



Miilux products are dimensionally accurate and ready for use as wear-resistant component parts and wear-resistant sheets. Homogeneous hardness is provided in the whole part by using edge-to-edge hardening technology in component part production.

You can request Miilux products at the order stage in line with your special requests such as extra marking, extra tests, packaging style, protective paint application, etc.

It offers excellent design solutions for wear parts of crushers, excavators, mining machinery, damper bodies, bulldozer blades, chute-feeders and similar wear parts. Miilux 400, 450, 500 products are used against friction and wear, providing a high service life compared to conventional materials. In addition, it allows the use of thinner material, reducing the body weight and increasing the load capacity. It shows positive cutting and welding behavior in production.

Maximum Chemical Composition Content (%) (Ladle Analysis)

Product Quality	Thickness (mm)	C	Si	Mn	P	S	Cr	Ni	Mo	B
Miilux® 400	4,00≤ – ≤60,00	0,20	0,60	1,50	0,025	0,01	1,00	0,60	0,50	0,005
Miilux® 450	4,00≤ – ≤60,00	0,26	0,70	1,70	0,025	0,01	1,30	0,80	0,50	0,005
Miilux® 500	4,00≤ – ≤60,00	0,30	0,70	1,70	0,025	0,01	1,50	3,00	0,70	0,005

Typical Mechanical Properties and Carbon Equivalent

Product Quality	Thickness (mm)	* Yield strength (Rp) 0,2 N/mm ²	*Tensile Strength (Rm) N/mm ²	*Elongation (A5%)	Impact Charpy-V - 40°C Joule (Min.)	Hardness Range (HBW)	**CEV
Miilux® 400	4,00≤ – ≤60,00 mm	1000	1250	10	25	370 – 460	0,58
Miilux® 450	4,00≤ – ≤60,00 mm	1100	1350	8	20	400 – 480	0,63
Miilux® 500	4,00≤ – ≤60,00 mm	1250	1550	8	17	450 – 560	0,70

*Typical values.

**CEV= $C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$

MILUX YÜKSEK MUKAVEMETLİ ÇELİK ÜRETİM A.Ş.

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Factory: Manisa Organize Sanayi Bölgesi, Hasan Türek Bulvarı No: 16 MANİSA Tel: 0 262 679 2634

Mersis No: 0620111964000001 Trade Registration No: 433938

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Narrowed Miilux Thickness Tolerances

Sheet Thickness (mm)	Tolerances (mm)
4,00-8,00	- 0,35 + 0,35*
6,00-7,99	- 0,40 + 0,80**
8,00-14,99	- 0,50 + 0,90**
15,00-24,99	- 0,60 + 1,00**
25,00 - 50,00	- 0,60 + 1,30**
50,01 - 79,99	- 0,60 + 1,70**
80,00 - 150,00	- 0,60 + 2,10**
Other thicknesses are supplied subject to negotiation.	
* Sheet from Coil (without edge cutting)	
** Sheet (with edge cut)	

Heat Treatment Condition

- Quenched (Q)
 - Quenched and Tempered (QT)*
- Subject to discussion.

Product Certificate

- Certified according to EN 10204 norm.
 - Test results are provided in English and/or Turkish in accordance with EN 10204-2.2.
- It is specified at the order stage for EN 10204-3.1, 3.2 test certificate

Hardness Test

- Brinell hardness test is performed 0.50 – 2 mm below the plate surface, from a machined surface, according to EN ISO 6506-1 standard.

Tolerances

- EN 10029 or EN 10051 standards are applied for dimensional tolerances.
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- The thickness measurement of the cut-edge boards is made at any point, at least 25 mm from the edge.
- The thickness measurement of the boards whose edges are not cut is made from a minimum of 40 mm inside the edges and from any point.
- EN 10029 Class N, Steel Type H tolerances are guaranteed for flatness*.
- ** Narrowed Miilux tolerances are targeted.

Surface Condition

- EN 10163-2 (Class B, Subclass 3) standard is guaranteed for surface defects.
 - The surface of the Steel Plates is sandblasted according to ISO 8501-1 Sa 2½ quality.
- Unless otherwise specified, shop primer is applied to Miilux products, which has been specially developed to provide very high welding and cutting speed after sandblasting, with a very low welding porosity and very low burning rate in the reverse area.
- Shopprimer protects the structure against atmospheric corrosion during storage.
 - Applied at a thickness of 15-25 microns (these values are indicated for a smooth test panel).
 - The protective paint has the feature of protecting Miilux products from atmospheric corrosion for up to 6 months.
 - Punch marking is applied.
 - Paint marking is applied.
- (Cast Number, Plate Number, Product Quality, Product Dimensions)

Size and Delivery Conditions

- Miilux products are supplied in a thickness range of 4.00-60.00mm, with a maximum width of 2500mm and a maximum length of 8000mm. Other sizes are subject to agreement.
- Miilux products are also available as ready-to-install component parts upon customer request.



