

ARMORFORM® ARTICULATING BLOCK MAT TECHNICAL DATA SHEET

TABLE 1.0 – FABRIC PROPERTIES			
PROPERTY	TEST METHOD	UNITS	VALUE
Physical:			
Composition of Yarn	-	-	Polyester
Mass Per Unit Area (Double Layer)	ASTM D 5261	oz/yd ²	14
Thickness (Single Layer)	ASTM D 5199	mils	27
Mill Width (Woven)	-	inch	72
Mechanical (Single Layer):			
Wide Width Strip Tensile Strength – Warp/Fill	ASTM D 4595	Lbs./inch	340/270
Elongation at Break – Warp/Fill – Max.		%	12/12
Mullen Burst Strength	ASTM D 3786	psi	545
Trapezoidal Tear Strength – Warp/Fill	ASTM D 4533	Lbs.	180/170
CBR Puncture Strength	ASTM D 6241	Lbs.	1525
Hydraulic (Single Layer):			
Apparent Opening Size (AOS)	ASTM D 4751	U.S. Standard Sieve	20
Flow Rate	ASTM D 4491	gal/min/ft ²	125

Table 2.0 - ARMORFORM® Articulating Block Mat (ABM)				
Style	Average Block Dimensions (in)	Avg. Unit Weight (lb./ft ²)	Block Weight (lb.)	Concrete Coverage (ft ² /cy)
3ABM	20 x 10 x 3	34	52	97
4ABM	20 x 14x 4	47	90	73
6ABM	20 x 20 x 6	70	195	49
8ABM	30 x 22 x 8	93	420	36

ARMORFORM[®] ARTICULATING BLOCK MAT **TECHNICAL NOTES**

1. The fabric forms for casting concrete revetments shall be as specified, ARMORFORM[®] Articulating Block Mat (ABM) as manufactured by Carolina Yarn and Fabrics, LLC, or approved equal.
2. The ARMORFORM[®] Block Mat (ABM), designated as _____ABM on the drawings, will indicate the fabric designation required from the choice of fabric styles shown in Table 2.0 above. Fabric style designates the average block dimensions, average block weight, and average unit weight of cast in place completed revetment:
3. The ARMORFORM[®] Uniform Section Mat (ABM) shall be woven in such a manner as to provide a woven double-layer, joined into a matrix of rectangular compartments (blocks) each separated by a narrow perimeter of salvage of approximately 1.5 inches. Ducts (grout tubes) interconnect each block and high strength revetment cables are installed between blocks and through the grout tubes joining one block to the next. The interwoven salvage between the blocks serve as a hinge to permit articulation, while the cables remain embedded in the concrete blocks to facilitate articulation.
4. The fabric forms shall be composed of synthetic yarns formed into a woven fabric. Yarns used in the manufacture of the fabric shall be composed of polyester. Forms shall be woven with a minimum of 50% textured yarns (by weight). Partially oriented (POY), draw-textured, and/or staple yarns shall not be used in the manufacture of the fabric. Each layer of fabric shall conform to the physical, mechanical and hydraulic requirements Mean Average Roll Values listed in Table 1.0 above. The fabric forms shall be free of defects or flaws which significantly affect their physical, mechanical, or hydraulic properties.
5. Mill widths of fabric shall be a minimum of 72 inches. Mill width rolls shall be cut to the length required, and the double-layer fabric separately joined, bottom layer to bottom layer and top layer to top layer, by means of sewing thread, to form multiple mill width panels with sewn seams on not less than 68-inch centers.
6. Fabric form panels shall be factory-sewn, by jointing together the layers of fabric, top layer to top layer and bottom layer to bottom layer, into predetermined custom sized panels. Sewn seams shall be downward facing as shown on the Contract Drawings. All sewn seams and zipper attachments shall be made using a double line of U.S. Federal Standard Type 401 stitch. All seams sewn shall be not less than 100 lbf/inch when tested in accordance with ASTM D 4884.
7. Baffles shall be installed at predetermined mill width intervals to regulate the distance of lateral flow of fine aggregate concrete. The baffles shall be designed to maintain a full concrete lining thickness along the full length of the baffle. The baffle material shall be nonwoven filter fabric. The grab tensile strength of the filter fabric shall be not less than 180 lbf/inch when tested in accordance with ASTM D 4632.
8. The fabric forms shall be kept dry and wrapped such that they are protected from the elements during shipping and storage. If stored outdoors, they shall be elevated and protected with a waterproof cover that is opaque to ultraviolet light.

TENSILE REINFORCING MEMBERS

9. Polyester tendons shall be constructed on low elongation, continuous filament fibers. The tendons shall have a core construction comprised of parallel fibers contained within an outer jacket cover. The strength and weight of the tendons shall be as shown in Table 3.0 below at a minimum.

TABLE 3.0 – STRENGTH OF POLYESTER TENDONS

STYLE	SIZE (mm)	WEIGHT (lb./100 ft)	STRENGTH (lbs.)
3ABM	20 (1/4")	2.60	3,300
4ABM	20 or 27 (1/4" or 5/16")	2.60 or 4.10	3,300 or 6,300
6ABM	30 (3/8")	5.40	7,600
8ABM	30 or 40 (3/8" or 1/2")	5.40 or 9.40	7,600 or 11,700

10. When necessary, tendons shall be joined by means of aluminum connectors (sleeves or crimps). All tendons shall be completely embedded in the hardened concrete. Exposed cables between adjacent blocks will not be permitted.
11. The tendons shall exhibit good resistance to mild concentrations of acids, alkalis and solvents. Tendons shall be impervious to rot, mildew and degradation associated with marine organisms. The materials used in the construction of the tendons shall show good resistance to immersion in fresh or saltwater.