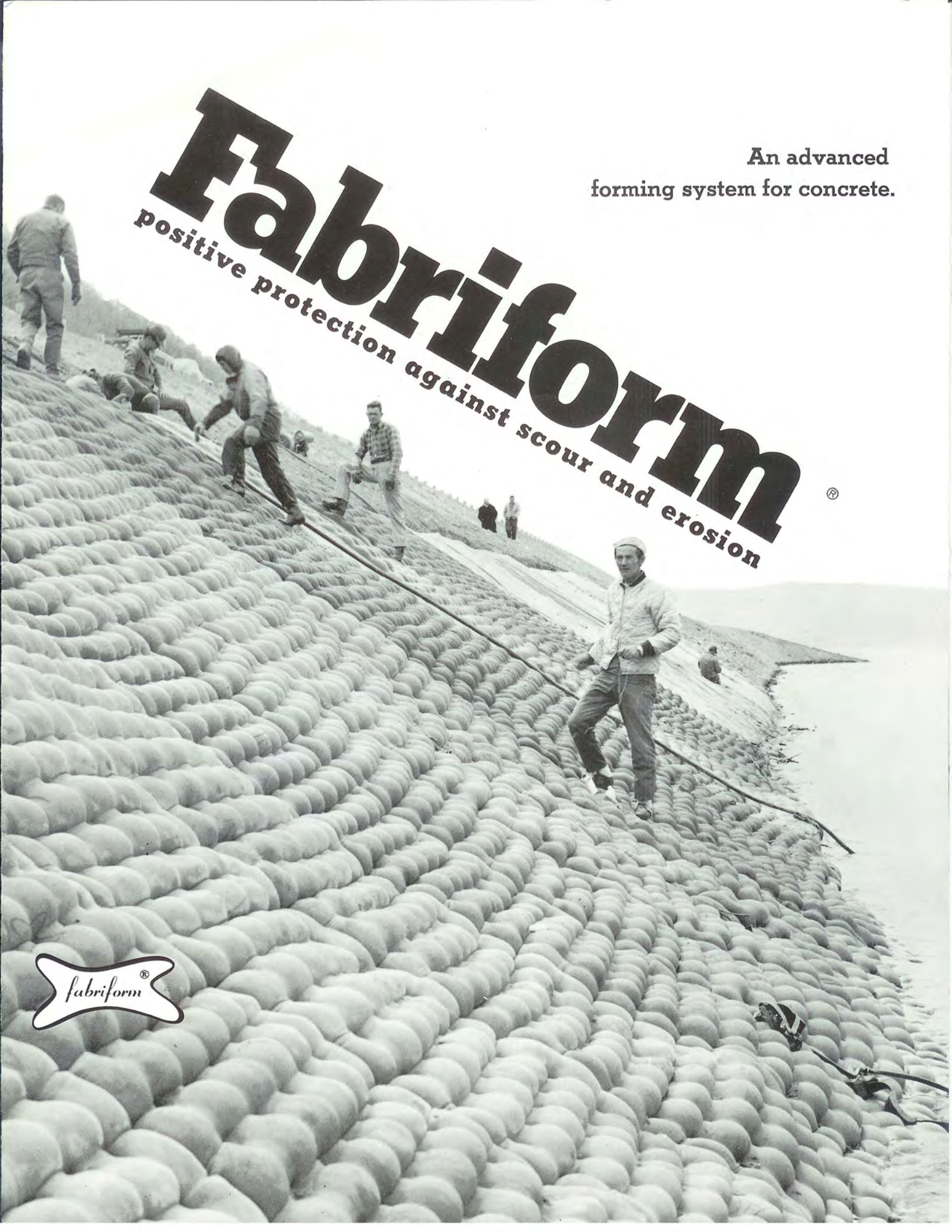
Fabriform®

An advanced
forming system for concrete.

positive protection against scour and erosion



The Fabriform process:*

This advanced forming system is a simple, fast, economical technique for the placement of concrete for slope protection both above *and* below water without the need for dewatering. Its performance characteristics and unique advantages make the Fabriform process an adaptable and logical choice for stabilizing and protecting shorelines, levees, dikes, canals, holding basins and similar projects. Here's why:

COVER ILLUSTRATION: Rapidly rising water necessitated prompt erosion control measures at the new Kinzua reservoir in western New York. The Fabriform process provided quick, effective protection to 0.58 miles of shoreline.

