

GERARD[®] ROOFING UNDERLAY

 **GERARD**
The worry-proof roof

ROOFING UNDERLAY FACTS

WHY ROOFING UNDERLAYS?

Today roofing underlays, also called roof membranes or roof foils, are commonly used for securing attics and thermal insulation layers against dampness, wind and dust. Moreover, they provide protection against rain, snow blown under the roofing, condensing water as well as leakage occurring as a result of possible damage.

HOW DO THEY WORK?

GERARD® underlays offer very good vapour permeability properties, which is important in case of vaporizing dampness accumulated in the roof structure during construction and released by construction materials for many months after construction.

Roofing underlays are used as scheme shown below.

ENVIRONMENTALLY FRIENDLY

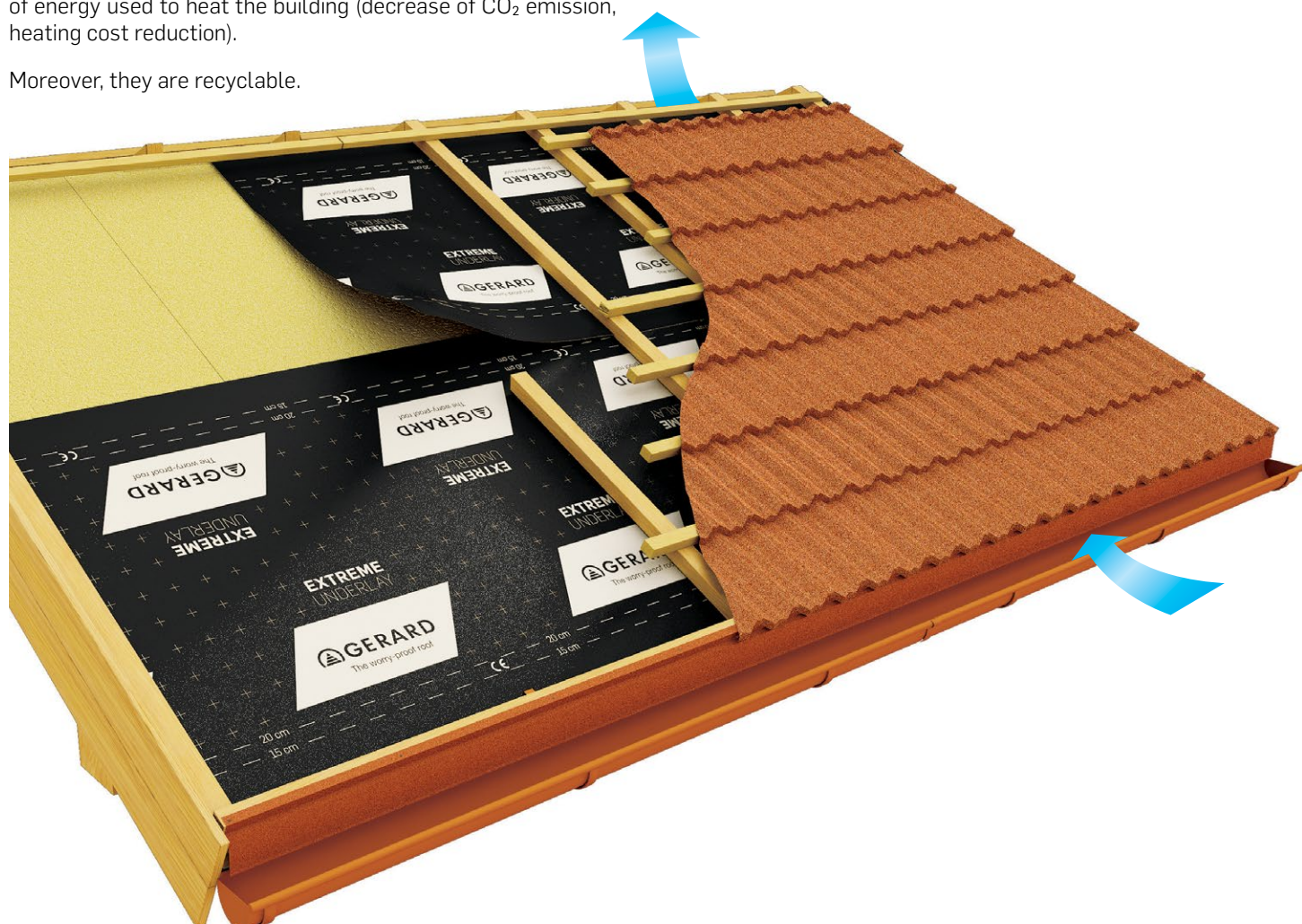
GERARD® underlays are safe for human health and eco-friendly - they provide correct functioning of thermal insulation, thanks to which they indirectly influence the decrease of the amount of energy used to heat the building (decrease of CO₂ emission, heating cost reduction).

