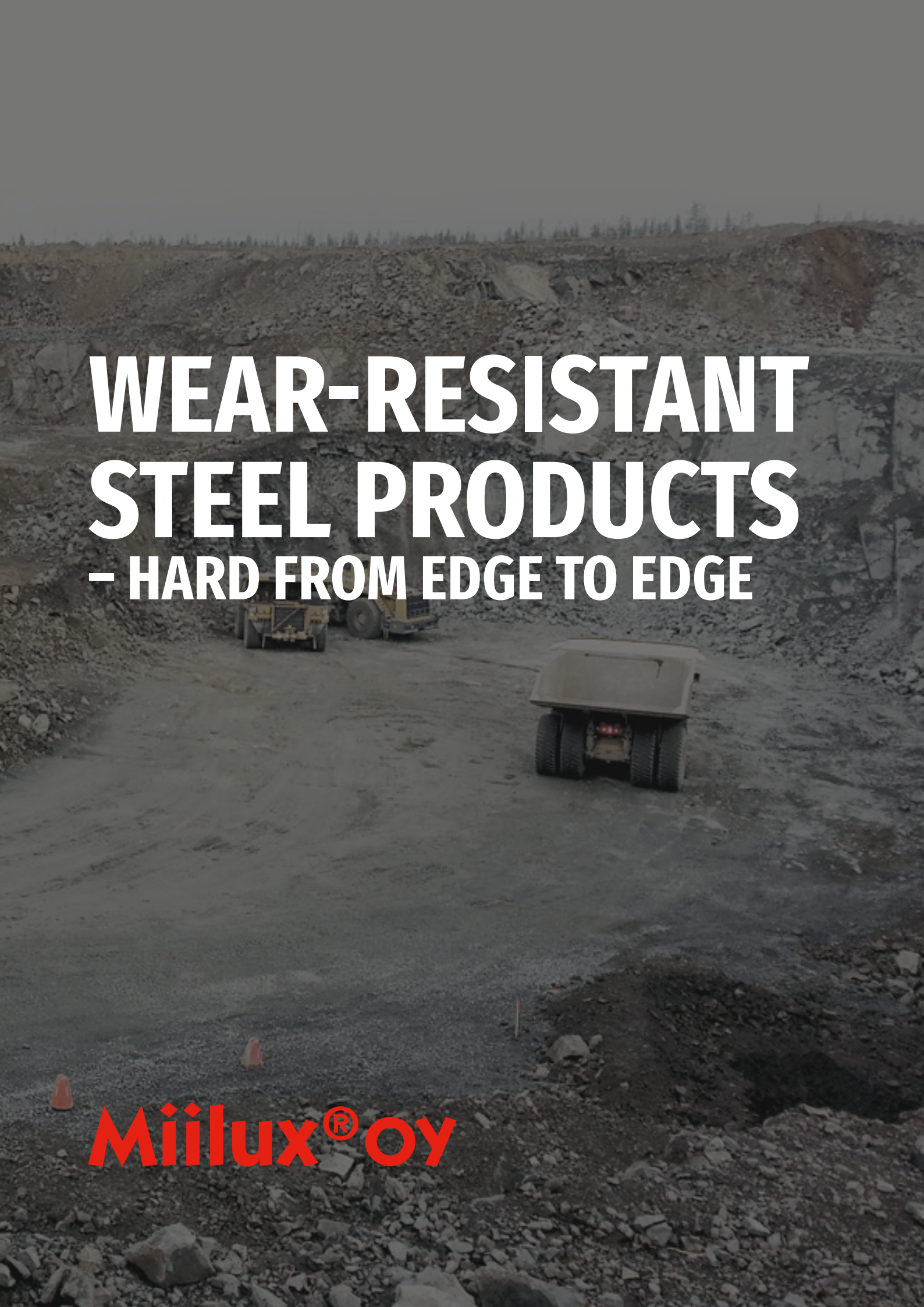


WEAR-RESISTANT STEEL PRODUCTS

– HARD FROM EDGE TO EDGE

Miilux® Oy

MIILUX® WEAR-RESISTANT STEELS

Miilux wear-resistant steels can be used in any application where a steel with high abrasion resistance and impact toughness is required. Typical applications include excavator and wheel loader buckets, crusher wear plates, as well as mining and process industry facing plates and components.

