

## CCW MIRACLAY MATERIAL CERTIFICATION

This is to certify that CCW MiraCLAY Waterproofing Membrane is a sheet membrane consisting of a uniform layer of sodium Bentonite clay that is sandwiched between a durable puncture resistant non-woven polypropylene fabric and a high tensile strength woven polypropylene fabric and then needle-punched together with thousands of high strength denier yarns which are fused to each layer of fabric. CCW MiraCLAY Granules, MiraCLAY Mastic, CCW MiraSTOP, CCW MiraDRAIN are part of the CCW MiraCLAY system and are recommended by Carlisle Coatings & Waterproofing.

CCW manufactures CCW MiraCLAY Membrane to comply with the following ASTM typical property values and meets the specification requirements:

CCW Miraclay - Property	Test Method	Unit	Typical Value
Nominal Dry Thickness	-----	in. (mm)	0.25 (6.4)
Bentonite Mass/Unit Area	ASTM D 5993	lbs/ft <sup>2</sup> (kg/m <sup>2</sup> )	1.0 (4.88)
Nonwoven	ASTM D 5261	oz/yd <sup>2</sup> MARV	6.0 (200)
Woven		(g/m <sup>2</sup> MARV)	3.1 (105)
Swell Index	ASTM D 5890	ml (g)	24 (2g) min
Moisture Content	ASTM D 4643	% max	12
Fluid Loss	ASTM D 5891	ml	18 max
Tensile Strength	ASTM D 6768	lb/in MARV (kN/m MARV)	30 (5)
Peel Strength	ASTM D 6496	lb/in MARV (N/m MARV)	3.5 (610)
Permeability	ASTM D 5887	m/s max	5 x 10 <sup>-11</sup>
Index Flux	ASTM D 5887	m <sup>3</sup> /m <sup>2</sup> /s max	1x10 <sup>-8</sup>
Internal Shear Strength	ASTM D 6243	psf (kPa)	500 (24)
Elongation	ASTM D 4632	%	150
Low Temperature Flexibility	ASTM D 1970	@ -25 <sup>0</sup> F (-32 <sup>0</sup> C)	Unaffected
Hydrostatic Head Pressure	ASTM D 751	ft. (m)	228 (59.49)
Adhesion To Concrete	ASTM D 903	lb/in. (kg/cm)	17.7 (8)

Rev. October 1, 2013