

## Decarb with Creusabro®

Creusabro® Steels are elaborated by low CO<sub>2</sub> 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

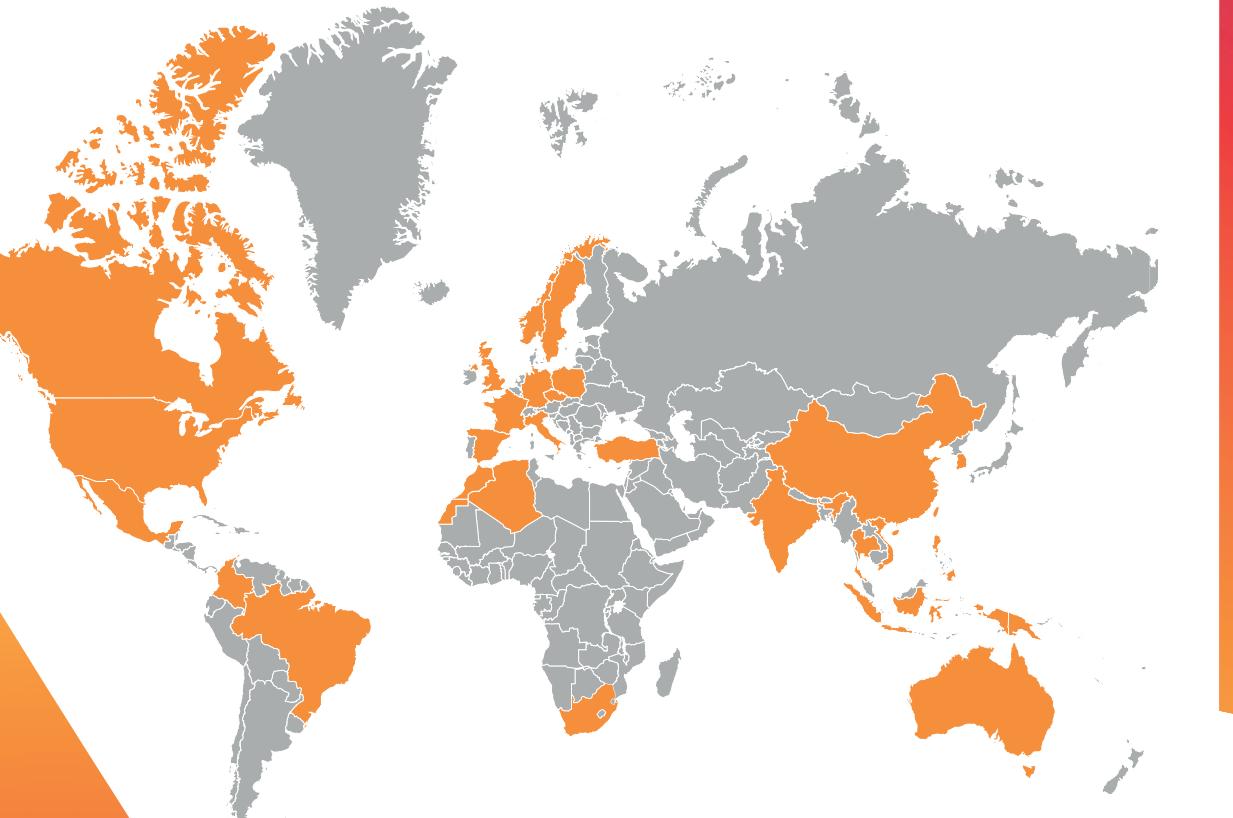
	Max width per thickness - (mm)															
	3	4	5	6	8	10	12	20	25	40	50	60	100	120	130	150
Creusabro®4800	1500		2000	2500	3000		3500			2500			2000			
Creusabro®6400				2500	3000		3500			2500						
Creusabro®8000		1500				2500										
Creusabro®Dual						2500										

Other dimensions on request



# Industeel

Thanks to our exclusive partners  
Creusabro® is available worldwide



### 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®

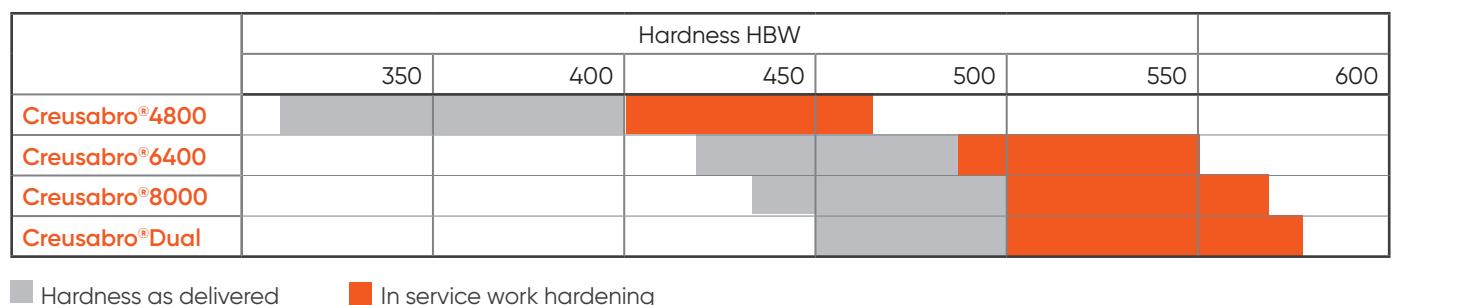


# Creusabro®<sup>®</sup>

## 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.



### 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.

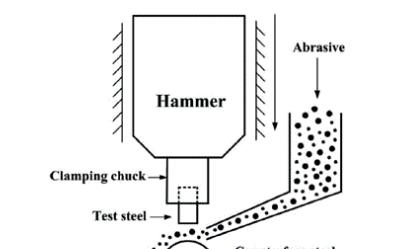
The better properties of Creusabro® result from the combination of an optimum alloying content and specific heat treatment procedures.

### 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



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

450 HB



### 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

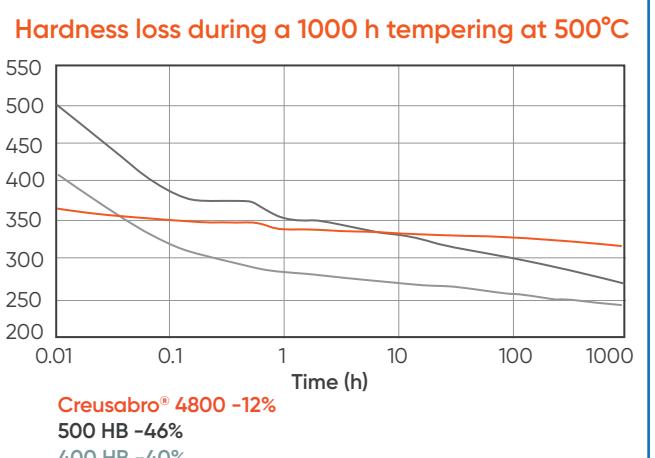
Despite high hardness and alloying level, Creusabro® allows the most severe mechanical processing, bending, welding.



## 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 guaranteed 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® 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® 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

### Creusabro® Dual

Is designed to fight the most severe sliding abrasion case

