

CCX® Properties

2605.01.EN

Pre-set (Uncured)	Test Method	Unit	Typical Values	
			CCX-U®	CCX-M®
ASTM D8364 ‘Standard Specification for GCCM Materials’ Classification				
GCCM Classification	ASTM D8364	Type	II	II
Dimensions				
Total Thickness	BS EN 1849-2	mm	10	10.3
Membrane Thickness	BS EN 1849-2	mm	N/A	0.3
Roll Sizes - W x L**	*	m	1.95 x 50	1.90 x 50
Area of CCX® per Roll	*	m²	97.5	95
Physical Properties				
Mass per Unit Area	BS EN 1849-2	kg/m²	13.5 - 15.5	14.0 - 15.5
Density	BS EN 1849-2	kg/m³	1400-1600	
Density Increase on Curing	*	% Increase	20-25	
Other Properties				
Working Time from Hydration - refer to the CCX® Hydration Guide	*	Minutes	<30	

Post-set (Cured) - at 28 Days from Hydration Unless Specified

(Hydrated by full immersion in accordance with ASTM D8030)

Post-set (Cured) - at 28 Days from Hydration Unless Specified (Hydrated by full immersion in accordance with ASTM D8030)	Test Method	Unit	Typical Values	
			CCX-U®	CCX-M®
Mechanical Performance				
Compressive Strength of Cementitious Mix (water/cementitious materials ratio to ASTM D8329)	ASTM D8329	MPa	60	70
Flexural Strength - at 24 Hours from Hydration				
- Initial Breaking Load	ASTM D8058	N/m	2500	
- Initial Flexural Strength	ASTM D8058	MPa	4	
- Final Flexural Strength (MD/CD)	ASTM D8058	MPa	6 / 4.5	10 / 6
Dynamic Puncture Resistance (depth of perforation)	BS EN ISO 13433	mm	0***	
Pyramid Puncture Resistance	BS EN ISO 14574	kN	15	
Differential Ground Movement (strain to exposure of geomembrane)	*	%	N/A	>10
Environmental Durability				
Freeze - Thaw Resistance - retained Initial Flexural Strength after 100 cycles	BS EN 12467	%	100	
Weathering (UV) Resistance - retained Initial Flexural Strength	BS EN 12224	%	90	
Microbiological Resistance - retained Initial Flexural Strength	BS EN 12225	%	85	
Permissible Long Term pH Immersion Range	*	pH	6-9	
Root Resistance	DD CEN/TS 14416	-	Passed	
Hydraulic Performance				
Abrasion Resistance - cementitious barrier depth of wear	ASTM C1353 / D8364	mm/1000 Cycles	0.2	
Manning's Roughness Coefficient - refer to CCX® Manning's test report	ASTM D6460	n	0.010-0.015	

The above values are typical and provide an indication of product performance based on testing by BICS Laboratories Ltd or TRI Environmental. Values marked with an asterisk (*) are based on Concrete Canvas Ltd laboratories internal assessments and testing. For design values, contact Concrete Canvas Ltd. **CCX® Rolls are supplied by area so the listed length and width dimensions are typical values and tolerances are typically +5%/-2.5% . ***Probe did not make a full penetration through the product, therefore the depth of penetration is zero.

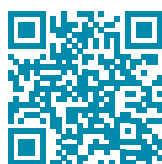
The primary function of the geosynthetic top surface is to constrain the cementitious material fill during installation. The top surface geosynthetic may degrade in high UV exposure or abrasive conditions, but the CCX® material will continue to provide its in-service armouring and erosion control functions as these functions are provided by the cured cementitious material and bottom geosynthetic layer(s). Information is provided based on current test data and may be subject to change as new information becomes available. The versatile nature of CCX® means that all application conditions cannot be anticipated. Concrete Canvas Ltd makes no warranties and assumes no liability in connection with this information. Project specific testing may be required to determine the suitability for CCX® material use in a particular application.



