

# DANOPOL® SINGLE PLY MEMBRANE WATERPROOFING SYSTEMS



GRAND DESIGNS

### **BUILDING TOGETHER**

in Partnership with Strata Waterproofing





For over 55 years DANOSA has protected buildings around the globe. During this time we have come to appreciate that each market has its own requirements, its own standards and nuances that we must respect.

Despite the cultural differences, the key similarity is a demand for high-quality products and, just as importantly, a high-quality service.

Our commitment to high quality production is supported by decades of production experience, our in-house state-of-the-art testing laboratory and our ever-growing factory. As a result, we are proud of our market leading status in European and international markets and continually invest in new products and services to expand our world of solutions.

By BUILDING TOGETHER in partnership, we are with you every step of the way, engineering value without compromising quality.

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### SPECIFYING DANOSA

### A Service That Is Proud To Be Different

There are a number of companies in the UK market, so choosing the right system for your project may seem a little daunting at first.

Choosing to build together in partnership with DANOSA you are assured of market-leading support as well as high-quality systems, specifically engineered to suit the requirements of your project.

Here are some of the most common reasons that our clients choose DANOSA:



We are proud and active members of the Single Ply Roofing Association:



#### AWARD-WINNING

Winners of the Most Innovative project two years in a row and Best New Build in UK industry construction awards. Our projects have been highly commended in Best Detailing categories and several of our projects have been featured on the TV show, Grand Designs.

#### PREMIUM INNOVATIVE SYSTEMS

DANOSA have been manufacturing specialist systems for over 55 years and combined with our dedicated in-house laboratory and research facility, are recognised for producing some of the highest performing construction systems and solutions for a variety of building applications.

#### SPECIALIST CONTRACTOR NETWORK

Our guaranteed systems are exclusive to our network of Trained Contractor partners. Each Trained Contractor receives training in how to specify and price our systems in addition to our dedicated installer training and assessment programmes. Further details on page 5.

#### IN-HOUSE AND ON-SITE TECHNICAL SUPPORT SERVICES

Dedicated in-house and on site technical support teams, providing specification advice, good practise guidance, surveys and project inspections. Our technical team sits on various industry technical councils, such as the Reinforced Bitumen Membrane Alliance (RBMA), the Single Ply Roofing Association (SPRA) and the Green Roof Organisation (GRO).

#### DESIGN, SPECIFICATION AND CALCULATION SERVICES

Windload, rainwater (flow rate), thermal and condensation risk calculations are just some of the services we provide inhouse, including a NBS format specification service and tapered insulation scheme design. Further details on page 20.

#### CLEAR & COMPREHENSIVE GUARANTEES

Our guarantees include all the supplied DANOSA components as part of a single-point cover (exc. living plants). Further details on page 21.

### TRAINED CONTRACTOR

### Installer Network



DANOPOL® Synthetic Waterproofing Systems are available throughout our national network of Trained Contractor partners.

Trained Contractors registered with Strata Waterproofing are able to supply and install our range of specialist waterproofing systems and provide you with a **DANOSA single-point guarantee**.

Our Trained Contractor partners are subjected to an audit and training to ensure that minimum levels of quality management are in place.

#### **Trained Installers**

All individual installers must be assessed and certified by our technical team and attend a reassessment at least every 5 years.

When installers have met the registration criteria and passed the assessment, each installer is issued with a unique installer ID number and registration card. Once registered, installers continue to receive on-site training and support from our Field Technicians to ensure that they have full support. Continual support and onsite assessments with our installer partners ensures that our installation standards are maintained across our projects.

As further assurance, as part of our quality management systems, all registered installer ID numbers are documented on our site visit reports.



## DANOPOL® Award-Winning Single Ply Membranes

Single ply membranes are manufactured from synthetic polymers which have been developed for roofing and waterproofing applications. DANOPOL® membranes are flexible form of PVC-p (polyvinyl chloride), which are welded together using hot-air. The membranes are reinforced with either a glass fibre or polyester net, depending on the application, which provides high tear resistance whilst remaining flexible. Additionally, DANOPOL® membranes are very lightweight.



