durostat 400/450/500

Wear-resistant sheets made from hot-rolled steel strip

durostat 400, durostat 450 and durostat 500 typically achieve hardness values of roughly 400, 450 and 500 HB. The steel is optimally suited to applications with high mechanical stress and high levels of abrasion, such as those in loading and conveying machinery, dredgers, crushing plants, screening equipment, chutes and truck bodies. Their high level of hardness is adjusted by means of direct quenching after hot rolling. State-of-the-art alloying technology with low carbon content guarantees excellent welding properties.

Sheets made of durostat 400, durostat 450 and durostat 500 are well suited to cold forming in spite of their high strength. In order to maintain their hardness, durostat 400, durostat 450 and durostat 500 may not be heated to more than 200 °C.

Convincing advantages:

- High wear resistance, low abrasion
- Longer service life and maintenance intervals
- Light-weight applications resulting from higher strength

greentec steel

Premium quality
with reduced carbon footprint

durostat®
greentec steel

Chemical composition

Ladle analysis in weight percent and carbon equivalent

durostat®	C max.	Si max.	Mn max.	P max.	S max.	Al min.	Cr max.	Mo max.	Ti max.	B max.	CEV max.	CET max.
400	0.15	0.60	2.30	0.025	0.010	0.020	0.50	0.20	0.050	0.005	0.59	0.38
450	0.20	0.60	2.30	0.025	0.010	0.020	0.50	0.20	0.050	0.005	0.62	0.42
500	0.24	0.60	2.30	0.025	0.010	0.020	0.50	0.20	0.050	0.005	0.66	0.46

CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15
CET = C + (Mn+Mo)/10 + (Cr+Cu)/20 + Ni/40

Mechanical properties: Surface hardness/tensile strength

		Typical values			
durostat®	Hardness [1] [HB]	Hardness [HB]	Yield strength $R_{p0.2}$ [MPa]	Tensile strength R_m [MPa]	Total elongation A_5 [%]
400	360 - 440	400	1100	1250	10
450	410 - 490	450	1200	1400	9
500	460 - 540	500	1300	1550	8

[1] Hardness measurements are conducted pursuant to EN ISO 6506. Test condition HBW2.5 | 187.5 is applied to sheet thickness ≤ 3 mm

Mechanical properties: Notch impact energy/bending radii

	Typical values Notch impact energy [1] A_v [Joule]		Bending radius Ri min. [2] [3]	
			Location of bending edge in direction of rolling	
durostat®	Test temperature -20 °C	Test temperature -40 °C	Transverse	Longitudinal
400	70	50	3 x sheet thickness	4 x sheet thickness
450	60	40	3 x sheet thickness	4 x sheet thickness
500	40	30	3.5 x sheet thickness	4.5 x sheet thickness

[1] Typical values (ISO-V, longitudinal), full samples (10 x 10 mm)
[2] Smallest permissible inside radius at 90° edging, Ri min.
[3] It must be taken into consideration that the quality of the cut edge has a strong influence on the achievable bending radii.

Example dimensions

Maximum width per thickness, minimum width 900 mm

durostat®	Thickness [mm] 2.5	3.0	3.5	4.0	5.0	6.0	8.0
400	1400	1520	1570	1620	1620	1620	1550
450	upon request	1520	1570	1620	1620	1620	1450
500	-	1450	1550	1600	1600	1600	-

Thickness < 3 mm: Supplied as cut sheet with cut edge
Thickness ≥ 3 mm: Supplied as cut sheet with mill edge
Maximum sheet length: 12 m (18 m at extra charge)
Further dimensions upon request

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Hot-rolled steel strip – greentec steel Edition

Max. carbon footprint 2.10 kg CO_2e per kg of steel [1)]

[1)] per EN 15804+A2 (EPD methodology) cradle to gate

All products, dimensions and steel grades listed in each voestalpine supply range are available as greentec steel Edition.

Please find further information and downloadable files at the following link:
www.voestalpine.com/durostat

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voestalpine
ONE STEP AHEAD.