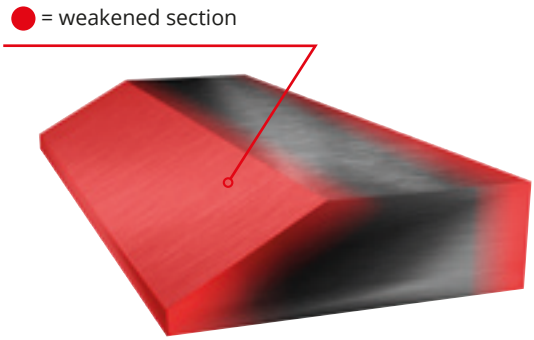
Compared to ordinary steels, the Miilux wear-resistant steels have superior wear resistance thanks to their hard from edge to edge quality and fully hardened structure.

On granite, a wear-resistant steel with a hardness of **500 HB** can achieve a **four times bigger** increase in service life compared to ordinary steels. This reduces the frequency of plate replacement, which saves costs.

The Miilux hard from edge to edge method opens up more options for the shape and hardness of the steel compared to wear-resistant steels produced by conventional methods. The Miilux wear-resistant steels can make structures lighter or thinner without compromising their durability.

MIILUX WEAR-RESISTANT STEELS ARE HARD FROM EDGE TO EDGE

The conventional method is to harden wear-resistant steels before cutting off pieces. Miilux wear-resistant steel products are hardened after cutting. This difference in methods has a significant impact on the durability of the steel.



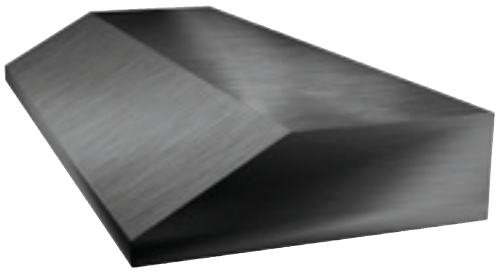


Figure 1. Ordinary wear-resistant steel

The figure illustrates the hardness of ordinary wear-resistant steel pieces. The heat from flame cutting compromises the hardness of the red sections. Flame cutting leaves weaker areas on the cut surfaces, i.e. the bevel and the rear.

The grey areas retain their original hardness. The red areas are quicker to wear, because the steel has been softened. These wear plates have a shorter service life and must be replaced sooner.

Figure 2. Miilux wear-resistant steels

Miilux wear-resistant steel differs from ordinary wear-resistant steel because of the final hardening method and fully hardened structure. For Miilux products, hardening is the final step after flame cutting and any machining.

This prevents extra heat from compromising the structure and wear resistance of the steel. The grey sections remain hardened, extending the service life of Miilux wear-resistant steel.

Ordinary wear-resistant steel

1. Hardening
2. Cutting, bevelling, machining, bending, etc.

Effects of the processing order:
- Significant loss of hardness on flame-cut surfaces.
- Compromised sections wear faster.
- Machined pieces can only have a hardness of 400 HB in practice.
- Hardened pieces are expensive to machine.

Miilux wear-resistant steels

1. Cutting, bevelling, machining, bending, etc.
2. Hardening

Effects of the processing order:
- The piece is hard from edge to edge, top to bottom.
- Superior wear resistance.
- Machined pieces can be hardened up to **600 HB**.
- Cost-effective machining.

MIILUX WEAR-RESISTANT STEELS ARE FULLY HARDENED FROM EDGE TO EDGE

Some wear-resistant steels on the market are only surface hardened. This means the steel has a hardened surface with a softer core.

Surface hardened plates can be used in fewer applications than fully hardened plates because of their soft core.

