

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

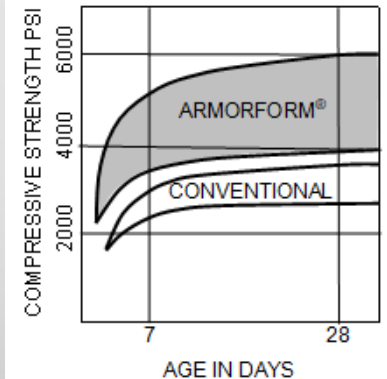
UNIFORM SECTION MAT TECHNICAL DATA

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

A fluid, high-strength, concrete is utilized in the construction of all ARMORFORM® revetments. As an aid to pumpability, a pozzolan grade fly ash may be substituted for up to 25% of the cement. Mixes designed with 5% to 8% air content will have improved pumpability and resistance to freeze-thaw. A retarding admixture may be used in hot weather.

Excess mixing water expelled through the permeable ARMORFORM® fabric will reduce the volume of fluid structural grout from 27 cu. ft. to approximately 25 cu. ft. of hardened grout and also reduce the water/cement ratio from approximately 0.7 to approximately 0.4.

Fine aggregate concrete consistency should be in the 9-11 second range when passed through the 3/4" orifice of the standard flow cone



TYPICAL RANGE OF MIX PROPORTIONS

Material	Mix Proportions	After Placement
	lbs./cu. yd.	lbs./cu. yd.
Cement	750-850	810-920
Sand	2030-2120	2195-2290
Water	485-555	360-430
Fly Ash	Up to 25% of Cement	