

22-L-0237/1

12 December 2022

Test report

Allshield Blue 2C coating + Unifilo® 500 serie, type U500 reinforcement /
Eco Prim Grip primer + additive of magnesium hydroxide and sand fraction /
Varyflex 370K24 / Eurofast DVP-EF-8040N + EDS-S-48180 /
Unidek Platinum Kameleon / trapezoidal steel deck



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expertise in façades and roofs

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Email

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Date of order

18 May 2022

Project number

22-L-0237/1

Author

A.R. Hameete

Subject

resistance to dynamic wind load

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1 Introduction

By order of Allshield Coating B.V., Kiwa BDA Testing B.V. has determined the resistance to dynamic wind load of the following buildup:

- substructure of a **trapezoidal steel deck VD 106R/750**;
- mechanically fastened insulation, **Unidek Platinum Kameleon** in combination with a **Eurofast® EDS 48160 + DVP-EF7005N5** fastening system;
- mechanically fastened two-layer roof waterproofing system with a top layer of **Allshield Blue 2C coating + Unifilo® 500 serie, type U500 reinforcement** and a mechanically fastened underlayer of **Varyflex 370K24** roof waterproofing sheet treated with an **Eco Prim Grip primer + additive of magnesium hydroxide and sand fraction**, in combination with a **Eurofast DVP-EF-8040N + EDS-S-48180** fastening system.

The suppliers and the delivery dates of the products used are mentioned below.

Table 1 – Specifications of the products used

Product	Supplier		Delivery date
	company	person	
Substructure	Kiwa BDA Testing B.V.	-	14-06-2022
Thermal insulation	Kingspan Unidek B.V.	-	13-06-2022
Fastening system (thermal insulation)	Kiwa BDA Testing B.V.	-	14-06-2022
Fastening system (roof waterproofing sheet)	Dakbedekkingsbedrijf Elro	Y. van Dijk	30-08-2022
Roof waterproofing sheet (underlayer)	Allshield® Coating B.V.	G.D. Souter	22-08-2022
Primer	Allshield® Coating B.V.	G.D. Souter	30-08-2022
Coating (top layer)	Allshield® Coating B.V.	G.D. Souter	31-08-2022

See annex V for photos of the products and further package data.

2 Investigation

The investigation into the resistance to dynamical wind forces has been performed on one test specimen according to EN 16002:2018 – Flexible sheets for waterproofing – Determination of the resistance to wind load of mechanically fastened flexible sheets for roof waterproofing.

The testing equipment used to determine the resistance to wind load has been a BDA Wind Uplift Tester.

The last calibration date of the equipment has been 11 March 2019.

The pitch of the test specimen during testing has been set at 0° (horizontally).

In contravention to the prescription in EN 16002 the insulation used consisted of Unidek Platinum Kameleon Insulation boards with the following specifications:

- a. thickness of 100 mm with a thickness tolerance of T2;
- b. compressibility level CS(10) 80;

instead of mineral wool insulation boards with the specifications:

- a. thickness of 100 mm with a thickness tolerance of T2;
- b. compressibility level between CS(10)50 and CS(10)70;
- c. point load level between PL(5)500 and PL(5)700.

Therefore the result of the determination of the resistance to wind load is only valid for the insulation / system as mentioned in chapter 3 of this report.

The test result of the wind uplift test has been interpreted according to the European Assessment Document EAD 030351-00-0402:2019 – Systems of mechanically fastened flexible roof waterproofing sheets¹, and according to the Dutch national standard NEN 6707:2011 – Bevestiging van dakbedekkingen – Eisen en bepalingsmethoden².

The apparent mass and thickness of the reinforcement, have indicatively been determined by Kiwa BDA Testing B.V.

During and after the test the Allshield Blue 2C coating has been visually (naked eye) inspected on cracks in the surface.

After the test specimen has been removed from the test equipment, the thickness of the coating has been measured at six random chosen positions of the test specimen.

The investigation has been performed in the period of week 24 up to and including week 39, 2022.

See annex III for the test schedule.

¹ EAD 030351-00-0402:2019 supersedes ETAG 006:2000/Amended:2012 – Guideline for the European Technical Approval of systems of mechanically fastened flexible roof waterproofing membranes.

² Fixing of roof coverings – Requirements and determination methods.

3 Construction of the test specimen

The construction data for the test specimen are mentioned in the table below.
The various layers are mentioned from the bottom up.
The specifications of the used products are mentioned underneath the table.

Table 2 – Construction data

Layer	Construction		Date
	company	person	
Substructure	Kiwa BDA Testing B.V.	A.R. Hameete	14-06-2022
Thermal insulation	Kiwa BDA Testing B.V.	A.R. Hameete	14-06-2022
Fastening system (thermal insulation)	Kiwa BDA Testing B.V.	A.R. Hameete	14-06-2022
Fastening system (roof waterproofing sheet)	Dakbedekkingsbedrijf Elro	Y. van Dijk	30-08-2022
Roof waterproofing sheet (underlayer)	Dakbedekkingsbedrijf Elro	Y. van Dijk	30-08-2022
Primer	Allshield® Coating B.V.	G.D. Souter	30-08-2022
Coating (top layer)	Allshield® Coating B.V.	G.D. Souter	31-08-2022
		K.D.K. Leendertse	
		M. Buizer	
		R. Gilhuis	

The construction of the test specimen has been supervised by Mr A.R. Hameete of Kiwa BDA Testing B.V.

The specimen has the effective test dimensions of 5000 mm × 2800 mm and has been built up according to the prescription of the principal from the bottom up.

Substructure

- Trapezoidal steel deck, VD 106R/750, mass 9,81 kg.m⁻², steel quality S320GD; measured overall thickness: 0,75 mm.

Thermal insulation

- Unidek Platinum Kameleon, production code: 22050070, insulation boards made of EPS, dimensions: 1200 mm × 1000 mm, thickness: 150 mm, mechanically fastened with one fastener per board.

Fastening system insulation boards

- Roofing screw: Eurofast® EDS-S-48160, production code: 0838-047-160.
- Metal washer: Eurofast® DVP-EF7005N5, production code: 944867.

Roof waterproofing sheet (underlayer)

- Varyflex 370K24, a polyester/glass reinforced SBS roof waterproofing sheet, thickness: 4 mm, width of the sheet: 1000 mm, production code: 11/03/2022 12:16.
- The spacing between the individual fasteners has been set at 0,25 m.
- The spacing between the rows of fasteners has been set at 0,90 m.
- The joint has been welded with by torching.
- The nominal width of the overlap is 100 mm.

Fastening system roof waterproofing sheet

- Roofing screw: Eurofast® EDS-B-48180, production code: K53129.
- Metal washer: Eurofast® DVP-EF-8040N, production code: 559148.

Primer

- Eco Prim Grip primer, production code: 2CI945183 with an additive of 20% (*m/m*) of magnesium hydroxide and 40% (*m/m*) of sand fraction.
- The primer has been applied with a paint roller.

Coating (top layer)

- Allshield Blue 2C coating, production code: 22-08-2022 + Unifilo® 500 serie, type U500 reinforcement.
- The coating has been applied with a paint roller.

The apparent mass and thickness of the reinforcement, have indicatively been determined by Kiwa BDA Testing B.V.

The fixation at the perimeter has been realized using wooden planks, with dimensions of 120 mm × 18 mm, whereby the roof waterproofing sheet has been welded around the planks (see annex IV). The mutual spacing between the fasteners at the perimeter fixation has been set at 0,25 m.

According to the prescription of the principal after the buildup and before testing the test specimen needs been stored in the laboratory for a period of at least fourteen days. The effective storing period in the laboratory after the buildup and before the start of the test has been 28 days.

A photo report of the construction of the test specimen has been given in annex I.

4 Results

4.1 Resistance to dynamical wind forces

At the first 90% step of the cycle of $\Delta W_{\max 100\%} = 800$ N (theoretical load) per fastener the test specimen has failed by tearing of the roof waterproofing sheet at the position of the fastening system.

