



RAMOR 400

General Product Description

The steel for blast protection

Ramor™ 400 is a medium-hard steel for blast protection, available in thicknesses of 3-30 mm (0.118-1.18") and delivering a hardness of 360-460 HBW.

Ramor 400 is available as cut-to-length sheet in thicknesses of 3-6.5 mm (0.118-0.256") and as plate in thicknesses of 6-30 mm (0.236-1.18"). It is not intended for further heat treatment.

Dimension Range

Ramor 400 is available as cut-to-length sheet in thickness between 2.0- 12.0 mm, and as plate in thickness between 6.0- 30.0 mm.

Mechanical Properties

Thickness (mm)	Hardness (HBW)
2.0- 30.0	360- 460

Mechanical Testing

Brinell hardness test according to EN ISO 6506-1 on each heat treatment individual/coil.

Hardness is measured on a milled surface 0.3-2 mm below plate surface.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Cr (max %)	Ni (max %)	Mo (max %)	B (max %)
0.20	0.70	1.5	0.020	0.010	1.00	0.50	0.50	0.005

The steel is grain-refined. Phosphorous and sulphur are not intentionally alloying elements.

Tolerances

More details are given on www.ssab.com

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Thickness

Cut Length		
Product Type	Thickness (mm)	Tolerance (Min / Max)
Cut Length	2.00- 3.00	- 0.0 / + 0.32
Cut Length	3.01- 4.00	- 0.0 / + 0.36
Cut Length	4.01- 5.00	- 0.0 / + 0.40
Cut Length	5.01- 6.00	- 0.0 / + 0.42
Cut Length	6.01- 6.50	- 0.0 / + 0.44
Cut Length	6.51- 8.00	- 0.0 / + 0.50
Cut Length	8.01- 10.0	- 0.0 / + 0.57
Cut Length	10.01- 12.00	- 0.0 / + 0.61

Heavy Plate		
Product Type	Thickness (mm)	Tolerance (Min / Max)
Heavy Plate	6.0- 7.9	- 0.0 / + 0.8
Heavy Plate	8.0- 14.9	- 0.0 / + 1.0
Heavy Plate	15.0- 24.9	- 0.0 / + 1.2
Heavy Plate	25.0- 30.0	- 0.0 / + 1.4

Length and Width

Sheets are delivered with mill edges cut as standard.

- Tolerances conform to EN 10 051 or to SSAB's standard after agreement.

Plate delivered according to SSAB's dimension program.

- Tolerances conform to EN 10 029 or to SSAB's standard after agreement.
- Dimensional tolerances for plate with mill edge according to special agreement.

Flatness

Tolerances according to SSAB's flatness tolerances which are more restrictive than EN 10029 Class N (steel type L)

Cut Length		
Product Type	Thickness (mm)	1000 Ruler (mm)
Cut Length	2.00- 3.00	6
Cut Length	3.01- 4.00	6
Cut Length	4.01- 5.00	6
Cut Length	5.01- 6.00	6
Cut Length	6.01- 6.50	6
Cut Length	6.51- 8.00	6
Cut Length	8.01- 10.0	6
Cut Length	10.01- 12.00	6

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Product Type	Thickness (mm)	1000 Ruler (mm)
Heavy Plate	6.0- 7.9	6
Heavy Plate	8.0- 14.9	6
Heavy Plate	15.0- 24.9	6
Heavy Plate	25.0- 30.0	6

Shape

Tolerances for plate according to EN 10 029.
Tolerances for Sheet according to EN 10 051.

Surface Properties

According to EN 10 163-2 Class B subclass 3.

Delivery Conditions

Ramor 400 is delivered in quenched condition.

Fabrication and Other Recommendations

Welding, bending and machining

For information concerning welding and fabrication, see SSAB's brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Ramor 400 is not intended for further heat treatment. If Ramor 400 is heated above 180 °C after delivery from SSAB no guarantees for the properties are given.

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



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