



WF 402AE
WOVEN FOIL

Extreme
ENVIRONMENT USE

Enhance HEAT INSULATION
PERFORMANCE with both sides high reflective surface

Extra PROTECTION
with LOW-E COATING Technology

ECONOMIC · QUALITY · RELIABILITY

EnViro-tuff[®]

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
PC000947



BS 476 : PART 6 : 1989 &
BS 476 : PART 7 : 1987
Reg No LS096501

Certified by CIDB



WF 402AE

WOVEN FOIL

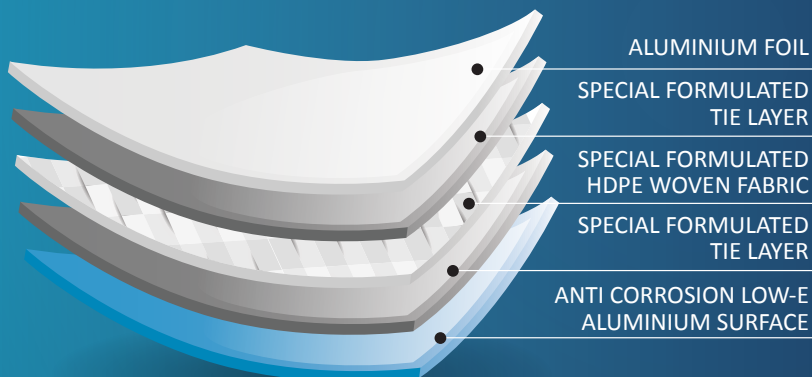
Enviro-tuff®

foil™

CHARACTERISTIC	TEST METHOD	UNIT (SI)	SPECIFICATION
Width	In-house	mm	Nominal ± 5
Length	In-house	m	Nominal (<50) ± 2.0% Nominal (≥50) ± 1.0%
Grammage	BS EN 965	g/m²	130 ± 15
Duty			Medium
Tensile Strength	MD CD AS/NZS 1301.448s	kN/m	> 9.5 > 6.0
Emittance	ASTM C1371	Index	≤ 0.05

WF 402AE (AL/Low E Film)

FIRE RETARDANT TEST WF 402AE			
CHARACTERISTIC	TEST METHOD	UNIT (SI)	SPECIFICATION
Fire Propagation of Material Sub-Index, i_f	BS 476 ; Part 6	Index	Pass (<6)
Overall Performance Index			Pass (<12)
Surface Flame Spread Test	BS 476 ; Part 7	Class	Class 1
Classification of Fire Hazard			Class 0



5 layers laminate made up of a double sided reflective material (Aluminium & Low-E Film) bonded to reinforce high density Polyethylene woven fabric by special material



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.



Impressive Appearance
Enviro-tuff Veno series is design with an improve outlook for a more impressive appearance.



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 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.



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.



No Wire Netting- Able to support 80kg/m3 wool
Enviro-tuff being strong and durable is design without additional supporting material for installation.



Anti Corrosion
Enviro-tuff with anti corrosion protection



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 (WF 402AE) Fire Retardant Woven Foil With Aluminium Foil And (Aluminium / Low E Film) Foil Bonded To High Density Polyethylene Woven Fabric.

Details in accordance with manufacturer's instructions.

CHARACTERISTIC	TEST METHOD	UNIT (SI)	SPECIFICATION	CLASSIFICATION
Grammage	BS EN 965	g/m ²	130 ± 15	-
Tensile Strength	MD CD AS/NZS 1301.448s	kN/m	> 7.5 > 4.5	Light
Edge Tear Resistance	TAPPI T470	N	> 45	
Vapour Barrier	ASTM E 96	µg/N.s	≥ 0.14	Low
Emittance	ASTM C1371	Index	≤ 0.05	Single Sided Reflective
Thermal Resistance	ISO 8301/MS ISO 8302	m ² K/W	1.262	-

WF402 (AL/MPET)

FIRE RETARDANT TEST FOR WF402		
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 O



5 layers FR compliance composite structure made up of double sided reflective material (Aluminium & Metalized) bonded to reinforce high density polyethylene woven fabric 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.

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Sample of Specification

V-Foil Enviro-tuff (WF402) Fire Retardant Woven Foil With Aluminium Foil And (Aluminium / Metalized) Foil Bonded To High Density Polyethylene Woven Fabric.

Details in accordance with manufacturer's instructions.



WF402
WOVEN FOIL

EnViro-tuff®

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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: AR 0385



MS 2095 : 2014
PC000947



BS 476 : PART 6 : 1989 &
BS 476 : PART 7 : 1987
Reg No LS096501



WOVEN FOIL



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

REFLECTIONS OF QUALITY AND RELIABILITY



Housing Project



Warehouse Project



Poultry House Project



Factory Project



Hotel Resort Project

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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.

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.



