FOLIE
GEOTEXTIEL EN GEOGRIDS
LEIDINGSYSTEMEN
VIJVER EN TUIN
EPS CONSTRUCTIES
KUNSTSTOF FABRICATEN
DRAINAGESYSTEMEN
GROEIPLAATSVERBETERING

JOOSTEN KUNSTSTOFFEN

CONCRETE CANVAS

Betonnen afdichting zonder storten

Met Concrete Canvas (CC) creëer je een waterdichte, betonnen afdichting zonder beton te storten en inzet van zwaar materieel.

CC bestaat uit een toplaag van hydraterend geotextiel en een waterdichte PVC onderlaag met daar tussen een 3-dimensionale vezelwapening die een droge onverharde betonmix bevat.

Wanneer de toplaag nat wordt gemaakt (besproeien of onderlopen), verhard de mix in de vezelwapening en ontstaat een dunne, duurzame, waterdichte en brandwerende betonlaag.

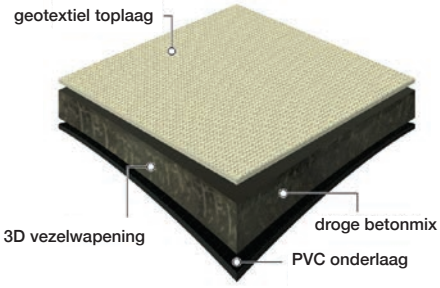
Voor projecten waar zwaardere eisen worden gesteld aan de waterdichtheid is Concrete Canvas Hydro (CCH) ontwikkeld. Voor CCH is aan het standaard CC een chemisch bestendig en hoogwaardig waterdicht geomembraam als extra onderlaag toegevoegd.

Afhankelijk van de toepassing en ondergrond wordt CC gefixeerd door middel van schroeven, schroeven en afdichtingskit of thermisch lassen. CCH wordt altijd verbonden door middel van thermisch lassen. Hiervoor zijn goed zichtbare markeringslijnen aangebracht op de toplaag.

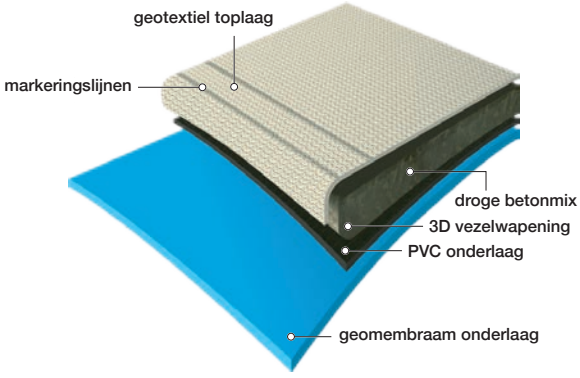
Zowel Concrete Canvas als Concrete Canvas Hydro zijn op rol verkrijgbaar in verschillende diktes, breedtes en rollengtes.

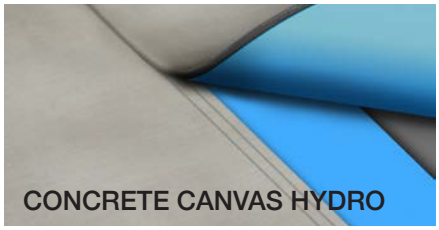
+ STERK + DUURZAAM + FLEXIBEL + WATERDICHT

CONCRETE CANVAS



CONCRETE CANVAS HYDRO





CONCRETE CANVAS®
Concrete on a Roll

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CONCRETE CANVAS®

DATA SHEET

Concrete Canvas® (CC) properties — 2002.01.EN

Pre-set	Test Method	Unit	Typical Values		
			CC5™	CC8™	CC13™
Physical Properties					
Thickness	BS EN 1849-2	mm	5	8	13
Batch Roll Sizes		m	1.0x10	1.1x4.55	N/A
Area of CC per Batch Roll		m^2	10	5	N/A
Bulk Roll Sizes		m	1.0 x 200	1.1 x 114	1.1 x 73
Area of CC per Bulk Roll		m^2	200	125	80
Mass per Unit Area	BS EN 1849-2	kg/m^2	7	12	19
Density	BS EN 1849-2	kg/m^3	1430-1540		
Density Increase on Curing		% Increase	30-35		
Other Properties					
Peel Strength (strength of internal linking fibres)	BS EN ISO 13426-2	kN/m	4.0	4.5	5.0
Embodied CO_2 Saving (cradle to gate for CC8™ vs poured concrete)	ISO 14040 & EN 15804	% Saving	55		
Working Time from Hydration (refer to the CC Hydration Guide)		Hours	1 to 2		

