

HERTALAN[®]

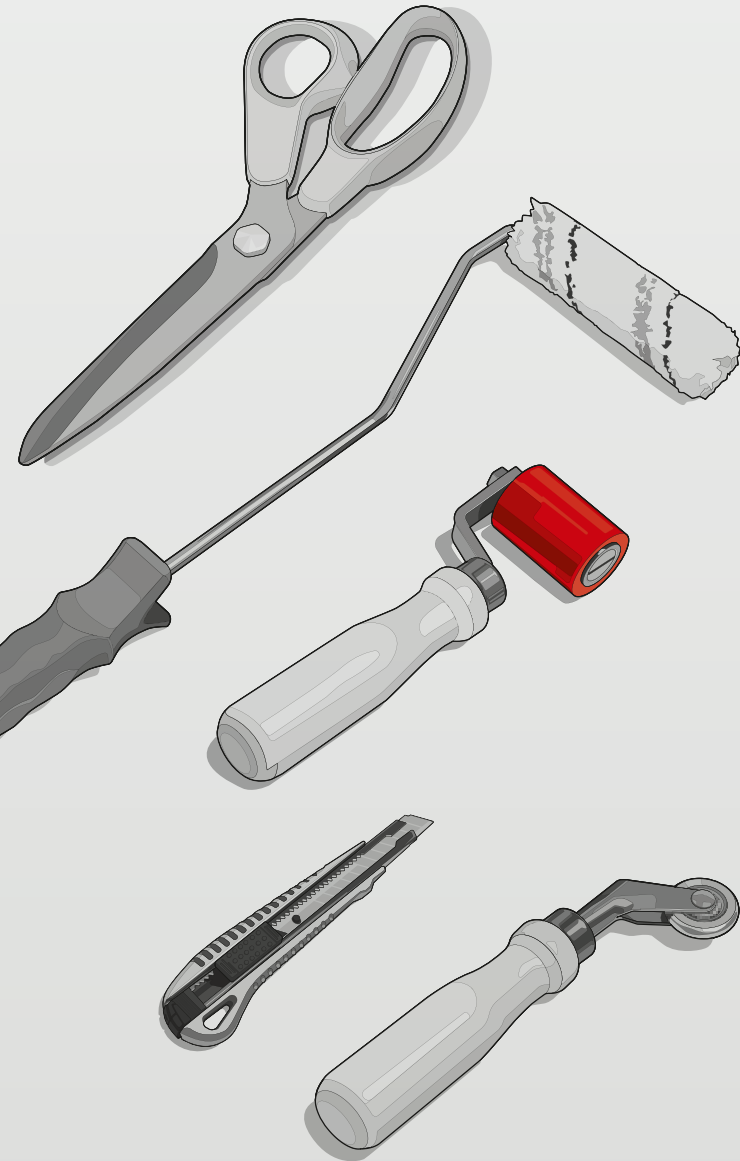
EPDM systems
and accessories

INSTALLATION INSTRUCTIONS



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CARLISLE[®]
CM EUROPE



The following installation instructions provide a foundation of material related information and, in conjunction with the HERTALAN® specification guidelines, should serve as a basis for the planning, preparation and installation of HERTALAN® waterproofing membranes.

The instructions will provide contractors with support in conjunction with a training session in our CARLISLE® ACADEMY in the UK together with on-site support on the construction site. Key installation steps are described in text form and are illustratively supplemented by relevant graphics, images and drawings.

Other local circumstances or material combinations that are not described may potentially have an impact on functionality. Please contact the Technical Department for specific and detailed substrate requirements as well as individual installation instructions.

Both the information and the product descriptions contained in this publication have been compiled to the best of our knowledge and belief based on our prior experiences and tests. They form the basis of all the solutions described. Claims for compensation may not be derived from the same. We reserve the right to make technically reasonable changes to designs and ranges to meet our high quality and progress standards. The publication of these installation instructions shall cause all previous versions to lose their validity.

June 2018

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General requirements

Basic rules

The generally recognised rules of technology must be observed. The latest versions shall apply with respect to the standards, regulations and guidelines. All HERTALAN® waterproofing membranes meet the material requirements for high-quality roof waterproofing solutions according to DIN 18531 (property class E1 and application class K2), whereby the additional requirements must also be observed according to the valid regulations.

Requirements for building waterproofing solutions are according to DIN 18532, DIN 18533, DIN 18534 and DIN 18535. Preliminary work by other trades must be suitable for the roof structure in question. It is not possible to take all the constructive partial and special solutions into consideration in these installation instructions. The relevant national occupational safety and accident prevention regulations must be observed.

Please request the EC safety data sheets or national safety data sheets for individual materials.



Please also observe the instructions on the packaging of HERTALAN® system accessories

Important installation instructions

When planning and installing the standard layer structure and the detailed solutions, the following individual pieces of information must be observed, to name but a few examples:

- According to the technical regulations (DIN 18531 and the Flat Roof Guidelines), the waterproofing solution should or is required to be planned with a minimum slope of 2%. Justified exceptions are possible and are described. Roofs of application class K1 can also be planned without any slope according to DIN 18531-1 if the selection of the waterproofing solution meets the requirements of application class K2. According to this regulation, the minimum thickness for HERTALAN® waterproofing membranes is 1.2 mm. All HERTALAN® waterproofing membranes should be installed at an ambient temperature of over 5°C. The relevant ambient temperature for applying the respective adhesives should also be observed in this regard.
- The general substrate requirements for the installation variant in question must be taken into consideration. In particular, the substrate must be checked with respect to material compatibility and mechanical stress. Suitable protective layers or separating layers made of either raw glass fleece / plastic fleece or bitumen membranes must be laid if necessary.
- In the area of roof drains, the substrate should be lowered by min. 1 cm on a surface area of min. 0,5 m² (0,7 x 0,7 m) for faster rainwater drainage. Roof drains should be arranged as centrally as possible within a seam-free area of the HERTALAN® waterproofing membranes.
- When carrying out metalwork, we advise using stainless steel (type following consultation with the manufacturer in question), aluminium or suitable plastic to form drainage elements.
- Due to unfavourable ambient conditions, such as acid fog or rain, we exclude any warranty claims in the event of unprotected drainage elements made of zinc or zinc-containing alloys corroding. Depending on the individual layers, additional measures must be taken against slipping in conjunction with the roof geometry.
- When directly refurbishing waterproofing solutions that are susceptible to shrinkage (such as PVC waterproofing solutions), we advise exclusively using waterproofing membranes with the RhinoBond® fixing system.
- We advise installing the self-adhesive aluminium vapour barrier membranes ALUTRIX® FR or ALUTRIX® 600 as a vapour barrier membrane on trapezoidal steel profiles and on timber / timber materials. The tearproof and puncture-resistant membranes have an equivalent air layer thickness (sd value) of > 1,500 m. ALUTRIX® FR also has a heating value of less than 10,500 kJ/m², and thus meets the fire safety requirements according to DIN 18234 or the German Industrial Building Directive (IndBauRL). ALUTRIX® FR meets the FM Standard Class No. 4470 (FM Approval). Please refer to the relevant data sheet and the ALUTRIX® installation instructions for further information about the ALUTRIX® vapour barrier membranes.
- When installing thermal insulation made of polystyrene rigid foam panels under freely exposed waterproofing solutions, their temperature resistance of max. 70°C to 85°C (long term) and of max. 100°C (short term) must be observed. Because this temperature resistance can be exceeded within local roof areas with increased heat build-up, such as in front of heat-reflecting, bright or glazed façades, we advise arranging a ballast or using alternative thermal insulation materials here. Roof waterproofing solutions are exposed to a multitude of internal and external influences, particularly of a mechanical and thermal nature. Unlike many other materials susceptible to shrinkage, the high degree of flexibility of HERTALAN® waterproofing solutions prevents material stresses from building up and therefore prevents the waterproofing solution

from ageing prematurely. However, when in use, visual changes occurring in the form of certain unevenness or rippling cannot always be avoided.

This particularly applies to bonded HERTALAN® waterproofing solutions on existing roofs with trapped residual moisture, or on timber / timber materials, and to installation on thermal insulation materials that are susceptible to a great deal of movement and shrinkage.

