



Ballistic steel for human protection

Miilux Protection 600 – quenched Ultra High Hardness armor steel.

Chemical composition content % maximum (ladle analysis)

Steel grade	Thickness	C	Si	Mn	P	S	Cr	Ni	Mo	B
Miilux® PROTECTION 600	5-20mm	0,46	0,80	0,60	0,015	0,015	0,80	3,5	0,50	0,004

Typical mechanical properties

Steel grade	Thickness	Yield strength Rp 0,2 N/mm ²	Tensile strength Rm N/mm ²	Elongation A5 %	Impact Charpy-V -40 °C Kv Joule	Hardness Range HBW
Miilux® PROTECTION 600	5-20mm	1500	2000	6	15	570-650

Miilux Protection 600 is supplied in plate thickness 5-20mm (other thickness per agreement)
Maximum plate size is 2450x6000 (8000)mm

Delivery Condition

Quenched

Tolerances

Dimensions according to EN 10029
Thickness according to EN 10029 Class C
Flatness according to EN 10029 class N, steel type H

Surface condition

According to EN 10163-2 class B subclass 3

General technical delivery condition

According to EN 10021, unless otherwise is agreed Inspection documents EN 10204-2.2, issued in English

Technical specification of Miilux Protection 600

Class	Thickness of the test (nominal)	Type of weapon	Calibre	Type of bullet	Weight of the bullet	Shooting range	Speed of the bullet
VPAM PM7	5 mm	Rifle	5,56 x 45 mm 7,62 x 51 mm	SS109 (M855) M80 Nato Ball	4,0 g 9,5 g	10 m	950 ± 10 m/s 830 ± 10 m/s
Stanag 4569 Level 1	6 mm	Rifle	7,62 x 51 mm 5,56 x 45 mm 5,45 x 45 mm	M80 Nato Ball SS109 (M855) M193	9,5 g 4,0 g 3,5 g	30 m	833 ± 20 m/s 900 ± 20 m/s 937 ± 20 m/s
Stanag 4569 Level 2	8 mm	Rifle	7,62 x 39 mm	API BZ	7,7 g	30 m	695 ± 20 m/s
VPAM PM9	10 mm	Rifle	7,62 x 51 mm	P80 Nato AP	9,7 g	10 m	820 ± 10 m/s

Cutting

Cutting is possible by using plasma, laser or abrasive water jet cutting.

Welding

Preheating in welding always 100 °C, for plate thickness 5-20mm. Austenitic consumables must be used. Maximum temperature in welding is 180 °C.

Machining

Machining is possible with special hard metal (HSS) tools.

Cold forming directive limits for the purpose of description only

Steel grade	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		Max angle (°)
		Transverse	Longitudinal	Transverse	Longitudinal	
Miilux [®] PROTECTION 600	5-10	~ 10,0	~ 12,0	~ 23	~ 27	30

Bending should be done with one press | Slow pressing speed is recommended | Lower tool should be roller-type (see drawings)

