

# ABRACORR 30

## ABRASION / CORROSION RESISTANT STEEL

— **ABRACORR 30** is a fine grain weldable steel, particularly well adapted to resolve problems of severe abrasion in wet environments and in an ambient temperature of up to 600 °C. The workability of **ABRACORR 30** is acceptable considering the relatively high mechanical characteristics. Typical applications are: steel plant, cement plant, sugar factories, phosphate industry, mines, public works, handling of aggregates in a salt marine environment.

### Product description

— Plates of **ABRACORR 30** are available in thicknesses from 5 to 40 mm. Thicknesses above 40 mm can be offered after consultation.

### Chemical composition

C	Si	Mn	P	S	Cr	Ni	Mo	V
≤ 0.08	≤ 0.40	≤ 1.65	≤ 0.030	≤ 0.015	2.00	1.20	0.20	0.12

### Mechanical properties in delivery condition (indicative values)

Thickness (mm)	Hardness[*] (HB)	UTS (MPa)	YS (MPa)	E (%)
≤ 15	320	1000	660	10
15-40	300	950	550	10

[\*] Brinell surface hardness according to EN 10003-1.

— **Delivery conditions:**

Plates are delivered in the normalised condition normalising temperature: 925 °C.

— **Tolerances:**

Usual tolerances as delivered conform to EN 10 029 class A.

— **Mechanical characteristics in hot conditions:**

Temperature (°C)	20	100	200	300	400	450	500
Ys (MPa)	775	825	875	805	775	745	700
UTS (MPa)	1160	1055	1095	1155	1070	985	880

Tests are carried out per heat and thickness.

— **Surface condition:**

Surface condition is to EN 10 163.

— **General remark:**

If the application of this steel or the processing route have particular requirements which are not mentioned in this data sheet, please refer.

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## Processing information

— The respect of this processing information is of fundamental importance in order to obtain complete satisfaction with the products made from this steel. The user should be assured that the calculation, construction and fabrication methods used are adapted to the material, that they correspond with the accepted rules of processing and for the desired usage. The choice of material remains the responsibility of the user. The recommendations of the data sheet if you speak about you have to provide it!

### — Cutting And Welding:

Due to the high level of chromium, **ABRACORR 30** in an oxidising environment forms a layer of refractory oxide. This layer of oxide or calamine must be removed from the surface of the steel before the cutting operation (either mechanically or by flame without oxygen). In general preheating is not necessary before the cutting operation. **ABRACORR 30** can be welded using normal procedures: a basic lowhydrogen electrode, with gas flux (MIG, MAG), with solid flux. It is recommended to use if possible electrodes with a low yield strength. In the case of extreme wear, the weld head can be protected with a final pass of chromium carbide.

### — Machining:

In principle this steel can be drilled with HSS (High Speed Steel) tools, and it is advisable to use HSS Co (cobalt alloy) bits which give a satisfactory cutting performance if the speeds and feeds are adapted. Due to the presence of refractory oxides it is recommended to grind the area of the plate to be drilled and to mark the hole correctly so as to avoid the slipping of the bit. The use of hard steel bits is not necessary. For countersinking and sawing it is recommended to use specially hardened tools with a negative cutting angle as for hard wearing steels.

### — Cold forming:

In spite of its high mechanical properties **ABRACORR 30** can be cold formed without significant difficulty. It is recommended to grind the sheared or cut edges in the bending zone. It is also advisable to apply a slight chamfer to the edges in order to remove sharp angles in the bend zone. In any case it is not recommended to use a bending tool of less than three times the thickness of the plate.

### — Hot Forming and Heat Treatment:

Due to the normalised condition of the steel, hot forming at a temperature of at least  $\leq 925$  °C can be carried out. In this case, the mechanical characteristics can be retained by leaving the work piece to cool in a calm air environment.

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## General note

— If further informations are required, please request a copy of our technical guide

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