

ARMORFORM[®]

YOUR SOLUTION TO PERMANENT HARD ARMOR EROSION CONTROL

Uniform Section Mat

- **Uniform Section Mat (USM)** is formed with a double-layer woven fabric, joined together by spacer cords on closely spaced centers to produce a mat of uniform thickness. Similar to traditional concrete slope paving, USM creates a solid, high-quality concrete lining with a low hydraulic resistance for use in various lining and erosion resistance applications.
- **Uniform Section Mat (USM)** form a lining of required nominal thickness, bonded cobbled surface and specified weight to provide strength and erosion protection to resist the calculated tractive forces. The design criterion for selection of lining thickness is the same as that used to determine the thickness of conventional concrete slope paving. Relief of hydrostatic uplift pressure may be provided by inserting plastic weep tubes through the mat at specified centers. USM is custom fabricated into multiple mill width panels, designed to fit actual site dimensions and topography.



ARMORFORM[®]
Fabric Formed Hard Armoring

DESIGN CONSIDERATIONS

- USM is used where velocities are low to high, bedload and ice formations are light and a roughness coefficient of $N=0.015$ is required.
- USM reduces seepage losses in reservoirs, ponds, holding basins and channels.
- USM is recommended for drainage flumes and spillways.
- USM should be installed on engineered slopes.

APPLICATIONS

- Bridge Abutments
- Storm Sewer Outfalls
- Channel Lining
- Geomembrane Ballast/Protection
- Spillway/Weirs
- Embankments

INDUSTRIES

- Highways/Bridges
- Ports/Harbors
- Dams/Levees
- Rivers/Canals
- Flood Control
- Coastal/Marine
- Industrial Waste Landfill
- Mining
- Oil/Gas Pipeline

UNIFORM SECTION MAT TECHNICAL DATA

UNIFORM SECTION MAT (USM)			
STYLE	NOMINAL THICKNESS	UNIT WEIGHT	CONCRETE COVERAGE
3" USM	3.0"	35 lbs./ft ²	97 sq. ft./cy
4" USM	4.0"	47 lbs./ft ²	73 sq. ft./cy
6" USM	6.0"	70 lbs./ft ²	49 sq. ft./ct
8" USM	8.0"	93 lbs./ft ²	36 sq. ft./cy
10" USM	10.0"	115 lbs./ft ²	28 sq. ft./cy
12" USM	12.0"	136 lbs./ft ²	22 sq. ft./cy

MATERIAL PROPERTY – ARMORFORM FABRICS			
PROPERTY	TEST	UNITS	VALUE
PHYSICAL			
Composition of Yarns	-	-	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			
Wide-Width Strip Tensile Strength - WARP FILL	ASTM D 4595	lbs./inch	340/270
Elongation at Break - WARP FILL - Max.		%	12/12
Trapezoidal Tear Strength - WARP FILL	ASTM D 4533	lbs.	180/170
Grab Tensile Strength	ASTM D4632	lbf	364/310
Grab Tensile Elongation		%	25/21
CBR Puncture Strength	ASTM D 6241	lbs.	1575
HYDRAULIC			
Apparent Opening Size (AOS) ³	ASTM D 4751	U.S. Standard (mm)	20
Flow Rate	ASTM D 4491	gal/min/ft ²	125