[Further Info](#)



[CCX® DoP](#)



[Sustainability](#)



Concrete Canvas® (CC) Properties

2510.01.EN

Pre-set (Uncured)	Test Method	Unit	Typical Values		
			CCT1 [®]	CCT2 [®]	CCT3 [®]
ASTM D8364 ‘Standard Specification for GCCM Materials’ Classification					
GCCM Classification	ASTM D8364	Type	I	II	III
Dimensions					
Thickness	BS EN 1849-2	mm	5	7	11
Batched Roll Sizes	*	m	1.0x10	1.1x4.55	N/A
Area of CC per Batched Roll	*	m ²	10	5	N/A
Bulk Roll Sizes**	*	m	1.0 x 170	1.1 x 114	1.1x 73
Area of CC per Bulk Roll	*	m ²	170	125	80
Physical Properties					
Mass per Unit Area	BS EN 1849-2	kg/m ²	8	12	19
Density	BS EN 1849-2	kg/m ³	1500-1750		
Density Increase on Curing	*	% Increase	15-25		
Other Properties					
Working Time from Hydration (refer to the CC Hydration Guide)	*	Hours	1 to 2		
Embodied CO ₂ Saving (cradle to grave for CCT2™ as a % of poured concrete - refer to CC CO ₂ Report)	ISO 14040	% Saving	62		

Post-set (Cured) - at 28 Days from Hydration unless specified

(Hydrated by full immersion in accordance with ASTM D8030)

Post-set (Cured) - at 28 Days from Hydration unless specified (Hydrated by full immersion in accordance with ASTM D8030)	Test Method	Unit	Typical Values		
			CCT1®	CCT2®	CCT3®
Mechanical Performance					
Compressive Strength of Cementitious Mix (water/cementitious materials ratio to ASTM D8329)	ASTM D8329	MPa	45	60	65
Flexural Strength - at 24 Hours from Hydration					
- Initial Breaking Load	ASTM D8058	N/m	750	1750	5000
- Initial Flexural Strength	ASTM D8058	MPa	4		
- Final Flexural Strength (MD/CD)	ASTM D8058	MPa	10/4.5	6/4.5	6/4.5
Dynamic Puncture Resistance (depth of perforation)	BS EN ISO 13433	mm	0***		
Pyramid Puncture Resistance	BS EN ISO 14574	kN	12		
Differential Ground Movement (strain to PVC failure, MD/CD)	*	%	>5/>1.5	>5/>3	>2/>2
Coefficient of Thermal Expansion	*	α (mm/m/°C)	0.012-0.015		
Environmental Durability (minimum 120 year expected life - see BBA Cert 19/5685)					
Freeze - Thaw Resistance (retained Initial Flexural Strength after 200 cycles)	ASTM C1185	%	80		
Weathering (UV) Resistance (retained Initial Flexural Strength)	BS EN 12224	%	100		
Microbiological Resistance (retained Initial Flexural Strength)	BS EN 12225	%	100		
Chemical Resistance (refer to CC Chemical Resistance)	BS EN 14414 (Mod)	-	Passed		
Root Resistance (refer to CC Root Resistance Testing)	DD CEN/TS 14416	-	Passed		
Permissible Long Term pH Immersion	*	pH	4-9		
Hydraulic Performance					
Abrasion Resistance (cementitious barrier depth of wear)	ASTM C1353 / D8364	mm/1000 Cycles	0.15		
Manning's Roughness Coefficient	ASTM D6460	n	0.011		

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Occasionally there will be a Beam Fault (fabric imperfection under 100mm wide running across the width) in a Bulk Roll. This fault is unavoidable due to the manufacturing process and the fault will be clearly marked with a white tag, there will be a maximum of (1) one Beam Fault in any Bulk Roll. A joint may need to be made on site where there is a Beam Fault as the material at a fault will not reach the performance specified in this Data Sheet. The maximum un-useable material due to any Beam Fault will be 100mm. There are no beam faults in standard Batched Rolls.

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