

BUBBLE FOIL (G)



Suitable to be used in roofing insulation as reflection or heat barrier in industrial, commercial and residential buildings, poultry houses metal roofing and house wrapping.

DESIGNED TO YOUR ADVANTAGE



foilTM
EnViro-tuff[®]

REFLECTIONS OF QUALITY AND RELIABILITY



Housing Project

EnViro-tuff[®] the superior foil that is specially designed to meet global standards. It meets your needs for an effective and cost efficient protection from the ravages of harsh weather conditions.



Warehouse Project

EnViro-tuff[®] has high reflective properties. Rigorous tests are constantly conducted to ensure its durability & reliability. It is proven for its effectiveness, making it the ideal choice for providing optimum insulations against radiant heat & moisture vapour. Light in weight yet strong and durable.



Poultry House Project

EnViro-tuff[®] is designed for easy handling and offers superior quality at the fraction of the overall building cost.

Premium Quality at Competitive Prices



97% Radiant Heat Reflectivity

EnViro-tuff[®] radiant barrier dramatically improves energy efficiency of a building by effectively reducing up to 97% of radiant heat.



Moisture Barrier (WVTR)

EnViro-tuff[®] is a good vapour barrier which specially designed to prevent any penetration of water and moisture-laden air, guarding against condensation, rot and mildew.



UV + Heat Stability

EnViro-tuff[®] has the ability to maintain its physical size and properties under extreme temperature changes.



Tear & Puncture Resistance

EnViro-tuff[®] is strong and has high tear resistant feature due to its superior reinforcement.



No Wire Netting

EnViro-tuff[®] being strong and durable is design without additional supporting material for installation.



Energy Saving

EnViro-tuff[®] radiant barrier is designed to provide good insulation to improve energy performance of the building and save energy.



Acoustic Features

EnViro-tuff[®] bubble foil range has noise reduction feature.



Fire Retardant

EnViro-tuff[®] fire rated series tested and complied with international standards such as BS 476 part 6 & 7, ASTM E84 and AS 1530.



Factory Project



Hotel Resort Project

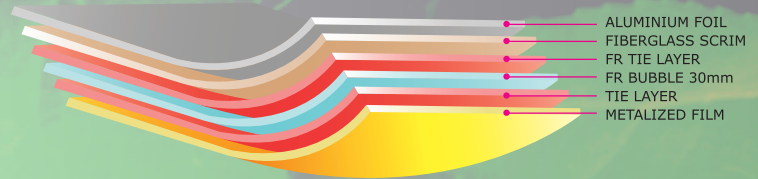


SIRIM
ISO 9001 : 2015
Certification No: AR 0385



SIRIM
MS 2095 : 2014
PC002618

G 302B (AL/MPET)

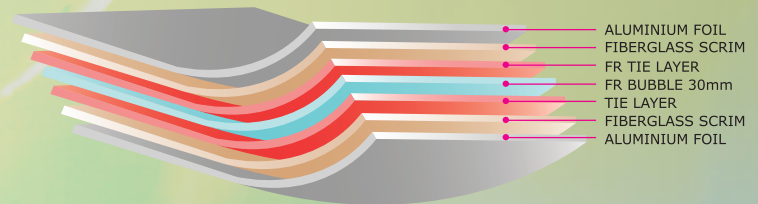


6 layers laminate made up of double sided reflective material (Aluminium & Metalized) bonded to FR bubble pack by special FR material.

