

MARS® STEELS FOR MILITARY APPLICATIONS

THREAT

MARS® 380

MARS® 500

MARS® 600

MARS® 650

MULTI-LAYER SYSTEM EXAMPLES  
(From strike face to back face)

RECOMMENDED MINIMUM THICKNESS FOR PROTECTION (mm)

Stanag Level*		Bullet Weight (g)	V proof (±20) (m/s)	i	Th	AD** (kg/sqm)	Th	AD** (kg/sqm)	Th	AD** (kg/sqm)	Th	AD** (kg/sqm)		AD** (kg/sqm)	
1	7,62 x 51 Nato ball (M80, C21, DM41)	9,55	833	0°	10,5	82	6,3	49	5,0	39	5,5	43	Mars® 650 th 5,2 mm + 0 mm air + Glass fibers th 6 mm	54	
	5,56 x 45 Nato SS109 (M855)	4	900				9,3	73	6,2	49					
	5,56 x 45 M193	3,56	937												
2	7,62 x 39 API BZ	7,7	695	0°	13,5	106	12,5	98	8,5	67	7,5	59	Mars® 600 4,5 mm + 30 mm air gap + Mars® 500 6,5 mm	86	
				30°	7	55	6	47	6	47	-	-	-	-	
3	7,62 x 54R API B32	10,4	854	0°	18	141	16	126	14	110	13	102	Mars® 600 5 mm + 15 mm air gap + Mars® 500 6,5 mm	90	
													Mars® 600 5 mm + 10 mm air gap + Mars® 380 8 mm	102	
	7,62 x 51 AP WC (AP8, M993)	8,4	930	0°	23	181	20,5	161	-	-	-	-	-	Mars® 600 9 mm + 15 mm air gap + Mars® 380 13,5 mm	177
														Mars® 650P 6 mm R6T10 + 30 mm air gap + Mars® 650P 8 mm R8T12 + 15 mm air gap + Mars® 500 12,5 mm	167
														Mars® 600 7 mm + 10 mm air gap + Mars® 650P 6 mm R6T10 + 10 mm air gap + Mars® 600 8,5 mm	153
														Mars® 650P 6 mm R6T10 + 30 mm air gap + Mars® 650P 8 mm R8T12 + 35 mm air gap + Mars® 600 8,5 mm	136
			60°	8,5	67	8	63	-	-	-	-	-	-		
4	14,5 x 114 API B32	64	911	0°	37	290	-	-	-	-	-	-	Mars® 600 14 mm + 0 mm air gap + Mars® 380 13,5 mm	216	
													Mars® 600 8,5 mm + 20 mm air gap + Mars® 600 8,5 mm + 20 mm air gap + Mars® 500 8 mm	196	
													Mars® 600 8,5 mm + 30 mm air gap + Mars® 380 15 mm	184	
													Mars® 500 6 mm + 30 mm air gap + Mars® 380 13,5 mm	153	
5	25 x 137 APDS-T (PMB 073)	121,5	1258	60	34	267	-	-	-	-	-	-	Mars® 650P 12 mm R12T18 + 100 mm air gap + Mars® 650P 6 mm R6T10 + 100 mm air gap + Mars® 380 15 mm	206	
	25 x 137 APFSDS-T (PMB 090)	130	1336	-	-	-	-	-	-	-	-	-	-	-	

\*Stanag 4569/ AEP 55 vol1 Ed C.

\*\*AD: Areal Density

Mars® 650P=Perforated Mars® 650

All information in this document is for information purpose only. Final configuration must be tested on vehicle.

Looking for a specific multi-layer configuration of for protection against a threat that is not included in this table? Please contact us for recommendation  
Industeel reserves the right to change its product range at any time without prior notice.

Contact Marketing : +33 3 85 80 50 37  
Contact Sales : +33 3 85 80 51 55  
<https://industeel.arcelormittal.com>

## MARS® STEELS FOR CIVIL APPLICATIONS

STANDARD & PROTECTION LEVEL	THREAT	BULLET WEIGHT	V Proof*	i	RECOMMENDED MINIMUM THICKNESS FOR PROTECTION (mm)					
					MARS® 500	MARS® 600	MARS® 650	th (mm)	AD** (kg/sqm)	th (mm)
		g	m/s		th (mm)	AD** (kg/sqm)	th (mm)	AD** (kg/sqm)	th (mm)	AD** (kg/sqm)
NIJ 0108.01. Ivl II	.357 Magnum JSP	10,2	426 ± 15	0°	<b>2,3</b>	18	-	-	-	-
EN 1522 FB3	.357 Magnum FJ/CB/SC	10,2	430 ± 10	0°	<b>2,3</b>	18	-	-	-	-
NIJ 0108.01 Ivl IIIA	.44 Magnum SWC	15,6	426 ± 15	0°	<b>2,5</b>	20	-	-	-	-
VPAM PM4	.357 Magnum FJ/CB/SC	10,2	430 ± 10	0°	<b>3,2</b>	25	-	-	-	-
EN 1522 FB4	.44 Magnum FJ/FN/SC	15,6	440 ± 10							
EN 1522 Annex A	7,62 x 39 FJ/PB/SC M43	8	700 ± 10	0°	<b>4,0</b>	31	<b>3,9</b>	31	-	-
VPAM PM6			720 ± 10							
EN 1522 FB5	5,56 x 45 SS109	4	950 ± 10	0°	<b>6,5</b>	51	<b>5,0</b>	39	-	-
EN 1522 FB6	5,56 x 45 SS109	4	950 ± 10	0°	<b>6,5</b>	51	<b>5,0</b>	39	-	-
VPAM PM7	7,62 x 51 Ball	9,5	830 ± 10							
NIJ 0108.01 Ivl III	7,62 x 51 M80	9,7	838 ± 15	0°	<b>6,5</b>	51	<b>5,0</b>	39	-	-
VPAM PM8	7,62 x 39 API BZ	7,7	740 ± 10	0°	<b>12,5</b>	98	<b>8,5</b>	67	<b>7,5</b>	59
EN 1522 FB7	7,62 x 51 AP (P80)	9,8	820 ± 10	0°	<b>14,5</b>	114	<b>10,5</b>	82	<b>9,5</b>	75
VPAM PM9										
NIJ 0108.01 Ivl IV	.30-06 (7,62 x 63) AP M2	10,8	868 ± 15	0°	<b>13,5</b>	106	<b>11,5</b>	90	<b>11</b>	86
VPAM PM10	7,62 x 54R API B32	10,4	860 ± 10	0°	<b>16</b>	126	<b>14</b>	110	<b>13</b>	102

\*For EN 1522 and VPAM PM 2006, velocity is recorded at maximum 2,5m from target strike face. For NIJ 0108.01, velocity is recorded at 2,5m from target strike face for levels II and IIIA and 12,5m for levels III and IV.

\*\*AD: Areal Density

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