Moreover, they are recyclable.

HIGH QUALITY AND WARRANTY

GERARD® underlays are made to meet increased requirements of pitched roof design. Originally the underlays were used to protect against dust and wind driven rain and snow. Over the past years the pitched-roof design and building products requirements developed substantially. Important requirements relate to aging resistance which results in long-term protection of roof system. Thanks to a high vapor permeability, GERARD® underlays can be used directly on thermal insulation layers as well as on roofs with full boarding. Vapour permeability allows the transfer of water vapour and thus maintain the healthy indoor environment.

GERARD® underlays have been designed and produced with the use of innovative technology. They offer modern solutions and high resistance for all applications. Our top range product GERARD® EXTREME is covered by 15 year manufacturer's warranty. Because of constant quality controls conducted by independent institutions, our underlays comply with strict EU requirements (CE marking).



ROOFING UNDERLAY FACTS

THE FOLLOWING CONDITIONS MUST BE EVALUATED BEFORE CHOOSING THE RIGHT PRODUCT:

- Is it a ventilated or non-ventilated roof construction
- Is it a supported or non-supported surface? (boards over rafters are considered as supported surface)
- How long a roofing underlay will be exposed to sun light (UV), rain, snow and wind before roof tiles are placed over it?
- Climate conditions and roof build-up; vapor diffusion calculation is needed
- Angle of roof slope

HIGH PERFORMANCE BREATHABLE UNDERLAYS

All GERARD® underlays are water resistant and water vapour permeable at the same time. The underlay is located on the cold side of insulation and prevents moisture (as well as snow, wind, and contaminants such as dust) that may have been driven through the roof tiles, from penetrating further into the roof structure.

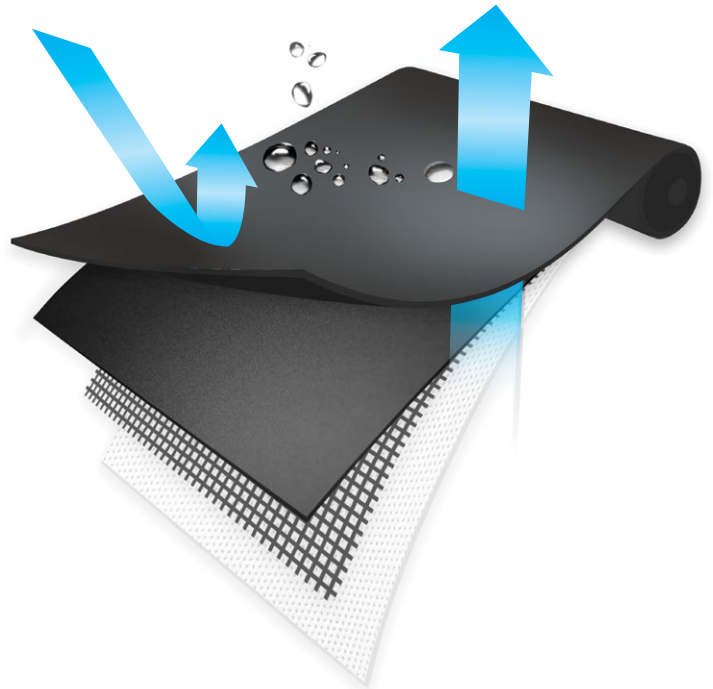
Thanks to their construction, GERARD® underlays “breathe” – allowing evaporation of moisture accumulated in the roof structure during construction and released by building materials for many months after the building is put into use.

Technologically advanced monolithic TPU film in top range GERARD® underlay guarantees extremely high resistance of the underlay to stretching and tearing. This positively affects the safety and speed of the roofer’s work. Due to its flexibility, the underlay perfectly adheres to the surface – it is easily moldable in roof valleys and roof corners.

