CCX® SPEC SHEET TO ASTM D8364

CCX® Classification Properties to ASTM D8364 'Standard Specification for GCCM Materials' 2402.01.EN

GCCM/B Property	Test Method	State of GCCM	Unit	Minimum Values Unless Specified		
				Type II Specification	CCX-U™	CCX-M™
Thickness	ASTM D5199	uncured	mm	7.0	8.5	8.5
Thickness	ASTM D5199	cured - 24 hrs	mm	7.0	8.5	8.5
Mass per Unit Area	ASTM D5993	uncured	kg/m^2	10.5	12.5	12.5
Density	ASTM D5993/D5199	uncured	kg/m^3	1250	1250	1250
Flexural Strength - Initial Breaking Load * (1st crack in cementitious material)	ASTM D8058	cured - 24 hrs	N/m	1500	2500	2500
Flexural Strength- Initial Flexural Strength * (1st crack in cementitious material)	ASTM D8058	cured - 24 hrs	MPa	3.5	3.5	3.5
Flexural Strength- Final Flexural Strength *	ASTM D8058	cured - 24 hrs	MPa	4	4	4
Compressive Strength of Cementitious Mix (water/cementitious materials ratio to ASTM D8329)	ASTM D8329	cured - 28 days	MPa	50	70	70
Pyramid Puncture Resistance	ASTM D5494 Type B	cured - 28 days	kN	3.5	10	10
Abrasion Resistance (cementitious barrier depth of wear - maximum value)	ASTM C1353	cured - 28 days	mm/1000 Cycles	<0.3	<0.2	<0.2
Tensile Strength - Final *	ASTM D6768	uncured	kN/m	8	14	17
Tensile Strength - Initial *▲ (1st crack in cementitious material)	ASTM D4885	cured - 28 days	kN/m	6.5	10	13
Tensile Strength - Final *▲	ASTM D4885	cured - 28 days	kN/m	19	22	26
Freeze - Thaw⁺ (residual Initial Flexural Strength to ASTM D8058 after 200 cycles)	ASTM C1185	cured - 28 days	%	80	85	85■
GCCM Classification	ASTM D8364		Type		CCX-U™ = Type II GCCM	CCX-M™ = Type II GCCM

* GCCM materials are non-isotropic and the values for flexural strength, tensile strength, and initial breaking load are reported as the lower of the material machine production direction (length of roll) or material cross-machine production direction (width of roll).

▲ When using CCX™ tensile strength properties for design purposes, please contact Concrete Canvas Ltd for advice on the appropriate data to use. ⁺ Freeze-thaw only applicable in freeze-thaw susceptible regions.

■ The CCX-U™ GCCM was measured and the retained initial flexural strength for the CCX-M™ GCCM is conservatively considered the same.

For independent laboratory test results please consult the CCX™ Test Reports by TRI Environmental

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GCCM Test Results Summary

TRI Client: Concrete Canvas Ltd.

Project: ASTM D8364 Testing

GCCM Property	Test Method	State of GCCM	Units	Test Result			ASTM D8364 Specification		
				CCX-U	CCX-M	[redacted]	Type 1	Type 2	Type 3
Thickness	ASTM D5199	uncured	mm	10.33	10.89	[redacted]	4.5 min	7.0 min	7.0 min
Thickness	ASTM D5199	cured - 24 hrs	mm	10.90	10.98	[redacted]	4.5 min	7.0 min	7.0 min
Mass per Unit Area	ASTM D5993,mod.	uncured	kg/m^2	15.91	16.66	[redacted]	6.5 min	10.5 min	10.5 min
Density	ASTM D5199/ASTM D5993, mod.*	uncured	kg/m^3	1541	1530	[redacted]	1250 min	1250 min	1250 min
Flexural Strength - Initial Breaking Load**	ASTM D8058	cured - 24 hrs	N/m	2709	2968	[redacted]	625 min	1500 min	3750 min
Flexural Strength - Initial Flexural Strength**	ASTM D8058	cured - 28 days	mPa	3.55	3.71	[redacted]	3.5 min	3.5 min	3.5 min
Flexural Strength - Final Flexural Strength**	ASTM D8058	cured - 28 days	mPa	5.98	7.12	[redacted]	4.0 min	4.0 min	4.0 min
Water Cementitious Ratio	ASTM D8329	-	-	-	0.21	-	-	-	-
Compressive Strength of Cementitious Mix	ASTM D8329	cured - 28 days	mPa	-	72.7	-	40 min	50 min	60 min
Pyramid Puncture Resistance	ASTM D5494	cured - 28 days	kN	11.8	12.7	[redacted]	2 min	3.5 min	4.5 min
Abrasion Resistance - Depth of Wear	ASTM C1353 ,mod.*	cured - 28 days	mm/1000 cycles	-	0.13	-	0.3 max	0.3 max	0.3 max
Tensile Strength**	ASTM D6768	uncured	kN/m	16.5	19.8	[redacted]	8 min	8 min	8 min
Initial Tensile Strength**	ASTM D4885, mod.*	cured - 28 days	kN/m	14.0	16.2	[redacted]	3.5 min	6.5 min	9 min
Final Tensile Strength**	ASTM D4885, mod.*	cured - 28 days	kN/m	24.2	29.0	[redacted]	10 min	19 min	19 min
Freeze - Thaw (residual Initial Flexural Strength to ASTM D8058 after 200 cycles)	ASTM C1185, mod.*	cured - 28 days	%	85	-	-	80 min	80 min	80 min

**Note: GCCM materials are non-isotropic and the values for flexural strength, tensile strength, and initial breaking load are reported as the lower of the material machine production direction (length of roll) or material cross-machine production direction (width of roll)

*Note: Test method modified according to the procedures outlined in ASTM D8364.