

## Decarb with Creusabro®

Creusabro® Steels are elaborated by low CO2 process in Industeel Belgian and French Electric Arc Furnaces with more than 80% of scrap.



Produced with Renewable energy, Creusabro® present the lowest Product Carbon Footprint of wear resistant steels. Therefore, they are eligible for the XCarb Recycled and Renewably Produced certification.



### The largest thickness range Worldwide

	Max width per thickness - (mm)																
	3	4	5	6	8	10	12	20	25	40	50	60	100	120	130	150	
Creusabro®4800	1500	2000	2500	3000	3500	2500											2000
Creusabro®6400			2500	3000	3500	2500											
Creusabro®8000		1500			2500												
Creusabro®Dual					2500												

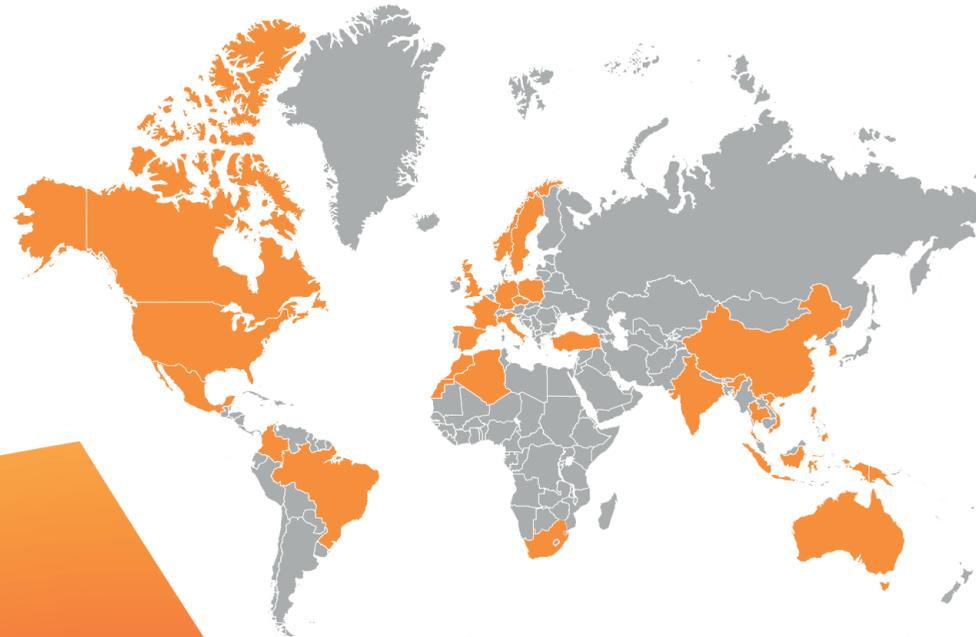
Other dimensions on request



# Industeel



Thanks to our exclusive partners  
Creusabro® is available worldwide



Our specialized distributors can advise the best value for money product for each application and propose design evolution.

### For more information

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All information in this brochure is for the purpose of information only. Industeel reserves the right to change its product range at any time without prior notice.



# Industeel Creusabro®



# Creusabro® Unique, best, proven

## A complete range to meet any situation

As historical first patented wear resistant steel, **Creusabro®** has long since shown that abrasion resistance is not exclusively connected to the hardness of the steel in its delivery condition. Composition and structure strongly influence the performance in service. **Creusabro®** steels are genuinely different than classical low alloyed martensitic abrasion resistant plates. The original chemical composition and manufacturing processes applied to **Creusabro®** provide a unique combination of distinctive metallurgical features that extend the lifetime of wear parts in critical applications.

	Hardness HBW					
	350	400	450	500	550	600
Creusabro®4800						
Creusabro®6400						
Creusabro®8000						
Creusabro®Dual						

■ Hardness as delivered ■ In service work hardening

## A unique concept

The DNA of **Creusabro®** is to combine a bainite-martensite mixed microstructure with a uniform through-hardened plate with low level of residual stresses to offer a reactive surface to withstand abrasion in the worst conditions in service. By disconnecting the wear resistance from the hardness of the steel, **Creusabro®** shows better value in use whatever the working environment. The better properties of **Creusabro®** result from the combination of an optimum alloying content and specific heat treatment procedures.

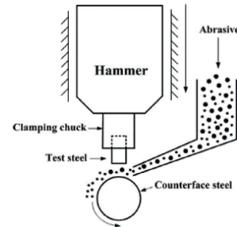
## A reactive surface

**Creusabro®** steels strongly improve their wear resistance in service by a surface hardening effect up to +70 HB under the action of local plastic deformations caused by impact with rocks or pressure by the abrasive particles. This is known as TRIP-effect (Transformation Induced Plasticity).