FUNCTIONAL LAYERS OF UNDERLAY

Permeable underlays allow water vapour to pass through the material by diffusion. At the same time they have a structure which is not penetrable for liquid water, which could appear as a result of improper design of the roof or poor workmanship.

Being air tight, water resistant and vapour permeable, GERARD® underlays will maximise the effectiveness of roof insulation and contribute to energy efficiency of the building.



The **TPU polymer** is ideal for products requiring excellent flex fatigue and broad use temperature. It is strongly resistant to:

1. resistance to tearing (nail shank)
2. elongation
3. tensile force.

Its mechanical properties provide the strength and stiffness you need, in addition to outstanding toughness, its chemical properties make it highly resistant.

It is used in GERARD® PERFORMANCE and GERARD® EXTREME underlays.

Polyester (PES) fibres are extremely strong and very durable: resistant to most chemicals, stretching and shrinking, wrinkle resistant, mildew and abrasion resistant.

Polyester is hydrophobic in nature and quick drying and is appropriate for harsh climates. It is used in GERARD® EXTREME underlay.

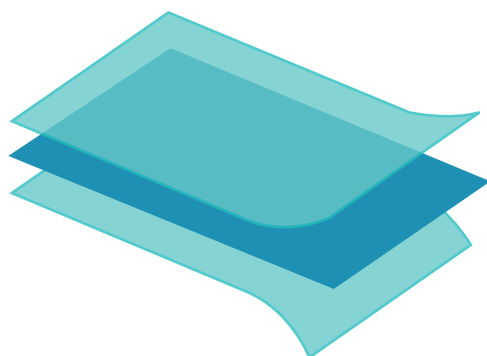
Polypropylene (PP) has remarkable properties, such as low density (weight saving), high stiffness, heat resistance and chemical inertness. It is used in GERARD® STANDARD and GERARD® PERFORMANCE underlays.

GERARD® STANDARD UNDERLAY

ENTRANCE RANGE:

Roof underlay, weight of about 150 g/m², comprise nonwoven polypropylene laminated either side of a micro-porous polypropylene film, diffusively open, with great water vapour permeability. Durable and aging resistant. Suitable to use on roofs with full boarding.

Very high resistance to harmful UV rays (acceptable exposure up to 3 months)*.



- 1 PP nonwoven
- 2 PP microporous film
- 3 PP nonwoven



GERARD® STANDARD UNDERLAY

TECHNICAL PARAMETERS

CHARACTERISTIC	TEST METHOD	UNIT	VALUE	TOLERANCE	
				Min.	Max.
Length	EN 1848-2	m	50	-0	+0,5
Width	EN 1848-2	m	1,50	-0,005	+0,005
Straightness	EN 1848-2	-	pass	-	-
Mass per unit area	EN 1849-2	g/m ²	150	-10	+10
Thickness	EN 1849-2	mm	0,7	-0,1	+0,1
Reaction to fire (free-hanging)	EN 11925-2	class	E-d2	-	-
Resistance to water penetration	EN 1928 method A	class	W1	-	-
Water vapour transmission properties (S _d)	EN ISO 12572 set C	m	0,02	-0,005	+0,02
Resistance to penetration of air	EN 12114	m ³ /(m ² x h x 50 Pa)	Max 0,050	-	-
Tensile properties: Maximum tensile force	EN 12311-1	N/50 mm	MD 350	-50	+50
			CD 210	-10	+40
Tensile properties: elongation	EN 12311-1	%	MD 60	-30	+30
			CD 75	-15	+15
Resistance to tearing (nail shank) (R)	EN 12310-1	N	MD 150	-35	+35
			CD 160	-30	+30
Dimensional stability	EN 1107-2	%	1	-	-
Stability at low temperature	EN 1109	°C	-40	-	-
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat (80°C)	Elongation EN 13859-1 Annex. C	%	MD 40	-20	+20
			CD 50	-10	+10
	Tensile strength EN 13859-1 Annex. C	N/50 mm	MD 320	-60	+60
CD 180			-20	+20	
	Resistance to water penetration EN 13859-1 Annex C	class	W1	-	-
Water vapour transmission (23°C/85%RH)	Lyssy	g/m ² x 24h	1500	-200	+200
Water vapour transmission (38°C/90%RH)	Lyssy	g/m ² x 24h	3200	-400	+400

