

POWA Group

Powatherm Ecoflex Protec4z

Flexible Thermal Insulation



POWATHERM ECOFLEX PROTEC4Z

Flexible Thermal Insulation

MATERIAL CHARACTERISTICS

Crossed-Linked closed cell polyolefin foam reinforced with heat laminated embossed pure aluminium foil.

SHEETS/ROLLS

Comes with factory applied adhesive backing

PIPE SECTIONS

Pre-formed to give a snug-fit on pipes and supplied with a longitudinal slit

STRUCTURE

Completely closed cell.
No losses fibres

MALLEABILITY

Excellent flexibility and high resilience to deformation

COLOUR: Greyish Black

DENSITY: 25-30 kgfm³
(foam only)



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Technical Specifications	Test Standard	EcoFlex - Protec4Z
Thermal Conductivity	ASTM C518	0.034 W/mK@ 24°C
Water Vapour Permeability	ASTM E96	0.00 g/h.m2
Water Vapour Permeance	ASTM E96	0.00 perms
Water Absorption (Vol.%) 28 days	BSEN 12087: 1997 Method 2A	0.3
Surface spread of flame	BS 476 Part 7	Class 1
Toxic Fume, R	BS6853: 1999	0.77
Smoke & Toxicity	ISO 5659-2 IMO MSC 61 (67) 1996	Ds<200, passed toxicity level
Operating Temperature		-80 °C to 100 °C
Environmental Concerns		CFC & HCFC Free Non contributing to ODP & GWP
Ozone Resistance		Excellent
UV & Weather Resistance		Excellent. No additional UV coatings required. Pass 300hr Salt Spray test



Certificate of Test

NE6536

REPORT No.: FNE10319

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AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

TRADE NAME: Powatherm Ecoflex Protec4Z (25 mm sample) sheet or tubular pipe and ducting etc. thermal insulation

SPONSOR: Rapid Industrial Group Pty Ltd
25 Common Street
GOULBURN NSW
AUSTRALIA

DESCRIPTION OF SAMPLE: The sponsor described the tested specimen as UV-protected reinforced pressed aluminium foil facing bonded to 25-mm thick layer of cross-linked polyethylene fire-retardant foam. The foil was adhered to the foam using acrylic based adhesive at an application rate of 0.025 L/m². The specimen contained flame-retardant additives.

Nominal total density: 25 kg/m³
Nominal total thickness: 25 mm
Colour: low-glare silver (foil) / charcoal grey (foam)

TEST PROCEDURE: Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was held between two layers of square mesh having 0.8-mm dia. wires at approximately 13-mm centres over each face, and was clamped to the specimen holder in four places.

RESULTS: The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m ²)	N/A	N/A
Smoke Release (log ₁₀ D)	-1.914	0.100

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	1

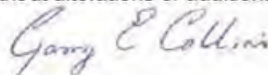
The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

DATE OF TEST: 9 November 2011

Issued on the 21st day of November 2011 without alterations or additions.



Heherson Alarde
Testing Officer



Garry E Collins
Manager, Fire Testing and Assessments



This document is issued in accordance with NATA's accreditation requirements.
Accreditation No. 165 – Corporate Site No. 3625



CSIRO Materials Science and Engineering
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555

Emission Test Certificate

Friday 20th September 2013

Supplier: PowAGroup Global (PO Box 1236, Goulburn NSW 2580)

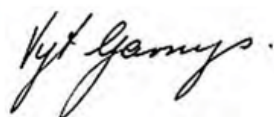
Sample Description: Powatherm Ecoflex Protec4Z Foil Faced Fire Retardant Cross Linked Polyolefin Foam Insulation

Date Tested: September 2013 (Tested by FORAY Laboratories – NATA Accreditation 1231)

Test Method: ASTM D5116 “Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Material/Products”.

Emission Data:

Green Building Council of Australia Green Star Office Design IEQ-13	Powatherm Ecoflex Protec4Z Foil Faced Fire Retardant Cross Linked Polyolefin Foam Insulation
Total Volatile Organic Compound Emission Rate limit <0.5mg/m ² /hr	Total Volatile Organic Compound Emission Rate: <0.009 mg/m ² /hr



Dr. Vyt Garnys
PhD, BSc(Hons) AIMM, ARACI, ISIAQ
ACA, AIRAH, FMA
Managing Director and Principal Consultant



Nick Joy
BSc(Hons)
Consultant

CV130905

Emission Test Certificate

Friday 20th September 2013

Supplier: PowAGroup Global (PO Box 1236, Goulburn NSW 2580)

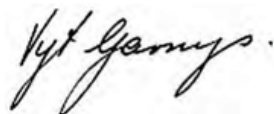
Sample Description: Powatherm Ecoflex Ezylag Fire Rated Closed Cell Elastomeric Foam Insulation

Date Tested: September 2013 (Tested by FORAY Laboratories – NATA Accreditation 1231)

Test Method: ASTM D5116 “Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Material/Products”.