However, the functional safety of the overall waterproofing solution is not impaired by the modified installation pattern. Regular care, inspection and maintenance measures must be taken in accordance with the national specifications so as to achieve the optimum service life for the overall waterproofing solution. It is advisable to include an appropriate inspection and/or maintenance contract for this purpose.



Note:

In the case of “swinging” supporting shells (such as trapezoidal sheet), or when using polystyrene insulation, an additional edge fixation is always required.



HERTALAN® roof waterproofing membranes

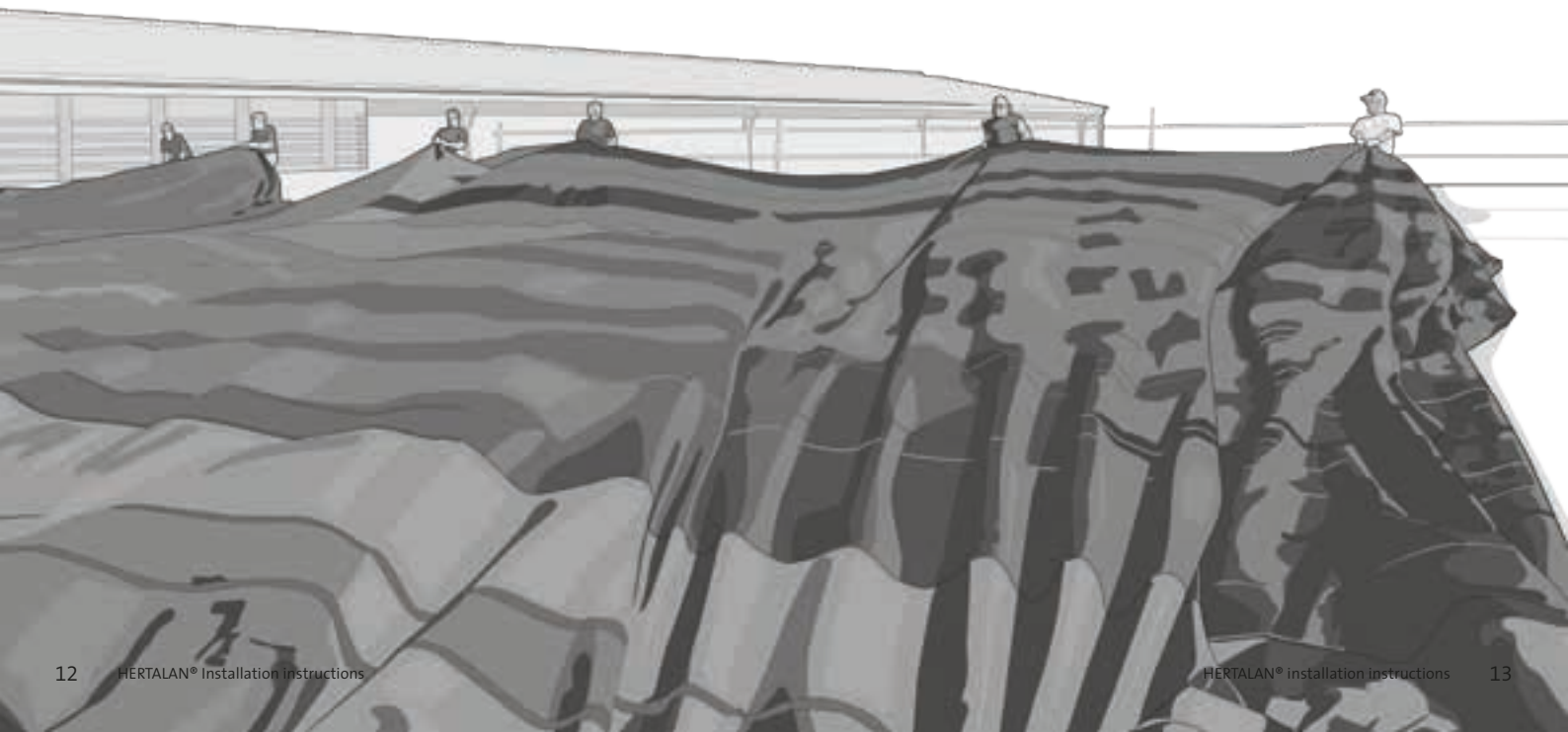
For more than 50 years, the HERTALAN® product range has offered you permanently reliable systems for waterproofing roofs, driveable surfaces, components in contact with the ground, interior spaces, containers and façade areas for both new builds and refurbishment projects. We also have the perfect product for all kinds of green roof. To ensure the ideal solution for your personal project, we provide HERTALAN® waterproofing membranes to suit any individual layer structure in various installation variants.

COLOUR DEVIATIONS

Production-related colour deviations cannot always be entirely ruled out in the case of HERTALAN® EPDM sheets and membranes, however, this does not diminish the physical properties or the long-term behaviour of our EPDM products. After prolonged exposure to natural weathering due to environmental influences, for example, the overall appearance adjusts automatically and accordingly in terms of colour.

WARRANTY

Our warranty declaration refers to the consistent quality of our products, in compliance with our product data sheets and according to our General Terms and Conditions. We reserve the right to make changes to the composition in the interests of technical progress, but not to make deviations from the installation process described here (installation instructions). Our Technical Department is available to answer any specific questions regarding installation.



1. Product and material description

With our HERTALAN® EPDM systems, we offer you permanently reliable waterproofing solutions for the particular challenges encountered in the fields of flat roof and building waterproofing for both new builds and refurbishment projects.

HERTALAN® EASY COVER

1.1 EPDM sheet system

EPDM membranes are vulcanised with one another during the hot bonding process to produce HERTALAN® EASY COVER.

This connection is considered the safest seam joint in the flat roof segment. Because the connection is of such a high quality, the Flat Roof Guidelines only require a seam width of 2 cm, which is not possible with any other material.

Since the EPDM sheets are delivered to the construction site in a pre-assembled state, they can be installed in virtually a single work step. As the number of seams to be created manually decreases, so too does the risk of leaks and the work effort required on the roof. HERTALAN® EASY COVER is installed without any need for naked flames, is tested by the FLL and is root, UV and ozone-resistant. The system is suitable for any flat roof, regardless of whether it is loose laid and ballasted, mechanically fixed or subjected to partial or full surface bonding.



HERTALAN® EASYWELD

1.2 EPDM waterproofing membranes

HERTALAN® EASY WELD is an EPDM system that is particularly suitable for the mechanically fixed roof waterproofing solution. In the edge area, the roofing membranes have UV-resistant welding strips made of a thermoplastic elastomer, which are welded to one another using hot air during the installation process.

This creates a durable, homogeneous and waterproof connection between the roofing membranes. HERTALAN® EASY WELD is tested by the FLL and is root, UV and ozone resistant.



- 1 EPDM with a textured surface – slip resistant.
- 2 The membranes are homogeneously connected to one another during the hot bonding process in the production plant.
- 3 3.0 cm

HERTALAN® EPDM STRIPS

1.3 EPDM strips

With the HERTALAN® EPDM strips, we have developed a system that can be used to waterproof any building. Hollow wall structures, doors and window frames can be quickly and efficiently protected against moisture penetration using this system. With HERTALAN® EPDM strips, you can benefit from quality, flexibility and comfort. Thanks to the special adhesive systems and the EPDM membranes's textured surfaces, you can work on practically any substrate and create almost any connection. These properties make HERTALAN® EPDM strips the best solution for applications in hollow walls, around window frames and on curtain wall façades.



1.4 EPDM special solution

HERTALAN® EASY STICK GS rolls are self-adhesive, reinforced EPDM strips that are particularly suitable for waterproofing façade penetrations such as windows and doors. The underside consists of a high-quality butyl layer with a release film that is cut into in the middle. The strip is available in standard widths of 100 up to a maximum of 1,000 mm and in a length of 20 m.

Due to its total thickness of 1.3 mm, the material can be very well adapted to the geometry of the different components.

