

Hardox Wear Plate

Steel grade	Hardness Nominal [HBW]	Impact toughness CVL typical 20 mm	Bending properties Transverse t < 8 mm R/t	Rel. service life interval ¹	CEV/CET ² Typical 20 mm	Thickness [mm]
Hardox – Workshop friendly abrasion resistant wear plates for all purposes, enabling lighter, stronger and more durable applications.						
Hardox HiTuf	350	95 J / -40 °C ³			0.56/0.38 ³	40–160
Hardox 400 Bar	400	45 J / -40 °C			0.58/0.37	40–70 ⁴
Hardox 400	400	45 J / -40 °C	2.5	1	0.48/0.29	3.2–130 ⁵
Hardox 450	450	50 J / -40 °C	3.0	1.1–1.7	0.56/0.38	3.2–130
Hardox 500	500	37 J / -40 °C	3.5	1.3–2.1	0.63/0.41	4–103
Hardox 550	550	30 J / -40 °C		1.5–4.0	0.72/0.48	8–65
Hardox 600	600	20 J / -40 °C		1.8–8.0	0.76/0.58	8–65
Hardox Extreme	650–700	< 15 J / -40 °C		2.0–18.0	0.65/0.54	8–19

All plates are produced with tolerances according to Hardox® guarantees or closer.

1. Max/min sliding wear by SSAB WearCalc (mild steel 0.2–0.8).
2. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40
3. 70 mm
4. Bar diameter
5. Thicknesses up to 160 mm are available upon request.

Hardox Wear Sheet

Steel grade	Hardness Nominal [HBW]	Impact toughness CVL typical	Bending properties Transverse t < 6 mm R/t	Rel. service life interval ¹	CEV/CET ² Typical	Thickness [mm]
Hardox – Workshop friendly abrasion resistant wear cut to length sheet for all purposes, enabling lighter, stronger and more durable applications.						
Hardox 400	400	45 J / -40 °C	3.0	1	0.48/0.30	2.0–8.0
Hardox 450	450	50 J / -40 °C	3.0	1.1–1.7	0.52/0.35	2.5–8.0
Hardox 450	450 ⁵		3.5		0.39/0.31	0.7–2.1
Hardox 500	500	37 J / -40 °C	3.5	1.3–2.1	0.55/0.40	3.0–6.5

All sheets are produced with tolerances according to Hardox® guarantees or closer.

1. Max/min sliding wear by SSAB WearCalc (mild steel 0.2–0.8).
2. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40
5. Tested according to Vickers hardness test.

Hardox Tubes

Steel grade	Hardness Nominal [HBW]	Typical Yield Strength [MPa]	External dimensions, circular	Wall Thickness [mm]
Hardox – Abrasion-resistant tubes for extreme performance and extended service life.				
Hardox 400	400	1000–1300	76.1–219.1	3.00–6.00
Hardox 500	500	>1200	76.1–133	2.00–6.00

Strenx Performance Steel Profiles

Steel grade	Yield Strength [MPa]	Impact toughness	Tensile strength [MPa]		CEV/CET ¹ typical	Wall Thickness [mm]
	Min		Min	Max		
Strenx Tube – Advanced high-strength structural hollow sections.						
Strenx Tube 700QLH	700	40 J / -40 °C	780	930	0.48/0.34	2.3–6.3
Strenx Tube 700MLH	700	27 J / -50 °C	750	950	0.38/0.24	3.0–10.0
Strenx Tube 700MH	700	40 J / -20 °C	750	950	0.38/0.24	3.0–8.0
Strenx Tube 900MH	900	40 J / -20 °C	930	1200	0.50/0.25	4.0–6.0
Strenx Tube 960MH	960	40 J / -20 °C	980	1250	0.51/0.28	4.0–6.0

1. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40

Strenx Performance Steel Hot Rolled Heavy Plate

Steel grade	Yield Strength [MPa]	Toughness typical 20 mm	Bending properties Transverse t < 8 mm R/t	Tensile strength [MPa]		CEV/CET ¹ typical	Thickness [mm]
	Min			Min	Max		
Strenx – High-strength, high-performance steel, enabling lighter and more innovative structures.							
Strenx 700	700 ²	165 J / -40 °C	1.5	780	930	0.43/0.29	4–160 ⁵
Strenx 900	900 ²	88 J / -40 °C	2.5	940	1100	0.55/0.36	4–100 ⁵
Strenx 960	960 ²	84 J / -40 °C	2.5	980	1150	0.55/0.36	4–100
Strenx 1100	1100	67 J / -40 °C	3.0	1250	1550	0.55/0.36	4–40 ⁵
Strenx 1300	1300	32 J / -40 °C ³	3.5 ⁴	1400	1700	0.65/0.42	4–10

All plates are produced according to Strenx® guarantees or closer.

1. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40 10 mm (8 mm above 1100 MPa).
2. Thickness 4–53 mm.
3. For 6 mm and half size test specimen.
4. t < 6: 3.5 t ≥ 6: 4.0
5. Thicker materials are available upon request, Strenx 700: 170 mm, Strenx 900: 120 mm, Strenx 1100: 50 mm.

