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ALKORGREEN

RENOLIT WATERPROOFING
EXCELLENCE IN ROOFING





Commercial building (The Netherlands)

RENOLIT WATERPROOFING

ALKORGREEN .. YOUR LIVING ROOF

Green roofs are not just another trend. The tendency towards green roofs has increased markedly over the last 20 years. With the alkorPLAN® membrane, **RENOLIT** has proved its competence within green roof projects over many years and various geographical locations.

ALKORGREEN roofs offer an ecological as well as an aesthetical solution for waterproofing your roof.

Apart from the aesthetic benefits, growing environmental awareness and the significant economical and ecological advantages are the driving forces behind the success of green roofs. Urbanisation creates problems, for which green roofs may offer a solution,

particularly with regard to storm water runoff and management. It's no coincidence that green roofs are subsidised in a growing number of regions and countries across Europe, Scandinavia (e.g. Belgium, Germany, United Kingdom, Sweden, Holland, etc..) alkorPLAN® roofing membranes are still mainly applied for waterproofing industrial and commercial buildings. Nevertheless, there is a clear development towards aesthetic and visible roof finishes.

The ALKORGREEN system offers a highly developed all in one green roof system, specifically adapted to our alkorPLAN® membranes.



Swimming pool (The Netherlands)



RENOLIT WATERPROOFING

GREEN YOUR ROOF WITH alkorPLAN®

One partner

The major advantage of the ALKORGREEN system is that you have only one contact for the waterproofing membranes as well as for the entire construction of the green roof. Architects and contractors can therefore reduce the time and trouble they would have to take in finding suitable systems and products themselves.

30 years of experience in waterproofing

alkorPLAN® has been successfully used in the waterproofing of green roofs for many years. alkorPLAN® membranes have an excellent resistance to static perforation Class L20*, on both hard and soft or insulated substructures.

FLL

alkorPLAN® has successfully passed the FLL root resistance test and can therefore be considered as a top quality product for green roofs. Furthermore, alkorPLAN membranes are installed using tried and tested hot air welding techniques which produce totally watertight and roof resistant joints.

Durability

alkorPLAN® has a life expectancy of 30 years, which is confirmed by the BBA and other independent industry testing authorities.

Green roofs and their properties

| | | Cross-section substrate layer (cm) | Additional weight (kg/m) | Maintenance | Accessibility | Type of plants |
|----------|-----------------------------|------------------------------------|--------------------------|----------------|---------------|------------------------------------|
| 1 | Extensive green roof | 3-15 | 30-150 | Minimal | No | Sedum, herbs, ... |
| 2 | Semi-intensive Green roof | 15-30 | 150-400 | Yes | Yes | Flowers, lawn, small shrubs, herbs |
| 3 | Intensive Green roof | > 30 | ≥ 400 | Yes | Yes | Any plant choice* |

(1 = standard ALKORGREEN system)

* Aggressive plants such as bamboo must be avoided on green roofs. For a full list of prohibited plant species, please refer to Krupka, Bernd. Dachbegrünung – Pflanzen und Vegetationsanwendung an Bauwerken. Stuttgart, Ulmer, . 2000



