

CONCRETE CLOTH™

pipeline protection grade
Standard set

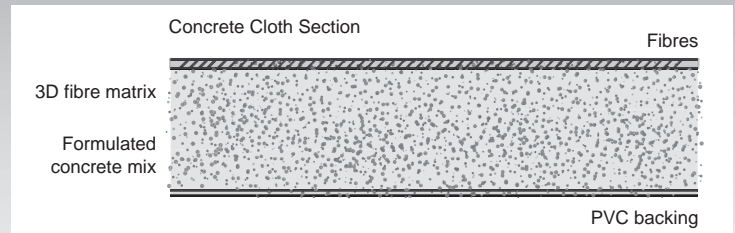
Protective Concrete shield on a roll

Concrete Cloth is a simple to use practical coating for pipeline protection manufactured by Concrete Canvas Ltd. It is a novel 3-dimensional fibre matrix containing a specially formulated dry concrete mix. A PVC backing on one surface of the cloth ensures the material is water proof. Hydrophilic fibres on the opposite surface aid hydration by drawing water into the cement.

The Concrete Cloth is flexible and can be wrapped around the pipe either as a cigar wrap or draped over and under the pipe to provide a superior tough rock shield.



When water is added, the standard set material remains flexible for 2 hours and then sets rapidly. It can be hydrated either by spraying with water or by immersion. Once set, the fibres reinforce the concrete preventing crack propagation and providing a safe plastic failure mode.



Applications

The unique properties of Concrete Cloth make it suitable for the most demanding pipeline applications. In remote areas it can be used to coat steel pipe on site without setting up expensive fixed wet concrete application plants. It can be used wherever the following properties are required:

- Rapid strength gain
- High impact and tear resistance
- Abrasion and sag resistant when hardened
- Heat resistant for high temperature or fire proofing applications
- Chemically resistant for situations where concretes are subject to chemical attack in aggressive soil conditions or inter tidal marine areas

Method of Hydration

Concrete Cloth can be hydrated using saline or fresh water. The minimum ratio of water to CC is 1:3 by weight. It cannot be over hydrated so an excess of water is always preferable. The recommended methods are:

Immersion: immerse in water for at least 90 seconds, then wrap section with wet cloth (not suitable for large pieces unless using an automated wetting trough).

Spraying: Once fixed in situ spray the dry concrete cloth with water until it is thoroughly saturated. Do not use a direct jet of pressurised water as this may wash a channel in the material and create a weakened area.

In a hot/arid environment, the cloth can be re-wetted during the first 4 hours after the initial hydration.

Applied Concrete Systems in partnership with Concrete Canvas
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Material Configuration

CC	Thickness (mm)	Standard		Maximum	
		Length (m)	Width (m)	Length (m)	Width (m)
CC4	4	160	1.1	200	1.2
CC8	8	80	1.1	110	1.2
CC13	13	50	1.1	68	1.2

Note: other dimensions are available depending on quantities



Physical Properties

Very high early strength is a fundamental characteristic of the cloth. Typical results at 20°C are given below;

Compressive testing based on ASTM C473 – 07

10 day compressive failure stress (MPa)	40
10 day compressive Youngs modulus (MPa)	1500

Bending tests based on BS EN 12467:2004

10 day bending failure stress (MPa)	3.4
10 day bending Youngs modulus (MPa)	180

Abrasion Resistance (ASTM C1353-8)

- CC lost 60% less weight than marble over 1000 cycles.

Hardness

4 to 5 on the MOHS scale



Excellent fire resistance

Setting Time

Initial (minutes) Min 120/Max 360	Typical 230
Final (minutes) Max Initial + 120	Typical 260

CC	Mass (unset) (kg/m ²)	Density (unset) (kg/m ³)	Density (set) (kg/m ³)
CC4	5.8	1500	+30-35%
CC8	12.0	1500	+30-35%
CC13	19.0	1500	+30-35%

MVT Rate

PVC Thickness	0.42 mm
PVC MVTR range	0.836-0.924 g.mm/(m ² .day)
CC Static Head	>3000mm

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