



CREUSABRO® 4800^P

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Creusabro 4800 is a wear resistant steel that combines resistance to abrasion together with a high level of toughness. The ability of this grade to work harden offers an increased wearlife of up to 50% compared to conventional 400HBW materials.

Creusabro 4800 is designed to provide the optimum combination of wear resistance, controlled hardness and ease of processing, achieved by a combination of an enriched chemical analysis (Cr, Mo, Ti) at a controlled quenching rate.

Applications

Cement plants, quarry, mining and earth-moving equipment, block moulds, screens, steel production and recycling plants.

Hardness

As supplied 340HBW - 400HBW

The chromium and molybdenum contents of Creusabro 4800 are the key elements that give a high resistance to softening in hot conditions, much better than standard 400HBW water quenched steels.

Creusabro 4800 can be hot formed (450°C - 500°C), followed by slow cooling and be used where the application has a continuous temperature of up to 350°C without losing its hardness properties.

Chemical Composition

Guaranteed values (%)

C	S	P	Mn	Ni	Cr	Mo	Ti
≤ 0.20	≤ 0.005	≤ 0.018	≤ 1.60	≈ 0.20	≤ 1.90	≤ 0.40	≤ 0.200

Mechanical Composition

Yield stress	Tensile strength	Elongation	Impact ISO V-notch
900 MPa	1200 MPa	12%	45J @ -20°C

Processing

Profiling

Oxy-gas, plasma and laser profiling can be carried out at works temperature (+10°C) up to 40mm thick. Plates over 40mm thick should be preheated to 150°C.

Shearing: Blades and machine must be in good condition and have adequate power. Shearing force is twice that required for structural steels.

Punching: Punching is possible but is much more difficult than with structural steels. Power requirements and punch wear will be significantly greater.

Forming

Cold forming

It is advisable to use as generous a radius as possible and ensure the plate temperature is above 10°C. Power requirements are extremely high and springback should be allowed for. To avoid cracking, flame cut or sheared plate edges should have a 2-3mm wide chamfer ground on top and bottom edges, along the bend circumference.

Bending direction (bend axis)	Minimum inside bending radius	Minimum V-block opening
Perpendicular to rolling direction	3t	10t
Parallel to rolling direction	4t	12t

Hot Forming

This operation can be carried out between 450°C - 500°C up to 15mm thickness, without any significant loss of properties.

Drilling

8% cobalt armour piercing drills are recommended. The plate to be drilled should be firmly clamped and positioned close to the drill post. An abundant flow of cutting fluid is also required.

The following speeds/feeds are recommended:

5mm dia		10mm dia		15mm dia		20mm dia		30mm dia	
rpm	Feed mm/rev	rpm	Feed mm/rev	rpm	Feed mm/rev	rpm	Feed mm/rev	rpm	Feed mm/rev
570	0.05	290	0.10	190	0.16	150	0.20	90	0.30

Welding

Creusabro 4800 can be welded by means of all standard processes. Consumables similar to those recommended for structural steels can be used.

Process Standard	Manual Welding Coated Electrode	Semi-Automatic (MIG)
AWS TYPE	AWS A5.1 E7016 Or E7018 class	AWS A 5.18 ER70S4 or ER70S6 AWS A 5.20 / ER71T5 class
AFNOR TYPE	A81-309 E51 4/3B	A81311 GS2 / A81350 TGS 51BH / TGS 47BH

For welds exposed to wear, please ask for advice on the choice of welding products, processes and parameters.

Welded joints must be free from grease, water and oxides.

Electrodes and flux should be stored according to the supplier's recommendations.

The following preheating conditions apply:

Welding process	Heat input (kJ/Cm)	Pre and post-heating conditions Combined thickness (mm)							
		30	40	50	60	70	80	90	
1 Semi-automatic gas	15								
	30								
2 Manual welding stick electrode	10								
	20								
3 Automatic S.A.W.	20								
	30								

□ = without preheating ■ = pre-post heating at 75°C ■ = pre-post heating at 125°C

Thickness Range

3mm to 100mm thickness

Note: IMS UK and its suppliers undertake continual material development and the data is a general guide, accurate at the time of printing. Buyers and users should satisfy themselves as to the suitability of the selected steel for their particular application.

Processing Facilities

- CAD / CAM Profiling
- Oxy – gas Profiling
- Forming
- Beveling
- Plasma Profiling
- DXF Compatible
- Drilling and Countersinking
- Welded Fabrications
- Laser Profiling
- Perforating

CREUSABRO 4800

Part of the IMS Group, with sales offices established in over 14 European countries, IMS UK is a major distributor and processor of Abrasion Resistant and High Yield Steel plate throughout the UK and Ireland.



IMS have an extensive stock of 3mm - 120mm plate, including their branded ABRO range of abrasion resistant grades, and offer full technical and material selection advice and support to provide cost effective solutions for complex applications.

The abrasion resistant stock range comprises standard 400 and 500 brinell grades, 11-14% manganese, as well as the more specialised Creusabro 4800 and Creusabro 8000 materials. Weld overlay Ultraclad 800 offers even higher performance in certain

applications. For high strength and weight saving applications RQT 701 is also available.

With over 100 years of specialist knowledge within the steel industry, the company offers in-house manufacturing facilities, to provide profiled, formed and drilled parts and welded fabrications, supported by a CAD/CAM design service ensuring precision manufactured components.

Spec	Operating Temp	Cold forming	Hot forming	Welding	Drilling	Profiling	Wearlife x Mild Steel	Impact strength
Abro 400	200°C Max	B	X	A	B	GPWL	3 to 4	High
Abro 500	200°C Max	C	X	B	C	GPWL	6 to 8	High
Creusabro 4800	350°C Continuous 400°C Intermittent	B	A	A	B	GPWL	3 to 5	High
Creusabro 8000	300°C Continuous 350°C Intermittent	C	A	B	C	GPWL	8 to 10	High
Abro M	Ambient only	B	B	B	C to X	PWL	20 to 30	Very high
Ultraclad 801	450°C Continuous 600°C Intermittent	A	X	A	X	PWL	20 to 30	Moderate to high
690 Yield	Ambient	A	X	A	A	GPWL	1.5 to 2	Very high

A = Possible
B = Possible with some difficulty
C = Difficult
X = Not possible*

P = Plasma
W = Water jet
L = Laser
G = Gas

*Consult our technical sales for recommended methods of fixing.



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