

# Steel that moves the earth

Wear Resistant Plates

 **ROCKSTAR 450**



## Product Description

Rockstar 450 is a wear resistant quenched and tempered steel plate grade having an excellent combination of hardness, formability, weldability and toughness to meet fabrication requirements.

## Product Application

Rockstar 450 is used for fabrication of crushers, liners for truck beds, buckets, hoppers, chutes, excavators and conveyor troughs, concrete mixer drums, trash truck bottoms, bucket lips, street sweepers and dump trailers and many more.

## Dimensions

Thickness	Width
6 – 50 mm	Up to 3500mm; higher width and thickness can be provided on a case to case basis
Delivery Condition	Quenched/Quenched and tempered. The plates are delivered with sheared or thermally cut edges. Untrimmed edges can also be delivered after agreement. Plates can be delivered in shot blasted and primer coated surface condition.

# Chemical Composition (Ladle Analysis)

Plate Thickness mm	C Max %	Mn Max %	P Max %	S Max %	Si Max %	Cr Max %	Ni Max %	Mo Max %	B Max %	CE Max	PCM Max
6.0 – 20.0										0.52	0.34
21.0 – 40.0	0.30	1.60	0.025	0.010	0.70	1.00	0.60	0.60	0.0040	0.60	0.40
41.0 – 50.0										0.65	0.50

Elements in wt%

$$CE = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15}$$

$$PCM = C + \frac{Si}{30} + \frac{(Mn + Cu + Cr)}{20} + \frac{Ni}{60} + \frac{Mo}{15} + \frac{V}{10} + 5 \times B$$

## Mechanical Properties

Hardness	425-475 BHN (On a milled surface 0.5-2 mm below the plate surface)			
	Yield Strength (MPa)	Tensile Strength (MPa)	% Elongation (L <sub>0</sub> =50 mm)	Impact at -20°C (In Joules)
Typical values for 20 mm plate thickness	1150	1350	12	30

Orientation of tensile specimen is Transverse and Impact is longitudinal to rolling direction

## Tolerances

<b>Thickness</b>	Thickness tolerance as per EN 10029. Narrower tolerances can also be offered.
<b>Length and Width</b>	Tolerances as per the requirements of EN 10029
<b>Flatness</b>	Tolerances as per the requirements of EN 10029 Class N
<b>Surface Properties</b>	Tolerances as per the requirements of EN 10163-2, Class A Subclass 1

## Heat Treatment and Fabrication Guidelines

### Heat Treatment

Rockstar 450 plates has obtained its mechanical properties by quenching and when required by subsequent tempering. The properties of as supply condition cannot be retained after exposure to service or preheating temperatures in excess of 225°C. Rockstar 450 is not intended for further heat treatment.

### Cold Forming

Bend radius is dependent on the direction of bending to rolling direction (t = Plate thickness)	Bend angle	Transverse	Parallel
	90°	3xt	4xt

### Welding & Cutting

Welding Method	All conventional welding methods like manual electric welding, submerged arc welding, inert gas welding
Preheating (Welding & Cutting)	Maximum 200°C for thickness greater than 20 mm

Kindly reach the company representative for any further requirements and details.

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