



HYDROTEX[®]

Fabric Formwork customized to provide superior and affordable
cast-in-place erosion control and scour protection



our process:

TOGETHER

We understand that firms charged with scour protection, erosion control, and infrastructure reinforcement projects need more than a product solution, and even more than a business partner.

You want a company who becomes your team member, who is also focused on the success of your project, and your business. Meet your new team member ... Synthetex®.

CUSTOM DESIGN FOR PROJECT SUCCESS

The concrete thickness required and the site specific considerations necessary for a successful installation, including hydraulic factors, vessel factors, slope, topography, obstructions, and the need to articulate or allow for vegetation.

SINGLE SOURCE VALUE

Since we are both the product designer and manufacturer, we are able to offer our customers a highly valuable solution at an affordable price, which includes, for first-time customers, up to 4 weeks of on-site training and technical support to ensure a successful installation.





PROJECT ANALYSIS



SOLUTION DESIGN



PROPOSAL PROCESS



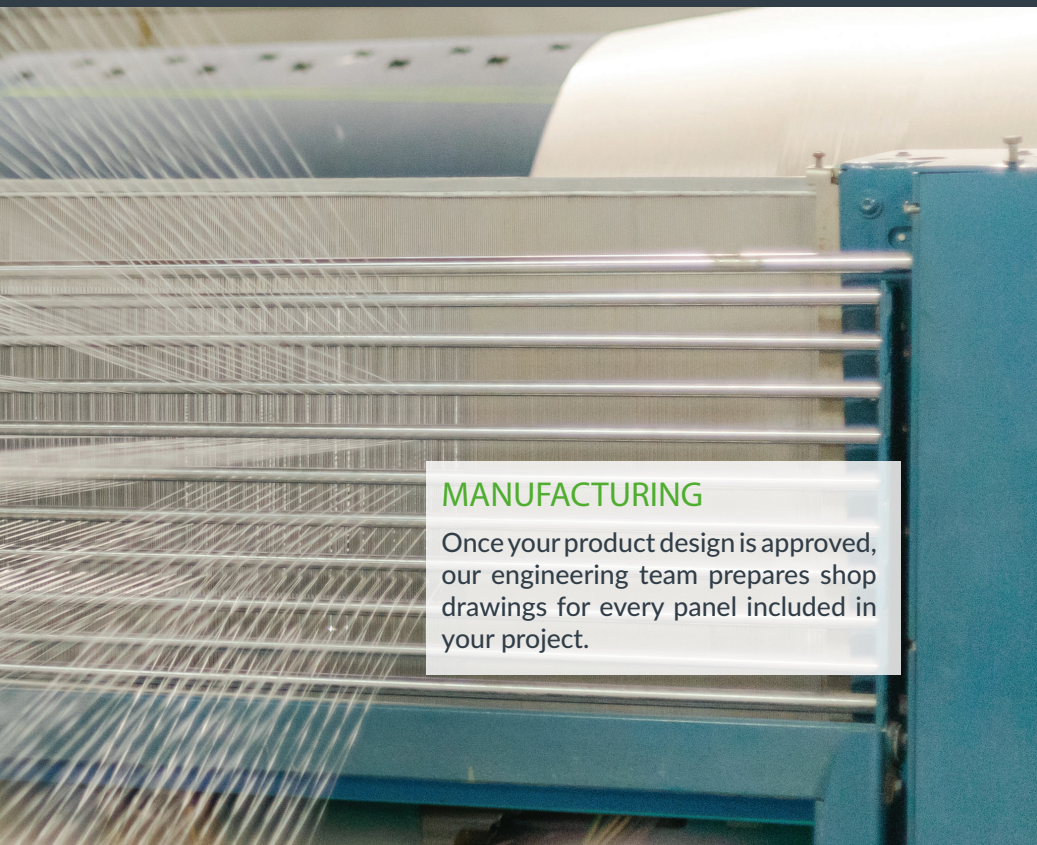
$$\Delta D = 0.035 \frac{\Phi}{\Psi} \frac{K_T K_h}{K_s} \frac{u_{cr}^2}{2g}$$



Unsure which product best solves the challenges of your project? We provide unbiased evaluations of your project specifications to determine the best solution ... even if it's not one of ours.

Our sales, engineering and manufacturing team members work closely with you to design the solution, product, mattress thickness and attributes required to meet your project's specifications.