Strenx Performance Steel Hot and Cold Rolled Strip

Steel grade	Yield strength [MPa]	Tensile strength [MPa]		Elongation A ₅ [%]	Bending radius 90° bend 6 mm	CEV/CET ⁵ Typical 6 mm	Thickness [mm]
	Min	Min	Max	Min	Min		
Strenx 100 – 110 XF – The thermomechanically rolled steel for cold forming used for light and heavy transportation components and solutions.							
Strenx 100 XF	100 ¹	110 ¹		15 ²	1.2		1/2"–3/8" ³
Strenx 110 XF	110 ¹	118 ¹		15 ²	1.2		1/2"–3/8" ³
Strenx MC – High-strength structural made for cold form for stronger and lighter structures.							
Strenx 600 MC	600	650	820	16	1.1	0.33/0.21	2.0–10.0
Strenx 650 MC	650	700	850	14	1.2	0.34/0.22	2.0–10.0
Stren 700 MC	700	750	950	12	1.2	0.39/0.25	2.0–10.0
Strenx 700 MC+	700	750	950	13	1.0	0.38/0.24	3.0–12.0
Strenx 900 MC	900	930	1200	8	3.0	0.50/0.25	3.0–10.0
Strenx 900 +	900	930	1200	11	3.0	0.50/0.34	3.0–6.0
Strenx 960 MC	960	980	1250	7	3.5	0.51/0.28	3.0–10.0
Strenx 960 +	960	980	1250	10	3.5	0.50/0.34	3.0–6.0
Strenx 1100 MC	1100	1200	1460	6	4.0	0.50/0.30	3.0–8.0
Strenx Cold Rolled – High-strength structural steel made to produce stronger and lighter structures.							
Strenx 700 CR	700	100	1200	7 ⁴	2.0	0.40/0.29	0.70–2.10
Strenx 960 CR	960	1200	1400	3 ⁴	3.5	0.39/0.28	0.70–2.10
Strenx 1100 CR	1100	1300	1500	3 ⁴	3.5	0.41/0.30	0.70–2.10

1. Ksi
2. Elongation A₅₀ Min.
3. Inches
4. Elongation A₈₀ Min.
5. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40

Strenx Performance Steel Sections

Steel grade	Yield Strength [MPa]	Impact toughness	Tensile strength [MPa]		CEV/CET ¹ typical	Wall Thickness [mm]
	Min		Min	Max		
Strenx Hollow sections – Advanced high-strength, cold-formed steel section.						
Strenx Section 650	650	27 J / -40 °C	700	950	0.24/0.22	2.50–10.0
Strenx Section 700	700	27 J / -40 °C	750	950	0.38/0.24	2.50–10.0
Strenx Section 900	900	27 J / -40 °C	930	1200	0.51/0.28	3.6–6.0

1. CEV=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15; CET=C+(Mn+Mo)/10+(Cr+Cu)/20+Ni/40

Tech Support



Tech Support provides you with technical support over the phone and via e-mail. You will receive an answer straight away or at the latest within 24 hours. We welcome questions in any language and invite you to work closely with our Technical Managers and expert groups. Our aim is to simplify your work in design, materials selection, fatigue, deflection, bending, drilling, machining and welding.

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Toolox

	Hardness guaranteed [HBW]	Impact energy guaranteed Min [J]	Yield strength R _{p0.2} [MPa]*	Tensile strength R _m [MPa]*	Elongation A ₅ [%]*	Compressive strength R _{c0.2} [MPa]*	Impact energy [J]*	Plate Thickness [mm]	Bar Diameter [mm]
Toolox 33 – A quenched and tempered engineering and tool steel, designed to have low residual stresses – resulting in good dimensional stability.									
-40 °C							27	6–130	21–141
-20 °C							45		
+20 °C	275–325	35	850	980	16	800	100		
+200 °C			800	900	12	750	170		
+300 °C						700	180		
+400 °C						590	180		
+500 °C						560			

Plates are tested in both longitudinal and transverse direction.
 Bars are tested in longitudinal direction.

	Hardness guaranteed [HBW]	Impact energy guaranteed Min [J]	Yield strength R _{p0.2} [MPa]*	Tensile strength R _m [MPa]*	Elongation A ₅ [%]*	Compressive strength R _{c0.2} [MPa]*	Impact energy [J]*	Thickness [mm]
Toolox 40 – A quenched and tempered engineering and tool steel with very low residual stresses – in combination with a typical hardness around 40 HRC.								
-40 °C								6–130
-20 °C								
+20 °C	360–420	20	1300	1260	14		38	
+200 °C			1150	1170	14			
+300 °C			1120	1160	14			
+400 °C			1060	1060	15			
+500 °C			930	900	16			

Plates are tested in both longitudinal and transverse direction.

	Hardness guaranteed [HBW]	Impact energy guaranteed Min [J]	Yield strength R _{p0.2} [MPa]*	Tensile strength R _m [MPa]*	Elongation A ₅ [%]*	Compressive strength R _{c0.2} [MPa]*	Impact energy [J]*	Approximate Hardness [HRC]*	R _{c0.2} [MPa] after 170 hrs soaking time at the actual temperature*	Plate Thickness [mm]	Bar Diameter [mm]
Toolox 44 – A quenched and tempered engineering and tool steel with very low residual stresses. In spite of a typical hardness of 45 HRC it boasts very good machinability and is un-matched on the market.											
-40 °C							14			6–130	21–141
-20 °C							19				
+20 °C	410–475	18	1300	1450	13	1250	30	45			
+200 °C			1200	1380	10	1120	60				
+300 °C						1120	80				
+400 °C						1060	80		1060		
+500 °C						930			910		

Plates are tested in both longitudinal and transverse direction.
 Bars are tested in longitudinal direction.
 The typical testing temperature for Toolox is room temperature.
 All other values are tested randomly and they are for information only.
 * Values are for guidance only.

Sales contacts



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Certain restrictions apply to the product program.

This is an extract from the product data sheets and recommendations.

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