

HIGH STRENGTH STEEL

High strength steel is thermo-mechanically rolled in new age plants where the heating, rolling and cooling process are carefully controlled. The chemical analysis, consists of low levels of carbon and precise levels of micro alloy such as niobium, titanium and vanadium. This extra high strength steel is used in applications such as truck chassis, truck body building, long reach cranes and earth moving equipments in these applications, the strength of steel is used to lighten the body tare weight and increase the payload without compromising on structural strength.

Mechanical properties-S700MC

Yield Strength R_{eL} (N/mm ²) Min	Tensile Strength R_m (N/mm ²) Min - Max	Elongation On Failure	
		≤ 2 mm A_{20} (%) Min	> 2mm A_{50} (%) Min
700*	700 - 900	18	12

Impact Strength

Designation	Test temperature	Impact level
0	Not impact tested	
0	-20 °C	40J
1	-40 °C	30J

Bendability

	Normal sheet thickness, t		
	≤ 3 mm	3 mm < t ≤ 6mm	> 6mm
Min recommended bending radius (x t)	0.8 x t	1.2 x t	1.6 x t

Chemical Composition

C % max	Si % max	Mn % max	P % max	S % max	Al % min	Nb % max	V % max	Ti % max
0.12	0.10	2.10	0.025	0.010	0.015	0.09 ²⁾	0.20 ²⁾	0.15 ²⁾

Welding

The low levels of carbon, phosphorus and sulphur enable all conventional welding methods to be readily used for HSS. No preheating is required. A narrow heat affected zone with a lower hardness is formed adjacent to the weld. Tensile test pieces taken across the weld can meet same minimum tensile strength requirements as the base metal.