The coating did not show any visual cracks (naked eye) during and or after the test.

See also the photos in annex II.

According to EN 16002:2018 and NEN 6707:2011 the test result is the peak load of the cycle preceding the cycle of failure.

Therefore the test result is 700 N (theoretical load) per fastener.

According to EAD 030351-00-0402:2019 the admissible (design) load for the wind uplift resistance is 467 N per fastener (see paragraph 5.1: Design load according to EAD 030351-00-0402).

According to NEN 6707:2011 the admissible (design) load for the wind uplift resistance is 467 N per fastener (see paragraph 5.2: Design load according to NEN 6707).

4.2 Thickness measurements coating

Table 3 – Thickness

Measurement	Thickness [mm]
1	2,34
2	2,79
3	3,07
4	3,74
5	2,21
6	2,72
Mean	2,8

4.3 Thickness and mass measurements reinforcement

Table 3 – Thickness

Measurement	Thickness [mm]	Mass [g.m ⁻²]
1	0,56	234
2	0,59	205
3	0,53	-
4	0,62	-
Mean	0,6	220

5 Determination admissible (design) load

5.1 Design load according to EAD 030351-00-0402

The test result of the wind uplift test has been interpreted according to the European directive European Assessment Document EAD 030351-00-0402:2019 – Systems of mechanically fastened flexible roof waterproofing sheets.

The admissible (design) load for the wind uplift resistance has been specified in the next formula:

$$W_{adm} = \frac{W_{test} \cdot C_a \cdot C_d}{\gamma_m}$$

Wherein:

- W_{adm} = admissible (design) load for the wind uplift resistance [N per fastener];
- W_{test} = test result [N per fastener];
- C_a = geometric correction factor;
- C_d = statistical correction factor;
- γ_m = material/safety factor.

The result and the correction/safety factors are given below.

The result is only valid for the insulation as mentioned in chapter 3 of this report.

Table 3 – Result and the correction/safety factors

System	W_{test}	C_a	C_d	γ_m	W_{adm}
See paragraph 3 for the buildup of the test specimen	700	1,00	1,00	1,50	467

5.2 Design load according to NEN 6707

The test result of the wind uplift test has been interpreted according to NEN 6707:2011 – Bevestiging van dakbedekkingen – Eisen en bepalingmethoden¹.

The admissible (design) load for the wind uplift resistance (X_d) has been specified in the next formula:

$$X_d = \frac{X_k \times K_{mod}}{\gamma_M} \quad X_k = W_{test} \times C_a \times C_d \quad \gamma_M = \gamma_m \times \gamma_{Rd}$$

Wherein:

- X_d = admissible (design) load for the wind uplift resistance [N per fastener];
- X_k = the characteristic value for the strength per m² of roof surface against blow off [N per fastener];
- K_{mod} = modification factor;
- γ_m = the partial factor for material property;
- γ_{Rd} = the partial factor associated with the uncertainty of the resistance model;
- γ_M = the partial factor for material property, also accounting for model uncertainties and dimensional variations.
- W_{test} = test result [N per fastener];
- C_a = geometric correction factor;
- C_d = statistical correction factor.

The result and the correction/safety factors are given below.

The result is only valid for the insulation as mentioned in chapter 3 of this report.

Table 4 – Result and the correction/safety factors

System	W_{test}	C_a	C_d	X_k	K_{mod}	γ_m	γ_{Rd}	X_d
See paragraph 3 for the buildup of the test specimen	700	1,00	1,00	700	1,00	1,50	1,00	467

Remarks:

The results are only related to the investigated samples, products and/or systems. Kiwa BDA Testing B.V. is not liable for interpretations or conclusions that are made in consequence of the results obtained.

The uncertainty of measurement can be retrieved at Kiwa BDA Testing B.V.

If sampling was not performed by Kiwa BDA Testing B.V., no judgement can be given with regard to the origin and representativeness of the samples.

Gorinchem, 12 December 2022

The laboratory



A.R. Hameete
operational manager

Kiwa BDA Testing B.V.



N.W.J. Haanappel BSc
manager testing

¹ Fixing of roof coverings – Requirements and determination methods.

I Photo report of the construction

Photo 1

The trapezoidal steel deck has been fixed on wooden beams.



Photo 2

The insulation has been fixed on the trapezoidal steel deck.

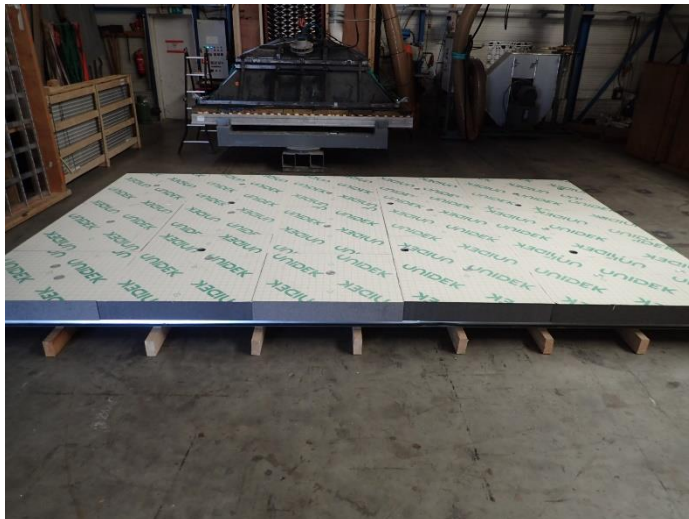


Photo 3

Holes are drilled through the insulation.

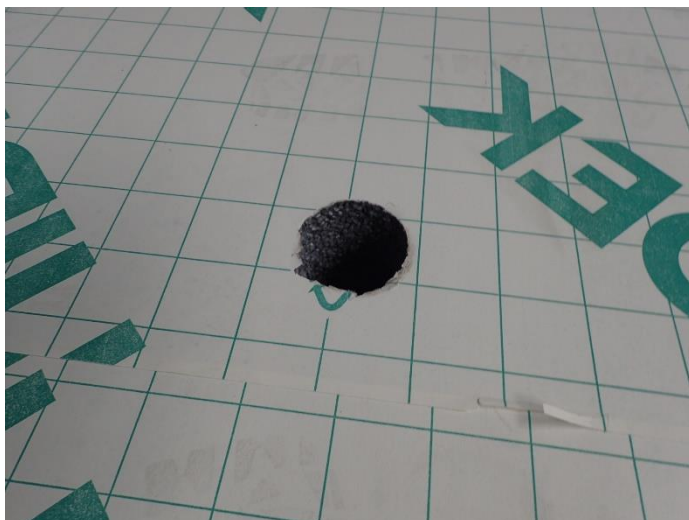


Photo 4
The roof waterproofing sheet is fastened.



Photo 5
The fastening system has been placed.



Photo 6
The distance from the edge of the fastening system to the edge of the roof waterproofing sheet.



Photo 7
The joint is welded.



Photo 8
The primer is applied.



Photo 9
The reinforcement is applied.



Photo 10
The coating is applied.



Photo 11
The test specimen is ready for testing.



II Photo report failure mode

Photo 1
Failure mode.



