

CARLISLE® ROOFING SYSTEM

COMPLETE WATERPROOFING SOLUTIONS FOR FLAT ROOFS & BUILDINGS



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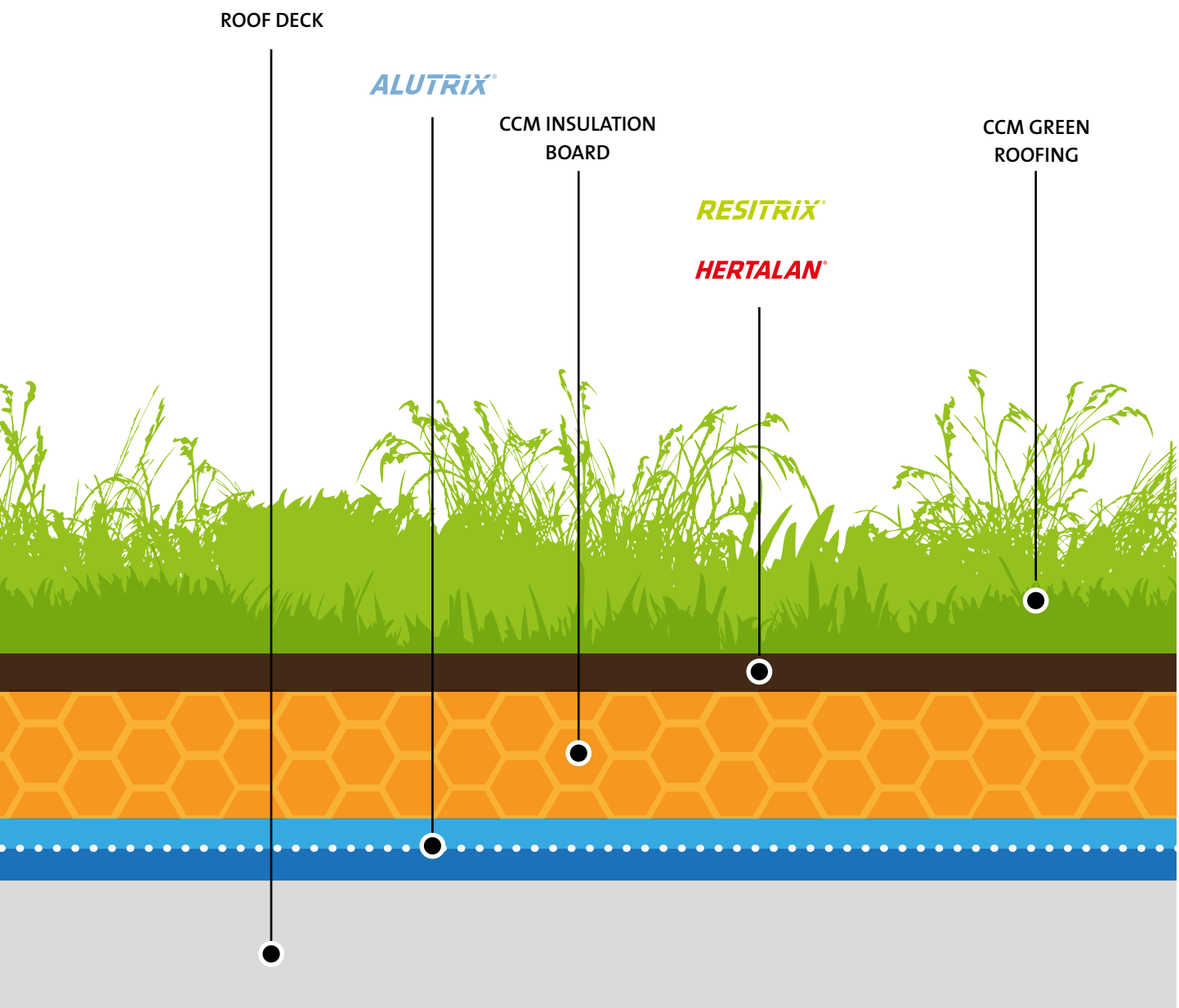
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Introduction

CARLISLE® CM Europe is the market leading manufacturer of EPDM single-ply roofing membranes.

We offer a hassle free, high quality, complete roofing system. The CARLISLE® roofing system includes vapour barrier, single-ply membrane, insulation and a range of green roofs to provide you with the best solution supported by an industry leading guarantee for complete peace of mind.



Vapour barrier layer

ALUTRIX® 600 and ALUTRIX® FR vapour barrier membranes are quick to install, self-adhesive and extremely resistant to moisture vapour. The membrane consists of reinforced aluminium with a self-adhesive backing and detachable release film. Both vapour barriers are particularly suitable for use on profiled steel sheets.