Standard roll size : W 1.20m x L 30m

CHARACTERISTIC		TEST METHOD	UNIT (SI)	SPECIFICATION
Laminated Roll Specifications	Width	In-house	mm	Nominal ± 5
	Length	In-house	m	Nominal (<50) $\pm 2.0\%$ Nominal (≥ 50) $\pm 1.0\%$
	Grammage	BS EN 965	g/m ²	340 $\pm$ 100
	Resistance to Dry Delamination	AS/NZS 4201.1	-	No delamination
	Resistance to Wet Delamination	AS/NZS 4201.2	-	No delamination
	Shrinkage	MD CD	AS/NZS 4201.3	% < 0.5 < 0.5
	Duty			Extra Heavy
	Tensile Strength	MD CD	AS/NZS 1301.448s	kN/m > 4.5 > 4.5 > 80
	Edge Tear Resistance	TAPPI T470	N	
	Vapor Barrier classification	ASTM E 96	MNs/g	Medium < 450 > 7
	Emittance	ASTM C 1371	Index	Single Sided Reflective ≤ 0.05
	Surface Water Absorbency	AS/NZS 4201.6	-	Unclassified
	Thermal Resistance	ISO 8301/MS ISO 8302	M ² K/w	1.231

G 302A1 (AL/AL)



7 layers laminate made up of double sided reflective material Aluminium Foil bonded to FR bubble pack by special FR material.

Standard roll size : W 1.20m x L 30m

CHARACTERISTIC		TEST METHOD	UNIT (SI)	SPECIFICATION
Laminated Roll Specifications	Width	In-house	mm	Nominal ± 5
	Length	In-house	m	Nominal (<50) $\pm 2.0\%$ Nominal (≥ 50) $\pm 1.0\%$
	Grammage	BS EN 965	g/m ²	350 $\pm$ 100
	Resistance to Dry Delamination	AS/NZS 4201.1	-	No delamination
	Resistance to Wet Delamination	AS/NZS 4201.2	-	No delamination
	Shrinkage	MD CD	AS/NZS 4201.3	% < 0.5 < 0.5
	Duty			Heavy
	Tensile Strength	MD CD	AS/NZS 1301.448s	kN/m > 3.0 > 3.0 > 50
	Edge Tear Resistance	TAPPI T470	N	
	Vapor Barrier classification	ASTM E 96	MNs/g	Medium < 450 > 7
	Emittance	ASTM C 1371	Index	Double Sided Reflective ≤ 0.05
	Surface Water Absorbency	AS/NZS 4201.6	-	Unclassified
	Thermal Resistance	ISO 8301/MS ISO 8302	M ² K/w	2.209

FIRE RETARDANT TEST FOR G 302B & G 302A1

CHARACTERISTIC	TEST METHOD	UNIT (SI)	SPECIFICATION
Fire Propagation of Material Sub-Index, i_1	BS 476 ; Part 6	Index	Pass (<6)
Overall Performance Index			Pass (<12)
Surface Flame Spread Test	BS 476 ; Part 7	Class	Class 1
Fire Resistance Classification	-	Class	Class 0

Sample of Specification

V-Foil Enviro-tuff (G 302B & G 302A1) Fire Retardant Bubble Foil With Aluminium Foil And Metalized Foil Bonded To Bubble Pack With Fiberglass Scrim.

Details in accordance with manufacturer's instructions.





foil™

S402
BUBBLE FOIL



EnViro-tuff®

ECONOMIC · QUALITY · RELIABILITY

EnViro-tuff® the superior foil that is specially designed to meet global standards. It meets your needs for an effective and cost efficient protection from the ravages of harsh weather conditions.

EnViro-tuff® has high reflective properties. Rigorous tests are constantly conducted to ensure its durability & reliability. It is proven for its effectiveness, making it the ideal choice for providing optimum insulations against radiant heat & moisture vapour. Light in weight yet strong and durable.

EnViro-tuff® is designed for easy handling and offers superior quality at the fraction of the overall building cost.