Our quotes are thorough and detailed, providing a solid case for solution design and cost savings. We can also assist with determining total installation costs and presenting the proposed solution to your key stakeholders.



MANUFACTURING

Once your product design is approved, our engineering team prepares shop drawings for every panel included in your project.

INSTALLATION SUPPORT



We understand that the key to a successful installation is proper instruction and technical support at the job site. No matter where your project takes us, we will be there to train your installation team and provide troubleshooting as needed.

What Is
**FABRIC
FORMWORK?**

Fabric formwork is a method of concrete molding and installation invented in the 1970s, consisting of two layers of geosynthetic fabric that is pumped with fine aggregate concrete at the project site.



WHY CHOOSE HYDROTEX?

HYDROTEX® fabric formwork products have the strength of traditional rock or pre-cast concrete options, while also providing an easier, safer, more customized and more affordable installation.



- ▶ Inherent strength due to being a method of concrete casting
- ▶ Can be installed in cold conditions
- ▶ Can be designed to articulate
- ▶ Can be pumped with concrete underwater
- ▶ Can be designed with permeability to relieve hydrostatic pressure
- ▶ Zipped panel connections create a solid structure
- ▶ Can be designed with cutouts to custom fit any environment
- ▶ The light weight of fabric and cast in place design saves on shipping costs
- ▶ Can be designed with internal cables for reinforcement
- ▶ Less required labor, less time, and no heavy equipment
- ▶ Can be designed to allow for vegetation growth

	Geocells	Rip Rap	Prefabricated Concrete Blocks	Gabions	HYDROTEX
Ease of Install	✗	✓	✗	✗	✓
Low Shipping Costs	✓	✗	✗	✗	✓
No Heavy Equipment	✓	✗	✗	✓	✓
Easy Site Access	✓	✗	✗	✓	✓

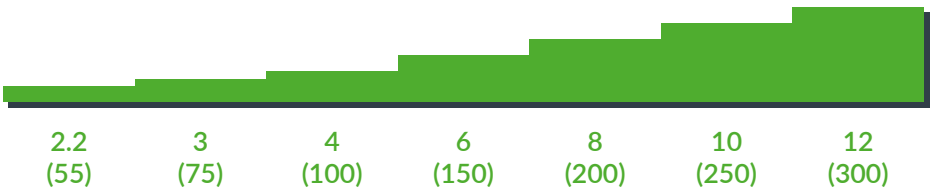
FILTER POINT



The **HYDROTEX®** fabric formwork system designed to enable permeability for hydrostatic pressure relief.

HYDROTEX Filter Point is a fabric formwork that consists of a double-layer woven fabric joined together by spaced, interwoven filter points to form a concrete lining with a deeply cobbled surface appearance. The filter points form water permeable drains and attachment points for the control of the concrete lining thickness.

AVAILABLE THICKNESSES, INCH (MM)



FEATURES

PERMEABLE - RIGID - CUSTOMIZABLE

APPLICATIONS

- Canal Lining
- Channel Lining
- Culvert / Outfall Protection
- Ditch Lining
- Downchute Protection
- Embankment Protection
- Liner Protection
- Pipeline Protection

INDUSTRIES

- Landfills
- Mining
- Municipal Water and Wastewater
- Rivers and Canals
- Roads, Highways, and Airports



ARTICULATING BLOCK



The **HYDROTEX®** fabric formwork system designed to enable articulation.

HYDROTEX Articulating Block is a fabric formwork that consists of a series of compartments (blocks) linked by an interwoven perimeter of fabric and internal revetment cables. Ducts interconnect the compartments, and high strength revetment cables are installed between and through the compartments and ducts. The cables remain embedded in the mattress to facilitate articulation along the lines of the interwoven fabric perimeters.

AVAILABLE THICKNESSES, INCH (MM)



3	4	6	8	10	12	14	16	18	20	22	24
(75)	(100)	(150)	(200)	(250)	(300)	(350)	(400)	(460)	(510)	(560)	(610)

FEATURES

PERMEABLE - FLEXIBLE - CUSTOMIZABLE

APPLICATIONS

- Bridge Abutment Protection
- Bridge Pier Scour Protection
- Canal Lining
- Channel Lining
- Embankment Protection
- Pipeline Cover
- Shoreline Revetment

INDUSTRIES

- Bridges and Piers
- Landfills
- Locks and Dams
- Marine and Coastal
- Ports and Harbors