PROPERTIES:

- Cold self-adhesive
- Vapour-tight
- Puncture-resistant and can be walked on
- Highly tear resistant
- Forms an air-tight layer
- Resistant to chemicals and ageing

PRODUCT-SPECIFIC PROPERTIES:

- CE certification and DIN EN 13970
- ALUTRIX® FR – Fire load reduced according to DIN 18234 or industrial buildings directive
- ALUTRIX® FR meets the FM Standard Class No.4470



Detailed substrate requirements and installation information can be found in the ALUTRIX® installation instructions and in our specification guidelines.

APPLICATIONS		ALUTRIX® 600	ALUTRIX® FR	FG 35	FG 35 PERCENTAGE OF AREA/ CONSUMPTION
INFORMATION FOR SURFACE BONDING *)	Metallic materials:				
	• Galvanized or un-coated substrates	Yes	Yes	Yes	50 %/ 100 g/m²
	• Plastic-coated substrates	Yes	Yes	No	---
	Wooden materials **)	Yes	Yes	Yes	50 %/ 100 g/m²
	Concrete materials without deck	Yes ***)	No	Yes	50 %/ 100 g/m²
	Bitumen materials	Yes	Yes	Yes	50 %/ 100 g/m²

*) For loosely installed roof structures with mechanical fixings or with ballast, priming within the roof area is not generally required.

**) Arrangement of separate, non-bondable separating tapes over joints of wooden plates with edge lengths longer than 500 mm.

***) On dry, smooth and clean concrete materials only. Mechanical damage or perforations must be avoided.

PRODUCT CODE

65000746

MATERIAL DETAILS	TEST PROCEDURE	ALUTRIX® 600	ALUTRIX® FR
THICKNESS	DIN EN 1849-2	0.6 mm	0.4 mm
WEIGHT	DIN EN 1849-2	approx. 700 g/m²	approx. 300 g/m²
PACKING UNITS PER PALLET		20 rolls	30 rolls
ROLL LENGTH	DIN EN 1848-2	40 m	
ROLL WIDTH	DIN EN 1848-2	1.08 m	
MAXIMUM TENSILE LOAD LONGITUDINAL/ TRANSVERSE	DIN EN 12311-2	≥800 / 700 N/5 cm	
NEEDLE-TEAR RESISTANCE LONGITUDINAL/ TRANSVERSE	DIN EN 12310-1	200 N	
COLD-BENDING BEHAVIOUR	DIN EN 495-5	-20 °C	
WATER TIGHTNESS 4 BAR/72 H	DIN EN 1928	Tight	
SHEAR STRENGTH	DIN EN 12317-2	657 N/5 cm	
FIRE BEHAVIOUR	DIN EN 13501-1	Class E	
STEAM PERMEABILITY SD VALUE	DIN EN 1931	> 1,500 m	
VISIBLE DEFECTS	DIN EN 1850-1	None	
STABILITY UNDER CHEMICAL ATTACK	DIN EN 1847/1928	Passed	
STABILITY UNDER ARTIFICIAL AGEING	DIN EN 1296	Passed	
IMPACT LOAD PROCEDURES A AND B	DIN EN 12691	150 and 1,500 mm	
RESISTANCE TO STATIC LOAD PROCEDURES A AND B	DIN EN 12730	20 kg and 20 kg	
HEATING VALUE	DIN 51900-1	No requirement ≤ 10,500 kJ/m²	
FM APPROVAL	FM Standard Class No. 4470	No requirement Class 1	

CARLISLE® Thermal Insulation



CARLISLE® Thermal Insulation-T

CARLISLE® Thermal Insulation-T is a high performance tissue faced insulation board that has been specifically designed for use with award winning RESITRIX® and HERTALAN® waterproofing membranes, in both new build and refurbishment applications.

Our market leading PIR insulation board benefits from high compressive strength and excellent dimensional stability, ensuring the flat surface finish required to achieve optimum performance.

In addition, these boards are suitable for use with a wide range of adhesives, primers and mech-fix systems.



CARLISLE® Thermal insulation-F

CARLISLE® Thermal Insulation-F is a high performance foil faced insulation board specifically designed for use with single ply EPDM membranes RESITRIX® and HERTALAN®, in both new build and refurbishment applications.

This high performance rigid PIR foam board is suitable for use in warm flat roofs under our mechanically fixed single-ply membrane systems. With dimensional stability, the board benefits from high compressive strength that exceeds 150kpa at yield. It is also suitable for loads associated with pedestrian maintenance traffic on the roofing systems.