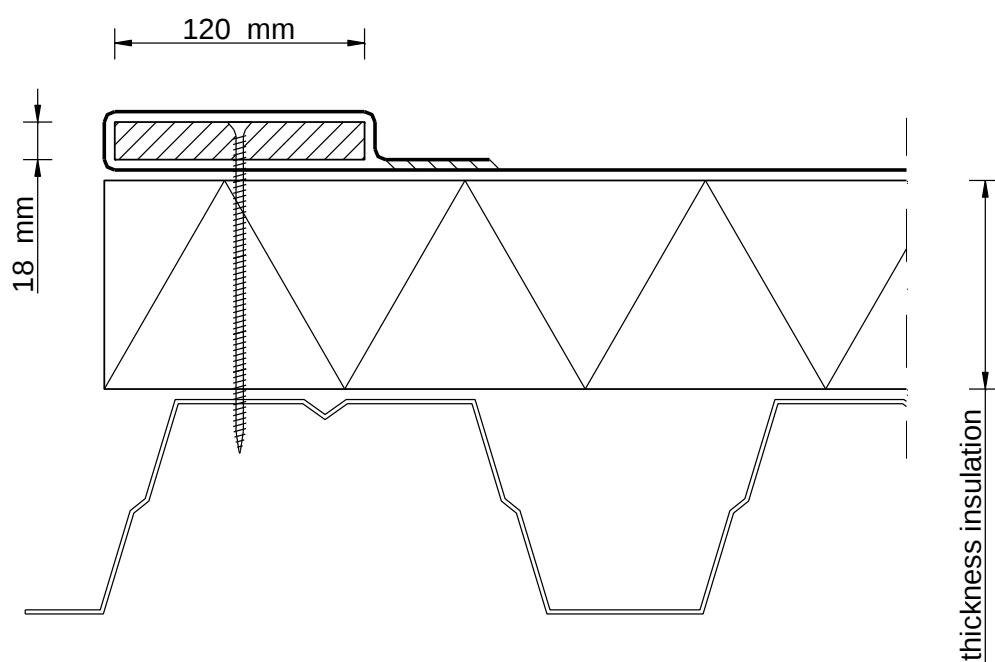
Photo 2
Detail of the failure mode.



III Test schedule

WIND TEST		Order number: 22-L-0237								
Start of test: 28/09/2022		Setting outlet		150						
End of test: 30/09/2022		cap [m x m]: 3,00 x 2,80		50						
Operator(s): A.R. Hameete / W.J.B. Middag / J.C. Delgado / R.J. de Jongh		5,00 x 2,80		150						
System: single layer mechanically fixed roof waterproofing sheet										
Dimensions test area				a/b = 3,60 m/b = 11,20						
longer side 5,00 m x shorter side (m) 2,80 m										
Distance between rows (a): 0,90 m Distance between fasteners (b): 0,25 m Number of fasteners per m²: 4,44 Number of spaces between the rows (α) 3 Number of spaces between the fasteners (β) 9				α β Cα						
				2 ≤ 3 --						
				4 0,85						
				≥ 5 0,90						
				3 ≤ 2 --						
				3 0,90						
				4 0,95						
				≥ 5 1,00						
				> 3 ≤ 2 --						
				> 3 1,00						
percentage peak pressure										
40 60 80 90 100 90 80 60 40										
number of gusts										
500 200 5 2 1 2 5 200 500										
temperature	peak force	suction pressure								
[°C]	[N/Fastener]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	
19,1	300	0,53	0,80	1,07	1,20	1,33	1,20	1,07	0,80	0,53
19,4	300	0,53	0,80	1,07	1,20	1,33	1,20	1,07	0,80	0,53
19,2	300	0,53	0,80	1,07	1,20	1,33	1,20	1,07	0,80	0,53
20,0	300	0,53	0,80	1,07	1,20	1,33	1,20	1,07	0,80	0,53
19,6	400	0,71	1,07	1,42	1,60	1,78	1,60	1,42	1,07	0,71
19,3	500	0,89	1,33	1,78	2,00	2,22	2,00	1,78	1,33	0,89
19,4	600	1,07	1,60	2,13	2,40	2,67	2,40	2,13	1,60	1,07
21,6	700	1,24	1,87	2,49	2,80	3,11	2,80	2,49	1,87	1,24
19,7	800	1,42	2,13	2,84	3,20	3,56	3,20	2,84	2,13	1,42
	900	1,60	2,40	3,20	3,60	4,00	3,60	3,20	2,40	1,60
	1000	1,78	2,67	3,56	4,00	4,44	4,00	3,56	2,67	1,78
	1100	1,96	2,93	3,91	4,40	4,89	4,40	3,91	2,93	1,96
	1200	2,13	3,20	4,27	4,80	5,33	4,80	4,27	3,20	2,13
	1300	2,31	3,47	4,62	5,20	5,78	5,20	4,62	3,47	2,31
	1400	2,49	3,73	4,98	5,60	6,22	5,60	4,98	3,73	2,49
	1500	2,67	4,00	5,33	6,00	6,67	6,00	5,33	4,00	2,67
	1600	2,84	4,27	5,69	6,40	7,11	6,40	5,69	4,27	2,84
	1700	3,02	4,53	6,04	6,80	7,56	6,80	6,04	4,53	3,02
	1800	3,20	4,80	6,40	7,20	8,00	7,20	6,40	4,80	3,20
	1900	3,38	5,07	6,76	7,60	8,44	7,60	6,76	5,07	3,38
	2000	3,56	5,33	7,11	8,00	8,89	8,00	7,11	5,33	3,56
	2100	3,73	5,60	7,47	8,40	9,33	8,40	7,47	5,60	3,73
	2200	3,91	5,87	7,82	8,80	9,78	8,80	7,82	5,87	3,91
	2300	4,09	6,13	8,18	9,20	10,22	9,20	8,18	6,13	4,09
	2400	4,27	6,40	8,53	9,60	10,67	9,60	8,53	6,40	4,27
	2500	4,44	6,67	8,89	10,00	11,11	10,00	8,89	6,67	4,44
	2600	4,62	6,93	9,24	10,40	11,56	10,40	9,24	6,93	4,62
	2700	4,80	7,20	9,60	10,80	12,00	10,80	9,60	7,20	4,80

IV Fixation



V Photos of the products and further package data

Coating



MATERIAL SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: **Allshield Blue**
Product description: Ceramic coating
Product type: Dispersions, two component

1.2 Relevant identified uses of the substance or mixture and uses advised against

<u>Identified uses</u>	
Industrial uses: Uses of substances as such or in preparations* at industrial sites	
Consumer uses: Private households (= general public = consumers)	
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
<u>Uses advised against</u>	<u>Reason</u>
None identified.	-

1.3 Details of the supplier of the safety data sheet E-mail

AllShield BV
Westvlietweg 68T
2495AA
The Hague
The Netherlands
Phone: +31 85 489 9950
Mobile: +31 65 374 2830

E-mail address of person responsible for this MSDS: kl@allshieldcoatings.com; rd@allshieldcoatings.com

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315

Eye Irrit. 2, H319

STOT SE 3, H335

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R36/37/38

Human health hazards: Irritating to eyes, respiratory system and skin.

See Section 16 for the full text of the R phrases of H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements



Hazard pictograms :

Signal word:

Hazard statements:

No signal word.

Causes serious eye irritation.

May cause skin irritation.

May cause respiratory irritation.

Precautionary statements:

General:

Keep out of reach of children. Read label before use. If medical advice is needed, have product container or label at hand.

Prevention:

Use only outdoors or in a well-ventilated area.

Response:

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical attention.

Storage:

Store locked up.

Disposal:

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements:

Not applicable

Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Special packaging requirements:

Containers to be fitted with

child-resistant fastenings:

Not applicable

Tactile warning of danger:

Not applicable

2.3 Other hazards:

Other hazards which do not
result in classification:

Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

SECTION 3: Composition/information on ingredients

Substance / mixture

Product/ingredient name	Identifiers	%	Classification: 67/548/EEC	Classification: Regulation(EC) No.1272/2008[CLP]	Type
Magnesium oxide	EC:215-171-9 CAS: 1309-48-4	< 25	Xi; R36/37/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General:	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
Eye contact:	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Inhalation:	Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiratory or oxygen by trained personnel.
Skin contact:	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion:	If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. See Section 2 and 3 for details.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.
If splashed in the eyes, the liquid may cause irritation and reversible damage.
Ingestion may cause nausea, diarrhea and vomiting.
This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Recommended: alcohol-resistant foam, CO₂, powders, water spray.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

Special protective actions for fire-fighters: Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters: Appropriate breathing apparatus may be required.