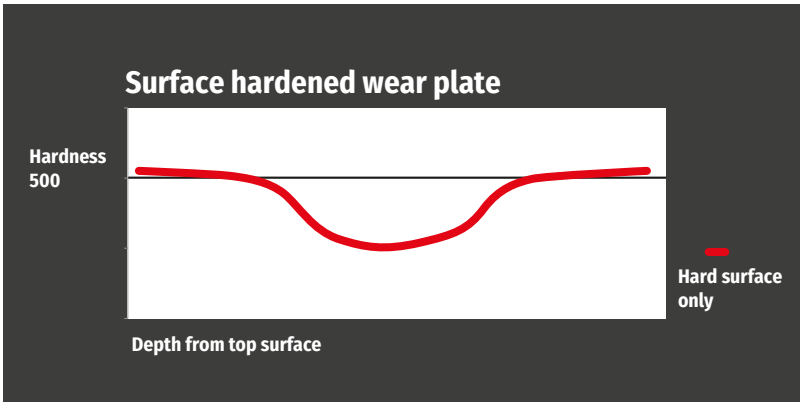


Figure 3. Surface hardened plate hardness curve. The plate has a soft core.

Miilux wear plates are hard from edge to edge. They will retain their shape and wear characteristics for a long time, which makes them the optimal choice for heavy-duty wearing applications.

The full hardening is the result of correct steel chemistry and composition. In practice, the result is a steel that has a uniform hardness from top to bottom with no softness in the core. Miilux wear plates are fully hardened – they are hard from edge to edge.

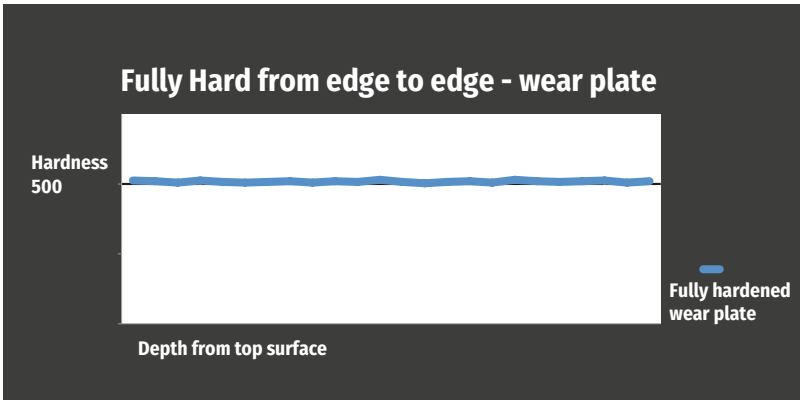


Figure 4. Fully hardened plate hardness curve. The plate is hard from edge to edge.

MIILUX® WEAR-RESISTANT STEELS PRODUCT RANGE

The hard from edge to edge method allows you to select any grade of wear-resistant Miilux steel. Machining will not limit the selection, as the steel is machined in its soft state before hardening. Many 400 HB plates can be replaced with 500 HB plates. This can extend service life many times beyond that of traditional solutions.

We will make digital models of the customer's pieces and manufacture them to the specified hardness. Miilux wear plates are available in five hardness grades: MX400, MX450, MX500, MX530, and MX600. The hardness is selected according to the application and operational conditions. If you require other sizes and thicknesses, ask details from our sales person.

WEAR PLATES MIILUX 400, 450, 500 AND 600

MIILUX 400

Plate size	Grade	Plate weight (kg)
3 x 1500 x 6000	Miilux 400	216
4 x 1500 x 6000	Miilux 400	288
5 x 2450 x 6000	Miilux 400	588
6 x 2450 x 6000	Miilux 400	706
8 x 2450 x 6000	Miilux 400	941
10 x 2450 x 6000	Miilux 400	1176
12 x 2450 x 6000	Miilux 400	1411
16 x 2450 x 6000	Miilux 400	1882
20 x 2450 x 6000	Miilux 400	2352
25 x 2450 x 6000	Miilux 400	2940
30 x 2450 x 6000	Miilux 400	3528
35 x 2450 x 6000	Miilux 400	4116
40 x 2450 x 6000	Miilux 400	4704
50 x 2450 x 6000	Miilux 400	5880
60 x 2450 x 6000	Miilux 400	7056
70 x 2300 x 6000	Miilux 400	7728
80 x 2000 x 6000	Miilux 400	7680
100 x 1800 x 5000	Miilux 400	7200