CARLISLE® Thermal Insulation



CARLISLE® Inverted board

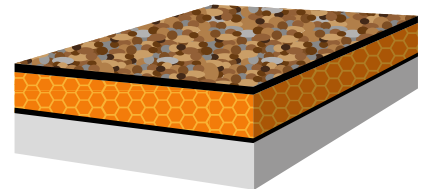
CARLISLE® Inverted Roof Insulation is a unique innovative closed cell expanded polystyrene (EPS) with low water absorption properties.

The insulation boards are loose laid over the weatherproofing, there is no requirement to adhere or mechanically fix the boards. Typically ballast and/or paving slabs are used to secure the insulation to the deck.

Our inverted roof insulation is manufactured in accordance with BS EN ISO 13163 under a quality assurance system approved to BS EN ISO 9001 and environmental management system to ISO 14001.

CARLISLE® Inverted Roof Insulation is a 100% recycled product. Lightweight and easy to install, they are available in single sheets between 50mm to 250mm thickness.

There are 3 types of compression strength available from 200kpa, 300kpa and 500kpa – this allows us to value engineer solutions based on loading requirements. All our boards are ETAG031 compliant.



CARLISLE® tapered insulation scheme

CARLISLE® tapered insulation is a popular alternative to onsite methods like screed-to-falls and timber firing pieces. CARLISLE® tapered insulation can be designed to meet the requirements of the most complicated projects, with installation times significantly reduced when compared to alternative industry methods.

Our tapered insulation scheme not only provides a solution for surface water drainage, but it can also be designed to meet the thermal performance requirements of the building. Our Technical Team can assist you when specifying tapered insulation on the substrate build-up, upstand limitations and the method of drainage.

Each roof is designed based on varying factors and a bespoke tapered insulation design (scheme of falls) is created for every project. The approved design is then used on site to guide contractors through the installation process.



EPDM waterproofing membranes

RESITRIX® – bitumen backed single-ply membranes

For over 50 years we have put all our experience and passion for EPDM into the development, production and installation of sustainable systems. This is how we developed our RESITRIX® EPDM waterproofing system to address particular challenges and reliable protection for flat roofs and waterproofing of buildings and facades, in both old and new builds.



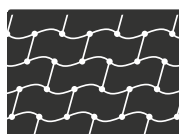
Thanks to the material qualities of EPDM, RESITRIX® is particularly characterised by its extremely stable molecular structure and is simultaneously extremely flexible down to a temperature of -40 °C. RESITRIX® withstands stretching of over 500% and then returns to its original position, meaning RESITRIX® can withstand any of the expansion stresses to which a flat roof is subjected during its normal life cycle. Furthermore, over the entire life of a RESITRIX® roof, there are no measurable changes, loss in weight, thickness, tensile strength or robustness of RESITRIX®.

For example, RESITRIX® has a maximum tensile force of approx. 650 N/50 mm: this means that a small car of up to 1,300 kg could be suspended to the membrane without any problems.

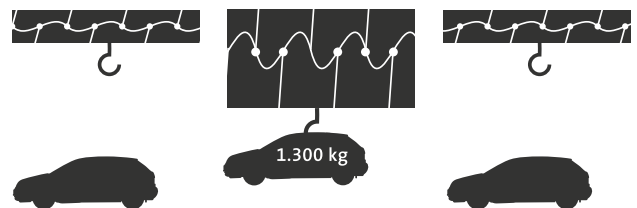
The RESITRIX® product range brings together the proven benefits of polymer-modified bitumen with the excellent qualities of EPDM in a highly flexible, single layer water-proofing membrane with outstanding installation properties.



NEWLY INSTALLED



NO STRUCTURAL
CHANGES AFTER
50 YEARS



WITHSTANDS STRETCHING OF OVER 500% AND
THEN RETURNS TO ITS ORIGINAL POSITION

HERTALAN® – bespoke EPDM waterproofing membranes

We have developed our sophisticated HERTALAN® EPDM systems for the special challenges and reliable protection of flat roofs and building waterproofing, for both refurb and new builds. As the first European manufacturer of EPDM waterproofing membranes and sheets, we have been supplying outstanding and long-lasting quality since the 1960's.



HERTALAN® is a plasticiser free material that is permanently resistant to UV rays, ozone and other natural atmospheric influences and is also extremely elastic within the temperature range of -45°C to +120°C. Thanks to its outstanding elasticity of up to 500%, it can be put to flexible use in various waterproofing situations. HERTALAN® withstands all tensile stresses that a flat roof is exposed to during the course of its normal life cycle.

These unique material properties of EPDM mean that HERTALAN® has an especially long service life. The South German Plastics Centre (SKZ) in Würzburg, which has tested our EPDM membranes in a long-term study, has acknowledged that HERTALAN® EPDM systems have a service life of more than 50 years.