HERTALAN® EASY STICK GS can also be used as a moisture barrier according to DIN EN 13967. The EPDM strip can be used even at low outside temperatures. A primer should also be used on absorbent substrates.



1.5 Material related characteristics

	EASY COVER	EASY WELD
THICKNESSES	1.2/1.3/1.5 mm	1.3/1.5 mm
WEIGHT	1.23 kg/m ²	1.30 kg/m ²
WIDTHS	1.4 / 2.80/3.50/4.20/ 5.60/7.00/8.40 9.80/11.20 / 12.6	700/1,400 mm
LENGTHS	20 / 25 / 30 m	20 m

	STORAGE AND TRANSPORT
EASY COVER EASY WELD	The sheets or rolls must be stored and transported in clean and dry conditions. The individual pallets may not be stacked on top of one another.

1.6 HERTALAN® system accessories

1.6.1 EPDM INTERNAL AND EXTERNAL CORNERS

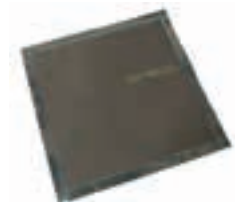
Vulcanised EPDM internal and external corners.

INTERNAL CORNER (90°)	100 x 100 x 100 mm
	200 x 200 x 300 mm
EXTERNAL CORNER (90°)	100 x 100 x 100 mm
	300 x 300 x 150 mm
SKYLIGHT CORNER (45°)	180 x 150 x 150 mm



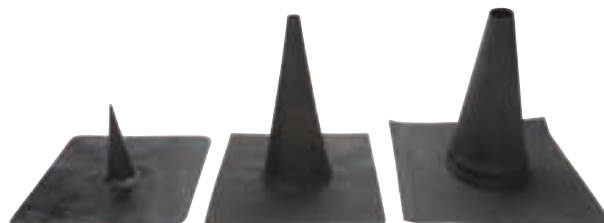
1.6.2 HERTALAN® SLEEVE

SLEEVE (ROUND)	500 mm
SLEEVE WITH EW JOINING EDGE	450 x 450 mm
SLEEVE WITH EW JOINING EDGE	700 x 700 mm
CUSTOM-MADE SKYLIGHT SLEEVE WITH EW JOINING EDGE	Upon request



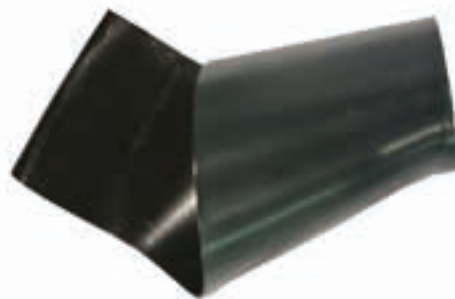
1.6.3 HERTALAN® PIPE SLEEVES

0 – 50 mm, 150 mm tall	300 x 300 mm
20 – 75 mm, 300 mm tall	300 x 300 mm
70 – 125 mm, 300 mm tall	300 x 300 mm
120 – 180 mm, 300 mm tall	400 x 400 mm



1.6.4 HERTALAN® FLASH WELD

POLYMER	EPDM / TPE	THICKNESS	1.6 mm
COLOUR	Black / green	WIDTH	180 mm
		LENGTH	5 m



1.6.5 HERTALAN® FLASHING

POLYMER	CR	THICKNESS	1.6 mm
COLOUR	Black / green	WIDTH	300 mm
		LENGTH	5 m



1.6.6 HERTALAN® FLASH WELD FINISHED PARTS

TONGUE, OVAL	350 x 170 mm
CIRCLE WITH GROOVE	Ø 170 mm



1.6.7 HERTALAN® COVER STRIP

THICKNESS	1.7 mm	LENGTH	20 m
THICKNESS OF THE EW COATING	0.5 mm	WIDTH	12, 18 and 36 cm



1.6.8 HERTALAN® EASY WELD WELDING ROPE

THICKNESS	3 mm
LENGTH	5 / 10 m



HERTALAN® KS 96

1.7 Adhesives

1.7.1 HERTALAN® KS 96 – SINGLE COMPONENT ADHESIVE AND SEALANT WITH AN MS POLYMER BASE

HERTALAN® KS 96 is specifically developed for the bonding of HERTALAN® EPDM rubber waterproofing solutions on vertical and horizontal substrates and for the additional waterproofing of bonded seams in the edge area.

Properties

HERTALAN® KS 96 demonstrates very strong adhesion properties – both between EPDM rolls and when used for bonding on the aforementioned substrates. The bond is elastic and waterproof. HERTALAN® KS 96 is applied on one side. Once it is completely cured, a temperature resistance of -40°C to +100°C is achieved.

Installation

HERTALAN® KS 96 is ready for use and must not be thinned or mixed with external materials. It must be applied in dry weather conditions and at a temperature of at least 5°C. Both the material and the substrate must be dry, free from frost and clean.

An overlap should be at least 50 mm in facade applications. Otherwise, the overlap depends on the application. Apply HERTALAN® KS 96 on one side in two lines measuring at least 7 mm in diameter – do not spread out.

In the case of adhered seams in-conjunction with HERTALAN® KS 137 contact adhesive, a 20 mm wide zone is sealed with HERTALAN® KS 96 (cartridge or foil). To this end, the adhesive is applied and then rolled onto the seam with a silicone pressure roller. Care must be taken here to ensure that the escaping bead of adhesive is approximately 1 mm wide. The excess adhesive is then removed with the rear of an empty cartridge, for example.



HERTALAN® KS 143

1.7.2 HERTALAN® KS 143 PU BONDING ADHESIVE

HERTALAN® KS 143 is a ready to use, single component PU adhesive with organic solvents which was specifically developed for bonding the HERTALAN® EPDM membranes and sheets to substrates in the surface area.

Installation

HERTALAN® KS 143 is ready for use. Do not thin or mix with external materials. When partially bonding the HERTALAN® KS 143 adhesive should be applied in a longitudinal direction that are at least 8mm in diameter. The product is installed in dry weather conditions and at an ambient temperature of at least 5°C. Both the material and the substrate must be even, dry, clean and free from frost. The adhesive must be air dried for between a min. of 5 minutes and a max. of 20 minutes to reduce the possibility of subsequent bubble formation due to trapped solvents.



HERTALAN®KS217

1.7.3 HERTALAN® KS 217 WATER BASED SURFACE ADHESIVE

HERTALAN® KS 217 is a ready to use, water based adhesive which has been specifically developed for bonding HERTALAN® EPDM waterproofing membranes on new timber and timber materials.

Installation

HERTALAN® KS 217 is ready for use. Do not thin or mix with external materials. HERTALAN® KS 217 must be applied over the entire surface. The product should be installed in dry weather conditions and at an ambient temperature of at least 5°C. Both the material and the substrate must be even, dry, clean and free from frost. The HERTALAN® EPDM waterproofing membranes are laid straight after the adhesive has been applied.



HERTALAN®KS137

1.7.4 HERTALAN® KS 137 CONTACT ADHESIVE

HERTALAN® KS 137 is a ready to use contact adhesive for HERTALAN® EPDM membrane and sheet seam connections and for surface bonding on dry, even and clean substrates (timber, concrete, metals such as aluminium, steel, zinc plate, etc.).

Properties

HERTALAN® KS 137 demonstrates very strong adhesion properties – both between the various HERTALAN® EPDM layers and when used for bonding on various substrates. The adhesive connections are elastic and waterproof. HERTALAN® KS 137 is always applied on both sides. Once it is completely cured, heat resistance of approx. -40°C to +80°C is achieved.

Installation

General: HERTALAN® KS 137 is ready for use and must not be thinned or mixed with external materials. It must be applied in dry weather conditions and at an ambient temperature of at least 5°C. Both the EPDM material and the substrate must be dry and clean.



HERTALAN® KS205

1.7.5 HERTALAN® KS 205 SPRAYABLE CONTACT ADHESIVE

Aerosol can for use on small and hard to reach surfaces. HERTALAN® KS 205 is a solvent based, sprayable contact adhesive with a synthetic rubber and synthetic resin base. The adhesive is applied on both sides and is used on horizontal and vertical substrates.

