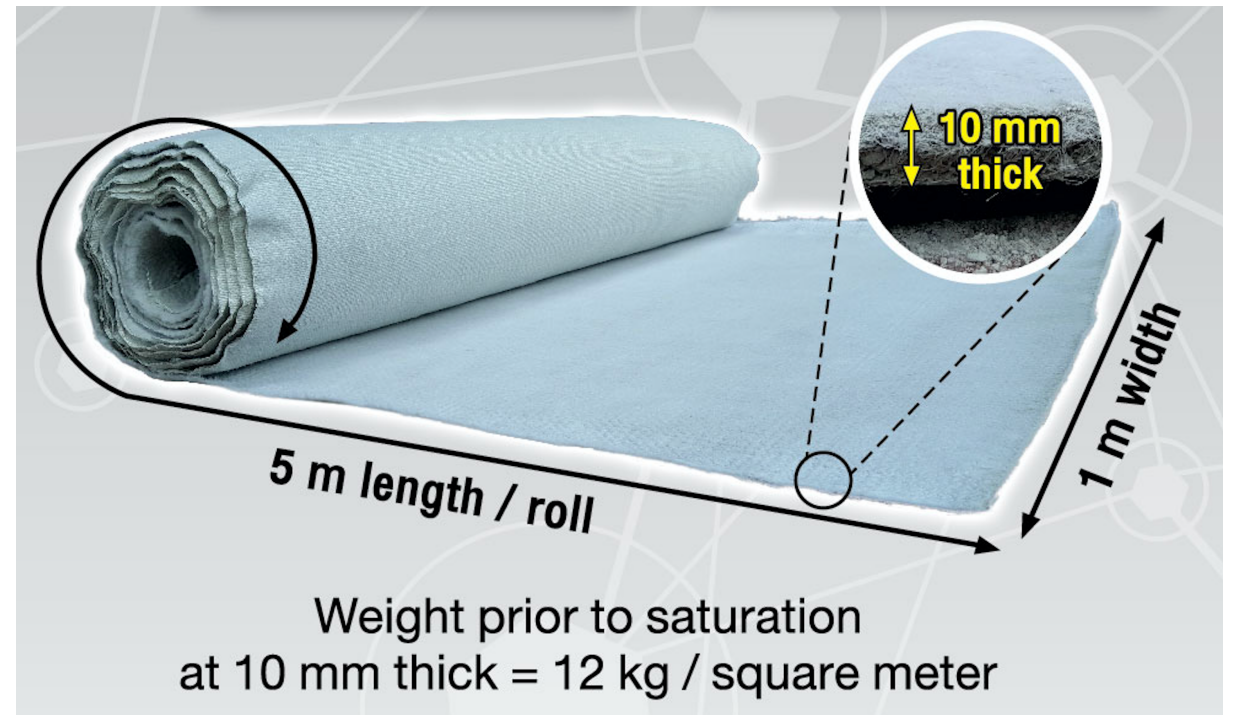


# Introducing Concrete Fabric™ the GCCM Liner from SCG



# About SCG

- Siam Cement Group (SCG) is Thailand's largest cement maker and the second largest company in Thailand.
- SCG which is listed on the Thailand Stock Exchange has over 53,000 employees and assets of 18 Billion USD.
- SCG is a leading business conglomerate in the ASEAN region which has committed itself to conducting business in line with good corporate governance and sustainable development principles throughout 100 years since SCG was established in 1913.



# SCG Concrete Fabric™



SCG Concrete Fabric, the cutting-edge innovation of combining cement and synthetic fiber technology to create a new innovation of a concrete fabric with high flexibility, strength, and the ability to maintain its form in any condition.