In addition, the sustainability of HERTALAN® has been certified by the Dutch certification institute NIBE (Institute for Building Biology and Ecology) by way of a DUBO certificate and an environmental product declaration (EPD).

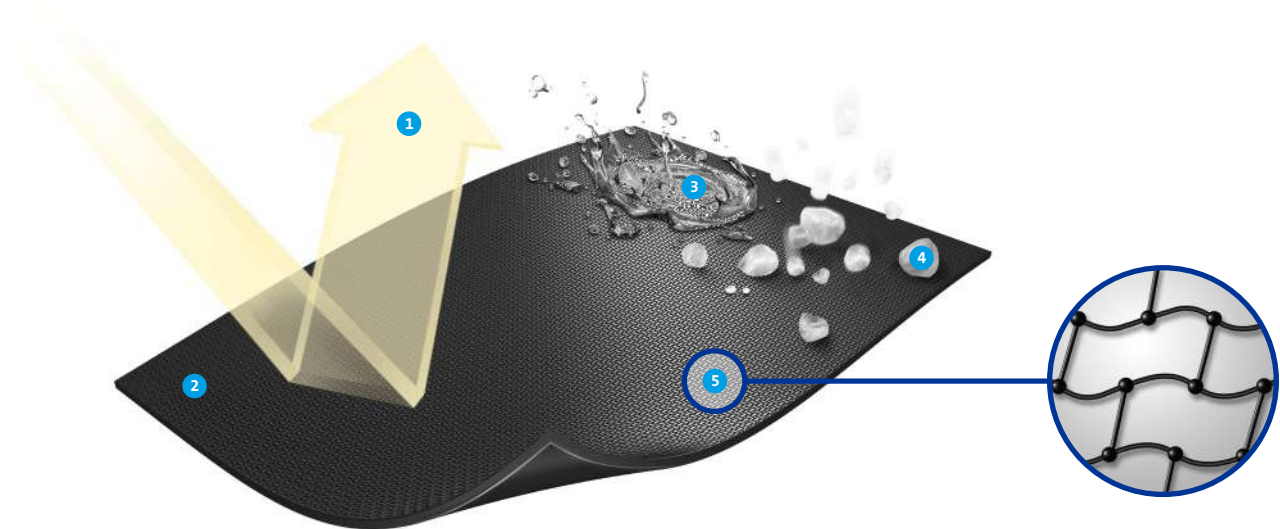
Our intelligent HERTALAN® EPDM systems make permanent flat roof and building waterproofing with EPDM easier than ever before. While the HERTALAN® EASY COVER sheet system, which is readymade in the factory, guarantees quick and easy application in a single work step, the HERTALAN® EASY WELD roofing membrane system enables safe installation without any risk of fire thanks to hot-air welding.

Why EPDM?



A waterproofing system used on flat roofs has much to endure. Above all, moisture, thermal and mechanical stresses (wind, sun, cold, precipitation and so on) lead to serious material demands which quickly age many waterproofing systems. It is no wonder that the procedure for producing EPDM (ethylene propylene diene monomer rubber) received a Nobel prize.

Due to its molecular structure, EPDM has outstanding material properties:



1 Permanently resistant to

- UV radiation
- Ozone radiation

2 EPDM

3 Extremely resistant to
a wide range of chemicals

4 Excellent resistance to ageing and weather, especially:

- Rain
- Hail, ice, snow
- High and low temperatures

5 Fully cross-linked molecular structure

- Permanently elastic and highly flexible
- Elongation at tear of up to 600%
- Flexible in cold weather down to -40°C
- Virtually shrink-free
- Bitumen resistant
- Halogen and softener free

Green roof system



MODULAR



CARLISLE® module comprises four layers: drainage, filter, substrate & sedum.

- Easy installation with an exceptional sedum growth coverage.
- Delivered in palletised form with a maximum number of 66 modules per pallet (15 m²).
- Lightweight with a high water storage capacity.
- 8–10 different sedum species are well rooted and grown to maturity.

EXTENSIVE



CARLISLE® extensive component green roof system consists of multiple layers including drainage, filter, substrate and sedum/ wild flower mat.

KEY FEATURES

- Comprises four layers: drainage, filter, substrate & sedum/ wild flower mat.
- Easy installation with pre grown vegetation for an instant green.
- Delivered in palletised form.
- Lightweight system with water storage capacity.
- Variety of different species: well rooted and grown to maturity.
- Offers seasonal variation in colour including a vivid flowering season to attract pollinators.
- Blankets may be installed on sloping surfaces of up to 30 degrees.

