

**Raex® AR 500****General Product Description**

— Any time, any wear Raex® AR offers a complete range of abrasion-resistant steels through SSAB's Certified Partner network. With its dependable quality and reliable performance, it delivers great value for all your typical wear applications.

**High availability**

Raex® AR plate and strip are quickly available from our global Raex® distribution network, enabling fast, effective production and less tied-up capital. For custom specialized grades, Raex® AR mill lead times are short and delivery is reliable for easy inventory planning and replenishment.

**Complete product range**

Available in thicknesses of 3.0 - 80.0 mm at 400-500 HB, Raex® AR has got your every wear need covered. You can depend on Raex® AR to help extend service life, increase payload, optimize production and save costs. And Raex® AR strip, made using modern technology and extensive quenched manufacturing processes, offers you more options and design possibilities.

**Quality and performance you can rely on**

Leaner production begins with reliable performance. Raex® AR is made from carefully chosen raw materials in a tightly controlled, integrated steel mill process. The result: reliable quality and performance hardness, bendability, surface quality and flatness – thus high performance for all your typical wear applications.

**Mechanical Properties**

Product type	Thickness <sup>1)</sup> (mm)	Width <sup>1)</sup> (mm)	Length <sup>1)</sup> (mm)	Hardness <sup>2)</sup> (HBW)	Typical yield strength (MPa), not guaranteed	Typical tensile strength (MPa), not guaranteed	Typical Elongation A (%), not guaranteed
Sheet	3.00 - 7.00	1000 - 1725	2000 - 12000	470 - 540	1400	1650	8
Plate	6.00 - 20.00	1000 - 3200	2000 - 12000	470 - 540	1300	1600	8
Plate	20.01 - 40.00	1000 - 3200	2000 - 12000	450 - 540	1300	1600	8
Plate	40.01 - 80.00	2000 - 2500	4000 - 9500	450 - 540	1300	1600	8

<sup>1)</sup> More detailed information on dimensions is provided from RaexSmart. Please contact your local sales representative for more information.

<sup>2)</sup> Brinell Hardness is measured, according to EN ISO 6506-1 on milled surface 0.3-3.0mm below surface. Hardness value is being announced in the material certificate. Mechanical properties are tested in transverse direction and tabulated for information only and values are not shown in material certificate.

**Impact Properties**

Product	Longitudinal test, typical impact energy, Charpy V 10x10 mm test specimen <sup>1)</sup>
Raex® AR 500 sheet & plate	30 J / -40 °C

<sup>1)</sup> Impact testing according to EN ISO 148-1 is performed on thickness ≥6mm. The specific value corresponds to a full-size specimen. Impact values are tabulated for information only and value are not shown in material certificate.

**Chemical Composition**

Product type	C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Cr (max %)	Ni (max %)	Mo (max %)	B (max %)
Sheet	0.27	0.50	1.60	0.025	0.010	1.20	1.00	0.25	0.005
Plate	0.30	0.80	1.70	0.025	0.015	1.50	1.00	0.50	0.005

The steel is grain refined.

**Carbon Equivalent CET(CEV)**

Product type	Sheet	Plate	Plate	Plate	Plate
Thickness (mm)	3.00 - 7.00	6.00 - 20.00	20.01 - 32.00	32.01 - 52.00	52.01 - 80.00
Typ CET(CEV) <sup>1)</sup>	0.40 (0.55)	0.40 (0.51)	0.41 (0.59)	0.43 (0.65)	0.43 (0.68)

<sup>1)</sup> The CEV value is being announced in the inspection certificate and the CET values are tabulated for information only.

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40} \quad CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

## Tolerances

### Thickness

Plates tolerances according to EN 10029 Class A, tighter tolerances upon agreement. Sheets tolerances according to EN 10051 Category A.

### Length and Width

For plate tolerances according to EN 10029, tighter tolerances upon agreement. Sheets tolerances according to EN 10051.

### Shape

Tolerances according to EN 10029 for plate and according to EN 10051 for sheet.

### Flatness

For plate and sheet the flatness deviation is max 6 mm/m.

### Surface Properties

According to EN 10163-2 Class A, Subclass 3.

### Bending

Minimum inner bending radii for a 90° bend are:

Sheets, 3.5 x t (transverse) and 4 x t (longitudinal).

Plates  $t \leq 20$  mm, 5 x t (transverse) and 6 x t (longitudinal).

## Delivery Conditions

The delivery condition is quenched. Sheets are available in as rolled surface condition with mill edge. Plates are available in as-rolled or shopprimed surface condition. Delivery requirements can be found in SSAB's brochure at [www.raexsteel.com](http://www.raexsteel.com).

## Fabrication and Other Recommendations

Welding, bending and machining recommendations can be found in brochures at [www.raexsteel.com](http://www.raexsteel.com) or consult Tech Support.

Raex® AR is not intended for further heat treatment. Mechanical properties are achieved by quenching. The properties of the delivery condition cannot be retained after exposure to temperatures in excess of 250°C.

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on this product. Grinding, especially of primer coated plates, may produce dust with a high particle concentration.

## Contact Information

[www.raexsteel.com/contact](http://www.raexsteel.com/contact)