## How It Works



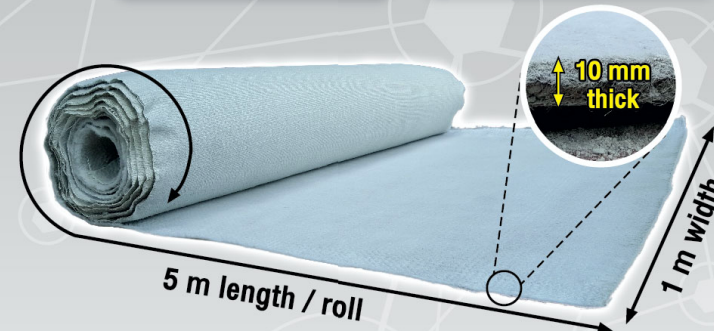
Free Form

Rigid Form

The SCG Concrete Fabric can be adjusted to any form according to your preference. It takes the SCG Concrete Fabric 4 hours to harden after it has been submerged in water or sprayed with water. The synthetic fibers and low permeability of SCG Concrete Fabric prevents the expansion of cracks.

SCG Concrete Fabric is appropriate for use in construction projects such as small canals, ponds, dykes, or walkways, for example.

## Product Features



Weight prior to saturation  
at 10 mm thick = 12 kg / square meter



# How to USE



# User Benefits

- Adjust** : Adjust the area to be smooth and compact.
- Laying** : Locate the blue indicator on the concrete fabric, and lay it blue side down. Adjust the fabric according to your preference.
- Fastening** : Overlap the edge of each concrete fabric sheet with its preceding sheet and fasten the edges with cement paste and hooks.
- Spraying Water** : Spray water onto the concrete fabric sheet until fully saturated, then let it set for 4 hours for the concrete fabric to fully harden. Clean, ph-balanced water should be used to spray the concrete fabric.
- Note** : Outcome depends upon user's expertise and skills.



## DIY Product :

- Convenient for DIY projects as the SCG Concrete Fabric can be adjusted to any shape or form needed. Tables and chairs, for example, can easily be made by yourself.

## Fast Installation :

- Adjust the area of installation, lay the SCG Concrete Fabric on the ground, spray water onto the concrete fabric, then wait for 4 hours for the concrete to set according to the required mold.

## Clean Working Area and Less Preparation Procedures :

- No measuring of raw materials before mixing concrete.
- No concrete mixing required.
- No leftover concrete afterwards.



# SPECIFICATION



**Product Name:** Concrete Fabric

**Composition:** Composite of cement and fabric

<b>Test item</b>	<b>Test method</b>	<b>Standard</b>	<b>Unit</b>
Mass per unit area (Weight)	Measure	11±2	kg/m <sup>2</sup>
Thickness	Measure	9±2	mm
*Flexural Strength or Modulus of Rupture at 7 days	BS EN 12467	Min.60	ksc

**Remark:** \* Curing condition: Continuous water curing with water content of 10 L/m<sup>2</sup> for 3 days and kept at 23.0 ± 3.0 °C, RH ≥50% until 7 days

## Test result from 3<sup>rd</sup> party

(Department of Irrigation Engineering, Faculty of Engineering, Kasetsart University)