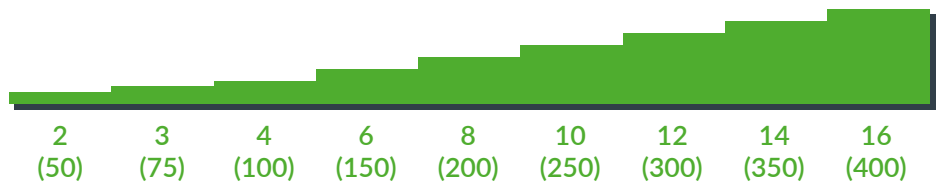
UNIFORM SECTION



The **HYDROTEX®** fabric formwork system designed to mimic smooth, poured concrete.

HYDROTEX Uniform Section is a fabric formwork with a relatively uniform (constant) cross section thickness and a brick pattern surface. Uniform Section has a relatively low coefficient of hydraulic friction (Manning's n value) to maintain optimum water velocities. Due to the impermeable aspect of concrete, this product is well suited for a wide array of lining and scour protection applications.

AVAILABLE THICKNESSES, INCH (MM)



FEATURES

IMPERMEABLE - RIGID - CUSTOMIZABLE

APPLICATIONS

- Canal Lining
- Coal Ash [CCR] Liner Protection
- Cooling Channels and Ponds
- Culvert / Outfall Protection
- Embankment Protection
- Liner Protection
- Pipeline Protection

INDUSTRIES

- Environmental and Containment
- Municipal Water and Wastewater
- Ports and Harbors
- Rivers and Canals
- Sediment Remediation





ENVIROMAT[®]

The **HYDROTEX[®]** fabric formwork system designed to enable vegetation.

HYDROTEX Enviromat is a fabric formwork that consists of concrete-filled elements and unfilled areas that allow vegetation. Once the concrete sets, the unfilled interwoven areas (approximately 20% of the total area of the lining) can be opened, filled with topsoil, and seeded. The Enviromat products are many times used in conjunction with a turf reinforcement mat (TRM).

AVAILABLE THICKNESSES, INCH (MM)



2.5 (65)

4 (100)

FEATURES

ALLOWS VEGETATION - PERMEABLE - CUSTOMIZABLE

APPLICATIONS

- Canal Lining
- Channel Lining
- Collection Channels
- Embankment Protection

INDUSTRIES

- Mining
- Rivers and Canals
- Roads, Highways, and Airports





ENVIROMAT FX[®]

The **HYDROTEX[®]** fabric formwork system designed to enable maximum vegetation.

Designed to be either cast-in-place or precast and then hoisted-in-place, Enviromat FX is a fabric formwork with unwoven filtration/vegetation perimeters around each block. Once the concrete sets, the unfilled fabric areas (nominally 30% of the total area of the lining) are used to establish vegetation as well as facilitate articulation, lifting, and placing.

AVAILABLE THICKNESSES, INCH (MM)

1 (25)

FEATURES

ALLOWS VEGETATION - PERMEABLE - CUSTOMIZABLE

APPLICATIONS

Canal Lining
Culvert / Outfall Protection
Ditch Lining
Embankment Protection

INDUSTRIES

Landfills
Marine and Coastal
Mining
Rivers and Canals
Roads, Highways, and Airports





FILTERBAND®

The **HYDROTEX®** fabric formwork system designed to enable maximum permeability for hydrostatic pressure relief.

HYDROTEX Filter Band is a fabric formwork that consists of a double-layer woven fabric joined together by spaced, interwoven filter bands, creating permeable drains for water to filter through. With alternating concrete tubes, Filter Band has a deeply textured surface appearance and achieves greater reduction of flow velocity and wave run-up due to a higher Manning's n value.

AVAILABLE THICKNESSES, INCH (MM)



4 (100)

FEATURES

PERMEABLE - RIGID - CUSTOMIZABLE

APPLICATIONS

- Canal Lining
- Channel Lining
- Culvert / Outfall Protection
- Embankment Protection

INDUSTRIES

- Mining
- Rivers and Canals
- Roads, Highways, and Airports



HYDROCAST[®] ARMOR UNITS



The **HYDROTEX[®]** fabric formwork system designed to create large, custom support structures on land or subsea.

