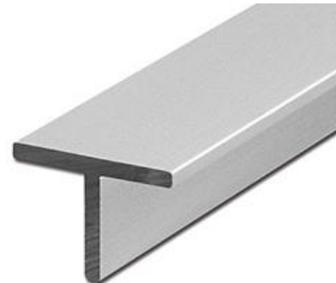
## INDIAN STRUCTURAL STEEL PRODUCTS

India is the 2<sup>nd</sup> largest steel producer in the world and also approaching towards a full quality regime. To achieve the objective of full quality regime, it is necessary to bring all the relevant Indian steel standards under the ambit of the steel quality control order. In India, Bureau of Indian Standards (BIS) is the National Standards Body, who are engaged in formulation and implementation of National Standards known as Indian Standards

<p><b>Rolled beams:</b></p> <p>ISJB – Indian standard junior beams</p> <p>ISLB - Indian standard lightweight beams</p> <p>ISMB - Indian standard medium weight beams</p> <p>ISWB - Indian standard wide flange beams</p> <p>ISHB - Indian standard heavy weight beams</p> <p>ISSC - Indian standard column section</p>	<p><b>Channel Section</b></p> <p>ISJC- Indian standard junior channels</p> <p>ISLC- Indian standard light channels</p> <p>ISMC- Indian standard medium channels</p>
<p><b>T sections</b></p> <p>ISJT- Indian standard junior T beams</p> <p>ISLT- Indian standard lightweight T beams</p> <p>ISST- Indian Standard <b>Long</b> Legged Tee Bars</p> <p>ISMT- Indian standard medium weight T beams</p>	<p><b>Rolled bars</b></p> <p>ISRO- Indian standard round bars</p> <p>ISSO- Indian standard square bars</p> <hr/> <p><b>Tubular section</b></p> <p>ISLT</p> <p>ISMT ISHT</p>



Angle section



T-Section



I Section



Channel Section



Tube Section

### Types of structural steel

**Carbon steel:** Carbon steel is a special type of steel that, as the name suggests, has a higher concentration of carbon than other types of steel. Most types of steel have a relatively low carbon content of about 0.05% to 0.3%. In comparison, carbon steel has a carbon content of up to 2.5%

**Fire resistant steel:** A steel is generally considered fire-resistant if its strength when heated to such temperatures for short periods of time remains equal to 0.6–0.7 of its strength at room temperature. The greatest resistance to fire — up to 800°C — is obtained in steels that contain boron.

**High strength carbon steel:** High-carbon steel has a carbon content of 0.60–1.25 wt.% and a manganese content of 0.30 – 0.90 wt.%. It has the highest hardness and toughness of the carbon

**High strength tempered steel:** tempering are processes that strengthen and harden materials like steel and other iron-based alloys. The process of quenching or quench hardening involves heating the material and then rapidly cooling it to set the components into place as quickly as possible. The process is tightly controlled, with the heating temperature, cooling method, cooling substance and cooling speed all dependent upon the type of material being quenched and the desired hardness. A typical heating range is between 815 and 900 degrees celcius, with extra care being taken to keeping the temperature as stable as possible. Variances in the degree of heat being applied during the process can result in distortion in the resultant metal.

**Medium and High strength micro alloyed steel:** Microalloyed steel is a type of alloy steel that contains small amount of alloying elements (0.05 to 0.15%), including niobium, vanadium, titanium, molybdenum, zirconium, boron, and rare-earth metals. They are used to refine the grain microstructure or facilitate precipitation hardening

**Stainless Steel:**Stainless steel is a group of iron-based alloys that contain a minimum of approximately 11% chromium a composition that prevents the iron from rusting and also provides heat-resistant properties. Different types of stainless steel include the elements carbon (from 0.03% to greater than 1.00%), nitrogen, aluminium, silicon, sulfur, titanium, nickel, copper, selenium , niobium, and molybdenum. Specific types of stainless steel are often designated by a three-digit number.

**Weathering steel:** Weathering steel, often referred to by the genericized trademark COR-TEN steel and sometimes written without the hyphen as corten steel, is a group of steel alloys which were developed to eliminate the need for painting, and form a stable rust-like appearance after several years' exposure to weather.