Post-set (Hydrated by full immersion in accordance with ASTM D8030. Water:GCCM ratio of 0.33)	Test Method	Unit	Typical Values		
			CC5™	CC8™	CC13™
Mechanical Performance					
Compressive Strength of Cementitious Mix+					
- 24 Hour	BS EN 12390-3	MPa	50		
- 28 Day	BS EN 12390-3	MPa	80		
Flexural Strength at 24 Hours from Hydration					
- Initial Break (MD)	ASTM D8058	MPa	>4.0		
- Initial Break (MD)	ASTM D8058	N/m	750	1750	5000
- Final Break (MD)	ASTM D8058	MPa	>10	>6	>6
Static Puncture Resistance (mean ultimate puncture force)	BS EN ISO 12236	kN	2.0	4.0	4.0
Dynamic Puncture Resistance (depth of perforation)	BS EN ISO 13433	mm	0*		
Pyramid Puncture Resistance	BS EN ISO 14574	kN	4.0	7.0	12.5
Differential Ground Movement (strain to PVC failure)		%	>5	>5	>2
Coefficient of Thermal Expansion		α (mm/mk)	0.012-0.015		
Environmental Durability (minimum 120 year expected life - see BBA Cert 19/5685)					
Freeze - Thaw Resistance (retained Initial Flexural Strength after 250 cycles)	BS EN 12467	%	95		
Weathering Resistance (refer to CC Weather Resistance)	BS EN 12467	-	Passed		
Chemical Resistance (refer to CC Chemical Resistance)	BS EN 14414	-	Passed		
Root Resistance (refer to CC Root Resistance Testing)	DD CEN/TS 14416	-	Passed		
Reaction to Fire (refer to CC Fire Certification)	BS EN 13501	-	Euroclass B-s1, d0		
Hydraulic Performance					
Abrasion Resistance (cementitious barrier depth of wear)	ASTM C1353	mm/1000 Cycles	0.2		
Manning's Roughness Coefficient	ASTM D6460	n	0.011		
Recommended Permissible Velocity (intermediate fixings may be required - contact CC Ltd)		m/s	Application Dependent	<8.6	>8.6

+ Cube testing at Water:Powder ratio of 0.3 to correspond to GCCM hydration by immersion to ASTM D8030 * 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 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. Roll dimension tolerances are typically +5%/-2.5%

Information is provided based on current test data and may be subject to change as new information becomes available. The versatile nature of Concrete Canvas® 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 Concrete Canvas® material use in a particular application.

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 19/5685

ISO 9001 CERTIFIED British Assessment Bureau

CE

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CC HYDRO™
Concrete Impregnated Containment

DATA SHEET

CC Hydro™ Properties — 2002.01.EN

Pre-set	Test Method	Unit	Typical Values	
			CCH5™	CCH8™
Physical Properties				
Total Thickness	BS EN 1849-2	mm	6	9
Bulk Roll Sizes		m	1.0x150	1.0x100
Mass per Unit Area	BS EN 1849-2	kg/m^2	8	13
Concrete Density	BS EN 1849-2	kg/m^3	1430-1540	
Density Increase on Curing		% Increase	30-35	
Other Properties				
Peel Strength (strength of internal linking fibres)	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	
Working Time from Hydration (refer to the CC Hydro™ Hydration Guide)		Hours	1 to 2	

Post-set (Hydrated by full immersion in accordance with ASTM D8030. Water:GCCM ratio of 0.33)	Test Method	Unit	Typical Values	
			CCH5™	CCH8™
Mechanical Performance				
Compressive Strength of Cementitious Mix[+] - 24 Hour	BS EN 12390-3	MPa	50	
Compressive Strength of Cementitious Mix[+]- 28 Day	BS EN 12390-3	MPa	80	
Flexural Strength at 24 Hours from Hydration - Initial Break (MD)	ASTM D8058	MPa	>4.0	
Flexural Strength at 24 Hours from Hydration- Final Break (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 x 10^{-11}	
Gas Permeability	ASTM D1434	$\frac{cm^3.cm}{cm^2.s.Pa}$	5 x 10^{-12}	
Environmental Durability (minimum 50 year expected life - see BBA Certificate 19/5685)				
Weathering Resistance (refer to CC Hydro™ Weather Resistance)	BS EN 12467	-	Passed	
Chemical Resistance - Retained Initial Flexural Strength (MD)				
Method A - Acid (10% solution H_2SO_4)	BS EN 14414	%	79	85
Method B - Alkaline (saturated suspension $Ca(OH)_2$)	BS EN 14414	%	132	138
Method C - Solvation & Swelling (35% vol diesel, 35% vol paraffin, 30% vol lubricating oil HD30)	BS EN 14414	%	128	110
Method D - Synthetic Leachate	BS EN 14414	%	133	129
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	0.2	
Manning's Roughness Coefficient	ASTM D6460	n	0.011	
Recommended Permissible Velocity (intermediate fixings may be required - contact CC Ltd)		m/s	Application Dependent	<8.6

[+] Cube testing at Water:Powder ratio of 0.3 to correspond to GCCM hydration by immersion to ASTM D8030 * Probe did not make a full penetration through the product, therefore the depth of penetration is zero.
[▲] 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. There are no beam faults in standard batched rolls.

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 QUALITY MANAGEMENT 0227 British Assessment Bureau

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