**SAN MIGUEL YAMAMURA
WOVEN PRODUCTS SDN. BHD.**



ISO 9001 : 2015
Certification No: QMS 00197



MS 2095 : 2014
PC002618



BS 476 : PART 6 : 1989 &
BS 476 : PART 7 : 1997
Reg No LS096501

Certified by CIDB



S402

BUBBLE FOIL

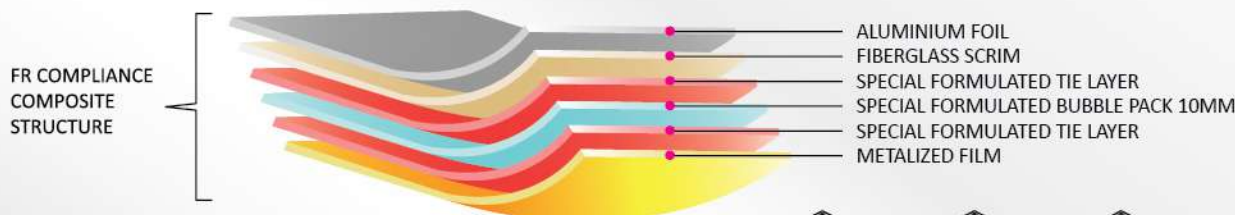
EnViro-tuff®

Vfoil™

CHARACTERISTIC	TEST METHOD	UNIT (SI)	SPECIFICATION	CLASSIFICATION
Grammage	BS EN 965	g/m ²	280 ± 100	-
Tensile Strength	MD CD AS/NZS 1301.448s	kN/m	> 3.0 > 3.0	Heavy
Edge Tear Resistance	TAPPI T470	N	> 50	
Vapour Barrier	ASTM E 96	MN.s/g	< 450 > 7	Medium
Emittance	ASTM C1371	Index	≤ 0.05	Single Sided Reflective
Thermal Resistance	ISO 8301/MS ISO 8302	m ² K/W	1.248	-

S402 (AL/MPET)

FIRE RETARDANT TEST FOR S402		
CHARACTERISTIC	TEST METHOD	SPECIFICATION
Fire Propagation of Material Sub-Index, i_1	BS 476 ; Part 6	<6
Overall Performance Index		<12
Surface Flame Spread Test	BS 476 ; Part 7	Class 1
Classification of Fire Hazard		Class 0



6 layers FR compliance composite structure made up of double sided reflective material (Aluminium & Metalized) bonded to bubble pack by special material.



Premium Quality at Competitive Prices



97% Radiant Heat Reflectivity

EnViro-tuff® radiant barrier dramatically improves energy efficiency of a building by effectively reducing up to 97% of radiant heat.



Moisture Barrier (WVTR)

EnViro-tuff® is a good vapour barrier which is specially designed to prevent any penetration of water and moisture-laden air, guarding against condensation, rot and mildew.



Lightweight

EnViro-tuff® is lightweight and strong, thus it makes installation work much efficient.



UV + Heat Stability

EnViro-tuff® has the ability to maintain its physical size and properties under extreme temperature changes.



Tear & Puncture Resistance

EnViro-tuff® is strong and has high tear resistant feature due to its superior reinforcement.



Fire Retardant

EnViro-tuff® fire rated series tested and complied with international standards such as BS 476 part 6 & 7, ASTM E84 and AS 1530.



No Wire Netting

EnViro-tuff® being strong and durable is design without additional supporting material for installation.



Energy Saving

EnViro-tuff® radiant barrier is designed to provide good insulation to improve energy performance of the building and save energy.



SIRIM Certification

EnViro-tuff® fire rated series are tested and certified to Sirim Products Listing.



San Miguel Yamamura Woven Products Sdn. Bhd. 182297-H

Lots 9 & 10, Jalan Usaha 4, Ayer Keroh Industrial Estate,
75450 Melaka, Malaysia.
Tel : 606-232 3898 (5 lines) Fax : 606-232 1437
www.smywoven.com

Sample of Specification

V-Foil Enviro-tuff (S402) Fire Retardant Bubble Foil With Aluminium Foil And (Aluminium / Metalized) Foil Bonded To High Density Bubble Pack By Special Material.

Details in accordance with manufacturer's instructions.