#### BRITISH BOARD OF AGRÉMENT (BBA) CERTIFIED

A full in-depth independent technical assessment of the DANOPOL® systems, including their manufacture, has been completed by the British Board of Agrément.

#### LONG LIFE EXPECTANCY

Independently assessed by the British Board of Agrément (BBA) to have a service life in excess of 30 years (soon to be 35 years).

#### VERSATILE SPECIFICATION

A choice of attachment options and unique design options such as our Alpha Profile system (see page 12).

#### UV RESISTANT

Engineered to withstand extreme climates such as South America, DANOPOL® membranes are manufactured with high-performance UV resistant inhibitors.

#### ROT PROOF / ROOT RESISTANT

DANOPOL® membranes are root-resistant as standard.

#### HIGHLY FLEXIBLE

Manufactured with a range of strong polyester and reinforcements, our DANOPOL® systems are designed to move and flex to accommodate building movement.

#### SINGLE POINT SYSTEM GUARANTEES

Our guarantees include all the DANOSA components as part of a single-point cover (exc. living plants). Further details on page 21.

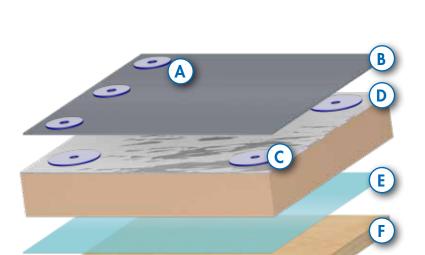


## DANOPOL® the Mechanically Fastened System

Perfect for lightweight structural deck constructions such as timber or profiled metal, our mechanically fastened DANOPOL® system provides an economical, quick and versatile solution for most flat roofing applications throughout the year.

#### **TYPICAL SYSTEM COMPONENTS**

- SUREFAST SF-T-50 THERMAL-BREAK FASTENING SYSTEM
  (for mechanical attachment of membrane)
- (B) DANOPOL® HS MEMBRANE
- SUREFAST SF-T-75 THERMAL-BREAK
  FASTENING SYSTEM
  (for mechanical attachment of insulation)
- FOIL-FIX PIR INSULATION (insulated systems only)
- AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- F STRUCTURAL DECK



- DANOPOL® membranes are mechanically fastened in accordance with a projectspecific wind uplift calculation.
- A loose-laid air and vapour control layer is mechanically fastened during the attachment of the insulation but can be changed for a fully-bonded air and vapour control layer if preferred.



## DANOPOL® the Adhered System

Quick and simple to install, our adhered DANOPOL® system is a popular choice for domestic projects and refurbishment, thanks to the integral 300gsm geotextile fleece backing which avoids the need for underlying separation or protection layers.

## A C B B

#### **TYPICAL SYSTEM COMPONENTS**

- A DANOPOL® HSF MEMBRANE
- (B) FLEECEBOND ADHESIVE
- TISSUE PIR INSULATION
  (insulated systems only)
- THERMOBOND ADHESIVE (insulated systems only)
- (insulated systems only)
- (F) BITUMEN PRIMER
- (G) STRUCTURAL DECK



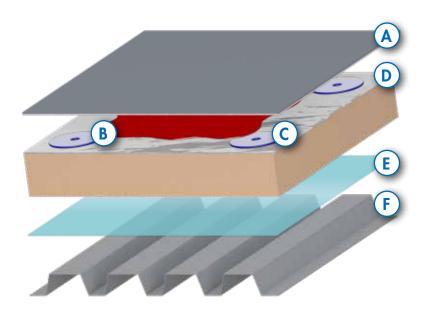
- Whilst the DANOPOL® membrane is adhered to the majority of the roof, some components such as perimeter trims and restraint bars still require mechanical fastening.
- Our advanced spray-applied adhesives provide superior resistant to wind uplift and can be applied throughout the year.

