CC HYDRO™

DATA SHEET

CC Hydro™ Properties — 2505.01.EN

Pre-set (Uncured)	Test Method	Unit	Typical Values	
			CCHT1™	CCHT2™
ASTM D8364 'Standard Specification For GCCM Materials' Classification				
GCCM/B Classification	ASTM D8364	Type	I**	II**
Dimensions				
Total Thickness	BS EN 1849-2	mm	6	8
Bulk Roll Sizes* **	*	m	1.0x150	1.0x100
Physical Properties				
Mass per Unit Area	BS EN 1849-2	kg/m^2	9	13
Concrete Density	BS EN 1849-2	kg/m^3	1550-1750	
Density Increase on Curing	*	% Increase	15-25	
Tensile Strength of Geomembrane Barrier MD/CD	BS EN ISO 527-4	kN/m	14/13	
Other Properties				
Working Time from Hydration (refer to the CC Hydro™ Hydration Guide)	*	Hours	1 to 2	

Post-set (Cured) - at 28 Days from Hydration unless specified (Hydrated by full immersion in accordance with ASTM D8030)	Test Method	Unit	Typical Values	
			CCHT1™	CCHT2™
Mechanical Performance				
Compressive Strength of Cementitious Mix (water/cementitious materials ratio to ASTM D8329)	ASTM D8329	MPa	45	60
Flexural Strength - 1 Day - Initial Flexural Strength	ASTM D8058	MPa	4	
Flexural Strength - 1 Day - Final Flexural Strength	ASTM D8058	MPa	13	13
Static Puncture Resistance (mean ultimate puncture force)	BS EN ISO 12236	kN	3.5	4.5
Dynamic Puncture Resistance (depth of perforation)	BS EN ISO 13433	mm	0****	
Pyramid Puncture Resistance	BS EN ISO 14574	kN	7.5	10
Differential Ground Movement (strain to PVC failure)	*	%	>15	
Coefficient of Thermal Expansion	*	α (mm/mk)	0.012-0.015	
Impermeability (Geomembrane Barrier)				
Water Permeability	BS EN 14150	m/s	1 x 10^{-11}	
Gas Permeability	ASTM D1434		5 x 10^{-12}	
Environmental Durability (minimum 50 year expected life▲ - see BBA Certificate 19/5685)				
Chemical Resistance - Retained Initial Flexural Strength				
Method A - Acid (10% solution H_2SO_4)	BS EN 14414	%	20	15
Method B - Alkaline (saturated suspension $Ca(OH)_2$)	BS EN 14414	%	80	65
Method C - Solvation & Swelling (35% vol diesel, 35% vol paraffin, 30% vol lubricating oil HD30)	BS EN 14414	%	65	70
Method D - Synthetic Leachate	BS EN 14414	%	65	75
Permissible Long Term pH Immersion	*	pH	4-9	
Root Resistance (refer to CC Root Resistance Testing)	DD CEN/TS 14416	-	Passed	
Flammability (refer to CC Hydro™ Fire Certification)	CAN/ULC-S668-12	-	Passed	
Hydraulic Performance				
Abrasion Resistance (cementitious barrier depth of wear)	ASTM C1353/ASTM D8364	mm/1000 Cycles	0.15	
Manning's Roughness Coefficient	ASTM D6460	n	0.011	

The above values are typical and provide an indication of product performance based on testing by BICS Laboratories Ltd or TRI Environmental or QAI Laboratories. Values marked with an asterisk (*) are based on Concrete Canvas Ltd laboratories internal assessments and testing. For design values, contact Concrete Canvas Ltd. **GCCM classification based on testing of the CCT1™ and CCT2™ GCCM material used for the manufacture of CC Hydro™. *** Bulk 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.

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 specifiedin this Data Sheet.
The maximum un-useable material due to any Beam Fault will be 100mm. CC HydroTM should not be used for the primary containment of liquids that would be detrimental to the environment. Information is provided based on current test data and may be subject to change as new information becomes available. The versatile nature of CC HydroTM means that all application conditions cannot be anticipated. Concrete Canvas Ltd makes no warranties and assumes no liability in connection

British Assessment Bureau — UKAS MANAGEMENT SYSTEMS 8289 — ISO 14001 ENVIRONMENTAL MANAGEMENT

British Assessment Bureau — UKAS MANAGEMENT SYSTEMS 8289 — ISO 9001 QUALITY MANAGEMENT

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