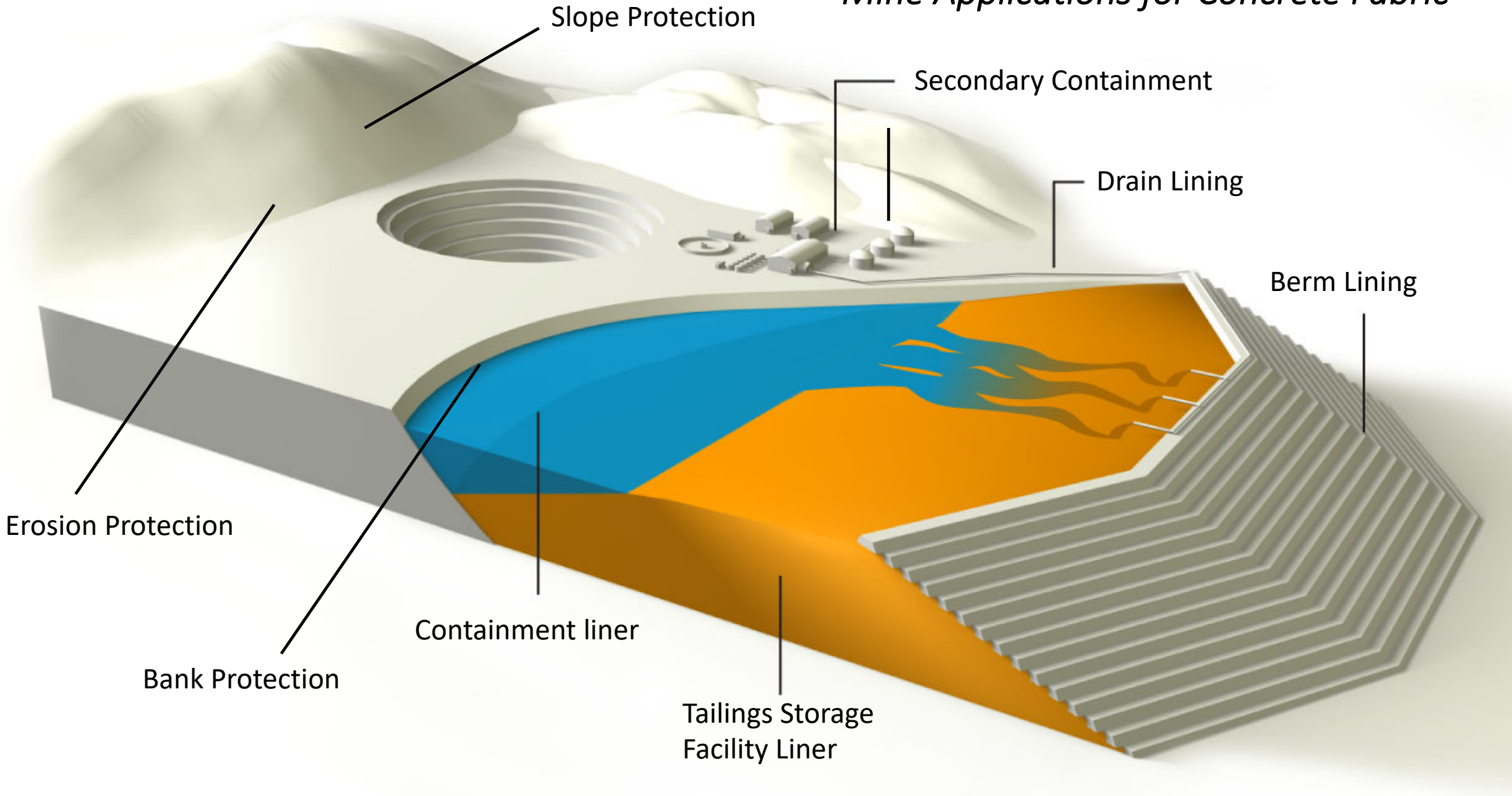
Page 1 has shown:

1. Water Permeability = 0
2. MANNING ROUGHNESS COEFFICIENT average = 0.019 (min = 0.012, max =0.019)

Page 2 has shown: water quality test

Index	Unit	Control criteria (Thai royal irrigation standard)	Test Result	
			v= 0.7 m/s	v = 0.9 m/s
PH (Potential of Hydrogen ion)	–	6.5-8.5*	7.44 – 7.83	7.42 – 7.91
EC (Electrical Conductivity)	µmhos/cm	< 2,000*	280 – 294	291 - 369
Salinity	ppt	<1*	0.1	0.1
TDS (Total dissolved solids)	mg/l	<1,300*	196 - 206	204 - 258
SS (suspended solids)	mg/l	<30 <sup>#</sup>	2 – 7	0 – 10
Turbidity (clarity of a liquid)	NTU	–	1.14 – 7.54	0.80 – 5.81
TH (Total Hardness)	mg/l CaCO <sub>3</sub>	-	80 - 104	82 - 102

