

CEMENT BLANKET

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1. PRODUCT

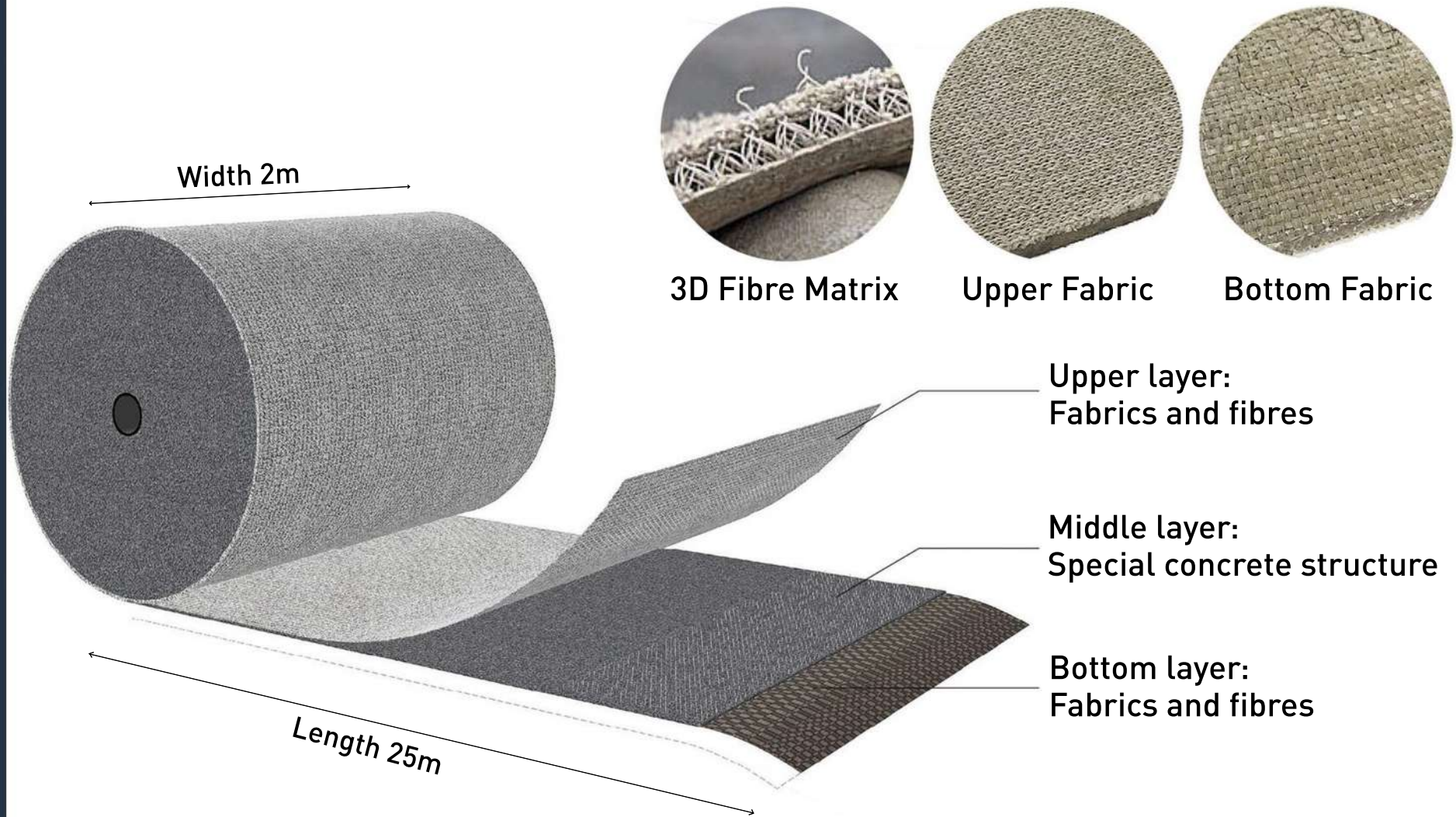
Using a Cement Blanket
make even the most difficult
projects easier to complete