SOLUTION

For Your Home With SUPERIOR THERMAL PERFORMANCE



Able to comply
UBBL & MS1525



Non-hygroscopic with
excellent vapour
barrier property



Superior thermal
performance and
improved air-tightness

Non carcinogenic
product



Lower installation cost,
able to minimize workforce
and incidental cost



Easier and quicker to install with
prefabricated system, able to
minimize double handling jobs



Excellent acoustic performance



 **foil**™



SIRIM
ISO 9001 : 2015
Certification No: QMS 00197



SIRIM
MS 2095 : 2014
PC002618

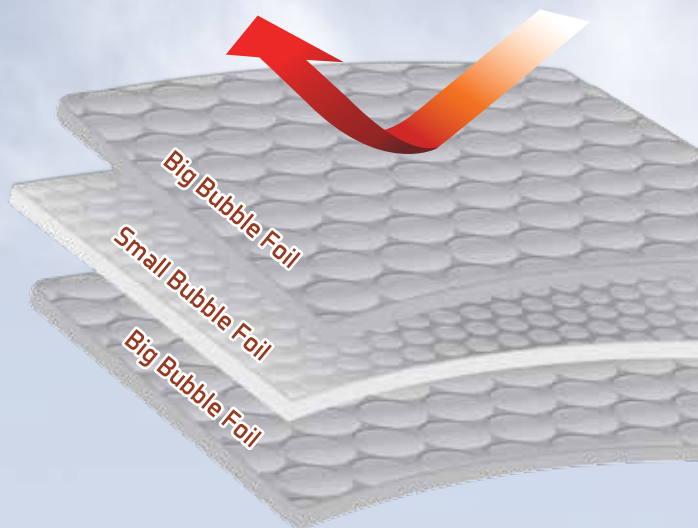
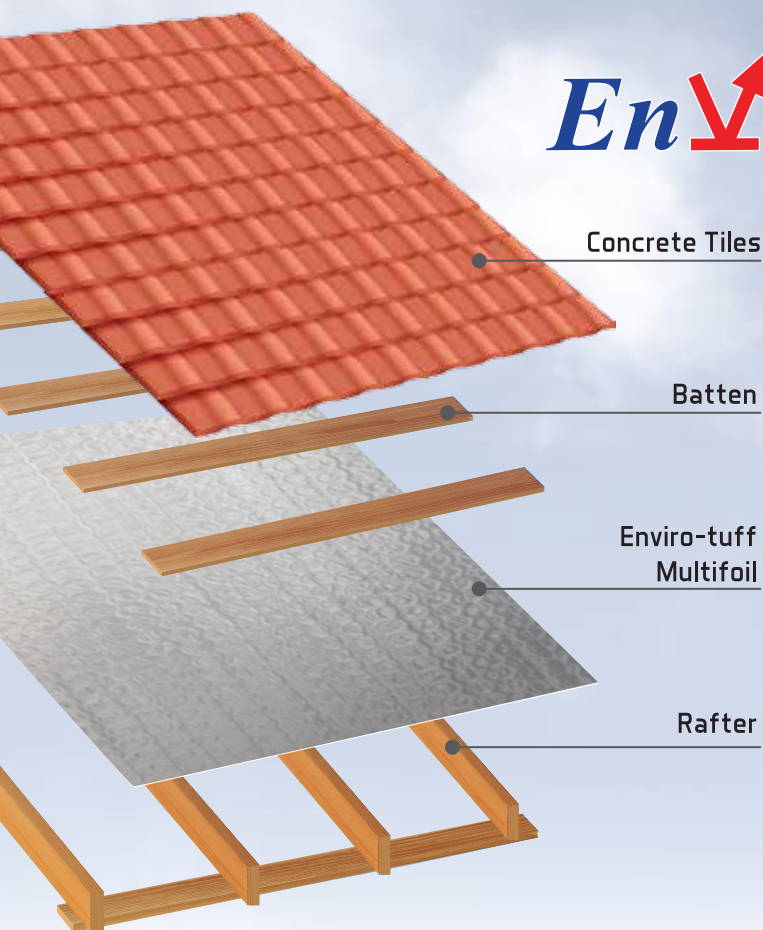