Installation

Bonding should take place max. 5 – 15 minutes after adhesive has been applied on both sides (depending on the weather and the temperature). Lay the HERTALAN® sheet or membrane in the adhesive zone without creating any creases or air bubbles, then firmly compress. The ambient temperature should be min. 5°C.

Substrates

Heavy / lightweight concrete, non-sanded bitumen roofing membranes, bituminously laminated insulation materials, timber, etc. Substrates must be even, clean, dry and free from oil / grease. The substrate must be free from sharp objects such as stones, glass, etc.



Note:

It is not possible to perform bonding directly on polystyrene insulation or soft PVC

1.8 HERTALAN® KS 205 pressure canister

The HERTALAN® KS 205 disposable pressure canister spraying system contains a contact adhesive for bonding HERTALAN® flat roof waterproofing solutions without using a compressor or a power supply.

Properties

- Pressure canister's capacity: 14.2 kg (18 litres) net consumption
- approx. 300 g/m² when product is applied on both sides
- Open setting time of 2 to max. 30 minutes
- Free from toluene and methylene chloride
- Pressure canister's weight when pressurised: 19.9 kg



The set consists of:

- 1 14.4 kg FG 205 pressure canister (disposable)
- 2 Connection hose
- 3 Stainless steel spray gun including extension piece (spraying lance)
- 4 CARLISLE® backpack for pressure canister, optional

Before use

- Ensure that all the parts of the pressure canister spraying system (disposable canister, connection hose, spray gun and spraying lance) are undamaged and have no defects.
- Please shake or roll the pressure canister for at least 30 seconds before use.

Set-up and assembly

The screwable individual components must be connected with one another. Ensure that the union nuts are secure during this process. The adjusting nut on the spray gun must be closed.



Important:

Please be sure to read the installation instructions before use

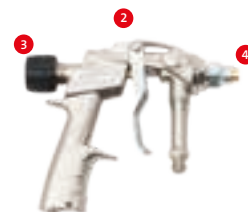


Use / handling:

- Before the spraying device is used for the first time, the valve on the pressure canister must be opened fully. The system must be checked for leaks.
- Regulate the inflow of adhesive using the adjusting nut on the spray gun so that an even spray pattern is achieved.
- Also using the specifically suitable backpack prevents the canister from constantly shifting around and thus makes work a great deal easier.
- The adjusting nut on the spray gun must be closed once the spraying process is complete. The valve on the pressure canister remains open until the canister is completely empty. To maintain usability, any product residue on the nozzle should be removed with G 500 cleaner.



Do not unscrew the spray gun's adjusting nut entirely, because it does not have an end stop. The adhesive would spray out in an uncontrolled manner otherwise.



- 1 Connect the spray gun to the hose, tighten with union nut.
- 2 Spray gun
- 3 Adjusting nut
- 4 Nozzle
- 5 Connecting hose
- 6 Adjusting nut without end stop
- 7 Connecting hose to canister valve
- 8 Pre-determined breaking point To be driven into cure the product residue

Replacing the canister

The canister must only be replaced once it has been completely emptied. The empty condition is detected by means of propellant gas audibly escaping. Once the canister valve has been closed, the connection hose is unscrewed from the canister and the spray gun is opened at the same time to relieve pressure. Once the adjusting nut on the spray gun has been closed, the accessories can be connected to a new canister again.

Disposal:

The empty pressure canister's valve is opened so that the remaining residual pressure can be released. This process should take place outdoors, because any residual adhesive can escape here. The residual pressure is completely released after at least 24 hours. Product residues can cure once a predetermined breaking point has been opened next to the valve.



Follow your local authority guidelines for safe disposal.

1.9 Coverage rates

PRODUCT	TYPE OF BONDING	CONSUMPTION	ROOF PITCH	UNIT
KS 96	On one side	Approx. 7 m Foil approx. 15 m	-	290 ml 600 ml
KS 143	Partial surface / min. 50%	Approx. 225 g/ m ²	Max. 20°	6 kg
KS 143	Full surface bonding	Approx. 300 g/m ²	Max. 20°	6 kg
KS 217	Full surface	Approx. 250 g/m ²	-	5 kg 18 kg
KS 137	Full surface / on both sides	Approx. 500 g/m ²	-	0.9 kg 5.3 kg
KS 205 PRESSURE CANISTER	Full surface / on both sides	Approx. 300 g/m ²	-	14.4 kg pressure canister
KS 205 AEROSOL CAN	Full surface / on both sides	Approx. 300 g/m ²	-	750 ml

2. Tools

2.1 Personal tools

The following tools are required to install HERTALAN® waterproofing membranes:

- Handheld welder (e.g. Leister, BAK, Steinel etc. with a nozzle width of 4 cm)
- Silicone pressure roller (width: 4 cm)
- Wire brush
- Brass pressure roller (width: 6 mm)
- Scissors
- Folding ruler or tape measure
- Cutter knife
- Chalk
- Chalk line

2.1.1 SILICONE PRESSURE ROLLER

The silicone pressure roller allows for proper and convenient installation of waterproofing membranes and is made particularly for professional use on roofs: it is balanced, sturdy and durable.



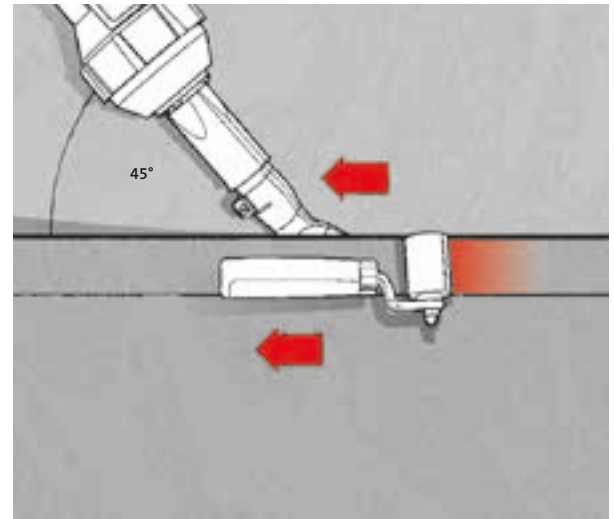
2.1.2 SCISSORS

Professional scissors provide optimum flexibility and allow for clean and precise installation of HERTALAN® waterproofing membranes.



2.2 Welding with the handheld welder

- A test weld should always be performed prior to starting the installation.
- Welding temperature: between approx. 500°C and 580°C. A welding width of min. 30 mm must be ensured.
- While welding with a handheld welder, use a silicone pressure roller to compress the EW joining edge with sufficient pressure. When using a machine, cladding tape must be used to ensure sufficient pressure here too.



! General information:

- The ideal setting depends on the ambient temperature, the wind conditions and the quality of the substrate.
- For subsequent or further installation of our products, such as creating seam connections using HERTALAN® EASY WELD systems (green on black connection), after approx. 24 hours of free exposure the surfaces to be welded (EPDM) must be abraded using a suitable power file.
- Before welding, the grinding dust must be removed and then cleaned with white spirit. This measure is not necessary for a green on green connection.

2.3 Welding with the automatic welder

A test weld should always be performed prior to starting the installation.

Welding temperature:

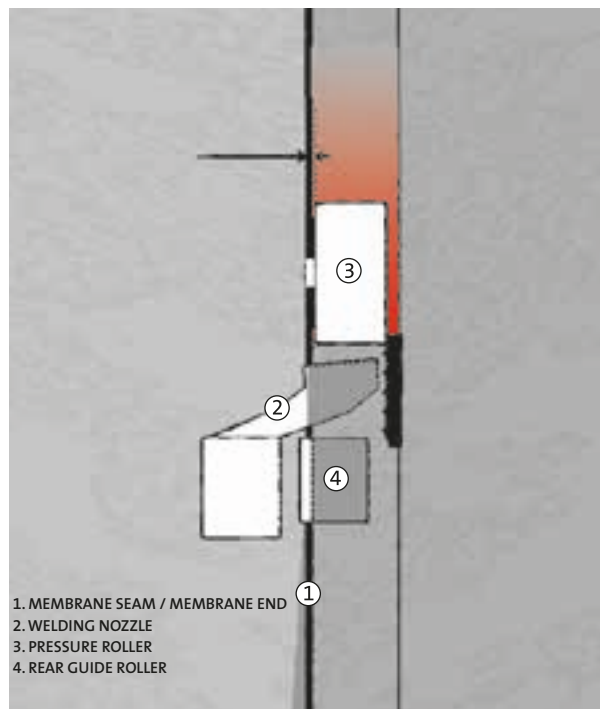
Green on green: approx. 500°C to 580°C and 2.5 m/min

Green on black: approx. 500°C to 580°C and 2.0 m/min

The automatic welder's pressure roller is run precisely along the top edge of the membrane. A welding bead escapes at the edge of the membrane in a very clearly visible way.

