UP771

UP771 is a ultra-high molecular weight polyethylene unidirectional material specifically designed for light weight composite armor applications such as helmets, ballistic inserts and vehicle armor. UP771 consists of four plies of unidirectional product, cross-plied in 0°/90°/0°/90° configuration. Each layer is individually constructed within a resin matrix using Barrday's proprietary UD technology to align the fibers in a parallel direction.

FEATURES AND BENEFITS

- Proprietary thermoplastic resin engineered to maximize ballistic performance
- Exhibits excellent mechanical rigidity and toughness
- Resistant to temperature extremes and moisture
- Molded panels can be readily waterjet cut without abrasive media
- Compatible with other Barrday products to assist with the painting, finishing of UP771 composite armor or bonding of UP771 to dissimilar materials.

PHYSICAL PROPERTIES

Characteristic	Lower Limit	Target	Upper Limit
Width	62.6 in 159.0 cm	63.2 in 160.5 cm	63.8 in 162.0 cm
Nominal Weight	5.1 oz/yd^2 174 g/m^2	5.3 oz/yd^2 180 g/m^2	5.5 oz/yd^2 186 g/m^2

BALLISTIC PERFORMANCE

Threat	Layers	Conditioned Areal Density kg/m^{2*}	Conditioned Areal Density lb/ft^{2*}	Average V50 m/s**	Average V50 ft/s**
FSP 17gn (0.22cal)	41	7.32	1.5	840	2755
FSP 0.30cal	82	14.65	3.0	1100	3608

The ballistic data listed here is representative of typical results and may be subject to revision. Performance may also vary between different test laboratories.

*Listed values and target areal densities only

** As per MIL-STD-662F. Panels pressed at 3000 psi.

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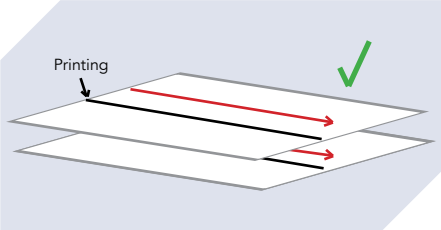
CORRECT LAYUP



Writing on UD should always be face up.
The writing direction can be rotated but not flipped.

For more information, please contact Barrday regarding questions relating to product lay-up, pressing protocols or testing conditions.

PROCESS INFORMATION

The following are general recommendations for successful processing. Adjustments may be required to achieve optimum results in your specific manufacturing environment.

Press Cycle

1. Load Panel into press heated to 215-220°F (102-104°C)
2. Press at 150psi (10.4 bar), at 220°F (104°C) for 5 to 10 minutes
3. Bump-press if necessary to allow any moisture present to escape & to prevent blistering
4. Press at 260-265°F (127-130°C) at 3000 psi or above* for 20 to 45 minutes depending on layer count.
5. Cool Down to below 120°F (49°C) – Under full pressure

*Pressure:
Better performance is achieved with higher pressing pressures:
Atmospheric: 14.5 psi (1.0 bar)
Low: 150 psi (10.4 bar) up to 200 psi (13.8 bar)
High: 3000 psi (207 bar)
Ultra-High: 10 000 psi (690 bar)