



BRAMAL

TECHNICAL DATA SHEET September, 2008

Bramal's VIREO™

VIREO™ is comprised of a polymeric blend of binding agents and additives that form a thermo set water & Vapor tight membrane within an hour. The primary component is recycled rubber polymer mechanically and chemically conditioned for superior performance characteristics when combined with the binding agents. Once the plural component liquid is applied and the binding agents have catalyzed, the resulting 7mm (AVG) roofing membrane will offer a highly durable, low weight, environmentally friendly and seamless roof with superior wind uplift performances due to its point by point adhesion to the substrate. The **VIREO™** Plural component liquid cold applied membrane offers numerous advantages such as no **VOC's**, no fire risks, conforms to complex shapes & obstacles and speed of execution (1 sq.ft/sec). This product has been tested in accordance with CGSB 37-GP-56M standard, conforms to the NBC requirements for roofing membranes and has passed CAN-ULC S107 fire rating requirements.

N.B. Surfaces to be covered by **VIREO™** must be dry, clean and clear of any debris before application.

Characteristics	Units	Specification	Test Method	Typical value
AVG THICKNESS	mm (mils)	CGSB 1-GP-71	*	6mm base + 3mm silica
STATIC PUNCTURING	N (lbf)	CAN/CGSB-37.56M AMEND	4 (23°C, -15°C) min 3	pass
DYNAMIC IMPACT	N (lbf)	CAN/CGSB-37.56M AMEND	4 (23°C, -15°C) min 3	pass
CRACK BRIDGING		ASTM D5849	(heat aged @ 70°C- tested -20°C)	pass
ADHESION in PEEL		ASTM C794-06	12 surfaces min 175N/m	pass
DIMENSIONAL STABILITY and WATER ABSORPTION			<2.2% min3%	pass
TENSILE TEAR-		ASTM D4073	min 400N	pass 7.47 N (meshed)
NORMALIZED STRAIN ENERGY			min 5.5kN/m	pass 7.34 kN/m (meshed)
WATERTIGHTNESS		CGSB 37-GP-56M AMEND	no losses	pass



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ABRAISON TEST		ASTM C 501	<0.400gr	pass very resistant
WEATHERING RESISTANCE and ELONGATION RECOVERY		ASTM C 957 ASTM D 2523 ASTM G 154	1000hrs and 2000hrs UV	pass
Without silica surface			Ef/Ei>90%	pass 118%
			Uf/Ui>90%	pass 115%
With silica surface			Ef/Ei>90%	pass 187%
			Uf/Ui>90%	pass 272%
Retention			>90%	pass 100%
CHEMICAL RESISTANCE		ASTM C 957 ASTM D 2523	$\sigma_f/\sigma_i > 70\%$	pass 122%
FREEZE THAW			no deleterious effect	pass stable
WATER VAPOUR PERMEANCE			11.8 ng/Pa s m ²	pass
PINHOLE TEST			no more than 1 pinhole per sample	pass
LOSS of VOLATILE ON HEATING			(80°C 60 days) 0.75%	pass
FIRE RESISTANCE		UL S-107		pass

The information on this Technical Data sheet is based upon data considered to be true and accurate, based on laboratory tests, and is offered solely for the user's consideration, investigation and verification. Nothing contained herein is representative of a warranty or guarantee for which the manufacturer can be held legally responsible. The manufacturer does not assume any responsibility for any misrepresentation or assumptions the reader may formulate.