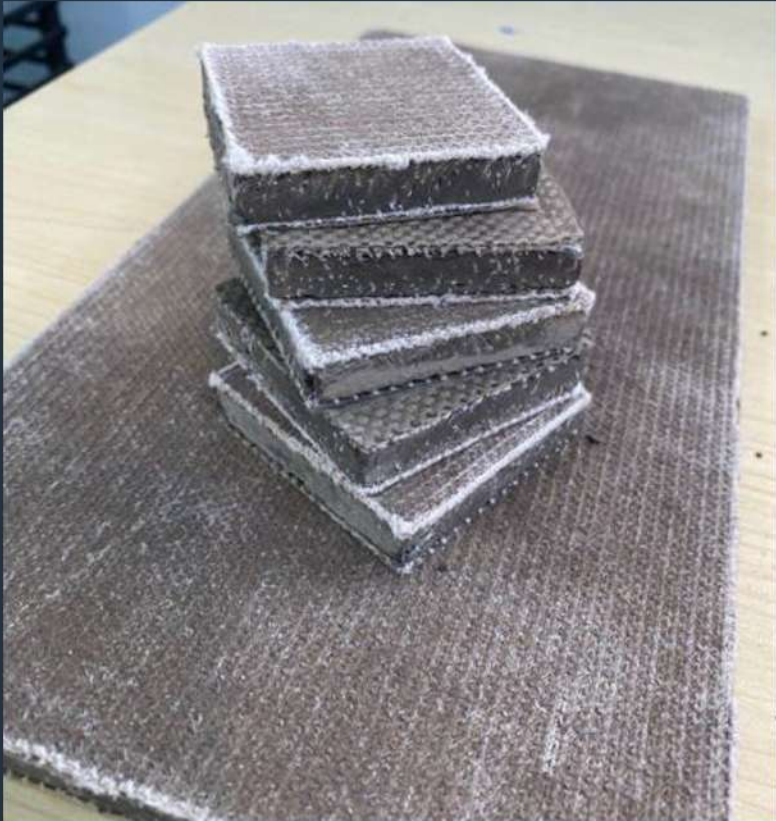




CEMENT BLANKET

Cement blanket is a unique proprietary material with three dimensional structure. It has a very wide range of applications throughout the building & civil engineering industry. Cement blanket is a soft cloth impregnated with special cement. It has a design life of above 50 years and is significantly quicker and less expensive to install compared to conventional concrete.





CB10

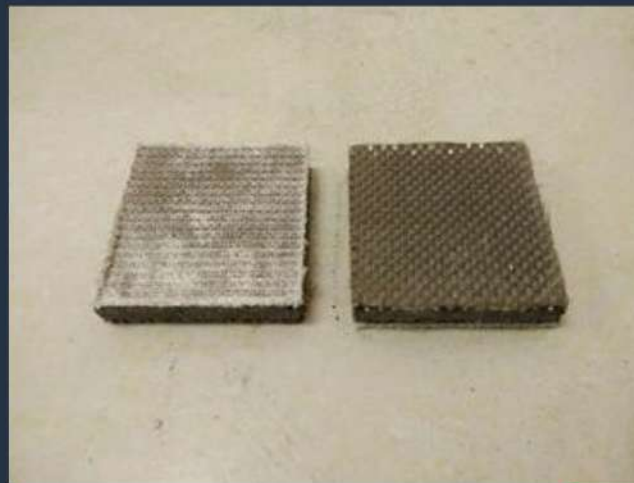


SNT10

No.	Test Item	Test Method	Result
1	Density	ASTM C1185-08(2016) Section 6	1590 kg/m ³
2	Flexural Strength	ASTM C1185-08(2016) Section 5	Longitude: 21.2 Mpa Latitude: 18.7 Mpa
3	Compressive Strength	ASTM C109/109M-16a	37.1 Mpa



Sample for item 1-2



Sample for item 3



During Test

Test Item(s)	Limit	Unit	MDL	001
Total Lead(Pb)	1000	mg/kg	20	ND

American Society for Testing and Materials- ASTM F 963-17 (Clasue 4.3.5) - total lead in Substrate Materials

Test Method: With reference to CPSC Test Method: CPSC-CH-E1002-08.3. Analysis was performed by ICP-OES.



Test Item(s)	Limit	Unit	MDL	001
Soluble Lead (Pb)	90	mg/kg	5	ND
Soluble Antimony (Sb)	60	mg/kg	5	ND
Soluble Arsenic (As)	25	mg/kg	2.5	ND
Soluble Barium (Ba)	1000	mg/kg	10	ND
Soluble Cadmium (Cd)	75	mg/kg	5	ND
Soluble Chromium (Cr)	60	mg/kg	5	8
Soluble Mercury (Hg)	60	mg/kg	5	ND
Soluble Selenium (Se)	500	mg/kg	10	ND

American Society for Testing and Materials - ASTM F 963-17 (Clause 4.3.5) - soluble heavy metal in Substrate Materials/paint and similar surface-coating materials.