INTENSIVE



CARLISLE® intensive component green roof system consists of multiple layers including drainage, filter, substrate and a wide range of landscaping options depending on the substrate depth.

KEY FEATURES

- Comprises four layers: drainage, filter, substrate & landscaping options.
- Easy installation with pre grown vegetation for instant effect.
- Delivered in palletised form.
- System with water storage capacity.
- Variety of different species: well rooted and grown to maturity.
- A greater choice of seasonal variation in plants and colours.
- Create recreational space.

BIO DIVERSE

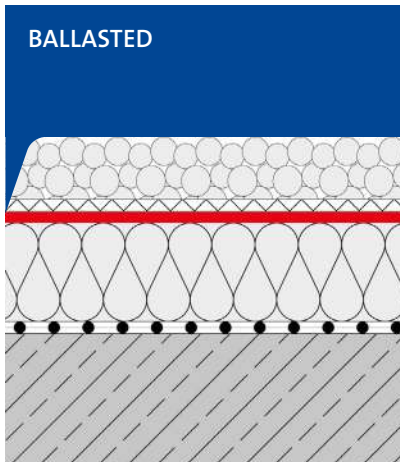


CARLISLE® bio diverse component green roof system consists of multiple layers including drainage, filter, substrate and a plantation determined by nature dependant on the substrate depth.

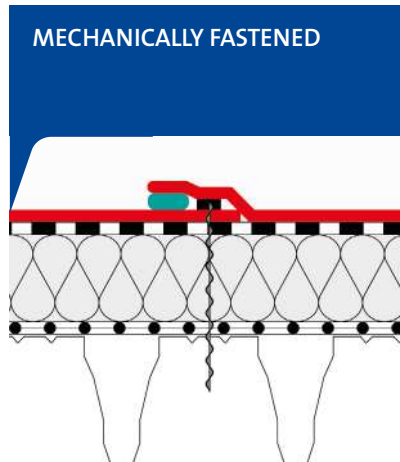
KEY FEATURES

- Comprises four layers: drainage, filter, substrate & natural plantation.
- Easy installation.
- Create natural habitat like plants, birds, animals and invertebrates to thrive.
- Delivered in palletised form.
- System with water storage capacity.
- Natural choice of plantation complimenting your local surroundings.

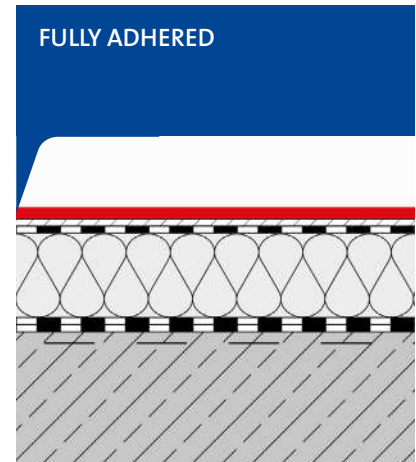
Roofing system installation options



Loose installations using ballast is quick and easy and is an extremely cost efficient choice for large roofs with limited detailing. This option is particularly suited for large industrial and commercial constructions. A ballast option features a loose-laid membrane that is covered and held in place by washed river gravel.



Mechanically fastened roof systems are lightweight and easy to maintain. We also offer a complete range of fasteners that are quick to install. The EPDM membrane is held in place by plates and fasteners that are secured through or below the membrane and into the deck. This method of attachment is the most widely installed system in the commercial roofing industry.



Fully adhered roof systems offer maximum stability and reliable installation. CARLISLE® offers an extensive range of adhesives including self adhered EPDM membranes for ease of installation.

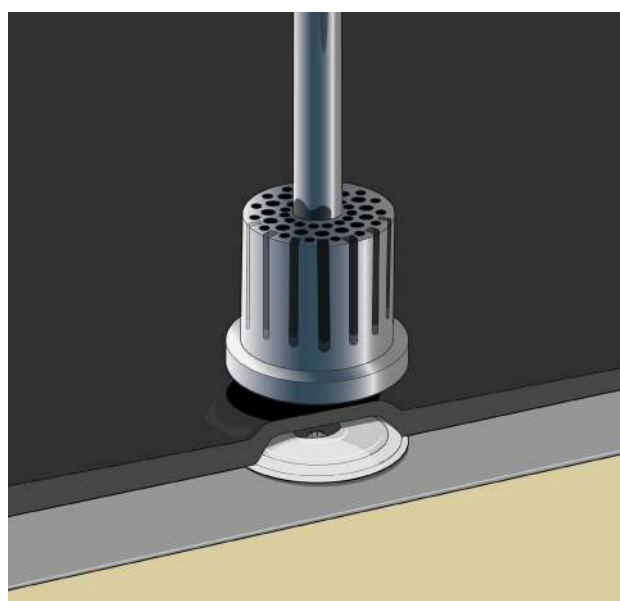
Experience the new dimension in installation with the RhinoBond® induction fixing system and our HERTALAN® EASY COVER sheets. This complete system uses induction compatible plates to fix the HERTALAN® EPDM sheet and the insulation in the supporting shell without any need to penetrate the roof waterproofing solution.

