

CREUSABRO® 8000®

- CREUSABRO® 8000® is a high performance wear and heat resistant steel, exhibiting on average wear resistance of 30-50% higher than conventional 500 HBW wear resistant steel in optimized conditions which is plastic deformation such as surface pressure and scratching. The surface hardness of CREUSABRO® 8000® increases by 70 HBW, due to plastic deformation.
- CREUSABRO® 8000® offers the best possible balance between exceptional wear resistance and improved workability.
- Application markets of CREUSABRO® 8000® are: mining, quarrying, cement industry, steel production, public works, recycling, yellow goods and increased temperature industries.

CHEMICAL ANALYSIS %

C	Mn	Ni	Cr	Mo	S	P
≤ 0.28	≤ 1.6	≤ 1.0	≤ 1.6	≤ 0.4	≤ 0.005	≤ 0.018

MECHANICAL PROPERTIES typical values

Hardness (HBW)	Yield strength (MPa)	Tensile strength (MPa)	Elongation A5 (%)	Impact strength KV -20 °C (J)	Young's modulus (GPa)
470	1,250	1,630	12	44	205

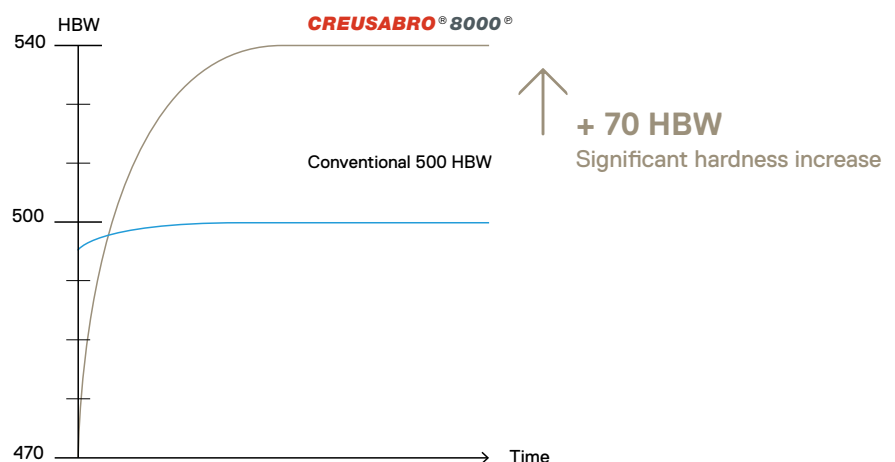
Hardness range (delivery condition): 430-500 HBW*

* Brinell hardness measured according to EN ISO 6506-1, on a milled surface below surface typically 0.2-3 mm depending on plate thickness.

METALLURGICAL CONCEPT

- Abrasion resistance is not exclusively connected to the hardness of the steel in its as delivered condition. Its composition and micro structure strongly influence the actual performance in service. The chemical composition and manufacturing processes applied to CREUSABRO® 8000® develop a metallurgical micro structure, which contributes strongly to the improvement of its wear resistance through the following effects.
- CREUSABRO® 8000® originality is to be delivered at an intentionally limited hardness in order to bring to subcontractor and manufacturer an easier way to work with. Easy to form due to lower bending force required as well as machining due to homogenous microstructure and hardness.

SURFACE WORK HARDENING

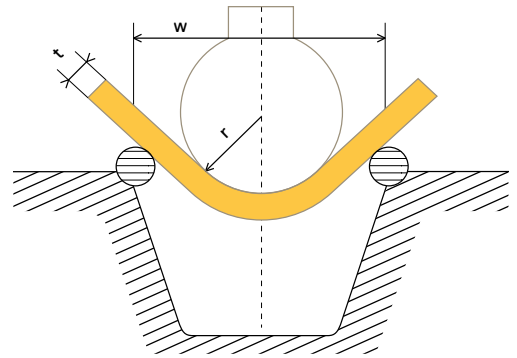


PROCESSING REQUIREMENTS

BENDING

Can be done without any problems when following conditions are met:

- Forming should be performed in room temperature;
- Thermal and mechanical cut edges should be machined;
- Minimum bending radius and die width should be used according to steel grade and thickness;
- Bending machine should have sufficient bending force and tools harder than formed steel;
- Surface scratches should be removed.

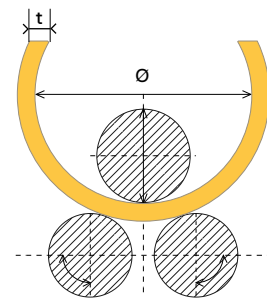


Rolling direction	Minimum bending radius (r)	Minimum die width (w)
Transversal	$5 \times t$	$14 \times t$
Longitudinal	$6 \times t$	$14 \times t$

ROLL BENDING

Has to be done using the following conditions:

- Minimum diameter (\emptyset) of bent piece should be $40 \times t$;
- Forming should be performed close to room temperature;
- Necessary bending force is about double then for mild steel.



WELDING

CREUSABRO steels are carbon steels and their weldability is good.

Due to high strength and hardness they require additional treatment:

- Can be welded with all common welding methods;
- It is recommended to use soft welding consumables;
- Welding should be performed in room temperature;
- Heat input should be as low as possible;
- Depending on thickness it is recommended to use suitable preheating temperature.

Welding method	Wire type	AWS	EN
Manual	Solid	AWS A5.1 E 7016 ORE E 7018	EN 499 E 42 4B 22 H10
	Solid	AWS 5.28 ER80S	EN 12070 G CrMo 1 Si
MAG	Flux	AWS 5.20 E71T-5	EN 758 T 42 3 B M2 H5
	Solid	AWS 5.17 EH 12 K	EN 12070 S CrMo1
SAW	Flux	AWS A5.23 F49X	EN 760: SA FB 1 65 DC

Process	Heat input (kJ/mm)	Preheating combined thickness (mm)						
		30	40	50	60	70	80	90
Semi-automatic	1.5							
	2.0							
Manual	1.5							
	3.0							
Automatic, SAW	2.0							
	3.0							

No preheating
 Preheating at 100 °C
 Preheating at 150 °C

↳ THERMAL CUTTING

All the classical thermal cutting processes can be used: flame, plasma and laser.

No matter what thermal cutting process is used, the following conditions are required to avoid any risk of cold cracking.

Steel temperature	Thickness ≤ 60 mm	Thickness ≥ 60 mm
≥ 10 °C	No preheating	Preheating at 150 °C
< 10 °C	Preheating at 150 °C	Preheating at 150 °C

↳ DIMENSIONS AND TOLERANCES

↳ DIMENSIONS

Thickness range (mm)	Standard size range (mm)	Flatness (mm/m)
4-100	1,500 × 3,000	5
	2,000 × 6,000	
	2,500 × 8,000	

Other dimensions available on request

↳ TOLERANCES

According to EN 10029 and tighter at the time of order for plate products.

According to EN 10051 and tighter at the time of order for strip products.

↳ CONTACT

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