

RAEX 450

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GENERAL PRODUCT DESCRIPTION

— Sold only through certified partners

SSAB now sells Raex® — the high-strength, wear-resistant steel with good hardness and impact toughness — exclusively through SSAB's Certified Partner network. Raex helps extend the lifespan of machinery, decrease wear in structural components and save costs. It also enables innovative design and lightweight products that improve energy efficiency.

Raex is a high-strength, wear-resistant steel with favorable hardness and impact toughness. It can help extend the lifespan of machinery, decrease wear in structural components and save costs. It also enables innovative design and lightweight products improving energy efficiency.

Applications include buckets and containers, cutting edges for earthmoving machines, wearing parts for mining machines, wearing parts for concrete mixing plants and wood processing machines, platform structures, and feeders and funnels.

Dimension Range

Raex 450 sheet is available in thicknesses of 2.5 to 8 mm and Raex 450 plate in thicknesses of 6 to 80 mm. Maximum width is depending on thickness. More detailed information on dimensions is provided at www.ssab.com.

MECHANICAL PROPERTIES

| Product | Thickness (mm) | Width (mm) | Length (mm) | Hardness (HBW) | Typical yield strength $R_{p0.2}$ (MPa) | Typical tensile strength R_m (MPa) | Typical elongation A (%) |
|---------|----------------|------------|-------------|----------------|---|--------------------------------------|--------------------------|
| Sheet | 2.50- 8.00 | 1000- 1700 | 2000- 12000 | 420- 500 | 1250 | 1450 | 9 |
| Plate | 6.00- 40.00 | 1800- 3200 | 2000- 12000 | 420- 500 | 1200 | 1450 | 9 |
| Plate | 40.01- 60.00 | 2000- 2500 | 4000- 9500 | 420- 500 | 1200 | 1450 | 9 |
| Plate | 60.01- 80.00 | 2000- 2500 | 4000- 6900 | 420- 500 | 1200 | 1450 | 9 |

Brinell Hardness is measured, according to EN ISO 6506-1 on a milled surface 0.3 - 3.0 mm below the plate surface. The measurement depth is determined on the basis of product form and plate thickness. Mechanical properties are tested in the transverse direction.

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Impact Properties

| Product | Typical impact energy, transverse test, Charpy V 10x10 mm test specimen ¹⁾ |
|----------|---|
| Raex 450 | 30 J/-40 °C |

¹⁾ Impact testing according to EN ISO 148-1 is performed on thickness ≥6 mm. The specified value corresponds to a full-size specimen.

CHEMICAL COMPOSITION (LADLE ANALYSIS)

| Product | C (max %) | Si (max %) | Mn (max %) | P (max %) | S (max %) | Cr (max %) | Ni (max %) | Mo (max %) | B (max %) |
|---------|-----------|------------|------------|-----------|-----------|------------|------------|------------|-----------|
| Plate | 0.26 | 0.80 | 1.70 | 0.025 | 0.015 | 1.50 | 1.00 | 0.50 | 0.005 |
| Sheet | 0.23 | 0.50 | 1.60 | 0.025 | 0.010 | 1.20 | 1.00 | 0.25 | 0.005 |

The steel is grain refined.

Carbon Equivalent CET(CEV)

| Thickness (mm) | Sheet 2.50 - 8.00 mm | Plate 6.00 - 20.00 mm | Plate 20.01 - 32.00 mm | Plate 32.01 - 52.00 mm | Plate 52.01 - 80.00 mm |
|-------------------------------|----------------------|-----------------------|------------------------|------------------------|------------------------|
| Typ CET(CEV) ^{1) 2)} | 0.35 (0.52) | 0.35 (0.48) | 0.38 (0.57) | 0.40 (0.61) | 0.40 (0.63) |

¹⁾ The CET values are tabulated for information only.

²⁾ The CEV value is being announced in the inspection certificate.

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

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

TOLERANCES

Thickness

For plate tolerances according to EN 10 029 Class A, tighter tolerances upon agreement. For sheet tolerances according to EN 10 051 Category A.

Length and Width

For plate tolerances according to EN 10 029, tighter tolerances upon agreement. For sheet tolerances according to EN 10 051.

Shape

For plate tolerances according to EN 10 029. For sheet tolerances according to EN 10 051.

Flatness

For plate tolerances according to EN 10 029, tighter tolerances upon agreement. For sheet tolerances according to EN 10 051.

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Surface Properties

According to EN 10 163-2 Class A, Subclass 3.

Bending

Minimum inner bending radii for a 90° bend are:

Sheets, 3 x t (transverse) and 4 x t (longitudinal).

Plates $t \leq 20$ mm, 4 x t (transverse) and 5 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 shop-primed surface condition. Delivery requirements can be found in SSAB's brochure at www.ssab.com.

FABRICATION AND OTHER RECOMMENDATIONS

Welding, bending and machining recommendations can be found in brochures at www.ssab.com or consult Tech Support, techsupport@ssab.com.

Raex 450 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 and Information

For information, see SSAB's brochures at www.ssab.com or consult Tech Support, techsupport@ssab.com.



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