Additional information: No unusual hazard if involved in a fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional on hygiene measures.

6.2 Environmental precautions: Do not allow to enter drains or watercourses. If the products contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up: Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13) Preferably clean with a detergent. Avoid using solvents.

6.4 Reference to other sections: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, sparks and flame. No sparking tools should be used. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or watercourses.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations.

Notes on joint storage.

Keep away from: oxidizing agents, strong alkalis , strong acids.

Additional information on storage conditions

Observe label precautions. Store in dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep away from sources of ignition. No smoking. Prevent unauthorized access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s) Recommendations: Industrial sector specific solutions:

Not available.

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Magnesium oxide	EH40/2005 WELs(United kingdom (UK), 12/2011). TWA: 10 mg/m ³ , (as Mg) 8 hours. From: inhalable dust TWA: 4 mg/m ³ , (as Mg) 8 hours. From: respirable dust and fume

Recommended monitoring Procedures:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs:

No DNELs/DMELs available

PNECs:

No PNECs available

8.2 Exposure controls

Appropriate engineering controls:

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn.

Individual safety measures

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection:

Safety glasses with side shields. (EN166)

Skin protection

Hand protection:

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the products.
The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.
Gloves should be replaced regularly and if there is any sign of damage to the glove material.
Always ensure that gloves are free from defects and that they are stored and used correctly.
The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.
Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves :	For prolonged or repeated handling, use the following type of gloves: Recommended: >8 hours (breakthrough time): nitrile rubber The recommendation for the type or types of glove to use when handling this product is based on information from the following source: EN 374-3 : 2003 The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
Body protection:	Wear overalls or long sleeved shirt. (EN467)
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection:	If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: disposable particulate mask (P2) (EN 143)
Environmental exposure controls:	Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance

Physical state:	Solid. [Crystalline powder]
Colour:	White
Odour:	Not available.
PH:	Not available.
Melting point/freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash point:	Not applicable
Evaporation rate:	Not available.
Flammability (solid, gas):	Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.
Burning time:	Not available.
Burning rate:	Not available.
Upper/lower flammability or explosive limits:	Not available.
Vapour pressure:	Not available.
Vapour density :	Not available.
Relative density :	1.5 to 1.7
Solubility(ies) :	Very slightly soluble in the following materials: cold water and hot water.
Solubility in water:	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Explosive properties:	Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and mechanical impacts.
Oxidising properties:	Not available.
No additional information.	

SECTION 10: Stability and reactivity

10.1 Reactivity:	No specific test data related to reactivity available for this product or its ingredients
10.2 Chemical stability:	Stable under recommended storage and handling conditions (see Section 7)
10.3 Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid:	When exposed to high temperatures may produce hazardous decomposition products.
10.5 Incompatible materials:	Keep away from following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
10.6 Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire, toxic gases including CO, CO ₂ and smoke can be generated.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

There are no data available on the mixture itself. See Section 2 and 3 for details.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.
If splashed in the eyes, the liquid may cause irritation and reversible damage.
Ingestion may cause nausea, diarrhea and vomiting.
This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Acute toxicity

Conclusion/Summary:

Based on available data, the classification criteria are not met.

Acute toxicity estimates:

Not available.

Irritation/Corrosion:

Conclusion/Summary

Skin:

Causes skin irritation.

Eyes:

Causes serious eye irritation.

Respiratory:

May cause respiratory irritation.

Sensitisation:

Conclusion/Summary

Skin:

Based on available data, the classification criteria are not met.

Respiratory:

Based on available data, the classification criteria are not met.

Mutagenicity:

Conclusion/Summary:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Conclusion/Summary:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Conclusion/Summary:

Based on available data, the classification criteria are not met.

Teratogenicity:

Conclusion/Summary:

Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure):

Not available.

Specific target organ toxicity (repeated exposure):

Not available.

Aspiration hazard:

Not available.

Other information:

Not available.

SECTION 12: Ecological information

12.1 Toxicity:	There are no data available on the mixture itself. Do not allow to enter drains or watercourses.
Conclusion/Summary:	Based on available data, the classification criteria are not met.
12.2 Persistence and degradability	
Conclusion/Summary:	This products has not been tested for biodegradation. Based on available data, the classification criteria are not met.
12.3 Bioaccumulative potential:	Not available.
12.4 Mobility in soil:	
Soil/water partition coefficient (Koc):	Not available.
Mobility :	Non – volatile.
12.5 Results of PBTand vPvB assessment	
PBT	Not applicable.
vPvB	Not applicable.
12.6 Other adverse effects:	No known significant effects or critictal hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Disposal considerations: Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

European waste catalogue (EWC):

The European Waste Catalogue classification of this product, when disposed of as waste is:

Waste code	Waste note
10 13 14	Waste concrete and concrete sludge

Packaging:

Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal consideration: Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Not emptied containers are hazardous waste.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.
Additional information	-	-	-

14.6 Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

CN code: 3214 90 00
EU regulation (EC) no. 1907/2006 (REACH)

Annex XIV – List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII – Restrictions

on the manufacture,
placing on the market and
use of certain dangerous
substances, mixtures and
articles:

Not applicable.

Other EU regulations

VOC for Ready-for-Use:
Mixture

Not applicable.

Europe inventory:

All components are listed or exempted.

National regulations

15.2 Chemical Safety Assessment:

This product contains substances for which Chemical Safety Assessments
are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008[CLP/GHS]

Classification	Justification
Skin Irrit.2, H315	Calculation method.
Eye Irrit.2, H319	Calculation method.
STOT SE 3, H335	Calculation method.

Full text of abbreviated H Statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Full text of classifications [CLP/GHS]:

Eye irrit.2, H319 SERIOUS EYE DAMAGE/EYE IRRITATION-Category2
Skin Irrit.2, H315 SKIN CORROSION/IRRITATION-Category2
STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation]-Category3

Full text of abbreviated R Phrases:

R36/37/38-Irritating to eyes, respiratory system and skin.

Full text of classifications [DSD/DPD]:

Xi- Irritant

Date of printing:

06/02/2019

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.





Reinforcement




UNIFILO® 500 SERIES

BRING TAILORED SOLUTIONS TO PULTRUSION

Unifilo® 500 Series continuous filament mat represent a large choice of tailored reinforcement solutions for efficient manufacture of high performance profiles by pultrusion process.

- Produced with patented Advantex® corrosion resistant E-CR glass by Owens Corning
- Made of continuous filaments randomly-oriented and bonded together with a thermoset binder.

Product Benefits

mat weight 6/cm²

225 - 300 - 450 -

600 - 900.

Customized for multiple needs

- Unifilo® 500 Series mats are available with varying levels of binder to match up with specific customer applications.

White ← → Yellow

U527 U528X1 U528 U529

More Conformable ← → Stiffer

Freedom of design and white color

- U527 product easily adapts to complex die shapes and preserves part white color.
- U528X1 product offers a great balance between softness, white color and good tensile strength requirements.

Productivity and high performance

- U528 product is easy to splice and enables excellent processability. It provides very good mechanical and di-electrical properties to molded parts.
- U529 product higher tensile strength fits the requirement for most challenging profiles and fast pultrusion process speed.

Corrosion resistance

- Excellent corrosion resistance with Advantex® Glass compared to standard E-glass: providing longer service life in applications facing corrosion.

Application

UNIFILO® 500 Series mats are compatible with unsaturated polyester, vinyl ester, acrylic and epoxy resins and designed for the reinforcement of pultruded shapes including gratings, ladder rails, frames, insulators. They are also proven to be well suited for compression molding of di-electrical laminates.



Product Data Sheet | U500 | December 2018

Availability

Unifilo® 500 Series mats are available in Europe and Asia-Pacific. U529 is available in North America. All products are made to order. Additional widths are available upon request by your Owens Corning contact.