GENERAL NOTES

A. Numbers in sketches below indicate sequence of mortar injection.

B. Inject mortar through the upper layer of fabric on about 8' to 10' centers.

C. Locate top edge of fabric form at least two feet above mean wave height.

D. Locate lower edge of fabric form at least two feet below mean low water or to stable slope.

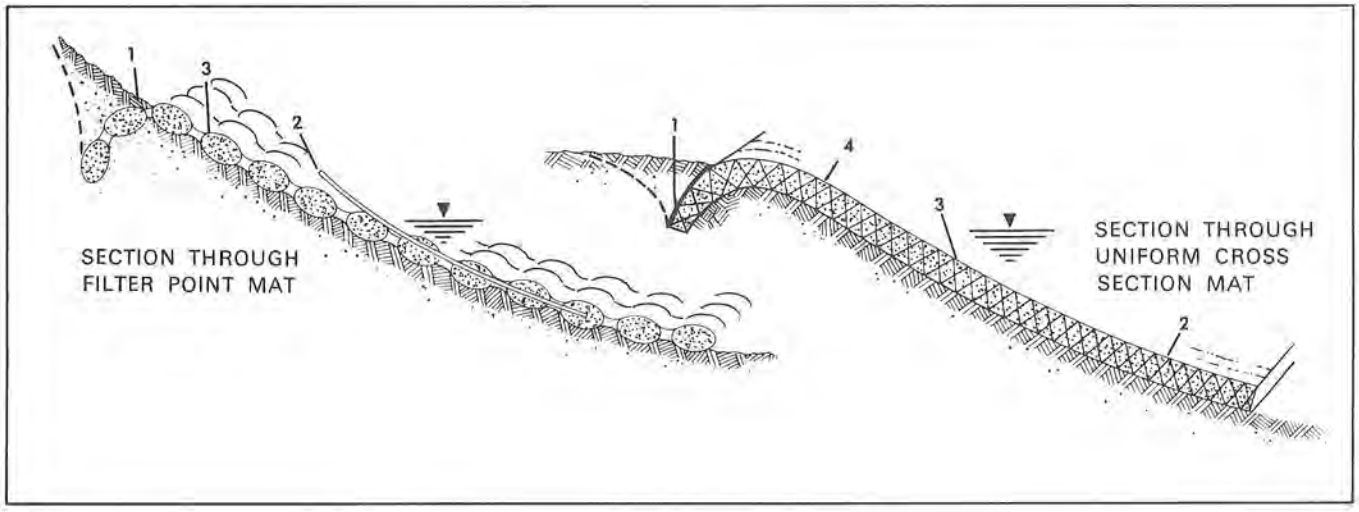
How the Fabriform process works.

Simply defined, the Fabriform system makes use of the pressure-injection of fluid fine-aggregate concrete into flexible fabric forms.

Controlled bleeding of mixing water through the special porous fabric produces all the desirable features of low water/cement ratio mortar—rapid stiffening, high strength and exceptional durability.

The Fabriform process eliminates many undesirable and costly features associated with more conventional erosion control systems. No other method, for example, can assure underwater protection with such precision and reliability.

For normal installations, the nylon forms, prefabricated to job specifications and dimensions, are simply spread over the terrain which has received minimal grading. The fabric form is then pumped full of mortar. No granular filter blanket or filter cloth is required. Quality control is built in; results are consistent. The fabric forms are effective and economical; clean and attractive when in place.



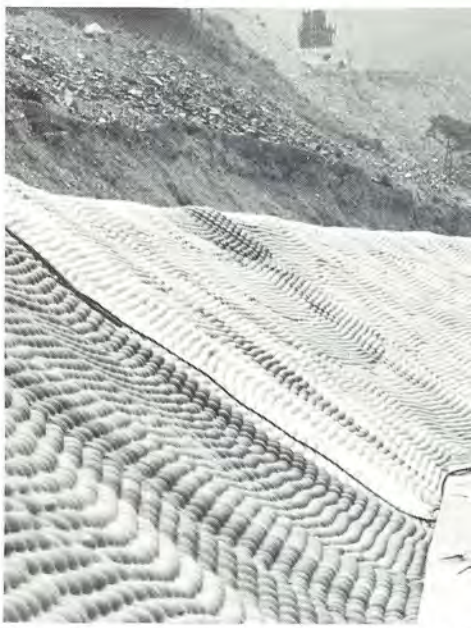
*U.S. Patent Nos.: 3,396,542; 3,396,545; and RE. 27,460; other U.S. and foreign patents issued and pending.

Many installations demonstrate Fabriform's effectiveness in erosion control.

A total of 173,000 sq. ft. of Uniform Cross Section Fabriform Mat was used to protect the holding pond for the sewage treatment plant at Cambridge, Maryland. The Fabriform-armored banks protect the inside against fluctuating wastewater levels and the outside against tide and wave action. Protection to the shellfish industry in this Chesapeake Bay area was also accomplished with this neat appearing, sophisticated design.

