



UHMWPE HARD ARMOUR SERIES

Advanced Protection. Engineered Performance.

Overview

Engineered from ultra-high-molecular-weight polyethylene (UHMWPE) fibres and a proprietary thermoplastic matrix, Artan Protec's Hard Armour Series delivers high ballistic performance at minimal weight. Each grade is cross-plyed at 0°/90° using precision-controlled heat pressing to maximise energy dispersion, rigidity, and impact absorption.

Key Advantages

- Superior strength to weight ratio
- Multi-hit capability with anti-BFS designs
- Corrosion free and moisture resistant
- Consistent performance across temperature extremes
- Compatible with custom lamination and moulding

Code	GSM	Series	Construction	NIJ 0101.06	M80 (kg/m²)	AK47 (kg/m²)	Applications
AH-120	120	Shield	2 Layer UD	III / III+	19.2	19.2	Plates, helmets, vehicles
AH-240	240	Shield	4 Layer UD	III / III+	19.2	19.2	Plates, marine & vehicles
AHX-115	115	Guard	2 Layer UD	III / III+	18.3	16.9	Insert plates, personal armour
AHX-230	230	Guard	4 Layer UD	III / III+	18.3	16.9	Helmets, vehicle plates
AHY-110	110	Prime	2 Layer UD	III / III+	16.2	14.5	Marine, aviation, helmets
AHZ-110	110	Ultra	2 Layer UD	III / III+	14.5	13.5	Helmets, vehicle armour
AHZ-220	220	Ultra	4 Layer UD	III / III+	14.5	13.5	Multi-hit plates, vehicle

Values from internal TDS. Areal densities are for standalone solutions. info@artanprotec.com | www.artanprotec.com



AH-120 SHIELD | HARD ARMOUR UD SHEET

Overview

Entry-level UHMWPE UD composite for economical III/III+ plates & helmets. Two cross plied layers maximise energy dispersion at low mass.

Specifications

Parameter	Value
Area Density	120 ± 10 g/m²
Thickness	0.13 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	150 m
Construction	2 Layer UD (0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 5 %	—
Tensile Strength	≥ 33.5 cN/dtex	GB/T 19975-2005
Modulus	≥ 1325 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m²)	Standard
III	M80	19.2	NIJ 0101.06
III+	AK47	19.2	NIJ 0101.06

Applications

- Insert plates
- Ballistic helmets
- Vehicle & marine armour

Areal density for standalone solution; exclusive anti-BFS per product TDS.

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AH-240 SHIELD | HARD ARMOUR UD SHEET.

Overview

Four ply 0°/90°/0°/90° lay-up for higher rigidity and multi-hit endurance in heavier inserts & vehicle panels.

Specifications

Parameter	Value
Area Density	240 ± 10 g/m ²
Thickness	0.26 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	100 m
Construction	4 Layer UD (0°/90°/0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 5 %	—
Tensile Strength	≥ 33.5 cN/dtex	GB/T 19975-2005
Modulus	≥ 1325 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m ²)	Standard
III	M80	19.2	NIJ 0101.06
III+	AK47	19.2	NIJ 0101.06

Applications

- Hard plates
- Helmets
- Marine & vehicle armour

Areal density for standalone solution; exclusive anti BFS per product TDS.

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AHX-115 GUARD | HARD ARMOUR UD SHEET

Advanced Protection. Engineered Performance.

Overview

Lightweight base grade using fibres for mobility focused inserts without sacrificing III/III+ performance.

Specifications

Parameter	Value
Area Density	115 ± 10 g/m²
Thickness	0.12 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	150 m
Construction	2 Layer UD (0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 4 %	—
Tensile Strength	≥ 36 cN/dtex	GB/T 19975-2005
Modulus	≥ 1400 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m²)	Standard
III	M80	18.3	NIJ 0101.06
III+	AK47	16.9	NIJ 0101.06

Applications

- Insert plates
- Personal armour

Areal density for standalone solution; includes anti BFS per product TDS.
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AHX-230 GUARD | HARD ARMOUR UD SHEET

Overview

Mid-range, 4-ply guard with reinforced integrity for helmets & vehicle plates.

Specifications

Parameter	Value
Area Density	230 ± 10 g/m²
Thickness	0.24 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	100 m
Construction	4-Layer UD (0°/90°/0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 4 %	—
Tensile Strength	≥ 36 cN/dtex	GB/T 19975-2005
Modulus	≥ 1400 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m²)	Standard
III	M80	18.3	NIJ 0101.06
III+	AK47	16.9	NIJ 0101.06

Applications

- Helmets
- Armour plates
- Vehicle panels

Areal density for standalone solution; includes anti BFS per product TDS.
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AHY-110 PRIME | HARD ARMOUR UD SHEET

Overview

Advanced lightweight performance using fibres for stiffness at very low areal density.

Specifications

Parameter	Value
Area Density	110 ± 10 g/m²
Thickness	0.115 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	150 m
Construction	2 Layer UD (0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 80 Denier	GB/T 14343-2008
Count CV	≤ 4 %	—
Tensile Strength	≥ 38 cN/dtex	GB/T 19975-2005
Modulus	≥ 1450 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m²)	Standard
III	M80	16.2	NIJ 0101.06
III+	AK47	14.5	NIJ 0101.06

Applications

- Marine & aviation panels
- Helmets

Areal density for standalone solution; exclusive anti-BFS per product TDS.
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AHZ-110 ULTRA | HARD ARMOUR UD SHEET

Overview

High modulus lightweight grade for elite multi-hit systems.

Specifications

Parameter	Value
Area Density	110 ± 10 g/m²
Thickness	0.115 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	150 m
Construction	2 Layer UD (0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 4 %	—
Tensile Strength	≥ 40 cN/dtex	GB/T 19975-2005
Modulus	≥ 1580 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m²)	Standard
III	M80	14.5	NIJ 0101.06
III+	AK47	13.5	NIJ 0101.06

Applications

- Helmets
- Vehicle armour
- Hybrid hard/soft systems

Areal density for stand-alone solution; exclusive anti-BFS per product TDS.
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AHZ-220 ULTRA | HARD ARMOUR UD SHEET

Overview

Top tier heavy duty ultra-grade for multi-hit plates & high threat vehicle armour.

Specifications

Parameter	Value
Area Density	220 ± 10 g/m ²
Thickness	0.23 ± 0.02 mm
Width	1.6 ± 0.01 m
Length	100 m
Construction	4 Layer UD (0°/90°/0°/90°)
Matrix	Thermoplastic resin

Mechanical Properties

Property	Nominal	Test Method
Count	800 ± 8 Denier	GB/T 14343-2008
Count CV	≤ 4 %	—
Tensile Strength	≥ 40 cN/dtex	GB/T 19975-2005
Modulus	≥ 1580 cN/dtex	GB/T 19975-2005
Breaking Elongation	≤ 4.0 %	—

Ballistic Performance

Level	Caliber	Areal Density (kg/m ²)	Standard
III	M80	14.5	NIJ 0101.06
III+	AK47	13.5	NIJ 0101.06

Applications

- Multi-hit plates
- Shields
- Vehicle defence panels

Areal density for standalone solution; exclusive anti-BFS per product TDS.
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