NOMINAL MAT WEIGHT (G/M ²)	MAT WEIGHT (OZ./SQ.FT.)	ROLL WIDTH (CM)	ROLL WIDTH (IN)
225 - 300 - 450 - 600 - 900	0.75 - 1.0 - 1.5 - 2.0 - 3.0	127 - 138	50 - 54.3

Packaging (Standard Reference)

Each roll is wound on a 103mm internal diameter cardboard tube and wrapped with a transparent stretch film. Upon customer request:

- Paper tube holds printed information allowing 100% traceability once roll is slit
- Rolls can be slit into 3-40cm stripes

NOMINAL MAT WIDTH (CM)	ROLL DIAMETER	ROLLS PER PALLET	PALLET SIZE (CM)
3 to 40	55	≥12 (to box capacity)	4 boxes on 114 x 114 pallet
40 to 70	55	12	114 x 114
70 to 105	55	6	114 x 114
105 to 210	55	4	114 x 114
>210	55	2 - 8	Wooden Crate

Labeling

Each roll bears a label detailing the product description, product code, real weight, roll width, roll number and date of manufacture; in case of stripes, only one label per cardboard box will be provided.

Storage

Unless otherwise specified, it is recommended to store glass fiber products in a cool, dry area. Ideal conditions are at a temperature between 10°C and 35°C and a relative humidity between 35% and 85%. The glass fiber products must remain in their original packaging material until the point of usage. If the storage temperature is below 15°C, it is recommended that the product be stored in the workshop, within its original packaging, at least 24 hours prior to use to help prevent condensation. The packaging is not waterproof. Be sure to protect the product from the weather and other sources of water. When stored properly, there is no known shelf life to the product, but retesting is advised after three years from the initial production date to insure optimum performance.



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SAFE USE INSTRUCTION SHEET

Creation Date 29-May-2015

Revision Date 09-Jun-2020

Version 4

0. General Information

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate recommended safe handling and use instruction for articles not regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Continuous Filament Glass Fiber Products: Chopped Strands Mat, Continuous Filament Mat		
Synonyms	Chopped Strand Mat, Unifilo®, Uniconform®, Multiconform®, CM1091, CM1099, CM1100, CM1141, CM-200, CM-220, CM730 X1, CM730 X6, M113, M123, M125, M143, M413, M5, M6, M6 X1, M705, M710A, M710B, M711, M715, M715 X1, M720, M723, M723A, M723A X4, M723A X6, M723A X8, M730, M730 X6, M8643, M8643 X7, T750, T754, U101, U527, U528, U529, U720, U740, U746, U750, U754, U756, U614, U801, U809, U812, U813, U814, U816, U817, U822, U850, U852, U854, U862, UM1A, UM2A, UM2B, UM5B		
Document code	OCCM10002		
Recommended Use	Industrial use, reinforcement of plastic		
Supplier Address	Owens Corning Composite Materials, LLC One Owens Corning Parkway Toledo, Ohio 43659	Manufacturer Address	Owens Corning Composite Materials, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	+ 33 479 75 53 00 (8:00am-5:00pm Central European Time)		
E-mail address	productcompliance@owenscorning.com		
Company Website	http://www.owenscorning.com/		

2. HAZARDS IDENTIFICATION

Regulatory Status	This product is not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200. Continuous Filament Glass Fiber (CFGF) Products are Articles Articles which meet the definition of 29 CFR 1910.1200 (b)(6)(v) (a manufactured item other than a fluid or a particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical (as determined in paragraph (d) of this section), and does not pose a physical hazard or health risk to employees) are not regulated by OSHA HazCom Standard
Other Information	As manufactured continuous filament glass fibers are non-respirable. May cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Under normal conditions of use, these products may release dust and non-respirable fibers (Particulates Not Otherwise Regulated). Under severe process conditions (e.g. shredding, crushing), these products may release very small amount of respirable particulate, some of which may be fiber-like in terms of l/d ratio (so-called "shards"). See Section 8 for Exposure Limit Data

3. COMPOSITION/INFORMATION ON INGREDIENTS

CFGF products are made of glass which is given a specific shape (filament) and dimension (filament diameter). A surface treatment (sizing) is applied to the filaments which are gathered to form a strand. The strand is further processed into a specific product design according to the downstream use of the article. The sizing is a mixture of chemicals, i.e. coupling agent, film former and polymeric resin/emulsion. The sizing content is usually below 3%
For Chopped Strand Mat (CSM) and Continuous Filament Mat (CFM) products, a binder is applied in a secondary step to form the mat. The binder is a mixture of polymeric resin and surfactant. The content of sizing and binder is usually below 15% of the product weight

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact	• DO NOT rub or scratch eyes • Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes • If eye irritation persists: Get medical advice/attention
Skin contact	• Wash off immediately with soap and plenty of cold water • DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of fibers and dust • DO NOT rub or scratch affected area • Use a wash cloth to help remove fibers and dust • If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin • If skin irritation persists, call a physician
Inhalation	• Move victim to fresh air • If symptoms persist, call a physician
Ingestion	• Rinse mouth with water and drink water to remove fibers from the throat • If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Flammable properties	• Continuous Filament Glass Fiber products are not flammable, are incombustible and do not support combustion. Only the organic part is combustible and could release small quantities of undetermined hazardous substances in case of major and prolonged heat or fire
Suitable extinguishing media	• Use CO2, dry chemical, or foam • Water spray or fog
Protective equipment and precautions for firefighters	• As in any fire, wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	• Avoid contact with eyes and skin • Avoid creating dust • Use personal protections recommended in Section 8
Methods for cleaning up	• Avoid dry sweeping • Avoid creating dust • Take up mechanically, placing in appropriate containers for disposal • Pick up and transfer to properly labeled containers • Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and fiber contamination • After cleaning, flush away traces with water

7. HANDLING AND STORAGE

Precautions for safe handling	- Prevent and/or minimize dust formation - Wear appropriate personal protective equipment in case of direct contact with the product
Storage Conditions	Keep product in packaging until use to minimize potential dust generation
Incompatible materials	None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

As manufactured continuous filament glass fibers are non-respirable. May cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Under normal conditions of use, these products may release dust and non-respirable fibers (Particulates Not Otherwise Regulated). Under severe process conditions (e.g. shredding, crushing), these products may release very small amount of respirable particulate, some of which may be fiber-like in terms of l/d ratio (so-called "shards").

Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
Continuous filament glass fiber, non-respirable	TWA: 1 fiber/cm³ respirable fibers: length >5 µm, diameter less than 3 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m³ inhalable particulate matter	-	-

OSHA PEL: TWA for Inert or Nuisance Dust are: 5 mg/m³ (Respirable fraction) and 15 mg/m³ (Total dust)

Engineering Controls Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits. Local exhaust ventilation should be provided at areas of cutting, milling or other similar processing to remove airborne dust and fibers.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles)
Skin and body protection	- Wear protective gloves - Wear long-sleeved shirt and long pants
Respiratory protection	If exposure limits are exceeded, wear appropriate respiratory protections (e.g.: FFP2 or N95 or KN95) to be chosen according to the actual airborne exposure level and in accordance with applicable local regulations
General Hygiene Considerations	- Wash hands before breaks and immediately after handling products - Remove and wash contaminated clothing before re-use

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance	Mat of glass fibers with filament diameter larger than 6 micron
Odor	Odorless
Color	White, or, Off-white
Water solubility	Insoluble in water
Softening point	> 800°C ; > 1500°F (glass)
Density	2.6 (glass)
Explosive properties	Not an explosive

10. STABILITY AND REACTIVITY

Stability	• Stable under normal conditions
Possibility of Hazardous Reactions	• None under normal processing conditions
Hazardous Decomposition Products	• None under normal use conditions • Small quantities of undetermined hazardous decomposition products may be released in case of heat exposure or during a fire

