ABRASERVICE
UK

# CREUSABRO® 8000®

— **CREUSABRO® 8000®** is a high performance wear resistant steel, exhibiting on average a wear resistance of 40 - 45 % higher than that of conventional 500 HB water quenched steel in optimised conditions.

— **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...

## Chemical composition

| C | Mn | Ni | Cr | Mo | S | P |
|---|---|---|---|---|---|---|
| ≤ 0.28 | ≤ 1.6 | ~ 0.40 | ≤ 1.6 | ≥ 0.20 | < 0.005 | < 0.015 |

## Mechanical properties in delivery condition (indicative values)

| Hardness (HB) | UTS (MPa) | YS (MPa) | E (%) |
|---|---|---|---|
| 470 | 1630 | 1250 | 12 |

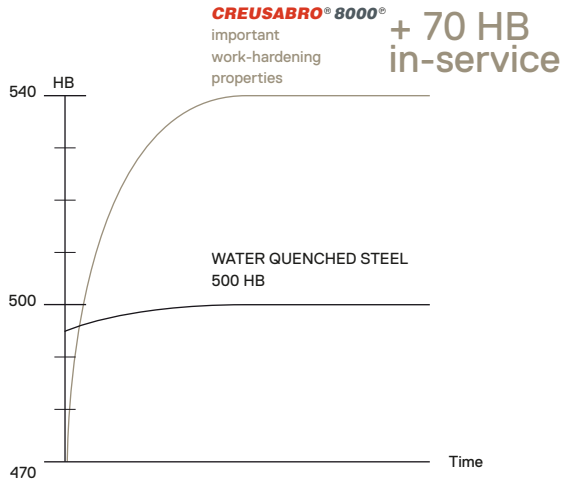
— **Hardness:**
430 - 500 HB (at delivery condition).

— **Toughness:**
KcvL -20 °C (-4 °F): ≥ 40 J/cm² (≥ 23.6 ft.lbs).

## Metallurgical concept

— **CREUSABRO® 8000®** originality is to be delivered at an intentionnal limited hardness in order to bring to subcontracter and manufacturer an easier way to work with. Bending in easier conditions (limited power requested), rolling in easier way (once again limited power requested), machining easier due to homogeneous micro-structure.

— **"TRIP effect"(Transformation Induced by Plasticity):**
**CREUSABRO® 8000®** , due to its initial structure containing retained austenite, has the capability to work harden in service under the action of local plastic deformations.



# Processing information

— **Drilling:**

- with high speed tools HSSCO (9 % cobalt)
  ex: AFNOR AR 2.9.1.8-AWS M42
  (for small and medium series)
- or with high speed tools with tips in tungsten carbide or solid carbide drill (used for small diameters) in this case with straight flutes. ex: K10 K20 according to Iso standard
  Lubrification : 20 % soluble oil (flow 10 l ⁄ min flow rate)
  Iso MAD674317

— **Cold bending:**

Can be done as long as following conditions are met:

- edges preparation by grinding to remove HAZ, edges in Bending zone rounding top and botton;
- minimum internal bending radius (table below);
- plate temperature at 10 °C min.

| | Internal minimum radius | V block opening minimum |
|---|---|---|
| Transversal | 5 x th | 14 x th |
| Longitudinal | 6 x th | 14 x th |

— **Flame cutting:**

All the classical flame cutting processes can be used: oxygas, plasma, laser. whatever the flame cutting process used, the following conditions are good enough to avoid any risk of cold cracking.

| products temperature | Thickness ≤ 60 mm | Thickness > 60 mm |
|---|---|---|
| ≥ 10 °C | no preheating | preheating 150 °C |
| < 10 °C | preheating 150 °C | preheating 150 °C |

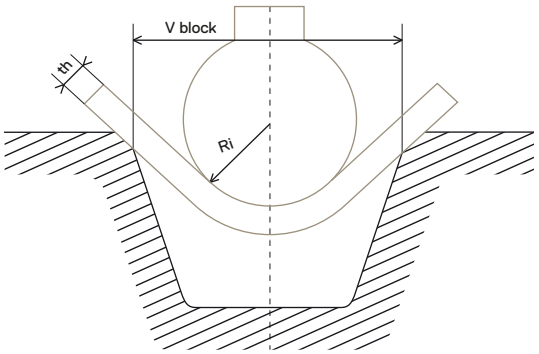
— **Rolling:**

Shall be performed in following conditions : Ø ≥ 40 x th (temperature of the piece ≥ 10 °C. ***CREUSABRO® 8000®*** can be formed at a temperature of 450 - 500 °C without any further heat treatment. At this temperature, forming requires lower power than at room temperature, proportionally to the reduction of its yield strength YS 0.2.

| Size range (mm) | Thickness (mm) |
|---|---|
| 1000 x 2000 | 8 - 25 |
| 1500 x 3000 | 5 - 50 |
| 2000 x 2000 | 20 - 60 |
| other sizes: please contact us | |
| full oil quenched | |

— **Milling:**

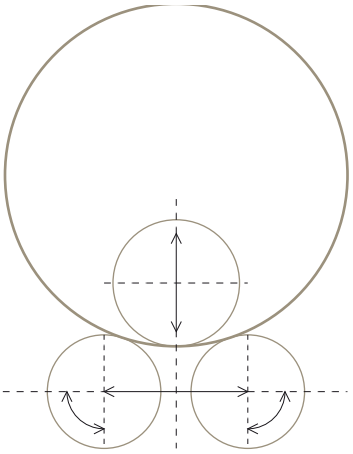
- with HSSCO (supercarburised cobalt alloy high speed steel)
  ex: AFNOR AR 6.5.2.5 A WS M35 or AR 12.05.5 A WS T15
- or carbide tips - Roughing Iso P10 or P20 grooving P15.




— According to the above parameters, bending strength depends thickness, die opening...

| Thickness (mm (in)) | Bending strength per meter (t ⁄ m) |
|---|---|
| 10 (0.39) | 200 |
| 20 (0.78) | 430 |

— Above table gives indicative power needed to bend for a die openning of 14 times the thickness.



# General note

— If you need some more technical data, don't hesitate to ask for our technical guide.

# Contact

**A.** Arley Road, Saltley, Birmingham B8 1BB, United Kingdom
**T.** +44 121 326 3100 — **F.** +44 121 326 3105
**E.** a.uk@abraservice.com — **W.** www.abraservice.com/uk/