INNOVATIVE TECHNOLOGY

RhinoBond® is an electromagnetic induction welding technology which is used as an induction fixing system in combination with HERTALAN® EASY COVER EPDM sheets. The induction device is activated directly using the specially coated fastening plate. The coating on the fastening plates is heated to approximately 280°C and thus liquefied by means of induction. The heating process lasts only five seconds if the RhinoBond® device is calibrated to the ambient temperature, the lining thickness and the power source.

Immediately after welding, a permanent connection to the HERTALAN® EPDM sheet is created within 45 seconds due to the magnetic cooling rods applying firm pressure on previously welded fastening plates.

The plates can be loosened again at a later time using the induction device. It is therefore possible to re-use the sheet if necessary.



SEVERAL MILLION SQUARE METRES OF ROOF AREA HAVE ALREADY BEEN PERMANENTLY WATERPROOFED IN THE USA WITH THE TRIED AND TESTED RHINOBOND® SYSTEM.

Value adding services

Training with the CARLISLE® ACADEMY

As Europe's leading manufacturer of EPDM, each of our CARLISLE® ACADEMY training sessions provides you with sound expert knowledge and practical expertise. Our courses focus on our company's own product lines.

Irrespective of the products, systems or solutions, CARLISLE® Academy offers the right training course. Training can be provided at our academy in Mansfield, or organised at your premises. Our tailor made courses are designed for the professionals, by the professionals.



GUARANTEE



CARLISLE® offer a standard 20 year product guarantee on all of systems.

Comprehensive product and workmanship guarantees are also available.

For more details please contact our Mansfield office or your local sales representative.

TECH & DESIGN SUPPORT



Our technical team are on hand to assist you in any way they can – from creating the specifications to inspecting the roof.

Many construction projects are highly complex, so you are more than welcome to contact our experienced technical team with any questions.

Value adding services



SUPPORT IN ALL SERVICE PHASES

Specifications writing

Roof inspections

Roof openings in the event of refurbishment operations

Creation of refurbishment concepts (flat roof check)

Technical advice for an individual roof structure (green roof Mechanical fastening or bonded roof structures)

U-value calculations

Cad drawings for individual connection areas or roof structures

Advanced test runs and wind load calculations

Testing laboratory

Drainage calculations

Wind suction calculations

BIM – VIRTUAL DESIGNS-REAL BUILDINGS

Consistent data standards, transparent planning processes, keeping construction costs within budget and adhering to the construction time line – while working with virtual, digital building information is already standard worldwide, the implementation of construction projects using building information modelling (BIM) is developing at a gradual pace. At CCM Europe, we want to be prepared for the comprehensive use of BIM and have therefore developed key detailed drawings with BIM-relevant data. As an architecture or planning firm, you can therefore use the detailed drawings with all the important information in the field of roof waterproofing.

Please contact our technical team for any drawing requests.

Exploiting the material's potential



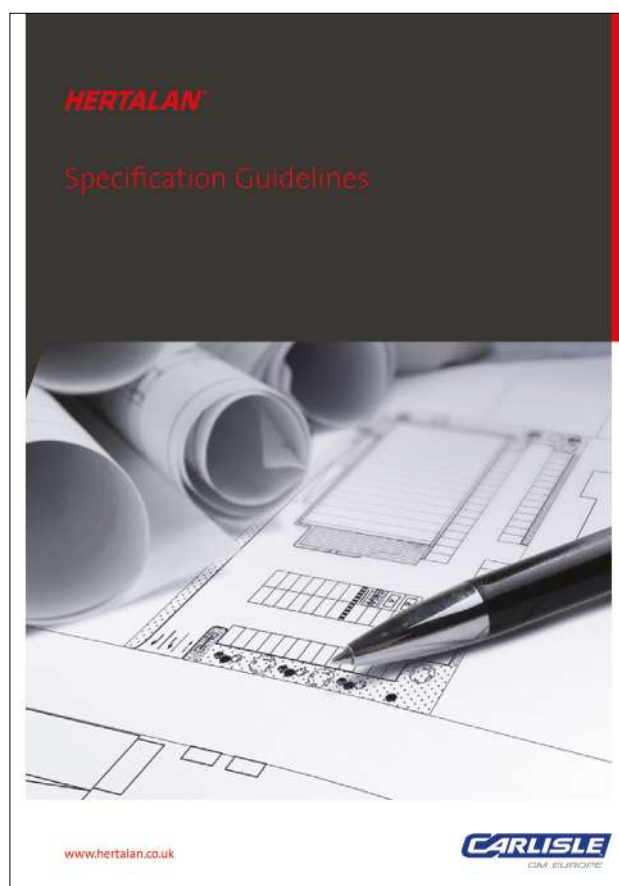
At CARLISLE® CM Europe, we see ourselves as solution providers first and manufacturers second. In addition to outstanding EPDM products, we therefore offer you an extensive customer service that helps you successfully implement your project from the very outset.