11. TOXICOLOGICAL INFORMATION

Product Information	Dusts and fibers may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Mechanical abrasion is not considered as a health hazard in the meaning of the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Inhalation may cause coughing, nose and throat irritation and sneezing. High exposures may cause difficult breathing, congestion and chest tightness. Continuous filament glass fibers are not respirable according to the World Health Organization (WHO) definition. Respirable fibers have a diameter (d) smaller than 3µm, a length (l) larger than 5µm and a l/d-ratio larger than or equal to 3. Fibers with diameters greater than 3 microns, which is the case for continuous filament glass fiber, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease. Continuous filament glass fibers do not possess cleavage planes which would allow them to split length-wise into fibers with smaller diameters, rather they break across the fiber, resulting in fibers which are of the same diameter as the original fiber with a shorter length and a small amount of dust. Microscopic examination of dust from highly chopped and pulverised glass demonstrated the presence of small amounts of respirable dust particles. Among these respirable particles, some were fiber-like in terms of l/d ratio (so-called "shards"). It can be clearly observed however that they are not regular shaped fibers but irregular shaped particles with fiber-like dimensions. To the best of our knowledge, the exposure levels of these fiber-like dust particles measured at our manufacturing plants are of the order of magnitude between 50 to 1000 below existing applicable limits
ACGIH (American Conference of Governmental Industrial Hygienists)	Continuous filament glass fibers are classified as A4 - Not Classifiable as a Human Carcinogen
IARC (International Agency for Research on Cancer)	The International Agency for Research on Cancer (IARC) in June, 1987, and in October, 2001 (see IARC Monographs on the Evaluation of Carcinogenic risks to humans – Man-made Vitreous Fibers – Volume 81), categorized continuous filament fiber glass as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify continuous filament glass fiber as a confirmed, probable or even possible cancer-causing material
NTP (National Toxicology Program)	Continuous filament glass fibers are not listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Continuous filament glass fibers are not listed in the Table of harmonized classification entries in Annex VI to CLP Regulation. Mechanical abrasion is not considered as a health hazard in the meaning of European Regulation 1272/2008 (CLP).

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment

13. DISPOSAL CONSIDERATIONS

Continuous filament glass fiber waste is a non hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods according to international transport regulations

15. REGULATORY INFORMATION

International Inventories

Continuous filament glass fiber products are articles. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS), TCSI (Taiwan)

California Proposition 65

This product is not regulated under California Proposition 65

16. OTHER INFORMATION

Prepared By
Creation Date
Revision Date

FCs
29-May-2015
09-Jun-2020

Disclaimer

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use

End of Safe Use Instruction Sheet



Primer

Version: April 23, 2020

 **MAPEI**

ECO Prim Grip™

**Multipurpose,
Bond-Promoting Primer**





DESCRIPTION

ECO Prim Grip is a ready-to-use, low-VOC, synthetic resin-based primer with bond-promoting silica aggregates suspended in dispersion. It enhances the performance and adhesion of mortars to existing ceramics and difficult-to-bond-to substrates. Plus, it improves bonding of self-leveling underlayments (SLUs) and bonds of render coats over cementitious substrates. Suitable for a wide variety of substrates, *ECO Prim Grip* combines excellent versatility with an easy, low-odor application.

FEATURES AND BENEFITS

- Ready-to-use gray latex, which is easy to apply with a roller or brush
- One-component, versatile primer for a wide variety of substrate conditions
- Single-coat application for faster turnaround and lower installation costs
- Low-odor and VOC compliance – great for use in interior, occupied environments
- Provides a rough keying surface ideal for polymer-modified mortars, render coats and leveling compounds, ensuring excellent bonding on smooth or low-absorptive substrates
- Easy handling and application properties
- Ideal primer for use with MAPEI's SLUs
- Provides excellent bond strength with resistance to moisture and aging
- No shotblasting or abrasion required, thus eliminating the resulting dust

WHERE TO USE

- Interior and exterior applications
- Use over ceramic tile, porcelain tile, vinyl composition tile (VCT), natural stone or exterior-grade plywood substrate before applying polymer-modified mortars or SLUs.
- Use over substrates that have a residue of well-bonded old cutback adhesive, floor-covering adhesive or polyurethane adhesive. Refer to the "Surface Preparation" section below.
- Use to improve the bond of SLUs on nonabsorbent surfaces such as ceramic tile, cement terrazzo and natural stone floors.
- Use before application of SLUs over sound and stable concrete substrates, whether they are smooth and nonabsorbent, or profiled and absorbent.
- Suitable for improving the bond of all types of cement render coats on concrete, brickwork and concrete block substrates

LIMITATIONS

- Substrate and ambient temperatures must be between 50°F and 95°F (10°C and 35°C).
- Test the concrete substrate using a calcium chloride test (ASTM F1869) to ensure that the moisture vapor emissions rate (MVER) is below 5 lbs. per 1,000 sq. ft. (2.27 kg per 92.9 m²) per 24 hours.
- Verify that the substrate is free of bond-inhibiting or bond-breaking materials, such as curing compounds and dust.
- For use in interior residential and commercial as well as exterior residential Environmental Classifications, including Res 1, 2, 3 and 6 and Com 1, 2

ECO Prim Grip

- and 3 as outlined in the TCNA Handbook. Do not apply on wet substrates.
- Do not dilute.
 - Do not install over any substrates containing asbestos.
 - Do not install over concrete with curing compounds, sealed Sathillo tile or fiber-reinforced plastic (FRP) panels.
 - The surface temperature of the prepared substrate must be at least 5 degrees Fahrenheit (2.8 degrees Celsius) above the dew point to avoid condensation on the surface as the *ECO Prim Grip* dries.
 - Protect from freezing.
 - When *ECO Prim Grip* and crack-isolation or waterproofing membranes are used in conjunction with SLUs, *ECO Prim Grip* should first be applied to the substrate; this should be followed by the leveler being applied over *ECO Prim Grip*, and then the crack-isolation or waterproofing membrane being applied over the leveler.
 - When *ECO Prim Grip* is used for substrate preparation before application of waterproofing or crack-isolation membranes, the textured surface of *ECO Prim Grip* must be smoothed first by applying an approved patching material before rolling on liquid-applied membranes or primers for sheet membranes. Because of the coarse surface of *ECO Prim Grip*, if liquid membranes are installed directly over the resulting aggregate surface, an extremely heavy coating of the membranes would be required to completely encapsulate the aggregate and deliver the specified mil thickness detailed for product performance. Peel-and-stick membranes need the smoothed surface to achieve the required level of adhesion for proper bonding.
 - Do not use for installations subject to water immersion, such as pools and spas.

SUITABLE SUBSTRATES

- Use before application of polymer-modified mortars or SLUs over sound, stable and nonabsorbent substrates including ceramic tile, natural-stone floors, glass tile, cement terrazzo, cement-based agglomerates, glazed cement masonry units, VCT, rigid fiberglass, well-bonded old cutback adhesive, floor-covering adhesive residue, polyurethane adhesive residue, exterior-grade plywood on floors, smooth nonabsorbent concrete, absorbent concrete, steel-troweled concrete, concrete with up to 20% fly ash, dry shake hardener, radiant-heated floors, gypsum substrates, gypsum-based SLUs and plastic laminate countertops.
- Use before the application of render coats over concrete, brickwork and concrete block substrates.
- Use over epoxy flooring to install carpet – with *Ultrabond ECO® 185*, *Ultrabond ECO 285* or *Ultrabond ECO 220*.

- Stone tile coated with a backing of epoxy resin, of epoxy resin with fiber reinforcement or of epoxy resin with an aggregate broadcast can be primed with *ECO Prim Grip* for interior residential to light commercial and exterior residential applications. After the bond-promoting primer is allowed to dry, MAPEI polymer-modified mortars meeting specifications referred to in the "Installing Followup Materials" section of this Technical Data Sheet are approved for use to install this type of stone. *ECO Prim Grip* is not recommended for exterior facades, installations subjected to commercial traffic or severe freeze/thaw conditions; instead, epoxy setting systems are required for such applications.