## DANOPOL® the Hybrid+ System

Combining the economical and speed benefits of a mechanically fastened system with the ease of application of an adhered system, our Hybrid+ system is fast becoming the default specification option of choice.

#### **TYPICAL SYSTEM COMPONENTS**

- (A) DANOPOL® HSF MEMBRANE
- (B) FLEECEBOND ADHESIVE
- C SUREFAST SF-T-75 THERMAL-BREAK FASTENING SYSTEM (for mechanical attachment of insulation)
- FOIL-BOND PIR INSULATION
  (insulated systems only)
- AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- F STRUCTURAL DECK



- Our FOIL-BOND PIR is a highperformance insulation which commonly reduces the insulation thickness of the system by 10mm or more. This is due to the foil-facing on both sides of the board, contributing to thermal resistance.
- The insulation is mechanically fastened in accordance with a windload calculation.

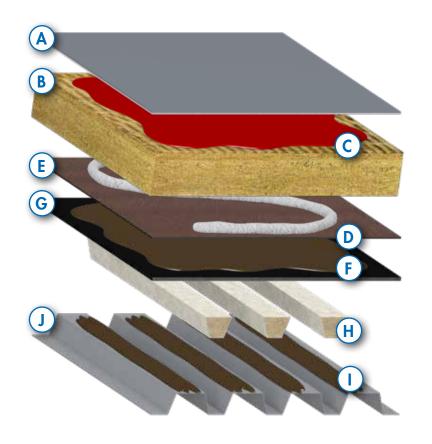






## DANOPOL® for Acoustics

Bespoke acoustic systems are engineered to combat rain drumming noise on lightweight structural decks or to create acoustically controlled environments, such as a music room or cinemas. Dense acoustic components combined with lightweight DANOPOL® membranes, make this an ideal specification choice.



#### **TYPICAL SYSTEM COMPONENTS**

- A DANOPOL® HSF MEMBRANE
- B FLEECEBOND ADHESIVE
- C STONEWOOL INSULATION (insulated systems only)
- THERMOBOND ADHESIVE (insulated systems only)
- AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- **F** BITUMEN PRIMER
- (G) ACOUSTIC MEMBRANE
- (H) STONEWOOL TROUGH FILLERS
- THERMOBOND ADHESIVE
- STRUCTURAL DECK



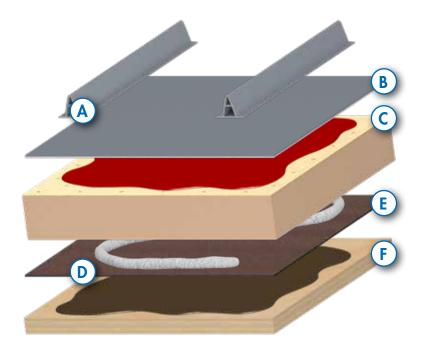
- We can complete calculations to design your specification to achieve a specific airborne sound reduction (dB) rating or a predicted A-weighted rain noise sound intensity level.
- BB93 outlines the acoustic specification standards for schools and education. In the health sector HTM 08-01 applies.

## DANOPOL® the Alpha Profile System

Simple to install and highly customisable, our Alpha Profiles provide a visually striking appearance to a completed roof system. Mimicking that of a traditional metal roof construction, it is a very common value engineering option to consider.