When using a machine, cladding tape must be used to ensure even pressure.

If the welding process is interrupted, you must always start welding again from the previous weld end and continue welding from this precise point.



Machine types:

Automatic welder e.g. Leister (type: Varimat).

Accessories:

- Reserve heating cartridge
- Silicone pressure roller (4 cm wide)
- Brass wire brush
- Extension cable (minimum cross section 4 mm)
- Lubricants
- Screwdriver
- Allen key
- Cleaner, white spirit and cloths



Note:

The width of the pressure roller and the nozzle is 4 cm.



2.4 HERTALAN® RhinoBond® fixing system

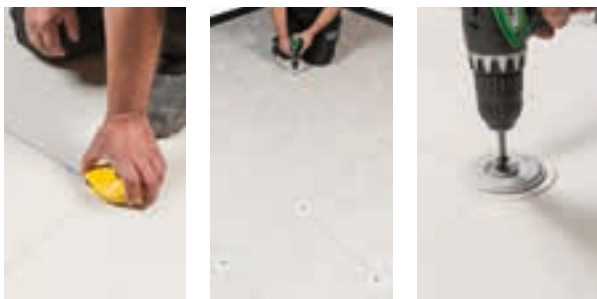
2.4.1 POSITIONING THE FIXING POINTS

The installation pattern for the fastening plates is defined using the wind load calculation and the manufacturer's instructions for the insulation. Apply the fixing pattern to the roof using for example, a chalk line.

Apply the fastening plates according to the fixing pattern.

In the case of meltable substrates, apply the separating disc together with the fastening plate.

Position, roll out and completely unfold the sheet.



2.4.2 PREPARING FOR THE INDUCTION FIXING SYSTEM

Before the HERTALAN® EPDM sheet is welded with the fastening plates by means of induction, the device settings (calibration) must be coordinated to the weather and ambient conditions. A series of welding tests with various energy levels should be carried out on a separate HERTALAN® EPDM sheet for this purpose. They are assessed manually and by means of a simple visual inspection.



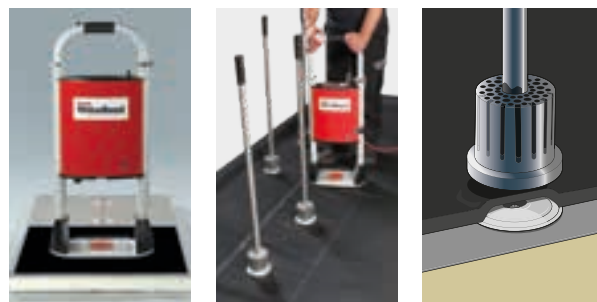
2.4.3 INSTALLING THE HERTALAN® EPDM SHEET

Position the RhinoBond® induction device right on top of a fastening plate on the HERTALAN® EPDM sheet.

Switch the RhinoBond® induction device on. The fastening plate is heated to approx. 280°C by means of induction.

The device beeps after 5 seconds and the welding process is complete.

Place the induction device on the next fastening plate, and then immediately position the cooling rod on the EPDM sheet above the previously welded fastening plate so that the HERTALAN® EPDM sheet is pressed firmly onto the melted coating. The cooling and pressure of the magnet consolidates the connection. The magnetic cooling rods should remain on the fastening plates for at least 45 seconds.



Note:

For more information, please refer to the separate installation instructions for the HERTALAN® RhinoBond® fixing system.

3. Installation

3.1 Installation instructions

INSTALLATION VARIANTS	LOOSE LAID WITH MECHANICAL FIXATION		PARTIAL OR FULL SURFACE COLD BONDING	INSTALLATION WITH BALLASTING / GREEN VEGETATION / WEARING LAYER
WATERPROOFING SHEET / WATERPROOFING MEMBRANE	HERTALAN® EASY COVER HERTALAN® EASY WELD MF / EASY WELD BASIC.		HERTALAN® EASY COVER / EASY WELD HERTALAN® EASY COVER BASIC*	HERTALAN® EASY COVER HERTALAN® EASY WELD MF
FIXATION METHOD	Seam fixation induction method		KS 143 polyurethane adhesive, KS 217 (full surface) for timber / timber materials	Optional or depending on the substrate
COVER IN THE CASE OF SEAM WELDING	Min. 5 cm in the case of green-on-black connections		Min. 5 cm	Min. 5 cm, 11 cm in the case of mechanical HERTALAN® EASY WELD MF seam fixation
COVER IN THE CASE OF SEAM BONDING**	With HERTALAN® KS 137 + HERTALAN® KS 96 10 cm		HERTALAN® KS 137 + HERTALAN® KS 96 10 cm	

*) LOOSE LAID AND BONDED METHODS OF HERTALAN® EASY WELD BASIC MEMBRANES ARE NOT STANDARD VARIANTS, BUT ARE POSSIBLE FROM AN APPLICATION TECHNOLOGY PERSPECTIVE. PLEASE CONTACT OUR TECHNICAL DEPARTMENT FOR MORE INFORMATION.

**) SEAM BONDING NOT POSSIBLE IN THE CASE OF MECHANICAL HERTALAN® EASY WELD MF SEAM FIXATION AND UNDER GREEN VEGETATION.

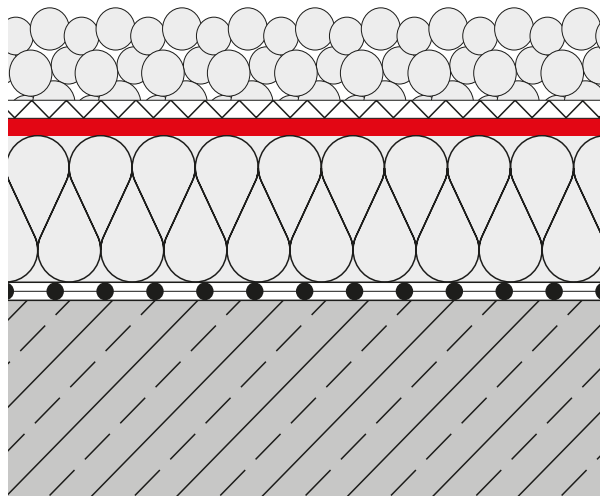


3.2 Installation variants

3.2.1 LOOSE LAID AND BALLASTED

The loose laid layers are secured in place by means of an appropriate ballasting solution, such as washed river gravel with a grain size of 16 / 32. Ballasting for flat roofs is determined according to DIN EN 1991-1-4.

The load bearing capacity of the roof structure must be checked.

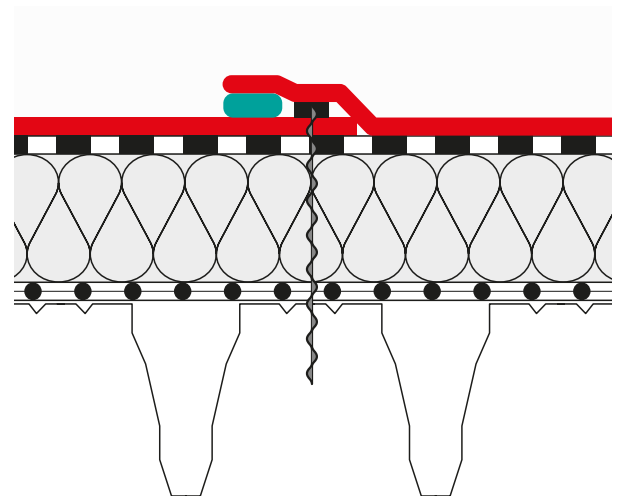


3.2.2 MECHANICAL FIXATION

The solution is secured in place by means of mechanically fixing the layer package in the supporting shell using roofing screws and fastening plates. There are different systems for this purpose: The required fixing elements for flat roofs are calculated according to DIN EN 1991-1-4.