Emission Data:

Green Building Council of Australia Green Star Office Design IEQ-13	Powatherm Ecoflex Ezylag Fire Rated Closed Cell Elastomeric Foam Insulation
Total Volatile Organic Compound Emission Rate limit <0.5mg/m ² /hr	Total Volatile Organic Compound Emission Rate: 0.055 mg/m ² /hr



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POWATHERM ECOFLEX PROTEC4z CROSSLINKED POLYOLEFIN FIRE RETARDANT THERMAL PIPE INSULATION HEATLOSS TABLE IN W/m

Water Temperature Deg. Celcius		60			65			70			80		
		10	20	30	10	20	30	10	20	30	10	20	30
Ambient Temperature Deg. Celcius													
CU Pipe Size	Pipe Insulation mm												
15 (12.7)	0	30.269	23.542	17.178	33.777	26.858	20.316	37.387	30.269	23.542	44.921	37.387	30.269
	25	6.268	5.015	3.76	6.895	5.641	4.387	7.522	6.268	5.014	8.777	7.522	6.268
	38	5.277	4.222	3.166	5.805	4.75	3.694	6.333	5.277	4.222	7.389	6.333	5.277
	50	4.749	3.802	2.851	5.228	4.277	3.327	5.703	4.753	3.802	6.653	5.703	4.753
20 (19.1)	0	44.784	34.817	25.395	49.985	39.73	30.04	55.338	44.784	34.817	66.517	55.338	44.784
	25	7.715	6.171	4.625	8.486	6.943	5.399	9.258	7.715	6.171	10.803	9.258	7.715
	40	6.246	4.997	3.747	6.87	5.621	4.372	7.495	6.246	4.996	8.774	7.498	6.246
	50	5.641	4.517	3.387	6.211	5.081	3.952	6.775	5.646	4.517	7.905	6.775	5.646
25 (25)	0	57.755	44.884	37.725	64.474	51.227	38.719	71.392	57.755	44.884	85.847	71.392	57.755
	25	8.97	7.176	5.381	9.869	8.073	6.278	10.766	8.971	7.176	12.562	10.766	8.971
	38	7.274	5.819	4.364	8.002	6.547	5.092	8.73	7.274	5.819	10.185	8.73	7.274
	50	6.396	5.121	3.841	7.042	5.761	4.481	7.682	6.401	5.121	8.963	7.682	6.402
32 (31.8)	0	72.241	56.117	40.898	80.663	64.062	48.399	90.322	72.241	56.117	107.47	89.336	72.241
	25	10.366	8.292	6.218	11.404	9.329	7.255	12.442	10.366	8.292	14.517	12.442	10.366
	40	8.123	6.497	4.873	8.934	7.309	5.685	9.747	8.122	6.497	11.372	9.747	8.122
	50	7.214	5.780	4.334	7.947	6.502	5.057	8.670	7.225	5.781	10.115	8.67	7.225
40 (38.1)	0	85.242	66.19	48.22	95.199	75.576	57.075	105.46	85.242	66.19	126.91	105.46	85.242
	25	11.627	9.3	6.974	12.786	10.463	8.137	13.955	11.627	9.301	16.283	13.955	11.627
	38	9.191	7.353	5.514	10.111	8.273	6.433	11.03	9.191	7.353	12.87	10.031	9.191
	50	7.949	6.366	4.774	8.754	7.162	5.57	9.55	7.958	6.366	11.142	9.551	7.958
50 (50.8)	0	110.320	85.597	62.310	123.260	97.773	73.781	136.590	110.320	85.597	164.510	136.590	110.320
	25	14.107	11.284	8.461	15.520	12.695	9.872	16.392	14.107	11.284	19.758	16.932	14.107
	38	10.961	8.768	6.575	12.057	9.864	7.672	13.154	10.961	8.768	15.347	13.154	10.961
	50	9.370	7.504	5.628	13.319	8.442	6.566	11.257	9.380	7.504	13.134	11.257	9.380
65 (63.5)	0	134.050	103.930	75.596	149.820	118.760	89.546	166.090	134.050	103.930	200.190	166.090	134.050
	25	16.535	13.225	9.917	18.191	14.880	11.571	19.833	16.535	13.225	23.160	19.847	16.535
	38	12.681	10.144	7.607	13.95	11.413	8.876	15.219	12.681	10.144	17.758	15.219	12.681
	50	10.744	8.605	6.453	11.832	9.681	7.529	12.908	10.756	8.605	15.061	12.908	10.756
80 (76)	0	156.430	121.060	87.996	174.710	138.380	104.270	193.750	156.260	121.060	233.690	193.750	156.260
	25	18.893	15.110	11.330	20.785	17.001	13.220	22.677	18.893	15.110	26.464	22.677	18.893
	38	14.346	11.475	8.606	15.781	12.911	10.040	17.217	14.346	11.475	20.089	17.217	14.346
	50	12.068	9.661	7.247	13.291	10.874	8.457	14.501	12.083	9.662	16.918	14.502	12.083