Test Method: With reference to ASTM F 963-17 (Clause 8.3), Analysis was performed by ICP-OES

2. FEATURES

Cement blanket is time saving, cost saving and more environmentally friendly.



FEATURES

EASY LOADING

Available in rolls for easy transportation, handling, and installation, mitigating large plant and equipment needed, reducing risk.



EASY TO USE

Only 4 steps to use it: Cutting, Laying, Overlapping, and Hydration.

RAPID INSTALLATION

It can be laid at a rate of 200m²/hour, up to 10 times faster than conventional concrete solutions.



TIME SAVING

Cement blankets cures within 24 hours

LOWER PROJECT COST

It is more cost-effective than conventional concrete, with less logistical burden.



HIGH STRENGTH & LONG LIFE

The compressive strength is greater than C40 concrete, and is durable for over 50 years.

FEATURES

ENVIRONMENTALLY FRIENDLY

It requires less maintenance post-installation. This means lower cost and fewer resources required.



LOW CARBON

Low cement content and provides a much lower carbon footprint, about 90% less than traditional solutions.

SAFE

It is safe for use in live watercourses



PREVENTS INGRESS

Cement blanket prevents water and wind from entering the substrate

FREEZE-THAW RESISTANT

It can withstand 100 cycles of Freeze-Thaw weather, making it suitable for use in various climates



NO SPECIALISTS REQUIRED

It can be installed with basic hand tools and minimal training. Doesn't require installation by a specialist.

