



Concrete Cloth™

Geosynthetic Cementitious
Composite Mat (GCCM)



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CANVAS**

Milliken™

Milliken Infrastructure
Solutions, LLC

Milliken Infrastructure Solutions

At Milliken Infrastructure Solutions, LLC, we solve infrastructure challenges differently. More than just a materials provider, we partner with the industry to deliver **smart, practical, innovative solutions**.

Our breadth of solutions rehabilitate, strengthen and protect infrastructure components. Backed by our **engineering expertise and support**, these systems **install easier and faster** than functional equivalents.

Whether you are building new or repairing existing infrastructure, we can help you strengthen your structures to deliver the performance you need.

Delivering Value



Engineering Expertise

- Assess challenges and recommend customized solutions
- Leverage multiple technology platforms
- Provide in-depth documentation and third-party validation



Technical Support

- Deliver in-field training and support
- Provide responsive and on-demand service



Project Optimization

- Lower total project cost
- Improve contractor productivity
- Reduce user impact
- Extend asset life cycle
- Reduce Installation Time
- Minimize surface/soil preparation
- Limited weather constraints



Applications

Ditch and Channel Lining

Concrete Cloth™ GCCM can be rapidly unrolled to form a ditch or channel lining. When comparing erosion control methods, it is a cost-effective alternative to riprap, cement stabilized soil, plastic inserts, and shotcrete.

Benefits

- Minimizes installation time
- Conforms to ditch geometry
- Lowers total project cost
- Requires no specialized equipment
- Can be installed at a rate of 20,000 sf per day team
- Acts as an effective weed suppressant



Culvert

Ideal as a protective wear surface in metal culvert applications, Concrete Cloth GCCM is a cost-effective alternative to topical invert coatings and relining systems. Additionally, it can be used at the headwall, inlet and outfall to prevent erosion and undermining of the existing structure.

Benefits

- Extends the life of existing culvert asset
- Can be hydrated with existing water source
- Easy to handle and place with a small crew



Slope

Concrete Cloth GCCM can be used to protect slopes as a replacement for shotcrete, riprap, and other hard armor systems. The material is easy to install, requiring limited equipment, and can be used by standard maintenance crews.

Benefits

- Reduces risk associated with shotcrete rebound and debris
- Reduces installation time
- Lowers total project cost
- Small equipment footprint
- Acts as an effective weed suppressant
- Can be placed in rainy weather, providing maximum schedule flexibility



Berm

Compared to poured or sprayed concrete, Concrete Cloth GCCM is a cost-effective alternative for lining secondary berms. Its ability to be installed quickly reduces time on site, while the availability of man-portable rolls allows for installation in areas with reduced access.

Benefits

- Acts as an effective weed suppressant
- Installs easily around existing structures
- Provides additional levels of impermeability
- Lowers total project costs
- Reduces maintenance costs
- Offers fire protection

Other Applications

- Geosynthetic liner
- Irrigation
- Mining
- Remediation



Changing the Way You Think About Concrete

Imagine being able to use concrete on slopes, in water, and in other hard to reach locations - with no forms, no mixing and minimal equipment. Concrete Cloth™ geosynthetic cementitious composite mat (GCCM) is a flexible fabric that will bend and curve, enabling it to follow the natural contours of the land including ditches and slopes.

The material can't be overhydrated, so it can be installed in the rain or under water, even salt water. And, because it comes in a variety of sizes, including rolls small enough for two men to carry, it reduces the need for heavy machinery.

An ideal alternative to rip-rap, shotcrete and poured concrete, Concrete Cloth GCCM can be used in any place that needs protection from erosion or wear, and can be used to channel or contain water or other liquids.

To meet the needs of your application, three sizes are available: **CC5** (5 mm or 0.2 inches), **CC8** (8 mm or 0.3 inches) and **CC13** (13 mm or 0.5 inches).

APPLICATION	CC5	CC8	CC13	COMMENT
Ditch Lining	◐	●	◐	Recommend CC8 unless either of the following conditions apply: Use CC5 if relining existing concrete channels, hard substrates such as rock, or for temporary works. Use CC13 if flow speeds are in excess of 28.2ft/s, the ground will be trafficked or is particularly unstable or steep.
Slope Protection	●	◐		Recommend CC5 CC8 maybe used on unstable ground or for high flow conditions.
Berm Lining	●	◐	◐	Recommend CC5 CC8 or CC13 maybe used for areas of heavy traffic.
Concrete Remediation	●	◐	◐	Recommend CC5 CC8 or CC13 maybe used where voids are large, or end use involves high flow rates or turbulent flow.
Culvert Lining	◐	●	◐	Recommend CC8 CC13 maybe used for flows with high levels of debris or high flow conditions. CC5 may be used for low flow conditions and low levels of debris.
Weed Suppression	●			Recommend CC5
Outfalls/Spillways		●	◐	Recommend CC8 CC13 maybe used for outfalls with a high level of debris or with high flow conditions.
Gabion Protection	●	●	◐	Recommend CC5 or CC8 CC13 maybe used for applications with high flow conditions or prone to impacts.
Mining Vent/Blast Walls	●	●		Recommend CC5 for vent wall applications. Recommend CC8 for walls exposed to blast, depending on pressure loading.

● Recommended ◐ Recommended for specific applications

Meeting Infrastructure Challenges with Science

Milliken is an innovation company that has been exploring, discovering, and creating ways to enhance people's lives since 1865. Our community of innovators has developed one of the largest collections of patents held by a private company. With expertise across a breadth of disciplines including specialty chemicals, floor coverings, and performance materials, we work around the world to add value to people's lives, improve health and safety, and help make the world more sustainable. For more information, visit www.milliken.com or infrastructure.milliken.com.

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