# Mine Applications for Concrete Fabric™







# Concrete Fabric™ GCCM for Secondary Containment Bunding at a Petrochemical Storage Facility

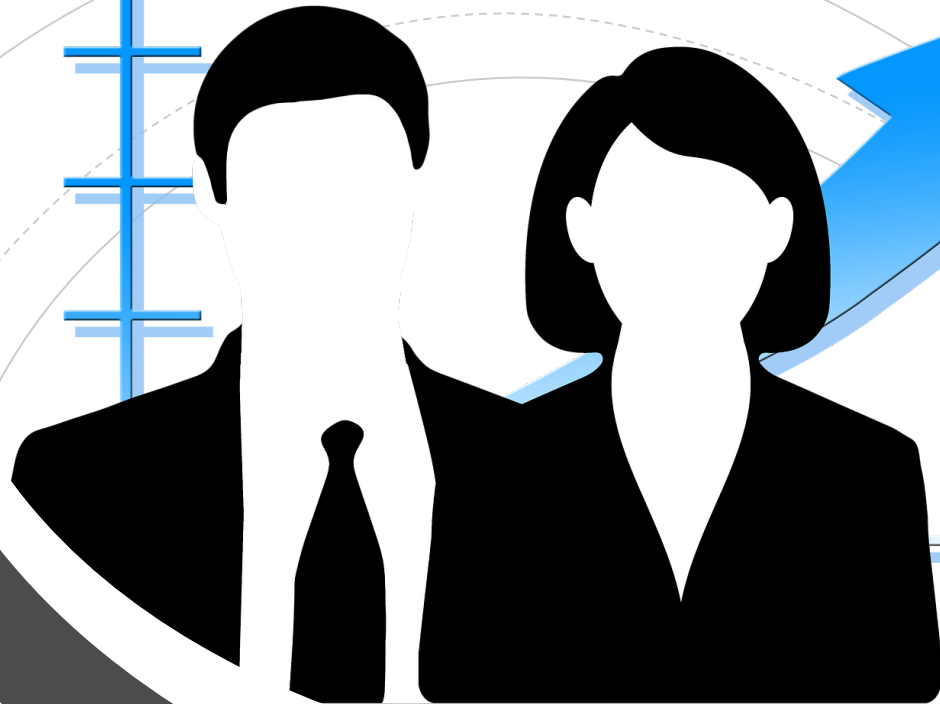


# GCCM Pricing Comparison

Grade	Thickness (mm)	Pricing per m <sup>2</sup> (USD)
SCG Concrete Fabric™	9 mm	\$16/m <sup>2</sup>
CC5*	5 mm	\$46/m <sup>2</sup>
CC8*	8 mm	\$67/m <sup>2</sup>
CC13*	13 mm	\$95/m <sup>2</sup>

\* Source: CC pricing M/s Sanbros Spares Pvt. Ltd., Nagpur

# SGC Sales Contacts for Concrete Fabric™



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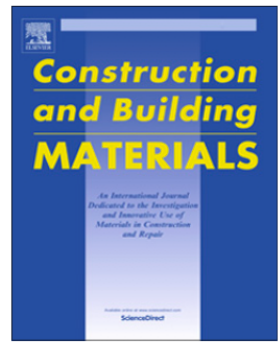


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SCIENTIFIC RESEARCH

# Construction and Building Materials

journal homepage: [www.elsevier.com/locate/conbuildmat](http://www.elsevier.com/locate/conbuildmat)



## Experimental investigation on mechanical properties of geosynthetic cementitious composite mat (GCCM)



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### H I G H L I G H T S

- A new development of geosynthetic cementitious composite mat (GCCM) is introduced.
- Key physical and engineering properties of GCCM are investigated in the laboratory.
- Tensile, bending, puncture, surface friction and water impermeability are tested.
- Effect of curing time and geotextile directions are considered.
- Strength and stiffness of GCCM required for geotechnical design are reported.





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SCIENTIFIC RESEARCH

## Composites Part B

journal homepage: [www.elsevier.com/locate/compositesb](http://www.elsevier.com/locate/compositesb)



# Finite element analysis of tensile and puncture behaviours of geosynthetic cementitious composite mat (GCCM)



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### ARTICLE INFO

#### Keywords:

Fabrics/textiles  
Layered structures  
Fibre/matrix bond  
Finite element analysis (FEA)

### ABSTRACT

This paper presents the fundamental mechanical properties that characterise constitutive behaviours of GCCM for large-strain problems in unidirectional tensile and axi-symmetry puncture tests. The 2D nonlinear FEA was conducted to simulate the GCCM behaviour. The optimised stiffness parameters can simulate the elastic behaviour of GCCM. The post-cracking governed by inelasticity of woven geotextile is modelled by bilinear stress-strain relationship. The interface between woven geotextile and cement layer is explained by the existing bond-slip model. The analytical results are presented in terms of load-displacement curves as well as the crack patterns, which are similar to the experimental results.

SCG-GCCM