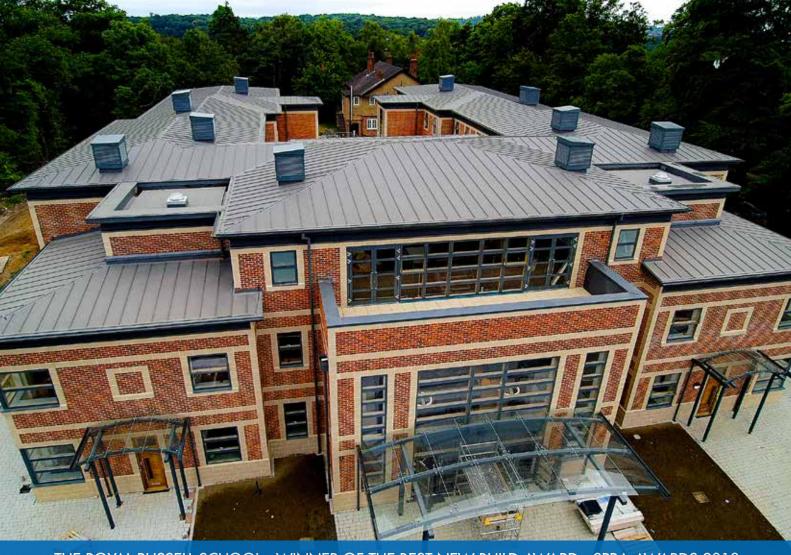
#### **TYPICAL SYSTEM COMPONENTS**

- (A) ALPHA PROFILES
- (B) DANOPOL® HSF MEMBRANE
- (C) FLEECEBOND ADHESIVE
- TISSUE PIR INSULATION (insulated systems only)
- THERMOBOND ADHESIVE (insulated systems only)
- F AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- **G** BITUMEN PRIMER
- (H) STRUCTURAL DECK

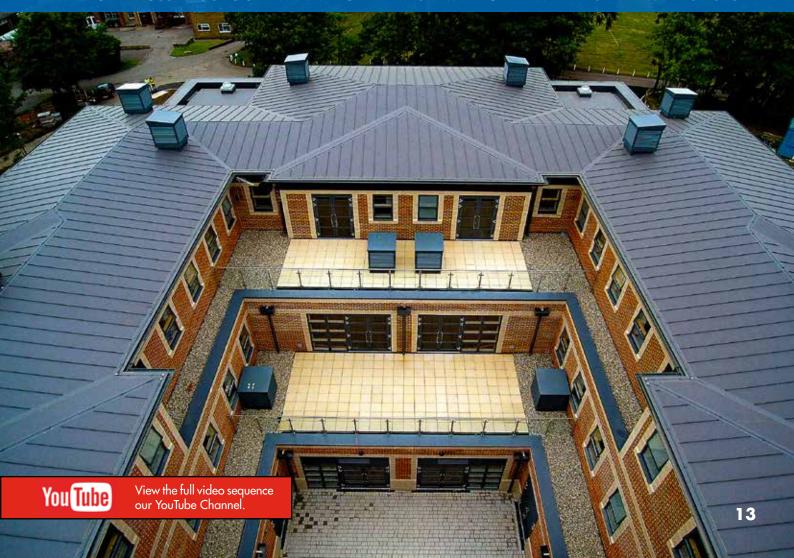


- Alpha profiles can be installed after the waterproofing has been completed and are hot-air welded to the finished DANOPOL® waterproofing.
- A typical DANOPOL® waterproofing system weighs around 3.00kg/m², meaning there is less load imposed onto the underlying roof deck and structure.





THE ROYAL RUSSELL SCHOOL - WINNER OF THE BEST NEW BUILD AWARD - SPRA AWARDS 2018

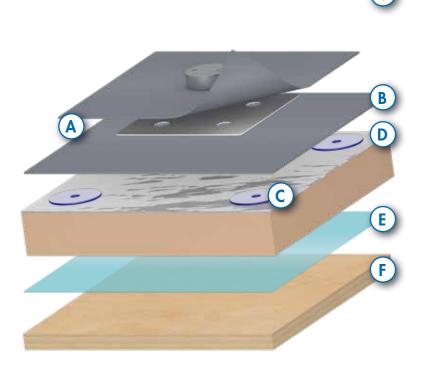


## DANOPOL® the Integrated Fixing Point (IFP) System

Our IFP system provides a secure system for the attachment of a variety of products directly to the roof deck. It does this whilst maintaining an entirely watertight seal, avoiding the need for complex details or reliance on maintainable rooftop sealants and banding.