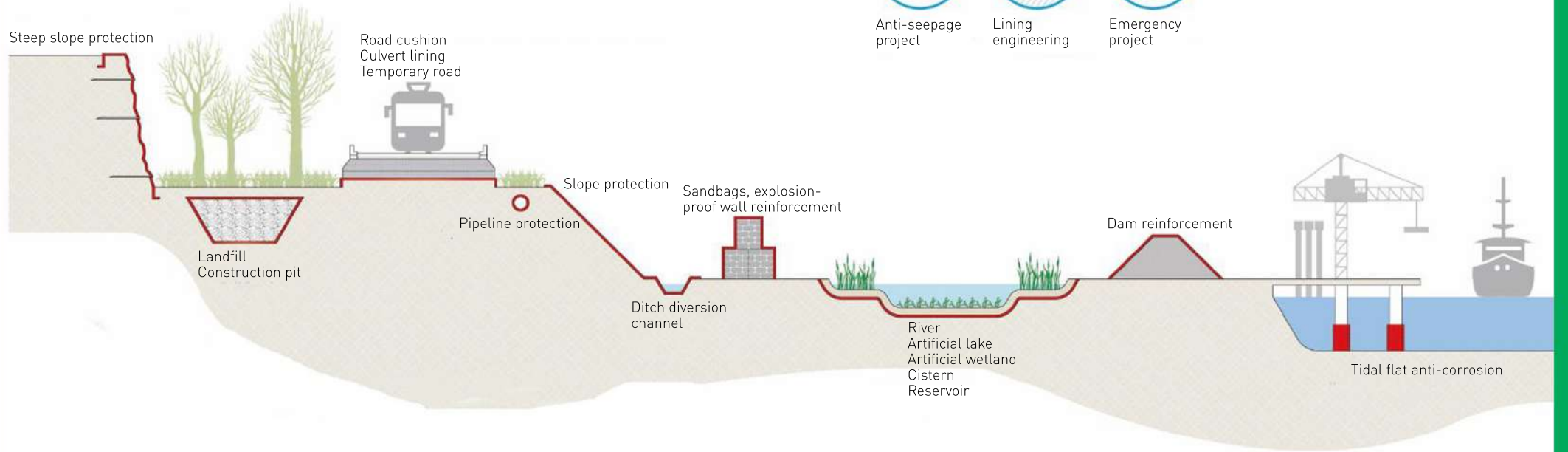
FEATURES

1. Refer to ASTM C109/C109M-16a, cement blanket's strength is 37.1Mpa, after 28 days the strength is 66.1Mpa, while C40 concrete's strength is 40Mpa after 28 days.
2. Labour cost: Using cement blanket, 2 workers can finish 600sqm per day, and it is smooth - no need to polish. While using concrete, 2 workers can only finish 200sqm per day.
3. Machine cost: There is an extra cost when using traditional concrete, because of the cost of a cement mixer and combining materials.
4. Transportation cost: Cement blanket is easy to deliver on a standard delivery truck. Traditional concrete must be delivered separately from regular orders.
5. Time and Labour cost: Before laying concrete, a sub-base must be prepared, it takes extra work to prepare ditches and slopes. Cement blanket does not need this extra preparation. After laying traditional, it must be polished at least 3 times, this is not needed for the blanket.
6. Time cost: Cement blanket only needs 24hrs to solidify. Concrete needs days to completely solidify, and must be kept clear throughout to avoid rework.
7. Labour cost: Cement blanket is simple to use, complete in 4 steps, can be layed by anyone with minimal training, and can be cut to any shape. Laying concrete needs a skilled worker with specific training.
8. Cement blanket can be laid on a rainy day
9. Cement blanket has a longer service life of about 50 years equalling lower maintenance cost.

3. APPLICATION

Cement blanket can be used in a wide variety of fields, including: water conservancy, railway, highways, environmental management, slope protection etc. The main function is anti-seepage.





APPLICATION: SLOPE PROTECTION

Mines slope protection
Roadside slope protection
Construction pit slope protection
Coastal embankment protection

Effective landslide prevention
Suitable for any angled slope



APPLICATION: DITCH LINING

- Ecological ditch
- Rain drainage ditch
- Mountain ditch
- Highway drainage ditch
- Temporary diversion channel
- Sewage ditch

It possible to lay the blanket in water or rain



Construction Plan		Content	Service Life	Tools	Working Hours	Features
Stone		Stone, Cement, Sand, etc.	25~40	Hammer, shovel, bricklayers knife	1 m ² /person/day	Large quantities of sand and stone are needed, falls off slopes easily.
Concrete	Pouring on site	Stone, Cement, Sand accelerator, etc.	30~50	Mixer truck, inspection equipment, paver, vibrator, mould	100-300 m ² /person/day	Good durability, more large-scale equipment, more labour required
	Prefabricated		20~30	Bricklayers knife, rubber hammer, spirit level, lifting tools	30-40 m ² /person/day	Need to tidy up the foundation, tamping, lower efficiency, long construction period
Cement Blanket		Fabric, Cement	≥50	Utility knife, water pipe, electric drill	400 m ² /person/day	Time saving and labour cost-saving, adapts to base deformation, cost-effective

APPLICATION: RIVER, LAKE, AND WETLANDS

River and lakes direction control

Artificial wetland

Wetlands

Landscaping

Ecological ditches

Control penetration and prevent rain erosion



Construction Plan	Permeability Coefficient (mm/d)	Comprehensive Permeability Coefficient	Comprehensive Cost	Efficiency (m ² /d)	Features
Geomembrane	0	10~20	100-200	1200	The effect of reducing seepage is good, a large amount of soil backfill is needed, and the upper part needs to be covered with an anti-scouring protective, which increases the workload and is easy to settle and dislocation is easy to break
GCL	0~0.09	20~50	150-250	900	The effect of reducing seepage is good, a large amount of soil backfill is needed, and the upper part needs to be covered with an anti-scouring protective layer, which increases the workload
Cement Blanket	Customised	Customised	160-200	2000	Appropriate permeability coefficient can be customised. It can adapt to the deformation of the foundation, resist erosion, simple operation, effectively reduce the construction period and labour costs, less affected by the environment, and good durability