HERTALAN® EASY WELD MF membranes are mechanically fixed in the overlap area (with 80 mm x 40 mm mounting plates). The readymade EW joining edges (alternately above and below) overlap at a width of min. 110 mm and are welded following fixation using hot air.

The roofing membrane must be fixed in the end join area with at least two fasteners (80 mm x 40 mm) and fixed in the longitudinal seam area approx. 10 mm from the middle of the membrane.



3.2.3 BONDED ROOF SYSTEM

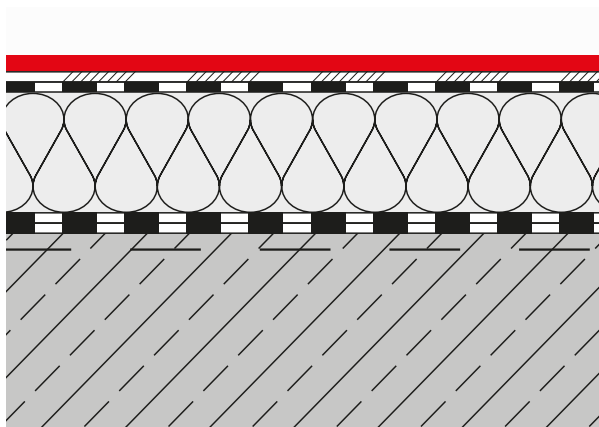
Partially bonded roof system

The substrate is prepared for bonding by applying HERTALAN® KS 143 in uninterrupted lines in the longitudinal direction to the sheet or the roofing membrane (application min. 50% surface area).

1. Perforate the container at the bottom end on an outside edge with four holes, approx. 6 to 8 mm in diameter.
2. Unscrew the cap on the top of the container.
3. The adhesive surfaces must air dry for between a minimum of 5 minutes and a maximum of 20 minutes dependent on certain conditions such as wind, temperature and humidity.
4. The HERTALAN® EPDM sheets and membranes are rolled into the prepared adhesive surface.
5. The surface is then compressed with a soft brush to prevent air bubbles from forming.



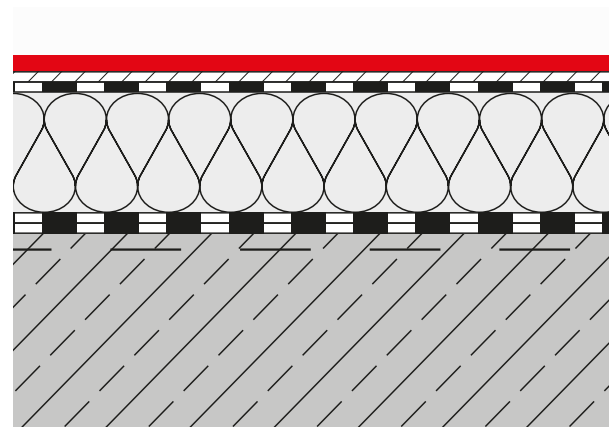
Attention In the case of full surface bonding, evenly distribute the applied adhesive with a fine paint roller.



Full surface bonded roof system with KS 217 water based surface adhesive on timber and timber materials

The substrate is prepared for bonding by applying HERTALAN® KS 143 in the longitudinal direction to the sheet or roofing membrane.

1. Apply the adhesive with a fine paint roller.
2. The open time depends on the outdoor temperature and ranges between 30 minutes at an outdoor temperature of approx. 5°C and 10 minutes at an outdoor temperature of approx. 30°C. The open time can vary accordingly depending on humidity and sunlight.
3. The HERTALAN® EPDM sheets and membranes are rolled into the prepared adhesive surface.
4. The surface is then compressed with a brush to prevent air bubbles from forming.

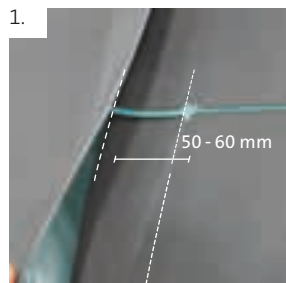


3.3 Detail formation

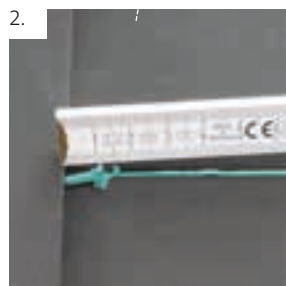
3.3.1 T-JOINT FORMATION

No EW joining edges that have been ready-made in the factory are attached to the end edges of the HERTALAN® EASY WELD waterproofing membranes.

T-joints and seam offsets are adjusted with a suitable power file or with the HERTALAN® EW welding cord to prevent capillaries from forming. The connection to end joints is established using HERTALAN® cover strip. The cover strip is rounded off at the outer edges and welded on as described previously.



Insert the welding rope approx. 50 mm to 60 mm in the seam offset area.

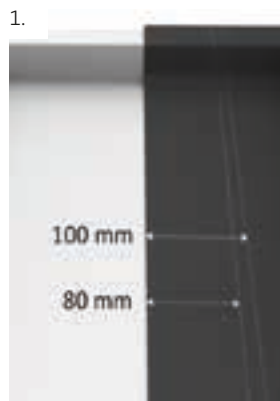


Have the welding rope protrude approx. 10 mm from the coverage.



During the welding process, persist with the welder for a short time to guarantee optimum heating of the welding rope.

3.3.2 SEAM BONDING



The seam coverage is min. 100 mm.

In the overlap area, apply 80 mm of KS 137 contact adhesive on both sides with a brush or a fleece roller.

Keep the remaining 20 mm free from contact adhesive.



After air drying, the seam is firmly compressed with a silicone roller. KS 96 adhesive is then applied in the edge area (20 mm) and rolled on in the longitudinal direction using a silicone pressure roller.

During this process, it must be ensured that a bead of adhesive measuring min. 1 mm escapes.

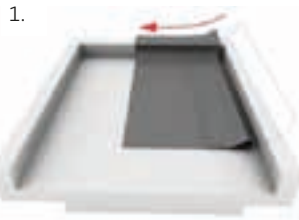
The excess adhesive is removed with the rear of an empty cartridge, for example.



Following completion, the seam must be protected against mechanical influences until final curing has taken place (approx. 24 h).

The seam must not be stepped on until it is fully cured.

3.3.3 FORMATIONS OF AN INTERNAL CORNER (FOLDING TECHNIQUE)



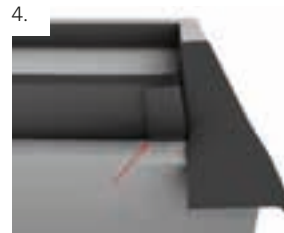
Apply the EPDM sheet, align so that the edges are straight, and fold back on one side in the longitudinal direction.



Cut into the mark at or up to the highest point.
Fold back the cut part of the material.



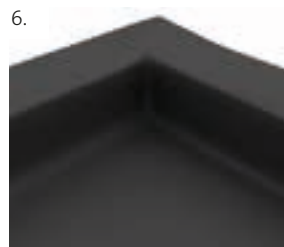
Raise the opposite side, fold inwards.



Mark the fold on the upper edge from the outside.



Cut into the mark up to the highest point.
Fold the inside corner so that the edges are straight and adjust the gradient accordingly. Cut off excess material.



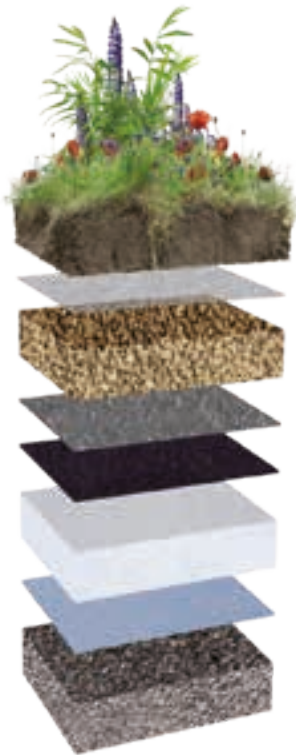
Fold the inside corner back and bond horizontally and vertically using contact adhesive, including the overlapping zones.

