CC HYDRO™

DATA SHEET

CC Hydro™ Properties — 2206.01.EN

Pre-set (Uncured)	Test Method	Unit	Typical Values	
			CCHT1M	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/m²	9	13
Concrete Density	BS EN 1849-2	kg/m³	1550-1750	
Density Increase on Curing		% Increase	15-25	
Peel Strength - strength of internal linking fibres (MD)	BS EN ISO 13426-2	kN/m	4.0	4.5
Tensile Strength of Geomembrane Barrier MD/CMD (MARV)	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	
			CCHT1M	CCHT2™
Mechanical Performance				
Compressive Strength of Cementitious Mix (water/cementitious materials ratio to ASTM D8329)	ASTM D8329	MPa	60	
Flexural Strength - 1 Day - Initial Flexural Strength (MD)	ASTM D8058	MPa	>4.0	
Flexural Strength - 1 Day - Final Flexural Strength (MD)	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	1×10^{-11}	
Gas Permeability	ASTM D1434	$\frac{cm^3.cm}{cm^2.s.Pa}$	5×10^{-12}	
Environmental Durability (minimum 50 year expected life▲ - see BBA Certificate 19/5685)				
Chemical Resistance - Retained Initial Flexural Strength (MD)***				
Method A - Acid (10% solution H_2SO_4)	BS EN 14414	%	>70	>70
Method B - Alkaline (saturated suspension $Ca(OH)_2$)	BS EN 14414	%	>100	>100
Method C - Solvation & Swelling (35% vol diesel, 35% vol paraffin, 30% vol lubricating oil HD30)	BS EN 14414	%	>100	>100
Method D - Synthetic Leachate	BS EN 14414	%	>100	>100
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	mm/1000 Cycles	0.15	
Manning's Roughness Coefficient	ASTM D6460	n	0.011	

*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. ***Data based on CCH5™ and CCH8™ from 2019. New test data pending ▲ When used for the primary containment on non pollutants and secondary containment of other liquids.

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 Hydro™ 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 Hydro™ 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 CC Hydro™ material use in a particular application.

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 19/5685

ISO 9001 CERTIFIED UKAS British Assessment Bureau

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