We would like you to really exploit the potential of the versatile material EPDM. Our technical team are on hand to help you in any way they can – from creating the specifications to inspecting the roof.

Many construction projects are highly complex. As it is often impossible to deal with the smallest details of every maintenance group, you are more than welcome to contact our experienced technical team with your questions.

Furthermore, to assist you with your planning and preparatory work for roof waterproofing solutions, we have Product Specification Guidelines for RESITRIX® and HERTALAN®. These guidelines are available to download via our website (www.ccm-europe.com) or contact our sales team and we will be happy to send you a printed copy.

These guidelines include key roof structures and detailed designs in text and visual illustrations.



Regional roots, global network

RESITRIX® is one of the innovative products brought together under the strong umbrella brand of CARLISLE® CM Europe, or 'representing' decades of skill in EPDM sealing solutions. Quality manufactured in Germany, at home on roofs throughout the world.



The CARLISLE® CM Europe Group brings together decades of experience of European rubber producers under one roof. It is part of the listed US group CARLISLE® Companies Incorporated and can look back on many years of tradition.

As an established specialist in high-quality technical elastomer products for flat roofs, façades and the waterproofing of buildings, we are always looking ahead. With our 475 employees, we do what we can every day to inspire our customers – with the best products, the best advice and the best training.

We give our customers the knowledge they need to carry out their projects properly and thus successfully. Only a manufacturer understands it's current products and the ways they can be used in the future.

For years, we have intensively trained craftsmen so that they can achieve the very best build quality. We have significantly expanded our training capability in our CARLISLE® ACADEMY and we can offer tailor-made training to installers, retailers, architects and planners. Success starts in the CARLISLE® ACADEMY.

Locations

EUROPE

- 1 | Hamburg | Germany**
(European Head Office and Production)
- 2 | Waltershausen | Germany**
(Production)
- 3 | Kaufbeuren | Deutschland**
(CARLISLE® Services)
- 4 | Weesp | The Netherlands**
(Production)
- 5 | Kampen | The Netherlands**
(Production and Administration)
- 6 | Mansfield | Great Britain**
(Production and Administration)
- 7 | Belper | Great Britain**
(Production and Administration)
- 8 | Baia Mare | Romania**
(Production)

AMERICA

- 9 | Scottsdale | USA**
(Headquarters of CARLISLE® Companies Inc.)
- 10 | Carlisle | USA**
(Division of CARLISLE® Construction Materials)

www.ccm-europe.com



An overview of our services

We want you to feel secure all round with CARLISLE® CM Europe. So for us, this not only includes supplying the best products for your project but also the best possible customer service.

ADVICE AND PLANNING

- Individual consultancy appointments
- Technical advice for new builds and renovations
- Creation of renovation concepts and illustration of renovation alternatives
- Individual designs of roof structures and detailed solutions
- Tender documents
- Drafting of specifications
- CAD drawings for individual connecting areas or roof superstructures

CALCULATIONS

- Wind-load calculations
- Drainage calculations
- Cost estimates

ON-SITE SERVICE

- On-site personal consultation appointments
- Roof inspections and property surveys with status reports
- Roof openings in the case of renovations
- Construction supervision up to the final site inspection



Our requirement for good service is that we accompany you in word and deed from the first consultation to measuring up and on-site briefings. Whether for new builds or renovations, from the roof to the waterproofing of buildings. We are even there for you after the completion of your project.

Our team of waterproofing specialists consists of specialist advisers and roofing experts. In this way, we can always provide tailor-made services to our customers, whether they are installers, planners, architects or specialist trading partners.