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- All substrates must be structurally sound, stable, dry, clean, and free of any substance or condition that may reduce or prevent proper adhesion.
- Thoroughly clean all surfaces of any substance that could interfere with the bond of the installation material, including paint, asphalt, wax, oil, sealers, curing compounds, and poorly bonded or incompatible adhesive.
- Repair cracks in the substrate before proceeding.
- Expansion and movement joints must be honored through the finished flooring system.
- Do not acid-etch surfaces before applying *ECO Prim Grip*.
- See the "Surface preparation requirements" reference guide in the Tile & Stone Installation Systems section of MAPEI's Website.

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

- Before use, stir to ensure that settling has not occurred during shipment or storage.
- *ECO Prim Grip* is ready to use; no dilution is required.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Apply *ECO Prim Grip* with a 3/8" (10 mm) nap roller or brush. Ensure that the surface receives a complete, thin film of product.
2. Polymer-modified mortar or render coat may be applied once *ECO Prim Grip* is dry. The minimum waiting time is from 15 to 60 minutes, depending upon the surrounding conditions and substrate porosity.
3. If completed coverage hasn't been achieved or the original surface is visually showing through, a second coat can be applied after a longer period of time, typically after 2 to 3 hours.

Continued on Page 4



**ECO
Prim-Grip**

Product Performance Properties

Laboratory Tests	Results
VOCs (Rule #1113 of California's SCAQMD)	21 g per L
VOCs (Section 01350 of California's CDPH)	Passed
pH	8 to 9
Viscosity	2,000 to 3,000 cps
Density	93.6 lbs. per cu. ft. (1.5 g per cm ³)
Application temperature range	50°F to 95°F (10°C to 35°C)

Shelf Life and Product Characteristics

Shelf life	2 years in original, sealed container. Protect from freezing during transport and storage.
Polymer type	Acrylic
Consistency	Pourable liquid
Color	Gray

Application Properties

Flash point (Seta)	> 212°F (100°C)
Window for application of SLU at 73°F (23°C)	2 to 3 hours of drying time up to 24 hours from application over porous substrate (concrete and wood); 2 to 5 hours of drying time up to 24 hours from application over nonporous substrate (ceramic and VCT)

Packaging

Size
Pail: 1 U.S. gal. (3.79 L) (4 pails per case)
Pail: 3.5 U.S. gals. (13.2 L)

Approximate Coverage*

Size	Coverage
Per 1 U.S. gal. (3.79 L)	150 to 300 sq. ft. (13.9 to 27.9 m ²)
Per 3.5 U.S. gals. (13.2 L)	525 to 1,050 sq. ft. (48.8 to 97.5 m ²)

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, concrete profile and porosity, type of equipment used, thickness applied, handling and application procedures.



ECO Prim Grip



Continued from Page 2

4. An SLU may typically be applied within 2 to 5 hours after the ECO Prim Grip has been applied. Drying times will vary depending on surface porosity, temperature and humidity. The maximum time allowed until installation of the SLU is 24 hours.
5. If ECO Prim Grip dries for more than 24 hours before application of the SLU, re-apply a second, undiluted coat and install the SLU within the correct application window.

CLEANUP

Clean equipment immediately. While ECO Prim Grip is still fresh, it can be removed easily from floors, walls and tools with water. Mineral spirits may be used to remove primer that has dried on tools.

INSTALLING FOLLOWUP MATERIALS

After the application of ECO Prim Grip, the following setting, self-leveling, membrane and patching materials may be applied:

Tile and stone setting materials

- MAPEI polymer-modified mortars classified as ISO 13007 C2P1 and meeting ANSI A118.11 standards or better
- Epoxy mortars classified as ISO 13007 R1 or R2 and meeting ANSI A118.3 standards

Patching materials

- Planipatch® with Planipatch Plus®
- Planiprep™ FF
- Planiprep SC
- Mapecem® Quickpatch

- Planitop® 330 Fast
- Planislope™ RS

Self-leveling materials

- Novoplan® 2
- Novoplan Easy
- Ultraplan® 1 Plus
- Ultraplan Easy

Waterproofing and crack-isolation membranes

- Mapelastix® CI, at a minimum thickness of 30 mils
- Mapelastix AquaDefense, at a minimum thickness of 30 mils
- Mapeguard® 2 (rolling of membrane is mandatory)
- Mapelastix WaterStop, at a minimum thickness of 40 mils
- Mapelastix HPG, at a minimum thickness of 30 mils

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com.

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.

Before using, the user must determine the suitability of our products for the intended use,

and the user alone assumes all risks and liability. ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.

We proudly support the following industry organizations:



MAPEI Headquarters of North America
1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888

Technical Services
1-800-992-6273 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service
1-800-42-MAPEI (1-800-426-2734)

Services in Mexico
0-1-800-MX-MAPEI (0-1-800-696-2734)

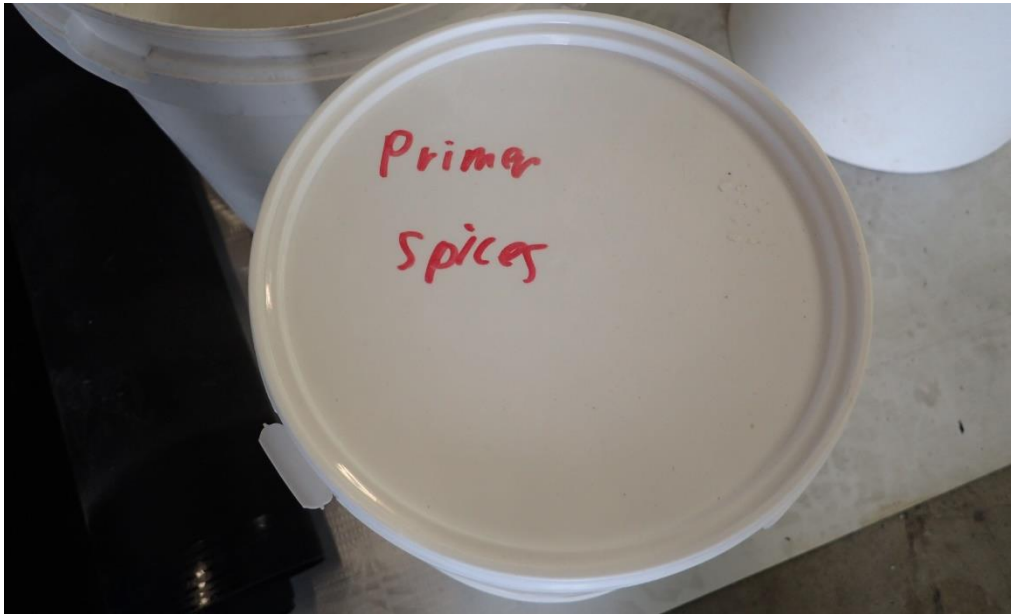
Edition Date: April 22, 2020
MK 3002916 (20-1416)

For the most current product data and BEST-BACKED™ warranty information, visit www.mapei.com.

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Additive



Roof waterproofing sheet



TECHNISCHE FICHE



VARYFLEX 370 - (370K14)

Omschrijving

Membraan samengesteld uit elastomeerbitumen met een polyester composiet wapening.
Wordt toegepast als toplaag in een één- of meerlaagse dakafdichting.
De bovenzijde is afgewerkt met zand.
De onderzijde is afgewerkt met een wegbrandfolie.