APPLICATION: PONDS

Cistern

Mineral washing pool

Industrial sewage pond

Sedimentation tank of sewage treatment plant

Fish pond

Sea water pond

Bank reinforcement

Corrosion resistance, erosion resistance

Anti-freeze, anti-aging, anti-UV

Non-toxic and harmless, no volatile gas

Safe



APPLICATIONS



Ditch lining



Revetment project

Sewage treatment plant



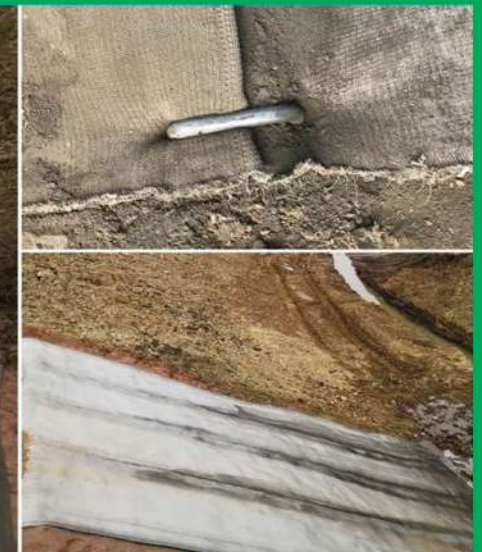
APPLICATIONS



Cistern



Bottom of water park lake



APPLICATIONS



Drainage ditch

Oil storage protection



APPLICATIONS



Pipeline protection

Temporary road



APPLICATIONS



Mineral Washing Pool



Large Culvert

APPLICATIONS



Highway

Slope protection



APPLICATIONS



Bank erosion project



Digestate tank



Slope protection

Tunnel



Shelter



4. INSTALLATION

A simple 4 step process:

1. Cutting
2. Laying
3. Overlapping
4. Hydration



INSTALLATION



CUTTING

Utility knife, angle grinder



LAYING

Manual laying, assisted by crane



OVERLAPPING

Electric drill, hammer, screw, braze, expansion bolt



HYDRATION

Water, water hoses, water pump, nozzles

CUTTING

Cement blanket can be cut with a utility knife, but the dust in the material will dull the blade, so it is recommended to change the blade often. For a bigger project, we suggest using an angle grinder



LAYING

Remove sharp objects before laying. Choose the proper method according to the project, 2 people lay out with hand or 3 people lay out with assistance of a crane.

In a water conservancy project, it needs to be laid in the direction of the water flow, and laid from downstream to upstream



OVERLAPPING

If the project has a higher request for anti-seepage, use a hot welding machine, sealant or mortar to overlap blanket. 10cm overlap is required for the joint, and use different overlapping methods according to different project requests.



OVERLAPPING

Base	Soil Substrates	Soil Substrates	Concrete Substrates	Concrete Substrates
Slope	<45°	90° ≥ x > 45°	<45°	90° ≥ x > 45°
At lap joint	Self-tapping screw Specification: 2.5cm length Spacing: 10cm	Self-tapping screw Specification: 2.5cm length Spacing: 10cm	Self-tapping screw Specification: 2.5cm length Spacing: 10cm	Self-tapping screw Specification: 2.5cm length Spacing: 10cm
Fixed at lap joint & top of slope	Fixing nail Specification: 20cm length Spacing: 40cm Include Washer	Fixing nail Specification: 40cm length, 14mm/16mm diameter Spacing: 40cm Include Washer	Expansion bolt Specification: 7cm length, 8mm diameter Spacing: 40cm If top of slope is soil, use 20cm length fixing nail; Or use expansion bolt if concrete	Expansion bolt Specification: 7cm length Spacing: 40cm

Remarks: If there is strict sealing requirements in project, workers can use sealant at the lap joint together with self-tapping screws.

OVERLAPPING



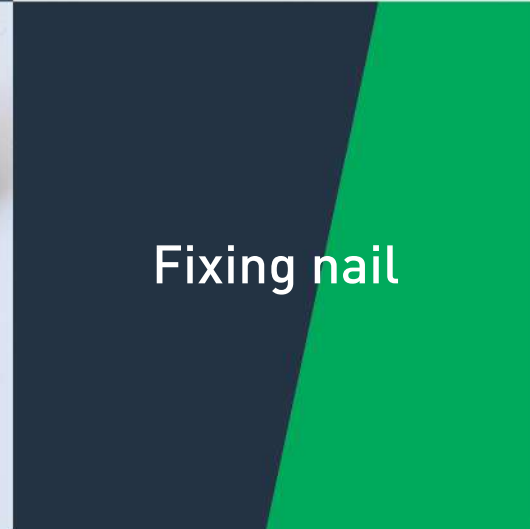
Expansion bolt



Washer



Self-tapping screw



Fixing nail



HYDRATION

Best weight ratio of water to canvas is 40:60. The canvas should seep with water at the press of a finger. If the water quantity cannot be controlled accurately, it is better to go for more rather than less.

The cement blanket can be laid directly in water.

It doesn't matter what quality of water is used: rainwater, sewage water and sea water are all okay, but there mustn't be grease in the water.

Do not use a high pressure water flow, as it could damage the canvas. It is better to use a spray nozzle.

It starts to solidify after 2 hours, do not drag the canvas after 1 hour of hydrating, and do not walk on it.



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