

Armour Plate Steel for Human Protection



Brown McFarlane provides specialist steel solutions to suit your needs by offering a wide range of Miilux armour plate products.

Products have been tested according to EN1522, MIL-A 46100D and STANAG 4569 together with other international specifications.

Miilux is an established brand of protection steel with a global reputation for high quality and integrity.

Specifications/Grades

Miilux Protection 380
Hardness 320 - 370HB
Supplied from 6mm to 25mm thick

Miilux Protection 400
Hardness 360 - 420HB
Supplied from 5mm to 40mm thick

Miilux Protection 450
Hardness 420 - 480HB
Supplied from 5mm to 40mm thick

Miilux Protection 500
Hardness 480 - 540HB
Supplied from 2.5mm to 40mm thick

Miilux Protection 500T
Hardness 480 - 540HB
Supplied from 2.5mm to 40mm thick

Plate formats up to 6100 x2500mm

Applications

- Armoured civilian vehicles
- Ballistic protection for buildings
- Cash in transit vehicles
- Military vehicles
- Police vehicles
- Security doors and bank counters

Key Benefits

- Facilities for machining, bending and cutting (plasma, laser, water jet).
- Fast ex-mill delivery, with no minimum order quantity.
- Fully accredited quality systems to ISO 9001, 14001 and 18001.
- Material can be supplied as ready to install components.
- Material meets international ballistic test standards.
- Delivered worldwide by our international logistics organisation.

Technical specification of Miilux Protection 500.

Class acc. to EN1522	Thickness of the test (nominal)	Type of weapon	Calibre	Type of bullet	Weight of the bullet	Shooting distance	Speed of the bullet V2,5 (m/s)
FB3	2.5 mm	Revolver	357 Mag.	Fulljacket, coned bullet, soft core	10.2g	5m	430±10m/s
FB4	3.0 mm	Revolver	44 Rem. Mag.	Fulljacket, flat nose, soft core	15.6g	5m	440±10m/s
	4.2 mm	Rifle	7.62 x 39mm	AK-47 M43	8.0g	10m	720±10m/s
FB5	6.0 mm	Rifle	5.56 x 45mm	SS109 (M855)	4.0g	10m	950±10m/s
FB6	6.0 mm	Rifle	7.62 x 51mm	M80 Nato Ball	9.5g	10m	830±10m/s
FB7	14.0 mm	Rifle	7.62 x 51mm	P80 Nato AP	9.5g	10m	820±10m/s
Stanag 4569	6.0 mm	Rifle	7.62 x 51mm	M80 Nato Ball	9.5g	30m	833±10m/s
	6.0 mm		5.56 x 45mm	SS109 (M855)	4.0g	30m	900±10m/s
Level 1	9.0 mm		5.56 x 45mm	M193	3.5g	30m	937±10m/s
Stanag 4569 Level 2	12.0 mm	Rifle	7.62 x 39mm	API BZ	7.7g	30m	695±10m/s
Stanag 4569 Level 3	24.0 mm	Rifle	7.62 x 51mm	AP (WC core)	8.4g	30m	930±10m/s
	16.0 mm		7.62 x 54Rmm	B32 API	10.3g	30m	854±10m/s

Chemical Properties Content % maximum (ladle analysis)

Steel Grade	C	Si	Mn	P	S	Cr	Ni	Mo	B
Miilux 380	0.13	0.40	1.40	0.020	0.010	1.50	0.40	0.40	0.005
Miilux 400	0.20	0.70	1.70	0.030	0.015	1.50	0.40	0.50	0.004
Miilux 450	0.26	0.60	1.50	0.030	0.015	1.50	0.70	0.50	0.005
Miilux 500	0.30	0.70	1.70	0.030	0.015	1.50	0.80	0.50	0.004
Miilux 500T	0.30	0.70	1.70	0.030	0.015	1.50	0.80	0.50	0.004

Typical Mechanical Properties

Steel Grade	Yield Strength Rpo.2 MPa	Tensile Strength Rm MPa	Elongation A5%	Impact Strength	Hardness Bhn
Miilux 380	800	1000	12	40 J	320 - 370
Miilux 400	1000	1250	10	35 J	360 - 420
Miilux 450	1200	1450	8	30 J	420 - 480
Miilux 500	1250	1600	8	20 J	480 - 540
Miilux 500T	1250	1600	8	20 J	480 - 540

Tolerances

Dimensions according to EN 10029 or EN 10051
Thickness according to EN 10029 class C and flatness according to EN 10029 class N, steel type H

Delivery condition

Quenched (500T quenched and tempered)

Surface condition

According to EN 10163-2 Class B Subclass 3.

General technical delivery condition

According to EN 10021. Unless otherwise agreed. Inspection documents EN 10204-2.2 issued in English.

Thickness Tolerances According to EN 10029

Plate thickness in mm	Tolerances in mm
3 - 4	-0.0 +0.35
5 - 6	-0.0 +0.70
7 - 9	-0.0 +0.90
10 - 13	-0.0 +1.00
>13	-0.0 +1.10

Other thickness tolerances by special agreement.



Quality steel plate suppliers to the world

Brown McFarlane International

BROWN McFARLANE INTERNATIONAL SALES

T. +44 (0) 1782 210 545
E. internationalsales@brownmac.com
United Kingdom

BROWN McFARLANE EUROPE

T. +32 3808 1377
E. antwerpsales@brownmac.com
Belgium

BROWN McFARLANE BRAZIL

T. +55 11 3958 8070
E. brazil@brownmac.com
Brazil

Brown McFarlane UK & Eire

BROWN McFARLANE GLASGOW (SCOTLAND & EIRE)

T. +44 (0) 141 551 9191
E. glasgowsales@brownmac.co.uk
United Kingdom

BROWN McFARLANE STOKE (ENGLAND & WALES)

T. +44 (0) 1782 289 909
E. stokesales@brownmac.co.uk
United Kingdom

Brown McFarlane Stainless & Duplex Steels

T. +44 (0) 1922 748 710
E. stainless@brownmac.com
United Kingdom

www.brownmac.com