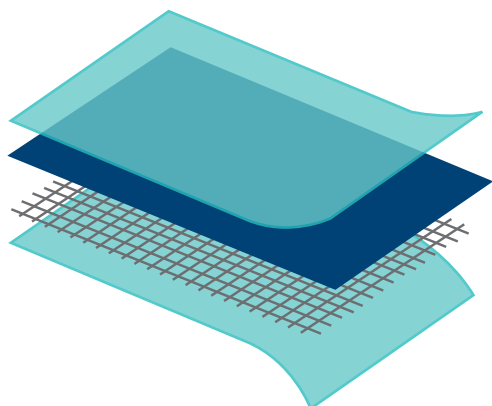
* concerns average yearly radiation in the Cental Europe climate

GERARD® PERFORMANCE UNDERLAY

MEDIUM RANGE:

Extremely durable four-layer underlays, built on the basis of a laminate containing 2 layers of polypropylene nonwoven and functional TPU monolithic polyurethane film, were equipped with an additional fourth layer of a reinforcing PP mesh provide greater security for roofers (e.g. in the case of accidental contact with underlay's sheathing), but they also ensure greater resistance to mechanical damages of the product (tearing and stretching).

Very high resistance to harmful UV rays (acceptable exposure up to 6 months)* and the influence of extremely high temperatures (even up to 120°C).



- 1 PP nonwoven
- 2 TPU monolithic film
- 3 PP reinforcing mesh
- 4 PP nonwoven



GERARD® PERFORMANCE UNDERLAY
With adhesive tape on the edge for tighter joint.

TECHNICAL PARAMETERS

CHARACTERISTIC	TEST METHOD	UNIT	VALUE	TOLERANCE	
				Min.	Max.
Length	EN 1848-2	m	50	-0	+0,5
Width	EN 1848-2	m	1,50	-0,005	+0,005
Straightness	EN 1848-2	-	pass	-	-
Mass per unit area	EN 1849-2	g/m ²	140	-10%	+10%
Thickness	EN 1849-2	mm	0,7	-0,1	+0,1
Reaction to fire	EN 11925-2	class	E	-	-
Resistance to water penetration	EN 1928 method A	class	W1	-	-
Water vapour transmission properties (S _d)	EN ISO 12572 set C	m	0,080	-0,050	+0,060
Resistance to penetration of air	EN 12114	m ³ /(m ² x h x 50 Pa)	Max 0,050	-	-
Tensile properties: Maximum tensile force	EN 12311-1	N/50 mm	MD 450	-100	+100
			CD 350	-50	+70
Tensile properties: elongation	EN 12311-1	%	MD 15	-5	+5
			CD 15	-5	+5
Resistance to tearing (nail shank) (R)	EN 12310-1	N	MD 280	-50	+100
			CD 280	-50	+100
Dimensional stability	EN 1107-2	%	2	-	-
Stability at low temperature	EN 1109	°C	-40	-	-
Short temperature resistance		°C	to +120	-	-
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat (80°C)	Elongation EN 13859-1 Annex. C	%	MD 15	-8	+8
			CD 15	-8	+8
	Tensile strength EN 13859-1 Annex. C	N/50 mm	MD 360	-70	+150
CD 280			-70	+100	
Resistance to water penetration EN 13859-1 Annex C		class	W1	-	-

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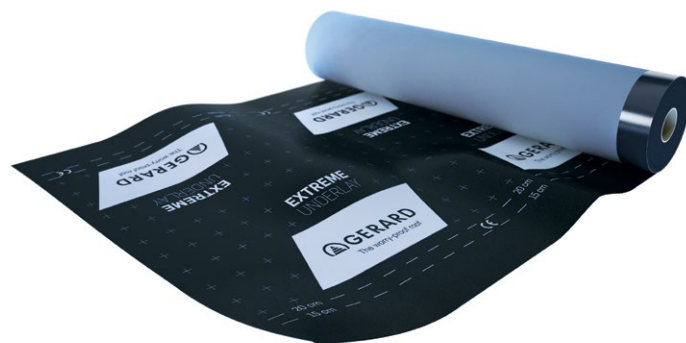
GERARD® EXTREME UNDERLAY

TOP RANGE:

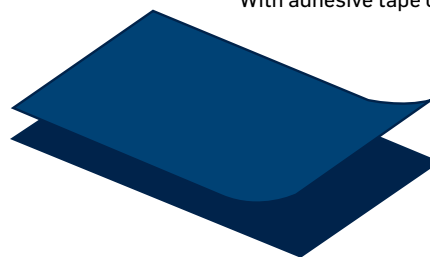
Double layered roof underlay with a layer of thermoplastic polyurethane (TPU) which guarantees extremely high resistance of the underlay to stretching and tearing. Thanks to the glue lamination technology, fibres from polyester (PES) needle punched fabric are evenly smoothed and they do not interfere with the functional layer as in the case of the technology of pouring a hot TPU layer.

The product is covered by a 15-year manufacturer's warranty. High technical parameters – premium class underlay. Very high resistance to aging processes.

Very high resistance to harmful UV rays (acceptable exposure up to 6 months)* and the influence of extremely high temperatures (even up to 120°C).



GERARD® EXTREME UNDERLAY
With adhesive tape on the edge for tighter joint.



- 1 TPU monolithic film
- 2 PES needle punched fabric

TECHNICAL PARAMETERS

CHARACTERISTIC	TEST METHOD	UNIT	VALUE	TOLERANCE	
				Min.	Max.
Length	EN 1848-2	m	50	-0	+0,5
Width	EN 1848-2	m	1,50	-0,005	+0,005
Straightness	EN 1848-2	-	pass	-	-
Mass per unit area	EN 1849-2	g/m ²	170	-10%	+10%
Thickness	EN 1849-2	mm	0,6	-0,10	+0,10
Reaction to fire (free-hanging)	EN 11925-2	class	B-s1, d0 ¹	-	-
Resistance to water penetration	EN 1928 method A	class	W1	-	-
Water vapour transmission properties (S _d)	EN ISO 12572 set C	m	0,12	-0,050	+0,060
Resistance to penetration of air	EN 12114	m ³ /(m ² x h x 50 Pa)	Max 0,050	-	-
Tensile properties: Maximum tensile force	EN 12311-1	N/50 mm	MD 410	-70	+70
			CD 390	-70	+70
Tensile properties: elongation	EN 12311-1	%	MD 55	-20	+20
			CD 70	-20	+20
Resistance to tearing (nail shank) (R)	EN 12310-1	N	MD 300	-50	+50
			CD 310	-50	+50
Dimensional stability	EN 1107-2	%	2	-	-
Stability at low temperature	EN 1109	°C	-40	-	-
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat (80°C)	Elongation EN 13859-1 Annex. C	%	MD 40	-15	+20
			CD 60	-20	+20
	Tensile strength EN 13859-1 Annex. C	N/50 mm	MD 350	-50	+50
			CD 320	-50	+50
	Resistance to water penetration EN 13859-1 Annex C	class	W1	-	-
Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat (120°C)	Elongation EN 13859-1 Annex. C	%	MD 40	-15	+20
			CD 60	-20	+20
	Tensile strength EN 13859-1 Annex. C	N/50 mm	MD 350	-50	+50
			CD 320	-50	+50
	Resistance to water penetration EN 13859-1 Annex C	class	W1	-	-
Water vapour transmission (23°C/85%RH)	Lyssy	g/m ² x 24h	500	-200	+200
Water vapour transmission (38°C/90%RH)	Lyssy	g/m ² x 24h	900	-300	+300

¹ when fitted directly to parts with A1 or A2 reaction to fire class or at any distance therefrom/ D-s2,d0 when fitted directly to wood and wood-based materials or at any distance therefrom

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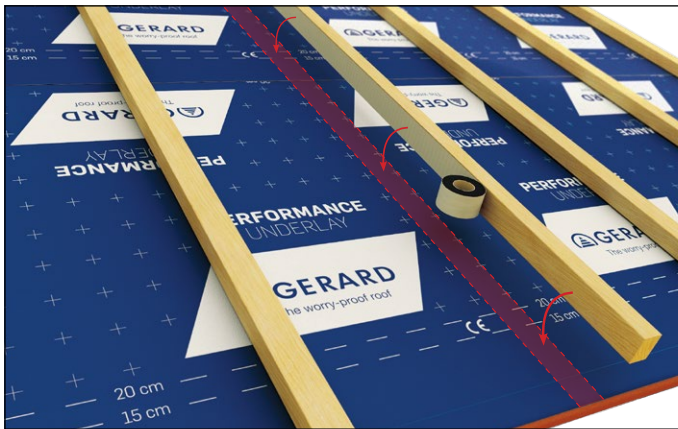
INSTALLATION DETAILS



GERARD® underlay can be placed on a supported or non-supported surface over the rafters on the insulating material. Overlap the GERARD® underlay sheet by 15 cm (red guide line). Overlap by at least 20 cm with a pitch of under 22°.