SIRIM
BS 476 : PART 6 : 1989 &
BS 476 : PART 7 : 1997
Reg No LS096501

CIDB PPS REG. NO:
1140425ML0002

EnViro-tuff®

foil™



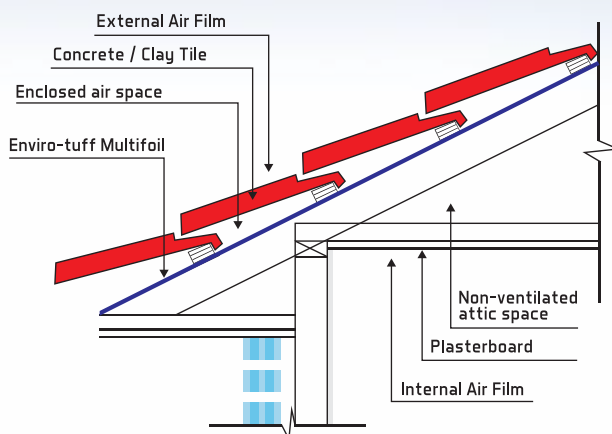
Customised reflective system made up of multi-layer of reflective insulations to meet user required thermal resistance (R-Value)*, pre-fabricated into blanket by a proprietary binding technique for easy handling and installation.

*Can be tailor made into different multifoil structure to suit customer thermal resistance requirement.

EXAMPLE OF R-VALUE CALCULATION

PITCH ROOF 20 'DEGREE	R-VALUE (m ² ·K/W)	REMARKS
External Air Film	0.040	AS/NZS 4859.2:2018 8(a)
12mm roof tiles	0.014	Manufacturer's data
25mm batten + Enclosed Air Space	0.725	Guidebook by RIMM & GBI
Envirotuff Multifoil (G401 / S402 / G401)	0.473	Manufacturer's data
Attic Space (Non Ventilated)	1.090	AS/NZS 4859.2:2018 Table 14
13mm plasterboard	0.048	Manufacturer's data
Internal Air Film	0.160	AS/NZS 4859.2:2018 Table 15
Total R, m ² ·K/W	2.550	
Total U, W/(m ² ·K)	0.392	1/Total R-value

Above calculation is for reference only, please refer to us for your roof system R-value calculation.



PREMIUM QUALITY AT COMPETITIVE PRICES



Fire Retardant

EnViro-tuff fire rated series tested and complied with international standards such as BS 476 part 6 & 7, ASTM E84 and AS 1530.



Tear & Puncture Resistance

EnViro-tuff is strong and has high tear resistant feature due to its superior reinforcement.



Lightweight

EnViro-tuff is lightweight, easy and quicker to install. Able to minimise incidental cost.



Energy Saving

EnViro-tuff radiant barrier is designed to provide good insulation to improve energy performance of the building and save energy.



97% Radiant Heat Reflectivity

EnViro-tuff radiant barrier dramatically improves energy efficiency of a building by effectively reducing up to 97% of radiant heat.



UV + Heat Stability

EnViro-tuff has the ability to maintain its physical size and properties under extreme temperature changes.



R Value > 2.5 m²·K/W

EnViro-tuff Multifoil able to achieve R Value > 2.5 m²·K/W"



Moisture Barrier (WVTR)

EnViro-tuff is a good vapour barrier which specially designed to prevent any penetration of water and moisture-laden air, guarding against condensation, rot and mildew.



Easy Install

EnViro-tuff Multifoil is easy to install.



Excellent acoustic performance

EnViro-tuff Multifoil is excellent in acoustic performance.



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Specification Guideline

Two layers of fire retardant big bubble foils G401 and one layer of fire retardant double-sided small bubble foil S402.

Details in accordance with manufacturer's instructions.

The Company shall not be liable for any defects or damage on the products(s) as well as any damage whatsoever which may be suffered by the purchase /owner arising from normal wear and tear, force majeure, accidents (including in transport), improper installation and/or maintenance, misuse, abuse, modification, alteration, tampering, or neglect by the purchaser/owner or any third party. Any material, fixture or accessory that needs to be installed together with the products shall be for the account of the purchaser/owner.