DELIVERY

- Delivery to the location of your choice, even direct to the construction site
- Provision of unloading facilities on demand
- Free delivery may apply on certain orders, subject to Terms and Conditions.
- On-time deliveries at fixed times are possible on request

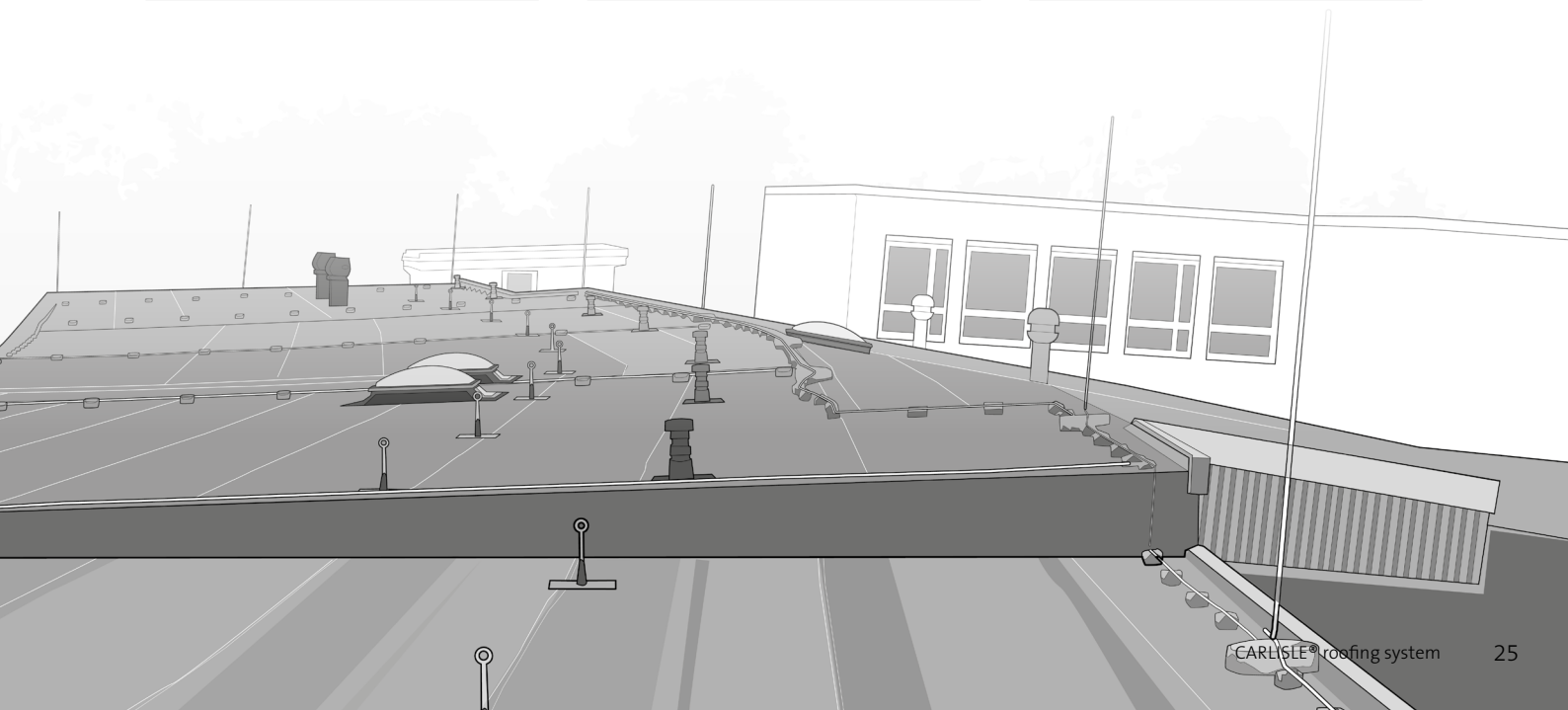
SAFETY

- Production certified acc. to DIN EN ISO 9001 and DIN EN ISO 14001
- Environmental product declaration (EPD)
- Comprehensive certification and test records
- Extended tests carried out on our in-house test laboratories

TRAINING

CARLISLE® ACADEMY for

- Installers
- Developers
- Architects & planners
- Trading partners



CONTACT

We are happy to advise on a suitable roofing system or waterproofing solutions for your project.

Just call, fax or mail us.



+44 (0) 1623 62 72 85



+44 (0) 1623 65 27 41



info.uk@ccm-europe.com



CARLISLE® Construction Materials Ltd.
Lancaster House, Fountain Court,
Concorde Way, Millennium Business Park
NG19 7DW Mansfield
Nottinghamshire

Further product information can also
be found online at www.ccm-europe.com

CARLISLE®
Construction Materials Ltd.

United Kingdom

Lancaster House | Concorde Way
Millennium Business Park | Mansfield
Nottinghamshire | NG19 7DW

T +44 (0)1623 62 72 85
F +44 (0)1623 65 27 41
E info.uk@ccm-europe.com

www.ccm-europe.com