Lightweight

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



SIRIM Certification

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

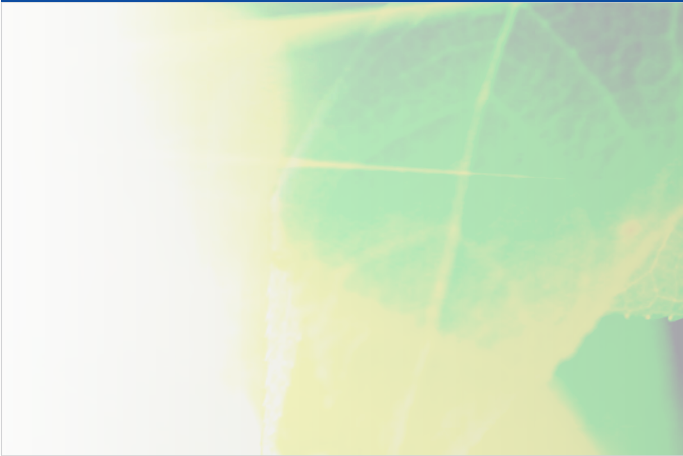


Fire Retardant

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



WF 302A (AL/AL)



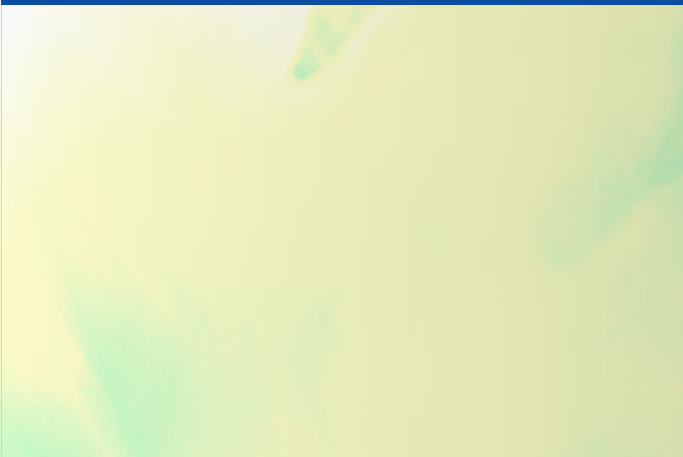
WF 302A (AL/AL)



5 layers laminate made up of a double sided reflective Aluminium Foil bonded to reinforce high density polyethylene woven fabric by special fire retardant material.

Laminated Roll Specifications	CHARACTERISTIC		TEST METHOD	UNIT (SI)	SPECIFICATION	CLASSIFICATION
	Grammage		BS EN 965	g/m ²	163 ± 10	-
	Tensile Strength	MD CD	AS/NZS 1301.448s	kN/m	≥ 9.5 ≥ 6.0	Medium
	Edge Tear Resistance		TAPPI T470	N	≥ 65.0	
	Vapor Barrier		ASTM E96	µg/N.s	> 0.002 < 0.14	Medium
	Emittance		ASTM C1371	Index	≤ 0.05	Reflective
	Thermal Resistance		ISO 8301 / MS ISO 8302	m2K/w	≥ 1.7	-

WF 302B (AL/MPET)



WF 302B (AL/MPET)



5 layers laminate made up of a double sided reflective material (Aluminium & Metalized) bonded to reinforce high density polyethylene woven fabric by special fire retardant material.

Laminated Roll Specifications	CHARACTERISTIC		TEST METHOD	UNIT (SI)	SPECIFICATION	CLASSIFICATION
	Grammage		BS EN 965	g/m ²	155 ± 10	-
	Tensile Strength	MD CD	AS/NZS 1301.448s	kN/m	≥ 9.5 ≥ 6.0	Medium
	Edge Tear Resistance		TAPPI T470	N	≥ 65.0	
	Vapor Barrier		ASTM E96	µg/N.s	> 0.002 < 0.14	Medium
	Emittance		ASTM C1371	Index	≤ 0.05	Reflective
	Thermal Resistance		ISO 8301 / MS ISO 8302	m2K/w	≥ 1.0	-

WF 301 (AL)



WF 301 (AL)



3 layers laminate made up of a single sided reflective Aluminium foil bonded to reinforce high density polyethylene woven fabric by special fire retardant material.

Laminated Roll Specifications	CHARACTERISTIC		TEST METHOD	UNIT (SI)	SPECIFICATION	CLASSIFICATION
	Grammage		BS EN 965	g/m ²	118 ± 10	-
	Tensile Strength	MD CD	AS/NZS 1301.448s	kN/m	≥ 7.5 ≥ 4.5	Light
	Edge Tear Resistance		TAPPI T470	N	≥ 45	
	Vapor Barrier		ASTM E96	µg/N.s	> 0.002 < 0.14	Medium
	Emittance		ASTM C1371	Index	≤ 0.05	Reflective
	Thermal Resistance		ISO 8301 / MS ISO 8302	m2K/w	≥ 1.1	-

FIRE RETARDANT TEST FOR WF 301, WF 302A & WF 302B

CHARACTERISTIC	TEST METHOD	SPECIFICATION
Fire Propagation of Material		
Sub-Index, <i>i_f</i>	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

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Sample of Specification

V-Foil Enviro-tuff (WF301, WF302A & WF302B)
Fire Retardant Woven Foil With Aluminium Foil And
(Aluminium / Metalized) Foil Bonded To High Density
Polyethylene Woven Fabric.

Details in accordance with manufacturer's instructions.