MIILUX 450

Plate size	Grade	Plate weight (kg)
6 x 2450 x 6000	Miilux 450	706
8 x 2450 x 6000	Miilux 450	941
10 x 2450 x 6000	Miilux 450	1176
12 x 2450 x 6000	Miilux 450	1411
16 x 2450 x 6000	Miilux 450	1882
20 x 2450 x 6000	Miilux 450	2352
25 x 2450 x 6000	Miilux 450	2940
30 x 2450 x 6000	Miilux 450	3528
35 x 2450 x 6000	Miilux 450	4116
40 x 2450 x 6000	Miilux 450	4704
50 x 2450 x 6000	Miilux 450	5880
60 x 2450 x 6000	Miilux 450	7056
70 x 2300 x 6000	Miilux 450	7728
80 x 2000 x 6000	Miilux 450	7680
100 x 1800 x 5000	Miilux 450	7200

MIILUX 500 (*MIILUX 530)

Plate size	Grade	Plate weight (kg)
5 x 2450 x 6000	Miilux 500	588
6 x 2450 x 6000	Miilux 500	706
8 x 2450 x 6000	Miilux 500	941
10 x 2450 x 6000*	Miilux 500	1176
12 x 2450 x 6000	Miilux 500	1411
16 x 2450 x 6000*	Miilux 500	1882
20 x 2450 x 6000*	Miilux 500	2352
25 x 2450 x 6000*	Miilux 500	2940
30 x 2450 x 6000	Miilux 500	3528
35 x 2450 x 6000*	Miilux 500	4116
40 x 2450 x 6000*	Miilux 500	4704
50 x 2450 x 6000*	Miilux 500	5880
60 x 2450 x 6000	Miilux 500	7056
70 x 2300 x 6000	Miilux 500	7728
80 x 2000 x 6000	Miilux 500	7680

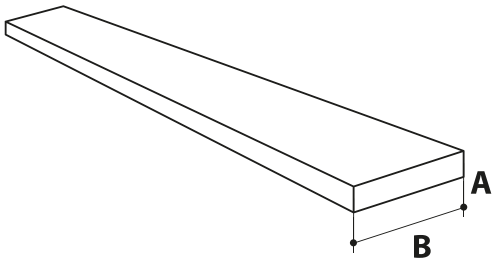
MIILUX 600

Plate size	Grade	Plate weight (kg)
8 x 2000 x 6000	Miilux 600	768
10 x 2000 x 6000	Miilux 600	960
12 x 2000 x 6000	Miilux 600	1152
16 x 2000 x 6000	Miilux 600	1536
20 x 2000 x 6000	Miilux 600	1920
25 x 2000 x 6000	Miilux 600	2400
30 x 2000 x 6000	Miilux 600	2880

500 HB: WEAR BARS, CUTTING EDGES, ARROW PROFILES, AND GROUSER BARS

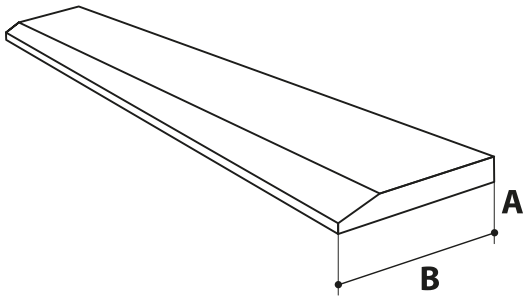
Wear rails, 500 HB

Thickness (mm)	Width (mm) B	Length (mm) A	Bar weight (kg)	Weight per metre (kg)
10	80	6000	38,4	6,4
10	100	6000	48	8
10	150	6000	72	12
12	80	6000	46	7,68
12	100	6000	57,6	9,6
12	150	6000	86,4	14,4
16	80	6000	61,5	10,24
16	100	6000	76,8	12,8
16	150	6000	115,2	19,2
20	80	6000	76,8	12,8
20	100	6000	96	16
20	150	6000	144	24
25	100	6000	120	20
30	100	6000	144	24
30	150	6000	216	36