Samenstelling

	VARYFLEX 370
Wapening	polyester composiet
Afwerking bovenzijde	zand
Kleur	-
Afwerking onderzijde	folie
Dekmassa	elastomeerbitumen

Verpakking

	VARYFLEX 370
Afmetingen van de rol (m)	6 x 1
Massa van de rol (kg)	25
Aantal rollen per pallet	36

Eigenschappen

		VARYFLEX 370
Dikte (mm) (EN 1849-1)	MDV	3,8
Treksterkte L (N/5 cm) (EN 12311-1)	MDV	800
Treksterkte B (N/5 cm) (EN 12311-1)	MDV	700
Rek bij maximale treksterkte L (%) (EN 12311-1)	MDV	30
Rek bij maximale treksterkte B (%) (EN 12311-1)	MDV	30
Dimensionele stabiliteit (%) (EN 1107-1)	MLV	0,3
Nageldoorscheursterkte L (N) (EN 12310-1)	MDV	200
Nageldoorscheursterkte B (N) (EN 12310-1)	MDV	200
Flexibiliteit bij lage temperatuur (°C) (EN 1109)	MLV	-20
Vloeitweerstand bij verhoogde temperatuur (°C) (EN 1110)	MLV	100

MDV = gemiddelde waarde / MLV = grenswaarde / NPD = geen prestatie vastgesteld

Verwerking

- Volledig lassen inclusief overlappen.
- Eénlaags losliggend onder zware schutlaag, de overlappen lassen.

Keuring & certificaten

KOMO CTG 715

Bijzondere aanwijzingen

Hygiëne, gezondheid en milieu

Dit product bevat geen gevaarlijke bestanddelen en beantwoordt aan de eisen inzake hygiëne, gezondheid en milieu.
Raadpleeg de veiligheidsfiche voor meer informatie.

Kwaliteits-, Milieu en Veiligheids- management

SOPREMA hecht veel belang aan de kwaliteit van zijn producten en het milieu.

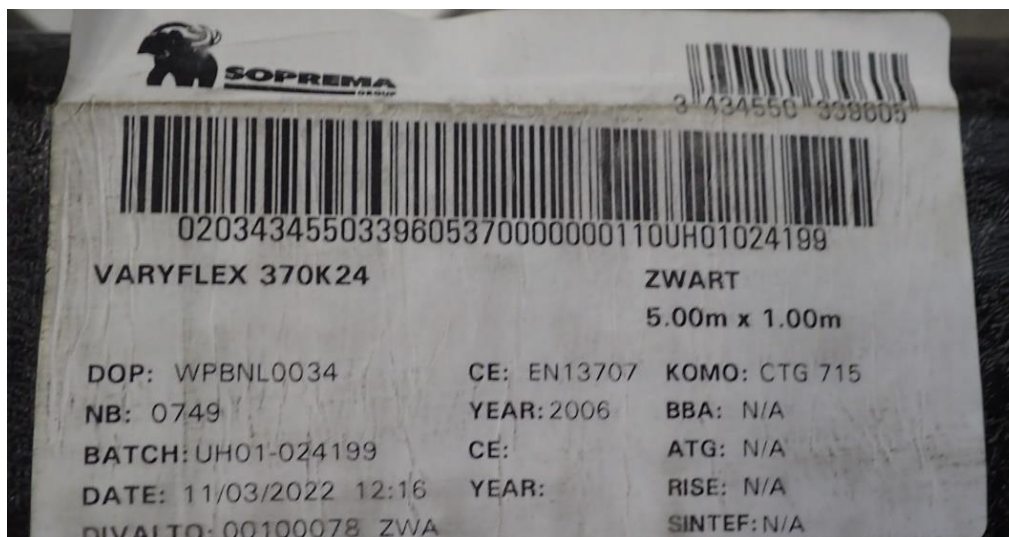
Daarom werken wij volgens de kwaliteits- en milieu management systemen **EN ISO 9001** en **EN ISO 14001**.

SOPREMA behoudt zich het recht voor om zonder voorafgaande kennisgeving de samenstelling en de gebruiksvoorwaarden van zijn producten te wijzigen, en dus ook de prijs. Bijgevolg zullen de bestellingen aanvaard worden aan de voorwaarden en technische eigenschappen die gelden op het ogenblik van ontvangst van de bestelling.

Contact: www.soprema.com

SOPREMA
GROUP





Fastening system (roof waterproofing sheet)





Thermal insulation



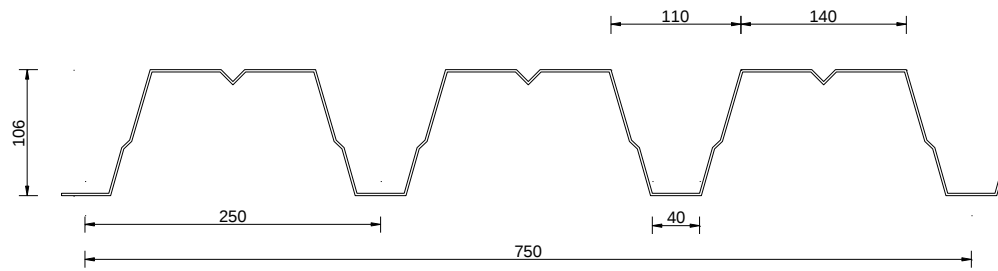
Fastening system (thermal insulation)





Substructure

Trapezoidal steel deck, VD 106R/750 (dimensions in mm)



Delivery notes

Kingspan Unidek BV,
Postbus 101, 5420AC GEMERT
Scheiweg 26, 5421XL GEMERT
Tel.: +31 (0)492-378111
Fax.: +31 (0)492-378306
Email: info@kingspanunidek.nl

Pakbon

Afleveradres

Kiwa BDA
Avelingen-west 35 -37
4202 MS GORINCHEM



Pagina: 1 van 1
 AanmDat: 10-06-22
 Ordernr: 22060379
 Klantnr: 1812
 LevDat: 13-06-22
 Pakbonnr: VPO424438
 Verzend: 353883
 Container 06-1405



Contactgegevens: info@kingspanunidek.nl, +31 (0)492-378111

Artikelsomschrijving	Geladen	Geleverd	Lengte	Breedte	Dikte	m3	kg	opm
Unidek Platinum Kameleon 1200x1000x150 Afschot mm: 0 Cachering: MG 1200x1000	25		1,200	1,000	0,150	4,50	63	10
Instructie Materialen tijdens transport, opslag en verwerking beschermen tegen directe invloed van zon of andere warmte bronnen, beschadiging en vervuiling.	1		0,000	0,000	0,000	0,00	0	20
Zichtbare schade dient onmiddellijk gemeld te worden bij ontvangst van de goederen. Alle andere claims moeten uiterlijk binnen 5 werkdagen na ontvangst van de goederen schriftelijk gemeld worden, met toelichting omtrent schade, manco of andere gebreken. De algemene verkoop- en leveringsvoorwaarden zijn gedeponeerd ter griffe van de Rechtbank te 's-Hertogenbosch d.d. 01/10/2021 depotnr. 19/2021 en zijn op aanvraag verkrijgbaar. **Om de beoogde en/of toegezegde prestaties van onze producten te kunnen realiseren, is het opvolgen van onze verwerkingsvoorschriften bij de verwerking van de producten en het gebruik van de door ons voorgeschreven of geadviseerde toebehoren en/of hulpmiddelen essentieel. Indien dit niet of niet volledig gebeurt, kan dit negatieve effecten hebben voor bijvoorbeeld de constructieve sterkte, warmteweerstand, luchtdichtheid, brandreactie en geluidswaerstand van onze producten.**								
Totaal						4,50	63	

20x 120x1200x1000
RETOUR.

Euro pallets	Gelost	
Euro pallets	Retour	

Autonummer	Bestelopdracht: Allshield Blue	Naam
------------	--------------------------------	------

Chauffeur	Uw ref. . . . :	Datum
aank/vertrek	Telefoon . . . : 0621570732	aank/vertrek
Factuuradres Unidek (Service Industrie) Scheiweg 26 5420AA GEMERT	Leveringscontactinfo Albert Hemeete	Handtekening (+stempel) voor ontvangst

13.06.2022
geleverd