3.4 Roof vegetation

When it comes to roof vegetation, a distinction is made between

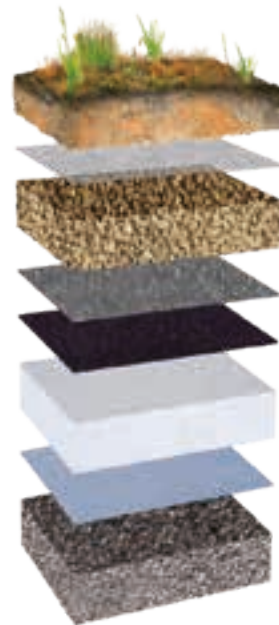
- Intensive roof vegetation and
- Extensive roof vegetation

Shrubs, woody plants and turf in particular are used for intensive roof vegetation projects. Bushes or trees can also be planted intermittently. For extensive roof vegetation, grasses, moss, herbs, sedum and other hardy and regenerative plants are planted in the thinner layers of substrate.



Typical roof structure
Intensive vegetation

- ... Vegetation layer
- ... Filter layer
- ... Drainage layer
- ... Protective layer
- ... HERTALAN® EPDM sheets or membranes
- ... Thermal insulation
- ... ALUTRIX® FR / ALUTRIX® 600 vapour barrier
- ... Substrate



Typical roof structure
Extensive vegetation

- ... Vegetation layer
- ... Filter layer
- ... Drainage layer
- ... Protective layer
- ... HERTALAN® EPDM sheets or membranes
- ... Thermal insulation
- ... ALUTRIX® FR / ALUTRIX® 600 vapour barrier
- ... Substrate

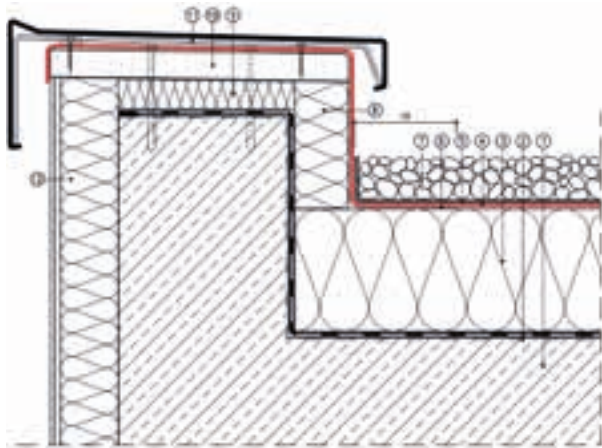
4. Detail drawing



Please observe the general installation instructions when forming all detailed designs presented below.

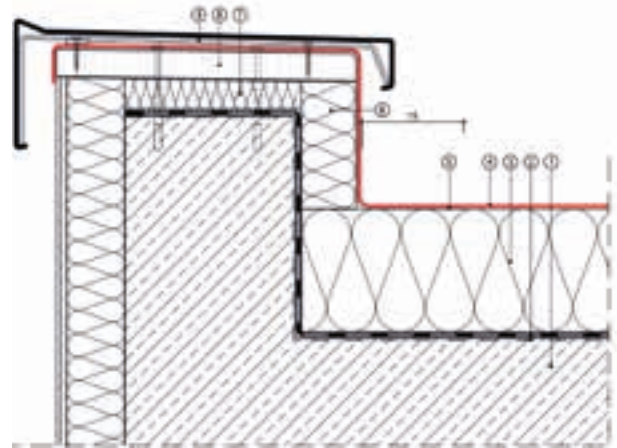
4.1 Fixing edges

4.1.1 LOOSE LAID AND BALLASTED



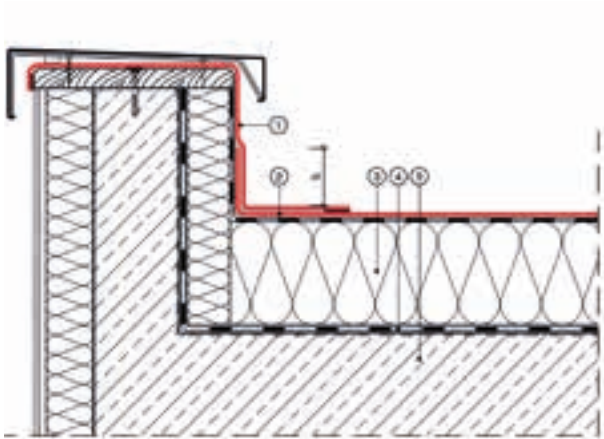
1. Concrete deck
2. ALUTRIX® 600 / ALUTRIX® FR vapour barrier
3. PUR / PIR bonded, as per the manufacturer's instructions
4. HERTALAN® EASY COVER, loose laid
5. Geo textile fleece, 300g/m²
6. Edge fixation with HERTALAN® KS 205 (approx. 300 g/m²) or HERTALAN® KS 137 (approx. 500 g/m²), vertical min. 120 mm, horizontal min. 150 mm
7. Gravel, 16 / 32 rounded stones, min. 50 mm
8. CCM PUR / PIR thermal Insulation
9. Pressure resistant insulation
10. Multi layer panel throughout
11. Parapet cover, aluminium or similar, mechanically fixed
12. Thermal insulation system

4.1.2 APPLIED BY MEANS OF BONDING



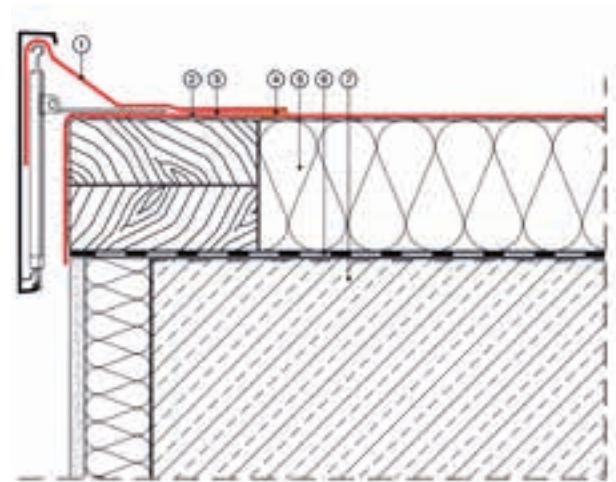
1. Concrete deck
2. ALUTRIX® 600 / ALUTRIX® FR vapour barrier
3. PUR / PIR bonded, as per the manufacturer's instructions
4. HERTALAN® EASY COVER, applied by means of bonding with HERTALAN® KS 143
5. PUR / PIR thermal insulation
6. Pressure resistant insulation
7. Multi layer panel throughout
8. Parapet cover, aluminium or similar, mechanically fixed
9. Thermal insulation system

4.2 Finishing upstands



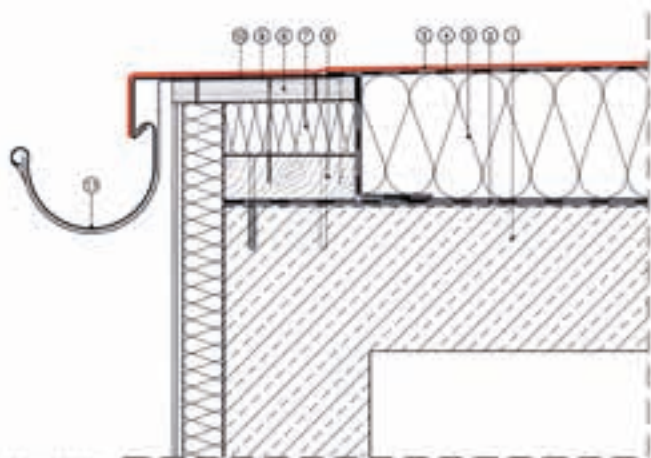
- | | |
|--|--|
| <ol style="list-style-type: none"> 1. HERTALAN® EASY WELD bonded with HERTALAN® KS 205 / KS 137 2. HERTALAN® EASY COVER bonded with HERTALAN® KS 143 (surface) | <ol style="list-style-type: none"> 3. PUR / PIR insulation, bonded acc. to manufacturer 4. Vapour barrier 5. Concrete |
|--|--|