### Trip effect phases:

- Austenite transformed to harder withstood martensite
- Absorption of impacts by austenite during transformation to martensite
- Matrix containing hard micro carbides
- Delays of cracking and surface steel peel off

### MLD test



Creusabro® 6400



450 HB



Sample aspect after 2h MLD test, 150 beats (3J)/min, 200 rot/min, Silica flow 7,12 g/s



## Deep hardening

The soft quenching rates used in the mill fabrication practice produce a uniform through-hardened plate and low level of residual stresses within the plate (dead flat).

## High temperature resistance

**Creusabro®** grades are suitable for continuous operating temperatures up to 450°C. Specific chemical composition and initial microstructure result in a high resistance to softening compared to classical water quenched steels, which lose their hardness above 220°C.

## Workability

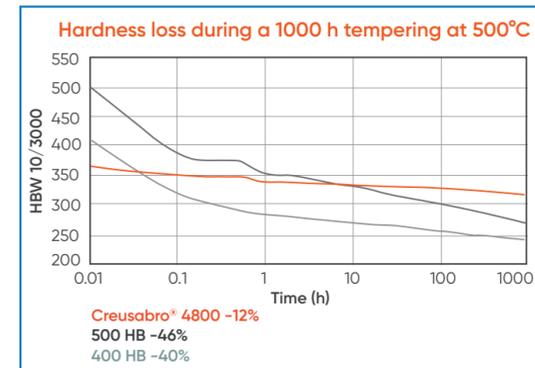
Despite high hardness and alloying level, **Creusabro®** allows the most severe mechanical processing, bending, welding.



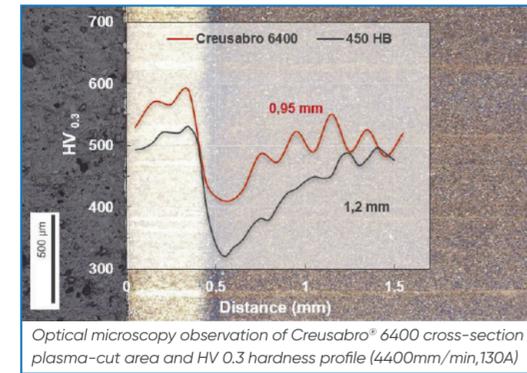
# Where and why to use Creusabro®

Tops		
Creusabro®4800	The highest resistance to wear+heat	Very low softening up to 500°C (930°F) The larger range of thickness (3mm to 150 mm)
Creusabro®6400	The 500 HB grade to be bend with garantied toughness	3.5 x thickness bending radius Perforation for screening 55HRC thanks to HAZ profile
Creusabro®8000	The superior compromise in all conditions	Extreme wear resistance in wet, hot, under severe impact or for structural use
Creusabro®Dual	Top resistance for sliding abrasion	Fully oil quenched Extra hard titanium carbides in a pre-hardened matrix

**Creusabro® 4800** presents the lowest softening rate at 500°C in comparison with all other wear resistant steel.



**Creusabro® 6400** is particularly adapted to screening thanks to increased HAZ profile.

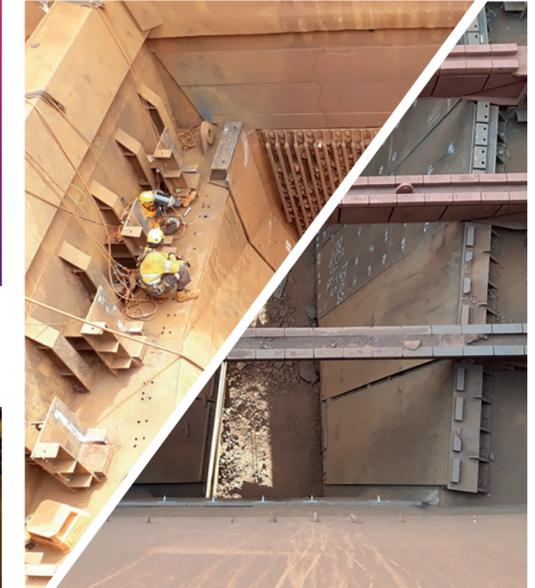


**Creusabro®** Grades showing high core hardness and high hardening in the cut zone, are outstanding solutions to crushing operations where the edge of the plate is the working surface.



## Creusabro® Dual

Is designed to fight the most severe sliding abrasion case



**Creusabro®** steels, due to higher alloying content have a better resistance in wet conditions. **Creusabro®** steels have largely proven their superiority for years with **Creusabro® 4800** and **Creusabro® 8000**.

The recent **Creusabro® Dual** and the complete new **Creusabro® 6400** extend the field of possibilities to reduce production costs, replacement frequency and enhance performance of all kinds of equipment.

## Creusabro® 8000

Combines exceptional wear protection to structural capacities and heat resistance.



Metal scraps Feeder in ArcelorMittal Fos, use of **Creusabro® 8000** allows weight reduction and reduce energy consumption

## Creusabro® 6400

Outstanding bending capacity allows severe radius up to 3.25 t as 500HB equivalent



Creusabro®6400 3.25t bending radius