HYDROCAST Armor Units consist of woven fabric sewn together to form custom shapes such as cubes, rectangles, or geometries that incorporate curves. When filled with fine aggregate concrete, they form a fabric-formed 3-D concrete shape with custom dimensions and volume. Self-sealing filling valves, suitable for use with an injection pipe at the end of a pump hose, are installed at predetermined locations. Custom features — such as internal steel cables, straps, or cam-lock filling ports — may be added.

AVAILABLE THICKNESSES, INCH (MM)

Custom Manufactured

FEATURES

100% CUSTOM

APPLICATIONS

- Pipe Plugs
- Scour Aprons
- Shoreline Revetment
- Tunnel Closures

INDUSTRIES

- Bridges and Piers
- Locks and Dams
- Marine and Coastal



GROUT BAGS



The **HYDROTEX®** fabric formwork system designed to mimic sandbags but with superior strength.

HYDROTEX Grout Bags consist of specially woven, double-layer synthetic forms pumped with fine aggregate concrete to create a grout bag of personalized thickness, weight, and configuration. Additional items such as tie-down straps, cut-outs around obstructions, and reinforcing cables can be incorporated into a grout bag.

AVAILABLE THICKNESSES, INCH (MM)

Custom Manufactured

FEATURES

100% CUSTOM

APPLICATIONS

Bridge Pier Scour Protection and
Remediation
Channel Lining
Culvert / Outfall Protection
Embankment Protection
Prop / Thruster Scour Protection
Scour Aprons

INDUSTRIES

Bridges and Piers
Locks and Dams
Marine and Coastal



PIPE WRAPS



The **HYDROTEX®** fabric formwork system designed to custom fit, wrap and protect oil & gas pipelines.

Synthetex's high-strength HYDROTEX pipe wraps are available in lengths and diameters designed to armor your above ground, underground, and subsea pipes with custom solutions and not restricted to the standard diameters. Fabric formed pipe wraps are a proven economical solution for pipe armoring and reinforcement.

AVAILABLE THICKNESSES, INCH (MM)