#### **TYPICAL SYSTEM COMPONENTS**

- (A) INTEGRATED FIXING POINT
- B DANOPOL® HS MEMBRANE
- C SUREFAST SF-T-75 THERMAL-BREAK FASTENING SYSTEM (for mechanical attachment of insulation)
- FOIL-FIX PIR INSULATION
  (insulated systems only)
- AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- (F) STRUCTURAL DECK



- The IFP is a low-profile stainless steel fixing point which presents 2nr M10 bolt holes allowing brackets, rails and supporting systems to be bolted directly to it.
- The underlying base plate is mechanically fastened directly to the structural roof deck after the waterproofing has been completed, at any specified centres.



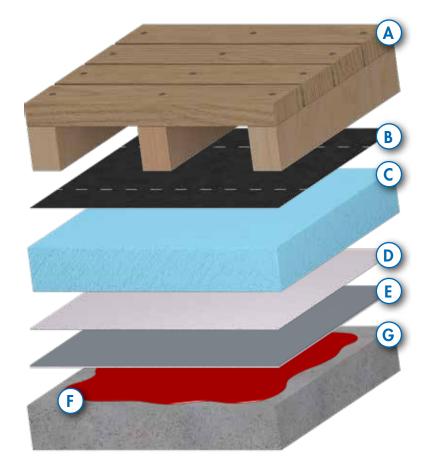


## DANOPOL® for Terraces and Balconies

In order to make the most of available floorspace, enjoyable roof spaces are becoming increasingly popular specification options. DANOPOL® systems offer a robust solution and can be installed as either a warm roof, or an inverted roof as depicted below, depending on the anticipated loadings.

#### **TYPICAL SYSTEM COMPONENTS**

- A SURFACING (timber deck finish shown for illustration only)
- B DANOFLOW (insulated systems only)
- C DANOPREN® TR XPS (insulated systems only)
- DANOFELT® PY 300
  (geotextile protection and filtration layer)
- (E) DANOPOL® HSF MEMBRANE
- F FLEECEBOND ADHESIVE
- G STRUCTURAL DECK



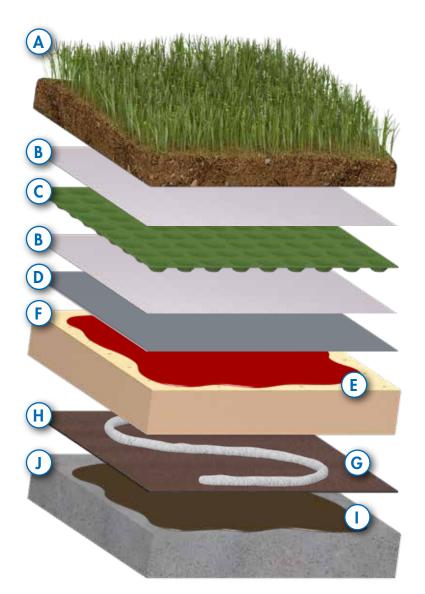
- A variety of different surfacing options can be used with this system. Speak to our technical department for further specification advice.
- DANOPREN® TR XPS can resist point loads of up to 300 kPa. If loading is to be greater than this, a 500 kPa variant, DANOPREN® 500 XPS is available.



### **DANOPOL®**

### for Living Roofs

A living roof provides environmental and aesthetic benefits to any construction and is a popular choice for city developments.