The overlap at the ridge should be at least 20 cm.



Use self-adhesive nail sealing tape on counter-battens for sealing underlays in places where they are penetrated by nails or screws.



Seams, overlaps, butt joints and damage to GERARD® underlay can be masked with adhesive tape. Connections to other substrates - e.g. masonry - should be made with selfadhesive polypropylene tapes.

ACCESSORIES



TAPE FOR SEALING ROOF UNDERLAYS

Two-sided glue tape that can be applied to any kind of roof underlays both inside and outside. Strong

and effective - provides a long-lasting strong adhesion.

MATERIAL:

Polypropylene combined with lowdiffusive polypropylene film, covered with a glue layer (on both sides).



REPARATION TAPE

Reparation tape dedicated to breathable underlays. Used to repair damages that occurred during underlay installation or to

seal damages caused by installation of roofing accessories.

MATERIAL:

Polypropylene combined with lowdiffusive polypropylene film, covered with a glue layer.



NAIL SEALING TAPE
























Self-adhesive nail sealing tape used on counter-battens for sealing underlays in places where they are penetrated by nails or screws.

Reduces unevenness between counter-battens, underlays and rafters. Prevents the thermal insulation layer from water penetration. Used underneath the counter-battens. Especially recommended on a roof under 15°.

MATERIAL:

Polyethylene foam.

FEATURES AND BENEFITS

<p>GERARD® STANDARD UNDERLAY</p> <p>(ENTRANCE RANGE)</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  UV RESISTANT 3 months </div> <div style="text-align: center;">  WATER VAPOUR PERMEABILITY </div> <div style="text-align: center;">  TEMPERATURE RESISTANCE from -40°C to +80°C </div> <div style="text-align: center;">  HIGH WATER BARRIER </div> <div style="text-align: center;">  SELF - SUPPORTING AND BOARDING </div> </div>
<p>GERARD® PERFORMANCE UNDERLAY</p> <p>(MEDIUM RANGE)</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  UV RESISTANT 6 months </div> <div style="text-align: center;">  WATER VAPOUR PERMEABILITY </div> <div style="text-align: center;">  TEMPERATURE RESISTANCE from -40°C to +120°C (120°C - short-term temperature resistance) </div> <div style="text-align: center;">  HIGH WATER BARRIER </div> <div style="text-align: center;">  FIRE RETARDANT E class fire retardant </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  SELF - SUPPORTING AND BOARDING </div> <div style="text-align: center;">  STRONG & DURABLE </div> <div style="text-align: center;">  SHORTER WORKING TIME </div> <div style="text-align: center;">  SAFETY WORKING </div> </div>
<p>GERARD® EXTREME UNDERLAY</p> <p>(TOP RANGE)</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  UV RESISTANT 6 months from -40° to +120° </div> <div style="text-align: center;">  WATER VAPOUR PERMEABILITY </div> <div style="text-align: center;">  TEMPERATURE RESISTANCE from -40°C to +120°C </div> <div style="text-align: center;">  HIGH WATER BARRIER </div> <div style="text-align: center;">  FIRE RETARDANT B-s1, d0* </div> </div> <p style="font-size: small; margin-top: 10px;">* when fitted directly to parts with A1 or A2 reaction to fire class or at any distance therefrom/ D-s2,d0 when fitted directly to wood and wood-based materials or at any distance therefrom</p> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  SELF - SUPPORTING AND BOARDING </div> <div style="text-align: center;">  STRONG & DURABLE </div> <div style="text-align: center;">  SHORTER WORKING TIME </div> <div style="text-align: center;">  SAFETY WORKING </div> <div style="text-align: center;">  UNIQUE WARRANTY </div> </div>

Part of:



Metals™
ROOFING SYSTEMS

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