Custom Manufactured

FEATURES

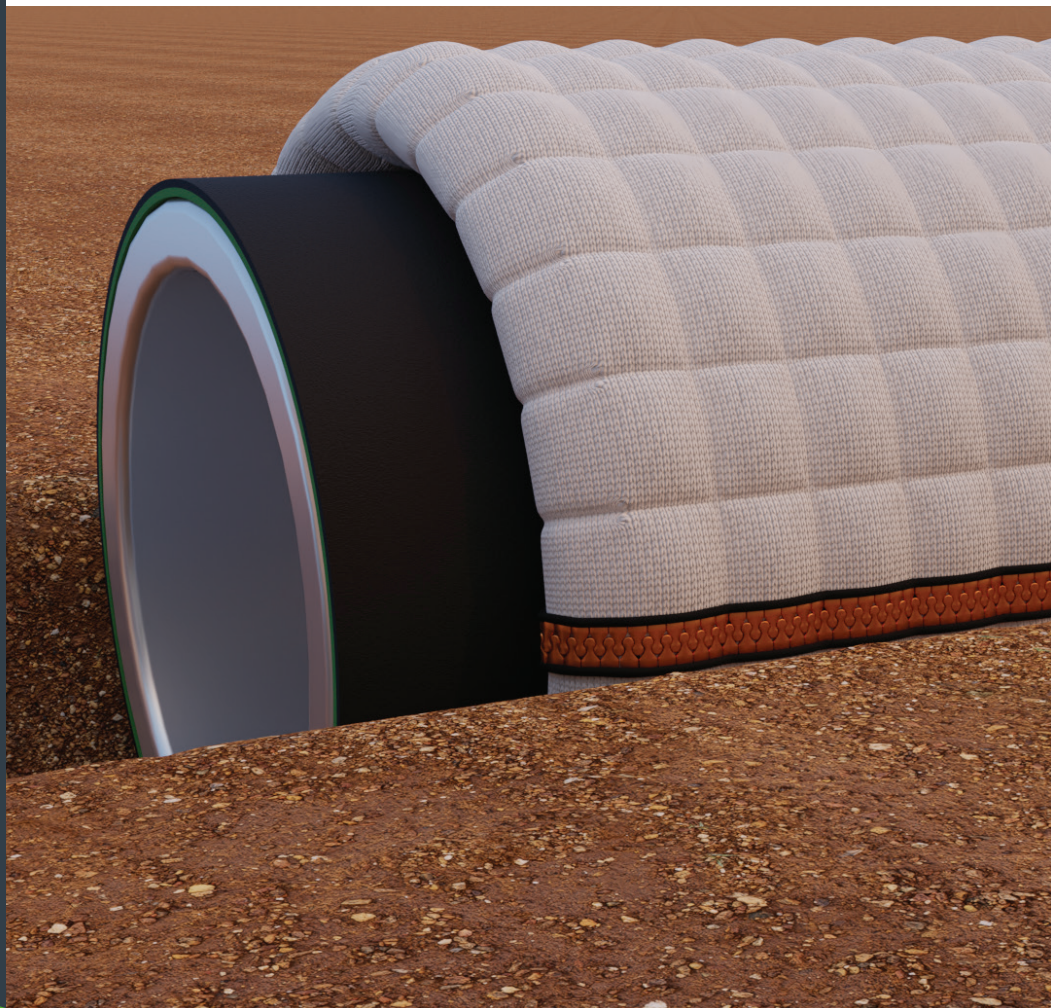
100% CUSTOM

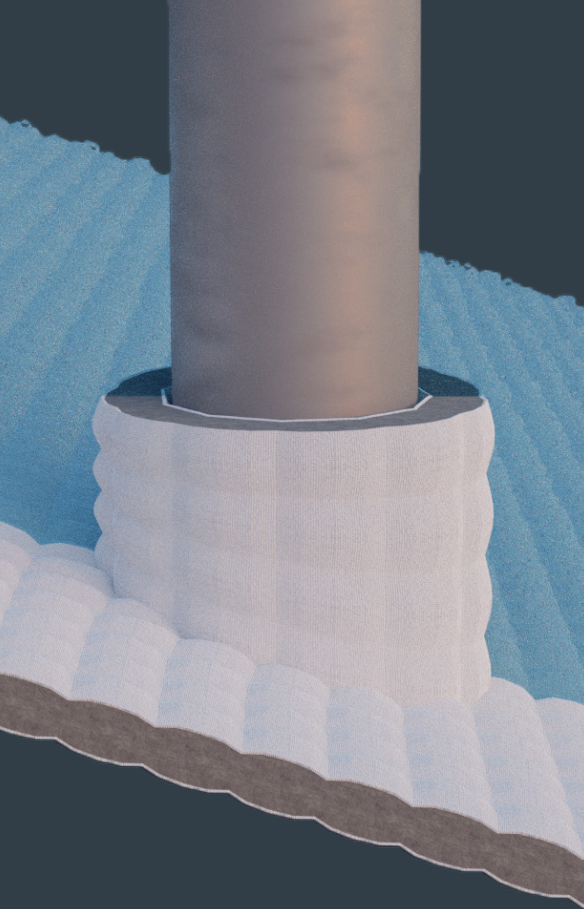
APPLICATIONS

- Overland Gas and Oil Pipelines
- Subsea Gas and Oil Pipelines
- Subterranean Gas and Oil Pipelines

INDUSTRIES

- Oil and Gas
- Municipal Utilities





PILE JACKETES



The **HYDROTEX®** fabric formwork system designed to custom fit, wrap and protect bridge or port piles.

Synthetex's high-strength HYDROTEX pile jacket systems are available in lengths and diameters designed to armor your steel, concrete or timber piles with custom solutions and not restricted to the standard diameters. Fabric formed pile jackets are a proven economical solution for pile repair and protection.

AVAILABLE THICKNESSES, INCH (MM)

Custom Manufactured

FEATURES

100% CUSTOM

APPLICATIONS

Bridge Pier Protection

INDUSTRIES

Bridges and Piers

Locks and Dams

Marine and Coastal



Filter Point

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage		Filter Point Spacing	
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³	in	mm
FP220	2.2	55	25	120	136	16.6	5	125
FP300	3	75	34	165	100	12.1	6.5	165
FP400	4	100	45	220	75	9.1	8	200
FP600	6	150	68	330	50	6.1	10	255
FP800	8	200	90	440	38	4.6	12	305
FP1000	10	250	113	550	30	3.6	14	355
FP1200	12	300	135	660	25	3.0	16	405

Articulating Block

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage	
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³
AB300	3	75	34	165	100	12.1
AB400	4	100	45	220	75	9.1
AB600	6	150	68	330	50	6.1
AB800	8	200	90	440	38	4.6
AB1000	10	250	113	550	30	3.6
AB1200	12	300	135	660	25	3.0
AB1400	14	350	158	770	22	2.6
AB1600	16	400	180	880	19	2.4