#### **TYPICAL SYSTEM COMPONENTS**

- A DANOSA LIVING ROOF SYSTEM (as specification)
- B DANOFELT® PY 300 (geotextile protection and filtration layer)
- C DANODREN® JARDÍN (specialist drainage as specification)
- D DANOPOL® HSF MEMBRANE
- **E** FLEECEBOND ADHESIVE
- F TISSUE PIR INSULATION (insulated systems only)
- G THERMOBOND ADHESIVE (insulated systems only)
- H AIR AND VAPOUR CONTROL LAYER (insulated systems only)
- BITUMEN PRIMER
- (J) STRUCTURAL DECK



- Suitable for all types of living roof systems. Further information about living roof specification options can be found on pages 16 to 17.
- DANOPOL® membranes are root-resistant as standard.



## LIVING ROOFS A Green Approach

Current market reports show a very healthy year on year growth for the living roof sector in the UK and it is not hard to see why. In addition to the more apparent environmental and aesthetic benefits, there are many additional benefits which local authorities, specifiers and homeowners alike are noticing, especially in built-up areas.

#### Why Consider A Living Roof?

#### PROTECTS ROOF - INCREASING LIFE EXPECTANCY

The waterproofing system is protected from the harmful effects of UV degradation and is protected from potential damage when people traffic the roof area.

#### IMPROVED ACOUSTIC & THERMAL PERFORMANCE

Noticeable improvements can be enjoyed with the addition of a living roof system. However, whilst it is not possible to account for such performance in thermal and acoustic calculations, many buildings consider this added benefit in the project specification.

#### ATTENUATION OF RAINWATER

Reducing rainwater run off during heavy rain to slow rate of discharge to drainage system by attenuating it at roof level with DANODREN® drainage layers. The rainwater held at roof level will also quench the planting, reducing maintenance levels required.

#### RECREATION OF NATURAL HABITATS

Promotes biodiversity and replaces green spaces which may have been lost during the construction. In other instances, new habitats can be created by replicating the ecology of the surrounding local area. Different species can be encouraged, depending on the type of living roof system selected.

#### REDUCTION OF HEAT ISLAND EFFECT

Living roofs provide shade and remove heat from the air and can reduce city-wide ambient temperatures by up to 5°C.

#### IMPROVED AIR QUALITY, WELL BEING & REDUCED AIR POLLUTION

By reducing roof temperatures, there is less demand on the use of air conditioning units, lowering our impact on the environment. Vegetation can also remove pollutants and GHCs from the air through dry deposition and carbon sequestration and storage.

We are proud and active members of the Green Roof Organisation:



#### **Living Roof System Types**







#### **EXTENSIVE:**

A relatively lightweight and versatile system and the most common type of living roof. These systems feature a range of relatively low maintenance planting, such as low growing wild-flowers or sedum blankets.

#### **INTENSIVE:**

Rooftop landscaping, designed to replicate a typical ground-level garden. These systems have very specific planting requirements and often include lawns and other amenity spaces.

#### **BIODIVERSE:**

Replaces or replicates groundlevel ecosystems to encourage biodiversity, wildlife and positive ecology. Often these systems are allowed to self-colonise and require very little maintenance.

#### M-TRAY® Pre-Established Modular Trays

Traditionally, living roof systems are built up on site from their component parts. After the system has been installed, the system goes through what is referred to as an establishment phase, as the roots grow and bed into the growing medium, and the system starts to flourish. During the establishment phase, the system will require careful maintenance, which may be anything up to 2 years after installation.

Pre-established extensive modular systems are becoming increasingly popular as the components are grown together in trays in a nursery until they are fully established and are ready to be placed onto a roof. Complete with integral water retention and drainage components, our M-Tray® pre-established modular trays can be simply lifted to roof level and interlocked into place for an instant established finish with minimal after-care.





Our M-Tray<sup>®</sup> is available with either a sedum only or a sedum and wild-flower mix. For more bespoke planting specifications or for a biodiverse system, a traditionally built up system will be required.

Traditional systems are available with either pre-grown blankets of flora, or alternatively can be plug-planted or planted with a traditional seed mix.