Customer Technical Services

Our Customer Technical Services team assists you when you have a question about product features

MIILUX® DATASHEET

MIILUX® 400 | 450 | 500

Miilux® oy

and usage areas.

E-mail: mth@miilux.com.tr

Sales and marketing

Our Sales and Marketing team assists you with your order requests and pre-sales services.

E-mail: satis@miilux.com.tr

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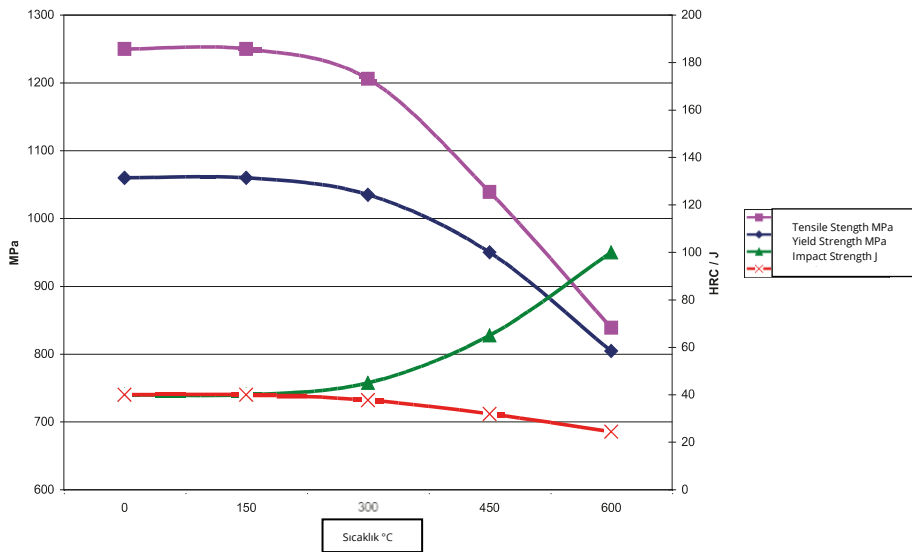
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Heat Treatment

Miilux products should not be heated up after production. Steel can be heated up to about 200 °C without any substantial drop of hardness. When temperature goes over 200°C, hardness, toughness and wear resistance drops as shown in the picture 1.

Miilux® 400 typical behaviour in teh heat treatments



WELDING AND FLAME CUTTING

Miilux® 400 can be welded well. Miilux® 500 is more limited with heat input and maximum welding energy. With Miilux® 400 preheating is needed when combined plate thickness is more than 40mm and with Miilux® 500 when plate thickness is more than 20mm. Recommended working temperatures are in next table. Preheating temperature should be at least 70 % at working temperature and weld ending temperature shouldn't. exceed much more than 30 % working temperature.

Recommended working temperatures

Product Quality	Combined Thickness					
	20 mm	30 mm	40 mm	50 mm	60 mm	80 mm
Miilux ® 400	-	-	100 °C	125 °C	125 °C	150 °C
Miilux ® 450	-	100 °C	125 °C	125 °C	150 °C	200 °C
Miilux ® 500	100 °C	125 °C	150 °C	175 °C	200 °C	200 °C

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Processing

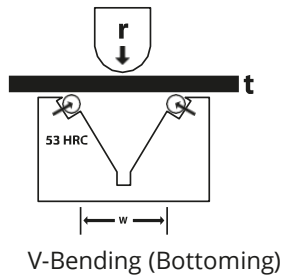
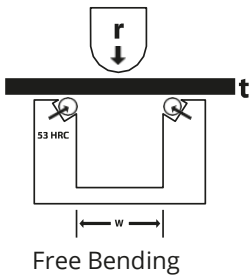
Miilux products can be machined using high speed tool steels (HSS) with the appropriate combination of machining tool speed and feed rate to provide satisfactory service life.

Cold Forming

In cold forming, sharp transition angles should be avoided as much as possible in Miilux products. In addition, the essence of condition of the equipment used in the operations, the operation plan and the good workshop practices should not be disregarded. The cold forming limits table is given below.

Product	Plate Thickness (mm)	Free bending < 90° Rounding radius of press / plate thickness (r/t) (Bending line to rolling direction)		Free bending – Free Hole Width / Plate Thickness (W/t)		Bottoming 90° - Free Hole Width Free Hole Width
		Transverse	Longitudinal	Transverse	Longitudinal	
Miilux® 400	4 – 20 mm	3,0	4,0	9,0	11,0	~ 15,0
Miilux® 450	4 – 20 mm	4,0	5,0	11,0	13,0	~ 15,0
Miilux® 500	4 – 20 mm	6,0	8,0	15,0	19,0	-

Bending should be done with a single press | Slow pressing speed is recommended | Lower tool should be roller type. (See Drawings)



MIILUX® DATASHEET

MIILUX® 400 | 450 | 500

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