The cooling-water discharge canal of VEPCO's nuclear power plant at Surry, Virginia, required 384,250 sq. ft. of 8" Filter Point Fabriform Mat. Side slopes were protected for the entire canal length of 2,330 ft., and full bottom protection was installed at the inlet end of the canal.

The intake and discharge canal, for Florida Power Corporation's fossil-fueled power plant at Tarpon Springs, Florida was excavated in loose, sandy soil. Positive protection against scour and erosion was provided by the installation of 174,000 sq. ft. of 8" Filter Point Fabriform panel assemblies.



Near Jimgu Dam more than 200 meter realigned to facilitate heavy rainfall ru trimmed to a slope of 1:1.2 and Filter I were installed to stabilize against scou rising as much as 7 meters.

a breakthrough in erosion control

Why the Fabriform process works so effectively.

The key to the superiority of the Fabriform system is the double-wall nylon fabric, developed specifically to meet design and performance criteria of revetment engineering.

The fabric is woven of textured nylon fill in a multifilament nylon warp for optimum strength, stability, filtering characteristics and adhesion.

As fluid mortar is injected into the nylon form, excess mixing water escapes through the pores of the fabric, producing a high-strength, high-density mass. In underwater applications, dilution is prevented by complete envelopment of the fluid mortar by the fabric, which is so woven as to restrain loss of solids.

Nylon is immune to attack by acids, alkalis, organic solvents, and biological organisms. And it has a pleasing color. Thus, the finished project looks as good as it works.

The fabric forms are available in two types: Filter Point and Uniform Cross Section.

Filter Point Configuration

Filter Point (FP) units are designed to relieve hydrostatic uplift pressures. Fabric is available with filter points spaced on either 5" or 8" centers. The cobbled surface of FP completed projects provides a value of "n" in the Manning Formula of 0.025 to 0.030 for maximum attenuation of hydraulic energy.

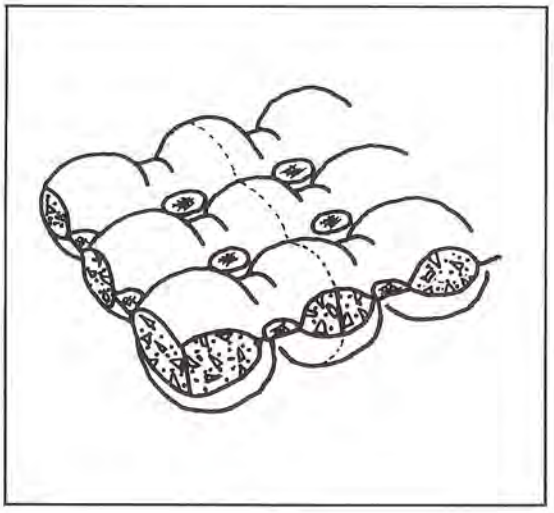
Mortar Vol. & Wt. per Ft.² of finished revetment

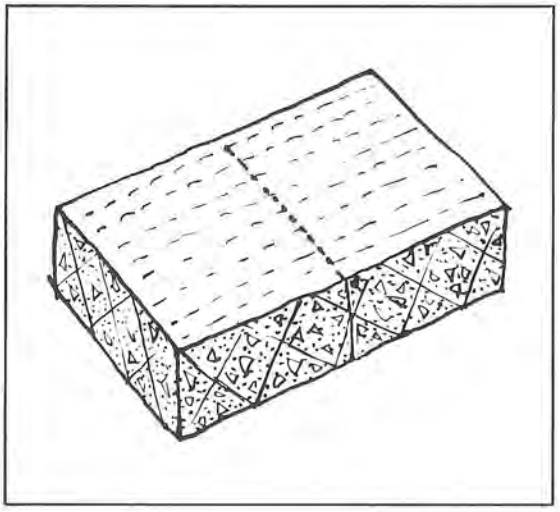
Fabric Style	5 in. FP	8 in. FP	UCS
Fresh Mortar	0.25 ft.³	0.38 ft.³	0.40 ft.³
Hardened Mortar	0.20 ft.³	0.30 ft.³	0.33 ft.³
Weight	26 lbs.	41 lbs.	44 lbs.
Maximum Thickness	3.3 in.	5.0 in.	4.0 in.
Average Thickness	2.2 in.	3.5 in.	3.8 in.

Above values for estimating purposes only.

Uniform Cross Section Configuration

Uniform Cross Section (UCS) units are designed for installations where the primary objective is impermeability and a low coefficient of hydraulic friction. A value of "n" = 0.012 is suggested. Widely-spaced filter points may be installed for relief of uplift pressure.