4.3 Finishing roof edges



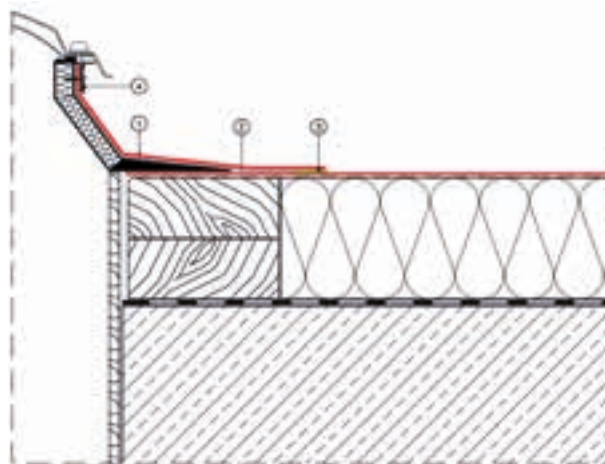
- | | |
|---|---|
| <ol style="list-style-type: none"> 1. HERTALAN® EASY WELD 2. HERTALAN® EASY COVER bonded with HERTALAN® KS 143 3. Bonding with HERTALAN® KS 205 / KS 137 | <ol style="list-style-type: none"> 4. EW joining edge 5. PUR / PIR insulation 6. Vapour barrier 7. Concrete |
|---|---|

4.4 Gutter drainage



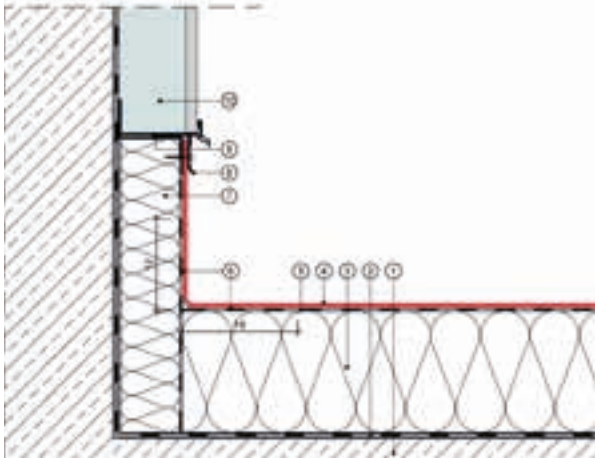
1. Concrete deck
2. Vapour barrier
3. EPS insulation
4. Cold applied, self adhesive membrane
5. HERTALAN® EASY COVER, applied by means of bonding
6. Timber sheet
7. Pressure resistant insulation
8. Multi layer panel throughout
9. Iron gutter bracket
10. Zinc suspension plate
11. Bracket mounted roof gutter made of zinc plate bonded to suspension plate with HERTALAN® EASY COVER KS 205 / 137

4.5 Skylight corner connection



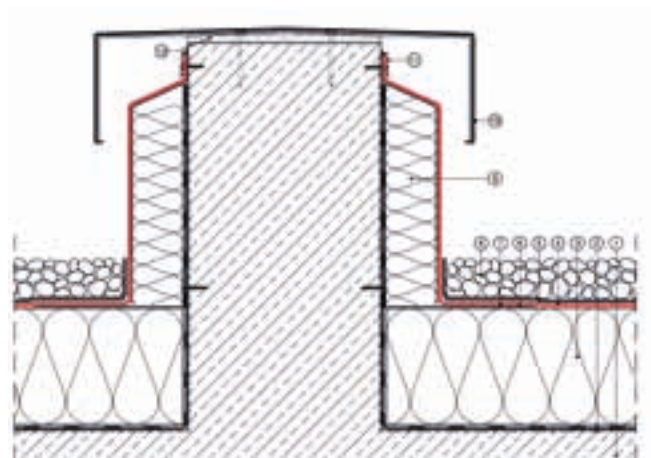
1. HERTALAN® EASY WELD bonded with HERTALAN® KS 205 / KS 137
2. HERTALAN® EASY COVER bonded with HERTALAN® KS 143
3. EW joining edge, 40 mm
4. Finish, e.g. flange profile

4.6 Wall connection



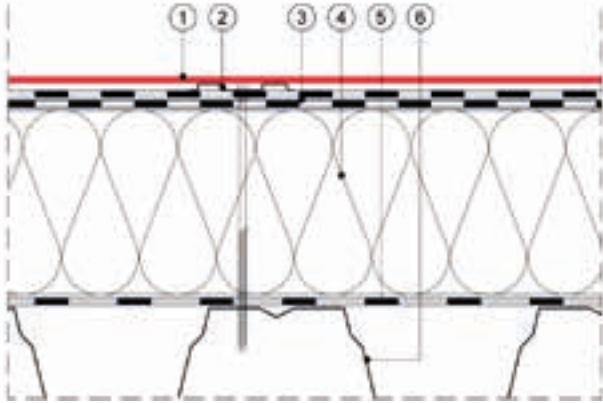
1. Concrete deck
2. Vapour barrier
3. EPS insulation
4. HERTALAN® EASY COVER, applied by means of bonding
5. Cold applied, self adhesive membrane
6. Edge fixation with HERTALAN® KS 205 (approx. 300 g/m²) or HERTALAN® KS 137 (approx. 500 g/m²), vertical min. 120 mm, horizontal min. 150 mm
7. PUR / PIR thermal insulation
8. Connection profile
9. Z profile
10. PUR / PIR thermal insulation

4.7 Fire wall



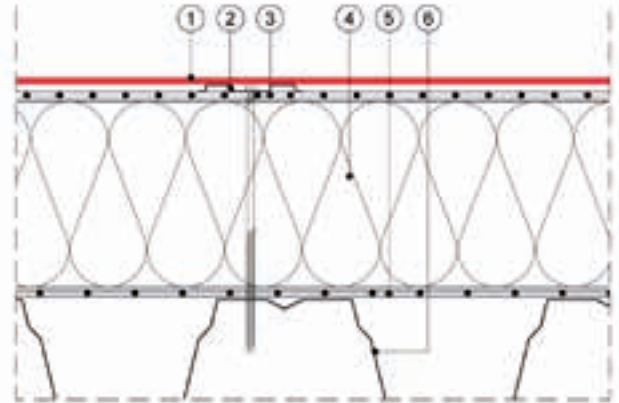
1. Concrete deck
2. Vapour barrier
3. Mineral fibre insulation, loose laid
4. HERTALAN® EASY COVER, loose laid
5. Geo textile fleece, 300 g/m²
6. Sheet metal bracket, 50 x 220 mm
7. Edge fixation with HERTALAN® KS 205 (approx. 300 g/m²) or HERTALAN® KS 137 (approx. 500 g/m²), vertical min. 120 mm, horizontal min. 150 mm
8. Gravel, 16 / 32 rounded stones, min. 50 mm
9. Megarock thermal insulation
10. Sheet metal cover
11. Wall connection profile
12. Non flammable filling (e.g. smooth finish)

4.8 Refurbishing a bitumen roof with RhinoBond®



- | | |
|---|----------------------------|
| 1. HERTALAN® EASY COVER | 4. EPS insulation |
| 2. RhinoBond® fixing plate
(incl. screw) | 5. Vapour barrier |
| 3. Existing bitumen roof | 6. Trapezoidal steel sheet |

4.9 Refurbishing a PVC roof with RhinoBond®



- | | |
|---|-----------------------------|
| 1. HERTALAN® EASY COVER | 4. Mineral fibre insulation |
| 2. RhinoBond® fixing plate
(incl. screw) | 5. PE film |
| 3. PVC roofing membrane | 6. Trapezoidal steel sheet |

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