


Milliken Infrastructure

CC Hydro™

Geosynthetic Cementitious Composite Mat

 STORM + SANITARY

 BRIDGES + ROADWAYS

 OIL, GAS + INDUSTRIAL



CC Hydro™ is the next evolution in all in one containment products. It combines the revolutionary Concrete Cloth Geosynthetic Cementitious Composite Mat (GCCM) with a high impermeability, chemically resistant geomembrane backing. The geomembrane provides a high performance liner with a testable joint for quality assured containment applications. The liner incorporates a hi-visibility welding strip allowing joints to be thermally bonded with a twin-track or triple-track air channel for on-site testing. The flexible concrete impregnated fabric, hardens on hydration to provide long term protection to the geomembrane from puncture, abrasion, weathering and UV.

ROLL SPECIFICATIONS

Product	Thickness in (mm)	Roll Width ft (m)	Roll Length ft (m)	Roll Area ft ² (m ²)	Average Unset Roll Weight lb (kg)
CCH5	0.2 (5)	3.28 (120)	492 (150)	1614 (150)	3000 (1350)
CCH8	0.3 (8)	3.28 (120)	328 (100)	1076 (100)	3100 (1400)

Standard production size information is subject to change without notice. Please contact your Milliken representative or distributor on exact roll size quotes (sales based on ft²). All test data are typical minimum values unless otherwise noted. Listed eights are minimum values, actual product weight may exceed these values. Set final install weight of products increase 30-35% on average over listed unset weights.

APPLICATIONS

- Berm & Secondary Containment
- Channel and Irrigation Lining
- Pond / Lagoon Lining

BENEFITS

Provides All-In-One Solution:

Combines the impermeability of a containment liner with the hard armor protection and durability of concrete, reducing install times and simplifying logistics

Eliminates Top Cover:

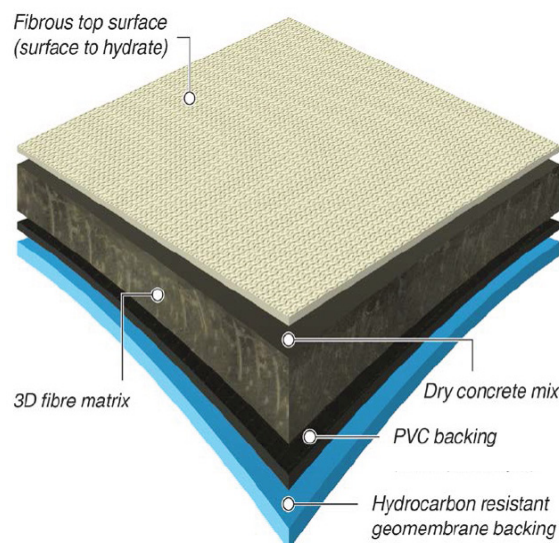
Does not require a protective top cover, removing the need for additional excavation, the treatment of contaminated soil and the use of costly fill materials

Maintains Volume Capacity:

Can be laid directly onto existing profiles without loss of volume capacity for refurbishment projects, providing significant overall time and cost savings

Reduces Life-Cycle Costs:

Provides effective weed suppression eliminating the ongoing maintenance cost of soil-covered systems.



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Concrete Cloth is a trademark of Concrete Canvas, Ltd.
Concrete Cloth is protected by Granted US Patents
8,287,982; 8,343,609; 8,703,266 with additional Pending
US Patents and Foreign Equivalents.

MILLIKEN INFRASTRUCTURE 

A Milliken COMPANY

Puncture Resistance: ASTM D-6241

Product	Puncture Strength lb (kg)
CCH5	350 (160)
CCH8	500 (225)

Membrane Specific Physical Properties

- Grab Tensile ASTM D751 (Section 12-15) - 270 lbs (1200N)
- Tear Strength ASTM D-751 (Section 28 B) - 40 lbs (180N)
- Seam Strength Grab ASTM D-751 (Section 66-71) 250 lbs (1100 N)
- Seam Strength Peel ASTM D-6392 - 20 lbs/in (3.5 N/mm)
- Cold Crack ASTM D-751 (Section 51-64) - Pass
- Heat Aging ASTM D-751 (Section 12-15) - No Loss
- Soil Burial ASTM G-160 - No Loss

Set Time: ASTM C-807

- Initial Set: 120 min
- Final Set: 240 min

Flex Strength: ASTM C-1185

- 7 Day Minimum: 475 psi (3.3 MPa)

Taber Abrasion: ASTM C-1353

- Approximately 7.5x Greater than 2500 psi OPC

Freeze Thaw: ASTM C-1185

- 200 Cycles: Pass

Flame Resistance

- CAN/ULC-S668-12: Pass

Manning's n Value: ASTM D-6460

- n=0.011

Permissible Shear & Velocity CC5: ASTM D-6460

- Shear <25 lb/ft² (1200 Pa)
- Velocity <35 ft/sec (10.7 m/s)

Product Exceeded Large Scale Testing Capabilities and was not tested to failure. To actually achieve these permissible values, the CC Hydro material must be properly anchored with a system designed to meet or exceed these values.

Tensile Strength: ASTM D-5035

Product	Working Strength lb/ft ² (kg/m ²)		Ultimate Strength lb/ft ² (kg/m ²)	
	Length	Width	Length	Width
CCH5	60 (10)	20 (3.5)	140 (24)	50 (8.5)
CCH8	85 (15)	25 (4.4)	190 (33)	100 (17)

Membrane Specific Chemical Properties - CAN/ULC-S668-12

- Chemical Compatibility ASTM D-751 (Section 12-15)
 - Tensile Strength retention >75%
 - Mass Loss <10%
 - Volume Change <20%
- Vapor Transmission ASTM D-814 <15 g/(h·m²)

Tested versus Ethanol, Methanol, Fuel C, ASTM IRM 903, Saturated Na Cl, Sodium Bicarbonate & Dilute Sulfuric Acid.