Superior st dependabl

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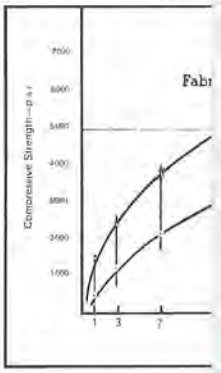


Curves show com Fabriform structu cast mortar. Fabri two-inch cubes cu four-inch test cyli

Recommer proportion Fabriform

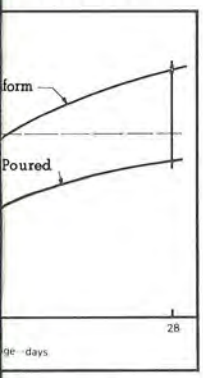
Material
Cem
Sand, concrete or ma
W
Water/cement r

Excess mixing wa the permeable Fa reduce the volum wet mortar to abo of hardened mort

Material
Original water
Lost water
Remaining water
Final w/c ratio

rength for e service.

mix design, rtar can attain gths as high as lays. Curves on this boratory tests hs developed by with those of t materials.



parative strengths of e and conventionally form samples were t from centers of nders.

nded mix for construction.

	Quantity per yd.³
ent	900 to 1,000 lbs.
son	2,200 to 2,000 lbs.
ter	570 to 610 lbs.
tio	0.63 to 0.61

er expelled through briform fabric will e of 27 cubic feet of ut 23.5 cubic feet ar:

	Quantity per yd.³
	570 to 610 lbs/yd.³
	218 218 lbs/yd.³
	352 to 392 lbs/yd.³
	0.39 0.39

A Fabriform installation is a simple, five-step procedure:

1. Remove stumps, boulders, and brush from the site. Grade sufficiently to provide a slope which is stable in the absence of erosive forces. In general, an average slope steeper than 1:1 is not recommended. Cut an upper toe trench to prevent undercutting of the completed structure in event of heavy runoff.

2. Place the preassembled fabric panels (usually from 2,000 to 3,000 square feet each in area) over the embankment, with seams straight and preferably perpendicular to the shoreline. The flexible, lightweight nylon fabric is usually placed by hand beginning upstream. Guide ropes to the opposite shore or small boats may also be used to assist in fabric placement.

3. Sew the fabric panels, as delivered to the job, together with heavy nylon thread to create a monolithic structure of any required length and width. All you need is an air-operated or electric bag closer.

4. Inject ready-mix mortar into the fabric envelope with a mortar pump; one with a capacity of from 10 to 12 cubic yards per hour is usually sufficient. The fabric in the toe trench is pumped first to serve as a positioning function. Fill the underwater portion of the mat next. Then fill the remaining section of the fabric. The lateral spread of the fluid concrete is controlled by shop-installed nylon strips which serve as grout stops. Production rates as high as 5,000 sq. ft. per day have been achieved on large projects—with a team of just four laborers and one supervisor.

5. Backfill the toe trench at the top.

proved dependable in critical applications

Fabriform erosion control mats

Pre-assembled to exact dimensions—easy to install—minimum labor required, produces effective-economical protection with a monolithic concrete structure of any desired length and width.

Filter Point Style Mats provide assured protection to meet variable conditions of banks and shorelines.

Uniform Cross Section Mats offer impermeability and minimum hydraulic friction.

Consulting, Civil and Geotechnical Engineers have designed and specified FABRIFORM MATS for many clients and various types of projects.

Client

State Departments of Transportation
U. S. Corps of Engineers
U.S. Department of Agriculture
Environmental Protective Agencies
Highway Departments
Municipal Sewage Plants
Flood and Water Control Districts
Public Works
Industrial Plants
Nuclear Power Plants
Fossil Fueled Power Plants
Land Developers
Marinas and Harbors

Project Types

Rechannelization	Reservoirs
Flood Control	Bank Stabilization
Drainage Systems	Discharge Canals
Canal Linings	Intake Canals
Ditch Liners	Dikes and Levees
Holding Ponds	Bridge Abutments
Dam-River-Creek Lining	Emergency Repairs

Fabric for forms— forms for concrete

Strong and supple concrete forms. As much at home under water as in the dry.

For additional information—and—

- to see what has already been accomplished with fabric forms from shielding against erosive forces to restoration of deteriorated pilings—
- to develop flexible and economical solutions for construction and maintenance problems—
- to take advantage of the versatility and economy of the endless potential of this advanced forming system for concrete—
- to receive informative case-history reports covering various types of erosion control projects (mention your area of interest).

Just call or write to us.

fabriform®

an innovative process of

CONSTRUCTION TECHNIQUES, INC.

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Telephone: 216-623-0679

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noff. The bank was finished-
Point Fabriform assemblies
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