Uniform Section

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage	
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³
US200	2	50	22	107	150	18.2
US300	3	75	34	165	100	12.1
US400	4	100	45	220	75	9.1
US600	6	150	68	330	50	6.1
US800	8	200	90	440	38	4.6
US1000	10	250	113	550	30	3.6
US1200	12	300	135	660	25	3.0
US1400	14	350	158	770	22	2.6
US1600	16	400	180	880	19	2.4



Filter Band®

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage		Filter Point Spacing	
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³	in	mm
FB400	4	100	45	200	75	9.1	8	200

Enviromat®

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage		open vegetated area
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³	%
EM250	2.5	65	28	138	120	14.6	20
EM400	4	100	45	220	75	9.1	20

Enviromat FX®

SIZE	Average Thickness		Mass Per Unit Area		Concrete Coverage		open vegetated area
	in	mm	lb/ft ²	kg/m ²	ft ² /yd ³	m ² /m ³	%
FX100	1	25	11	53.7	290	35.2	30

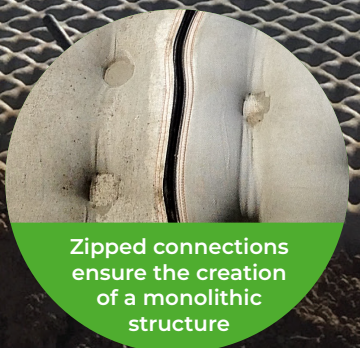
Fine Aggregate Concrete Mix Design

MATERIAL	Mix Proportions		After Placement Mix Proportions	
	lb/yd ³	kg/m ³	lb/yd ³	kg/m ³
CEMENT	750 - 850	445 - 505	805 - 915	475 - 540
SAND	2120 - 2030	1255 - 1205	2290 - 2190	1355 - 1295
WATER	540 - 555	320 - 325	460 - 470	270-275
AIR	As Required		As Required	

Water reducers and other admixtures may be required.
All dimensions and values in table are nominal.

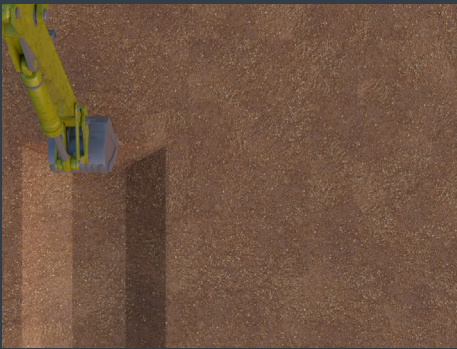


INSTALLATION PROCESS



Zipped connections ensure the creation of a monolithic structure





SITE PREPARED

The site is first graded, staked, and trenched in preparation for HYDROTEX® fabric framework installation.



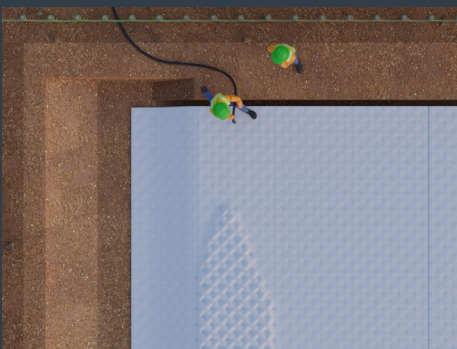
NON-WOVEN GEOTEXTILE INSTALLED

Depending on application, a nonwoven geotextile may be installed for soil retention.



HYDROTEX ROLLED OUT

HYDROTEX panels are rolled out and zipped together, forming a monolithic formwork.



HYDROTEX FILLED

Using predesigned filling points, the HYDROTEX fabric formwork is filled with fine aggregate concrete.



SITE INSPECTED

During and after pumping, the formwork is inspected to ensure even filling and structural integrity.

REQUIRED SUPPLIES

The following supplies are recommended for effective installation of HYDROTEX fabric framework.



DITCH WITCH



DIGGER



CONCRETE PUMP WITH HOPPER



READY-MIX TRUCK



FLEXIBLE CONCRETE PUMP HOSE



FLOW CONE TO TEST GROUT



INSTALLATION HANDBOOK

LET'S REINFORCE INFRASTRUCTURE FOR THE GOOD OF YOUR NEXT PROJECT.

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