DANOSA manufacturer a range of DANODREN® specialist drainage products, along with DANOFELT® geotextile protection and filtration layers. All included in the single-point system guarantee.

### **TECHNICAL SUPPORT**

We host an expansive array of standard installation instructions, product data-sheets, technical support statements and other resources on our dedicated portals. These resources are continually updated to ensure that the latest information is always available to our network.

Whilst standard installation instructions (details) will apply to most constructions, there may be instances where unavoidable restrictions require an alternative solution. We have a team of **Field Technicians** who are on hand to offer support and guidance on good practise guidelines, how to use and install our products and just as importantly, how to protect the products and systems after installation. Our team frequently attends design coordination meetings in the initial stages to offer any assistance and advice on sequencing with other trades.

Whether it's a new build project where a new detail or low-risk solution needs to be formulated to accommodate the design, or if it's a refurbishment project where you would like further specification options, our team will produce a full technical report detailing the visit and any subsequent recommendations.



#### **Specification Services**

Our dedicated technical support team are on hand to write your project specification. Based closely upon the NBS style, we can engineer your full system specification to include a detailed description of all the DANOSA system products described. Our specifications contain detailed installation instructions and product guidance to ensure that the full specification is delivered.

#### **Design Services**

- Tapered Insulation Scheme Design
- Standard CAD Installation Detail Design

#### **Calculation Services**

- U-Value (thermal) and Condensation Risk
- Wind Load (uplift)

### **GUARANTEES**

Your **guarantee** covers all components of the DANOSA waterproofing system which have been supplied by us - at no additional charge. Our single point guarantee provides long term assurance that the systems we engineer are robust and provide the maximum service life possible.

#### YOUR DANOSA UK GUARANTEE INCLUDES

- An individual guarantee certificate issued for every project, complete with a list of all the DANOSA waterproofing components supplied to the project..
- Insurance protection for DANOSA products covering product liability, replacement and substitution.

Guarantees protect you against the failure of materials, for example where they fail to provide their service or function. However, whilst many manufacturers stop at this point, issuing a guarantee should not be the limit of responsibility. We have invested in a technical support team consisting of leading industry experts to ensure correct design and specification. Furthermore, by only allowing registered **TRAINED CONTRACTORS** to purchase our materials, we ensure that everyone using the system is fully trained in how to specify, use and install our systems.

Continual training and development is delivered through our dedicated online portals which transmit the latest CAD design details, product data-sheets and other supporting literature to our trained contractors, architects and specifiers.





### **SUSTAINABILITY**

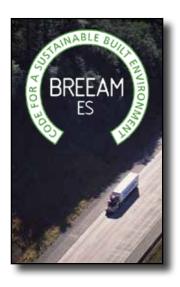
## Our commitments to ensuring a sustainable future as we care for our environment.

We recognise that every business has an important role to play in the local, regional and sometimes global environment. DANOSA prides itself in its approach towards green issues and our environment.

We are committed to making continuous improvements by seeking advice from leading experts to reduce our footprint and improve our systems of operation and sourcing.

#### **Green Building Certifications**

Green building certifications look to promote more sustainable construction with the subsequent financial, environmental and social benefits for all the building agents. Based on different scoring criteria, buildings receive a certain classification indicating their environmental performance. Used widely around the world, these certificates contain information on the environmental performance of the products contained in the building throughout their useful life.



Our Environmental Product Declarations (EPD) contain a lot of useful information. We have a responsibility as a manufacturer to provide detailed environmental data on our products. This includes data on the design, production, construction and maintenance of the system. This has led to the introduction of the European environmental regulation know as Environmental Product Declarations. This is a standardised document, verified by an independent agent and provides quantified and verifiable information about the environmental impact of a product.



The purpose of these tools is to assess the lifecycle environmental impact of products in accordance with the international standard EN ISO 14025. In this sense an EPD provides objective, transparent, comparable and useful information on the environmental impact of DANOSA products through life-cycle analysis (LCA) - from raw material extraction, to manufacturing, right to the end of their useful life in buildings.

