Industeel

ArcelorMittal

Creusabro® Superten

Creusabro® Superten: extra thick wear plate with enhanced crack resistance

In the Creusabro® family, Superten is halfway between high toughness quenched and tempered steels and wear resistant quenched steels.

Creusabro® Superten is an abrasion resistant steel with high tensile properties and enhanced crack resistance. As a result, it is used in massive structure components submitted to heavy service loads inservice conditions, in an abrasive environment. Thicknesses range of **Creusabro® Superten** extends from 50 to 180 mm. For heavier gauges, please inquire us.
Typical applications: Buckets, cutting blades, demolition and recycling equipment, scrap shears and high thickness structural parts.

PROPERTIES

STANDARDS

Creusabro® Superten

CHEMICAL ANALYSIS -% WEIGHT

C	Si	P	S	Mn	Ni	Cr	Mo	V
≤ 0.18	≤ 0.6	≤ 0.015	≤ 0.005	≤1.6	≤ 2.5	≤ 1.0	≤ 0.7	≤ 0.07

CARBON EQUIVALENT

$$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

Thickness range - mm (")	C.Eq
< 150 mm (≤ .5.9")	≤ .65
≥ 150 mm (≥ .5.9")	≤ .75

MECHANICAL PROPERTIES

	Hardness	YS	UTS	Elongation%	KCVL-20°C
Guaranteed values (as supplied)	300-380 HB	≥ 960 MPa* (≥ 139 ksi)	≥ 1050 MPa* (≥ 152 ksi)	≥ 12	≥ 32 J (24 ft. lbs)

* For thicknesses 120 mm and above, YS min. 890 MPa and UTS min. 980 MPa

DELIVERY CONDITIONS

SIZES - TOLERANCES

Thicknesses Whole range from 50 to 180 mm (2'' to 7.1'')	Sizes	Tolerances According to EN 1 0029 class A
≤ 70 (≤ 2.75'')	2000 x 6000 (6.56'' x 19.7'')	5 mm (.2'') / m
80 - 90 - 100 (3.1''- 3.5''- 3.9'')	2500 x 4000 (8.2'' x 13.1'')	
110 - 120 (4.3''- 4.7'')	2000 x 4000 (6.56'' x 13.1'')	
≥ 150 (≥ 5.9'')	2000 x 3000 (6.56'' x 9.8'')	

Other sizes available on request - Please, consult us.

PLATE PROCESSING

OXYCUTTING

We recommend a preheating temperature of 125-150°C (255-300°F).

DRILLING

For small series of holes, ordinary HSS drills can be used.
For larger series, we recommend to use HSS-CO tools.

Drill	Cutting speed Vc (m/min)	Diameter mm (inch)	Feed rate (mm/rev)	Rotation speed (rev/min)
HSS or HSS-Co	≈ 14	10 (.40'')	.11	415-540
		15 (.59'')	.16	270-320
		20 (.80'')	.22	180-240
		25 (.98'')	.25	130-200
		30 (1.18'')	.28	100-170

Brazed carbide or solid carbide drills may also be used when the milling machine is appropriate.

Cutting speed		Feed rate (mm/rev)				
Vc (m/min)		Ø 10 mm (.40'')	Ø 15 mm (.60'')	Ø 20 mm (.80'')	Ø 25 mm (1'')	Ø 30 mm (1.2'')
Solid carbide	30-45	.10	.13	.15	.17	.19
Brazed carbide	40-60	.10	.13	.15	.17	.19
Indexable inserts	80-90		.10	.12	.14	.15

Lubrication: 20% soluble oil.

MILLING

Tools with carbide tips are particularly suitable for milling Creusabro® Superten Simple machining operations (surfacing) may be performed with HSS-Co tools. Indicative processing parameters are listed below. They can be optimzed depending on the type of milling machine used and according to the data provided by the tools manufacturers.

	Cutting speed Vc (m/min)	Fed rate fz (mm/tooth)
Coated cemented carbides (roughing)	100-150 (4"-5.9")	.1 - .4
Coated cemented carbides (finishing)	150-300 (5.9'-11.8")	.015 - .15
Uncoated carbides	70-150 (2.8"-5.9")	.01 - .3
Coated HSS-Co	25-40 (1"-1.6")	.005 - .08
HSS-Co	20-25 (.8"-1")	.03 -.01

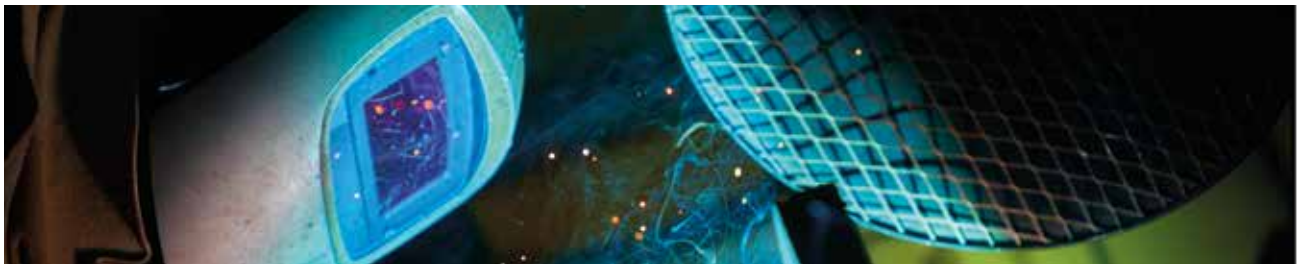
WELDING

Creusabro® Superten is weldable by all standard processes. Welding has to be conducted on surfaces that have been cleaned from rust, oil, paint and moisture. «soft» ferritic consumables (maximum weld metal YS: 500 MPa) must be used.

Preheating temperatures have been determined by implant tests.

Hydrogen content	Plate thickness mm (inch)	Preheat requirement °C (°F)
Low hydrogen (< 5 ml/100g)	< 150 mm (5.9")	100°C (210°F)
	150, 180 mm (5.9 - 7")	150°C (300°F)
High hydrogen (<10 ml/100g)	< 150 mm (5.9")	125°C (255°F)
	150, 180 mm (5.9 - 7")	150°C (300°F)

A 2 hours post-heating is recommended. The same temperature chosen for preheating should be used. Austenitic stainless consumables are recommended when pre and post-heating are not possible.



YOUR CONTACTS

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