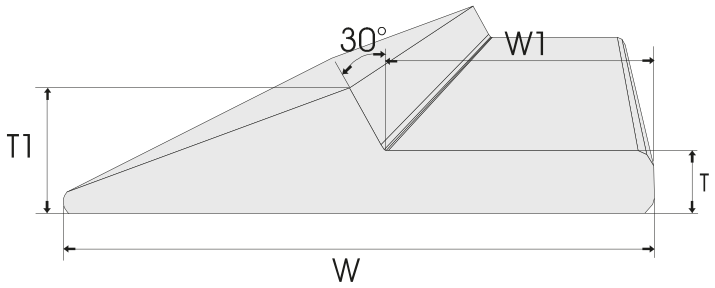
Cutting edges, 500 HB

Thickness (mm)	Width (mm) B	Length (mm) A	Bar weight (kg)	Weight per metre (kg)
12	110	6000	58,6	9,6
16	150	6000	106,8	17,5
20	150	6000	131,8	21,6
20	200	6000	181,2	29,7
25	200	6000	223,9	36,7
25	250	6000	273,3	44,8
30	250	6000	336,7	55,2
30	300	6000	403,8	66,2
32	270	6000	385,5	63,2
35	270	6000	423,3	69,4
40	300	6000	546,0	89,5
40	300	7500	671	89,5
50	400	6000	901,6	147,8
50	400	7500	1108,5	147,8



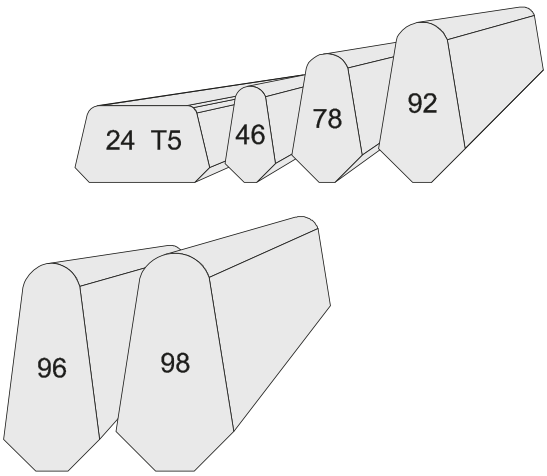
Arrow profile

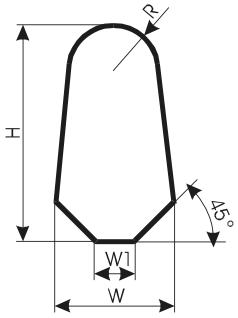
Prof. No.	Length (mm)	W (mm)	W1 (mm)	T (mm)	T1 (mm)	Weight per metre (kg)	Cutting
101	3000	101	46	11	21	9,7	Not available
151	3000	151	68	16	32	20,3	Not available
101	6000	101	46	11	31	9,7	Not available
151	6000	151	68	16	32	20,3	Not available

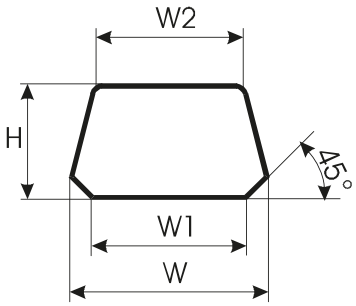


Grouser bars

Prof. No.	Length (mm)	H (mm)	W (mm)	W1 (mm)	W2R (mm)	Weight per metre (kg)	Cutting
24 T5	3000	24	42	33	33	7,1	
46	3000	30	16	4	5	2,8	Not available
78	3000	40	22	5	7	5,2	Not available
92	3000	50	27	6	10	8,4	Not available
96	3000	65	30	10	10	12	Not available
98	3000	65	37	12	14	15,7	Not available







Miilux sells and manufactures wear resistant steels. Hard from edge to edge method produces steel parts, products and solutions. Our personnel will be happy to assist you in choosing the right product for your application.

OUR SERVICES

- Modelling and design (2D and 3D)
- Strength calculations
- Flame cutting
- Plasma cutting
- Laser cutting
- Chamfering
- Rolling
- Machining
- Welding
- Surface treatment

Miilux® OY

Miilux Oy Finland
Ruonankatu 1
92100 RAAHE
Finland

Miilux Poland Sp. z o.o.
42-600 Tarnowskie Góry
ul Hutnicza 5-9
Poland

Miilux Turkey
Organize Sanayi Bölgesi No:16
Hasan Türek Cd.,
45030 Keçiliköy Osb
Manisa Merkez/Manisa, Turkey

www.miilux.fi