### **CERTIFICATION**

## inc. Research, development and internal quality control.

Servicing a global market can be a challenge at times, but by developing our products in accordance with an array of internationally recognised standards and commitments such as the European Harmonised Standard (CE Mark), we are able to continue to deliver the highest standards across the board.

Whilst independent testing and certification, such as the British Board of Agrément's BBA certification scheme, is an important tool to ensure that products (or systems) meet certain material, production and performance standards, we made a commitment to ensure that our products are monitored and tested continuously.

To deliver on this commitment, DANOSA has invested in a state-of-the-art in house testing and product development facility at our factory in Fontanar (Spain). These test procedures are incorporated in our Quality Management Systems of operation which ensure that each product line is continuously monitored and that batch samples are obtained and tested by our technicians and technical teams.

Our research and development department works closely with our technicians to deliver new technologies and modifications to our products. As a result of this continuing development, DANOSA has developed a range of premium specialist systems, including our range of DANOPOL®+ Single Ply Membranes with superior UV resistance. These premium engineered products and systems are robust and long-lasting, including specific modifications to meet to the demands of our UK construction habits as well as the challenges presented by our climate.













### CASE STUDIES

#### THE CROWS NEST, LYME REGIS



Winner of the SPRA Awards for The Most Innovative project 2017. This project features a hidden roof system, completed with our IFP system which ties into the surrounding cladding system, creating a seamless finish.

Project Size: 215m<sup>2</sup>

Private Residential Development

#### ST. LEONARDS ROAD, EASTBOURNE



A full mechanically fastened specification was provided to this residential development which included our FOIL-FIX PIR insulation and rooflights. All included in the single point guarantee.

Project Size: 550m<sup>2</sup> Client: Private Developer

#### RANSOM ROAD, SUFFOLK



Completed with a full system DANOPOL® specification, this adhered roof was used waterproofed the extension to this residential development. The addition of Alpha Profiles provided an attractive and eye-catching finish.

Project Size: 160m<sup>2</sup>

Private Residential Development

#### **BLACKDOWN HILLS, DEVON**



Winner of the SPRA Awards for The Most Innovative project 2018 and featured on the popular TV show Grand Designs. This project was completed with our DANOPOL® membrane before being covered with IFPs. Search YouTube for the Grand Designs Episode 'BlackDown Hills' to view the full build.

Project Size: 400m<sup>2</sup>

Private Residential Development

#### WESTGATE SHOPPING CENTRE COMPLEX, OXFORD



The £500 million redevelopment of the Westgate Shopping Centre was a key part of the regeneration of Oxford City Centre, creating high-quality buildings designed by world-class architects.

Full DANOPOL® system specifications were used for the new lightweight roof structures which spanned the majority of this development. Installed on to a range of profiled metal structural decks, the specifications included a range of specialist acoustic systems, specified and calculated in partnership with DANOSA UK, to provide the required acoustic treatment and soundproofing to the multiplex cinema underneath.

In addition to the DANOPOL® systems, the existing roof areas were fully refurbished with our POLYDAN® reinforced bitumen waterproofing systems. All the shopping promenades, rooftop terraces and plantrooms were completed with our DURA-DAN structural hot melt system which included our DANOPREN® XPS and DANODREN® combined drainage and protection layers.

Project Size: 24,000m<sup>2</sup> Client: The Crown Estate

#### TREVISSOME PARK, TRURO



An unusual and unique project development, completed with full system DANOPOL® specification. After the waterproofing was completed, an ballasted artificial grass system was installed to the full area. A before and after video showing the full project is available to view on our YouTube Channel.

Project Size: 1,200m<sup>2</sup> Client: Trevissome Park





AN OFFICIAL DANOSA UK PREMIER DISTRIBUTION PARTNER

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