

U471 BARRFLEX™

BarrFlex™ U471 is an advanced para-aramid unidirectional material for hard armor ballistic applications. Barrday BarrFlex™ U471 consists of two plies of unidirectional product, cross-plied in 0°/90° configuration. Each layer is individually constructed within a resin matrix. The resin matrix retains stability at elevated temperatures while the product maintains structural integrity after ballistic event.

PRODUCT DATA

Characteristic	Lower Limit	Target	Upper Limit
Width	62.99 in 160.0 cm	63.00 in 160.5 cm	63.39 in 161.0 cm
Conditioned Weight	7.67 oz/yd ² 260.0 g/m ²	7.99 oz/yd ² 271.0 g/m ²	8.32 oz/yd ² 282.0 g/m ²

BALLISTIC PERFORMANCE

Test	Layers	Conditioned Areal Density (kg/m ²)	Dry Pressed Areal Density (lb/ft ²)	Typical V50 (m/s)	Typical V50 (ft/s)
Barrday 0.30 Cal FSP V50 at 4.0 psf	77	20.9	4	830	2723
17 grain V50 at 2.0 psf	38	10.3	2	670	2198

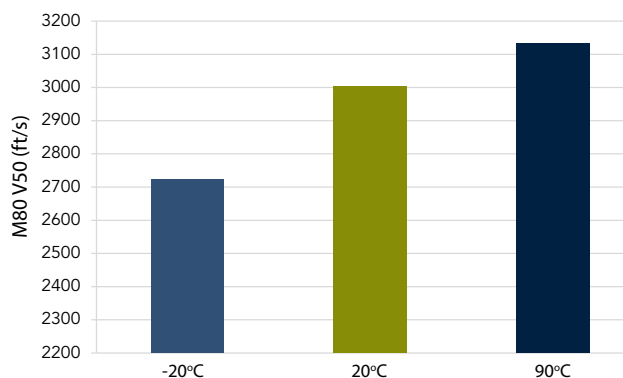
The ballistic data listed here is representative of typical results based on limited data and may be subject to revision.

TEMPERATURE PERFORMANCE

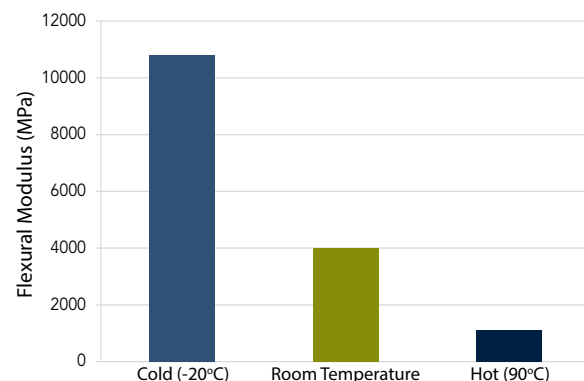
Temperature	Flexural Modulus (MPa)	As Backing M80 Ball V50 (m/s)	As Backing M80 Ball V50 (ft/s)	Structural Performance
-20°C	10800	830	2723	Good
+20°C	4000	915	3002	Good

Note: 1.64 psf U471 used as backing for 7mm 96% alumina tile, unsupported, standalone.

BALLISTIC PERFORMANCE OF U471 AS A BACKING



U471 FLEXURAL MODULUS ACROSS A TEMPERATURE RANGE



PRESSING RECOMMENDATIONS

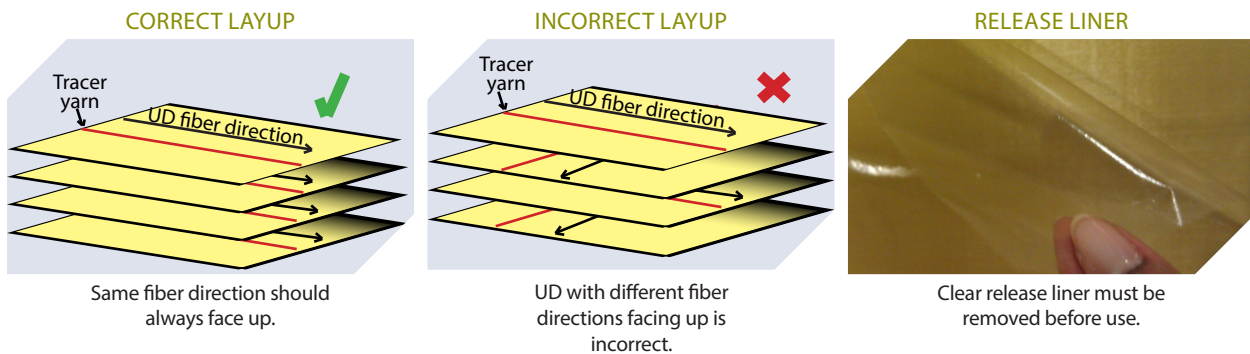
	Recommendation
Resin Specifics	Barrday Thermoplastic Matrix
Pressing Temperature	275°F (135°C)*
Bump Cycle #1	After 2 minutes at target temperature
Bump Cycle #2	After 5 minutes at target temperature
(The bump cycles are required to allow moisture to escape and to prevent blistering of the finished hard panels)	
Pressure	Recommended starting point of 500 psi [†]
Pressing Time	25 min (at target temperature)
Cool-down	Below 100°F (38°C) while under pressure
Storage	Store in a dry place under 70°F

* Temperature at center of panel as measured using a thermocouple.

[†] Barrday has only performed minimal pressure optimization studies. Additional pressure may be beneficial.

Please note: The processing conditions listed in this document are only general recommendations, as processing equipment can vary greatly. Please note that it is solely the responsibility of the armor manufacturer to determine the optimum pressing and autoclave conditions for any Barrday Inc. fabric system.

Material performance is dependent on product orientation. Always ensure the fiber orientation is correct.



Aramid Disclaimer:

Prolonged sunlight and UV exposure degrades aramid fibers. Aramid fibers will change color with exposure to sunlight or other UV sources.

Do not store in direct light. Do not store near open flame, heat or strong oxidants. Aramid yarn absorbs up to 8% moisture by weight. Caution should be taken if aramid fibers are used at temperature above 149°C for extended periods of time.

Taken from our Terms & Conditions:

Seller Warranty: Seller warrants that the goods delivered to Buyer in connection with the Order Acknowledgment meet Seller's standard specifications for the goods in effect at the date of delivery. This Warranty is valid for a period of 60 days from the date of shipment. This warranty is void and of no effect if the goods or any articles made from the goods are not stored or handled in accordance with the product specifications and/or the Certificate of Analysis.

Revision Control:

Users of this document will not be notified of revisions.