1 Sports Centre (Germany)



2 Shopping centre (Germany)

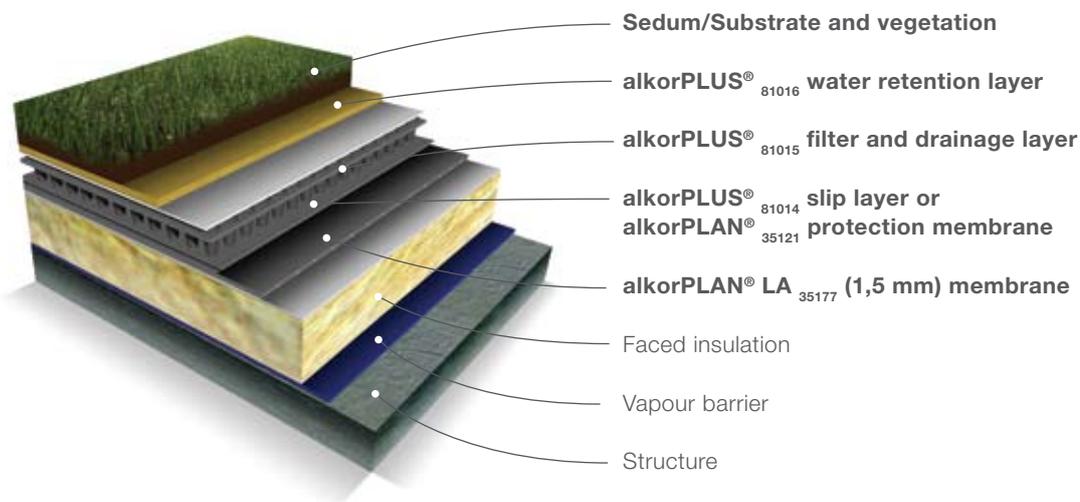


3 Old people's home (Germany)





RENOLIT WATERPROOFING THE ALKORGREEN SYSTEM



THE ALKORGREEN SYSTEM IS "STANDARD" FOR ROOFS WITH A SLOPE FROM 1° TO 5° *

Sedum/Substrate (6cm) and vegetation

In the case of large projects, we advise sedum cuttings to be sown onto a substrate layer of about 6 cm. For smaller projects, we recommend the use of pre-cultivated layers.

The substrate layer ensures feeding substances, water supplies to the vegetation plus oxygen and anchoring of the root structure.

alkorPLUS®⁸¹⁰¹⁶ water retention layer

This layer provides the plants with extra water in time of drought or prolonged high temperatures. This allows the plants to continue growing and maintain their life expectancy.

alkorPLUS®⁸¹⁰¹⁵ filter- and drainage layer

This layer is in two parts. The filter layer limits particles from the substrate layer migrating into the drainage layer causing blockages. The drainage layer ensures a steady removal of redundant water which is not held by the water retention layer.

alkorPLUS®⁸¹⁰¹⁴ slip layer or alkorPLAN®³⁵¹²¹ protection layer

This layer provides additional protection to underlying layers.

alkorPLAN® LA waterproofing membrane (1.5 mm)

This product provides a watertight roof and is totally unaffected by roots. Fully glued with adhesive alkorPLUS®⁸¹⁰⁶⁸)



Nature investigation Centre (Spain)



Guernsey (UK)



High school (Germany)

RENOLIT WATERPROOFING BENEFITS OF ALKORGREEN



International Campus (France)

ALKORGREEN offers a complete, **aesthetic and ecological system** for your roof.

Alkorgreen is a green roof system that is as practical for new build as it is for refurbishment projects.

The ALKORGREEN system is essentially an extensive green roof system but can be adapted to an intensive and a semi-intensive green roof system.*

Apart from the aesthetic benefits, a green roof has many other advantages:

From a construction and economic point of view

- Improved sound-proofing
- Reduction of heating/cooling costs
- Increased life expectancy of the waterproofing membrane
- Limited maintenance
- Limited weight

From an ecological point of view

- New environment for the fauna and flora
- Reduction of rain water run off
- Oxygen production
- Absorption of electromagnetic radiation

From a functional point of view

- Architectural possibilities
- Aesthetically pleasing.

*With many years experience of green roofs it is proven that with such a wide and varied plant choice there are few limits to the design possibilities. Such roof gardens are work for specialists and cooperation between the roofing contractor and the sedum specialist is essential. Every green roof design will differ in some way so **RENOLIT** Waterproofing UK offer a full technical service.

If you are interested in a semi intensive green roof, please contact **RENOLIT** UK ltd.



1

Improved sound-proofing

An ALKORGREEN roof system serves as an excellent sound insulator. Green roofs can be very efficient in reducing indoor noise attenuation from hail and rainfall etc..

2

Benefiting the urban environment

Green roofs create more natural green areas in the urban environment. The plants on the roof give the owners a more natural view, instead of the increasingly dominating black or grey flat roof surfaces.

3

Reduction of heating/cooling costs

A green roof provides extra insulation and energy efficiency for the building. Because of its insulating properties, Alkorgreen roofs have a large impact on the interior temperatures, reducing the amount of energy needed to heat a building in winter and to cool the building in summer.

2

3

4

Increased life expectancy of the waterproofing membrane

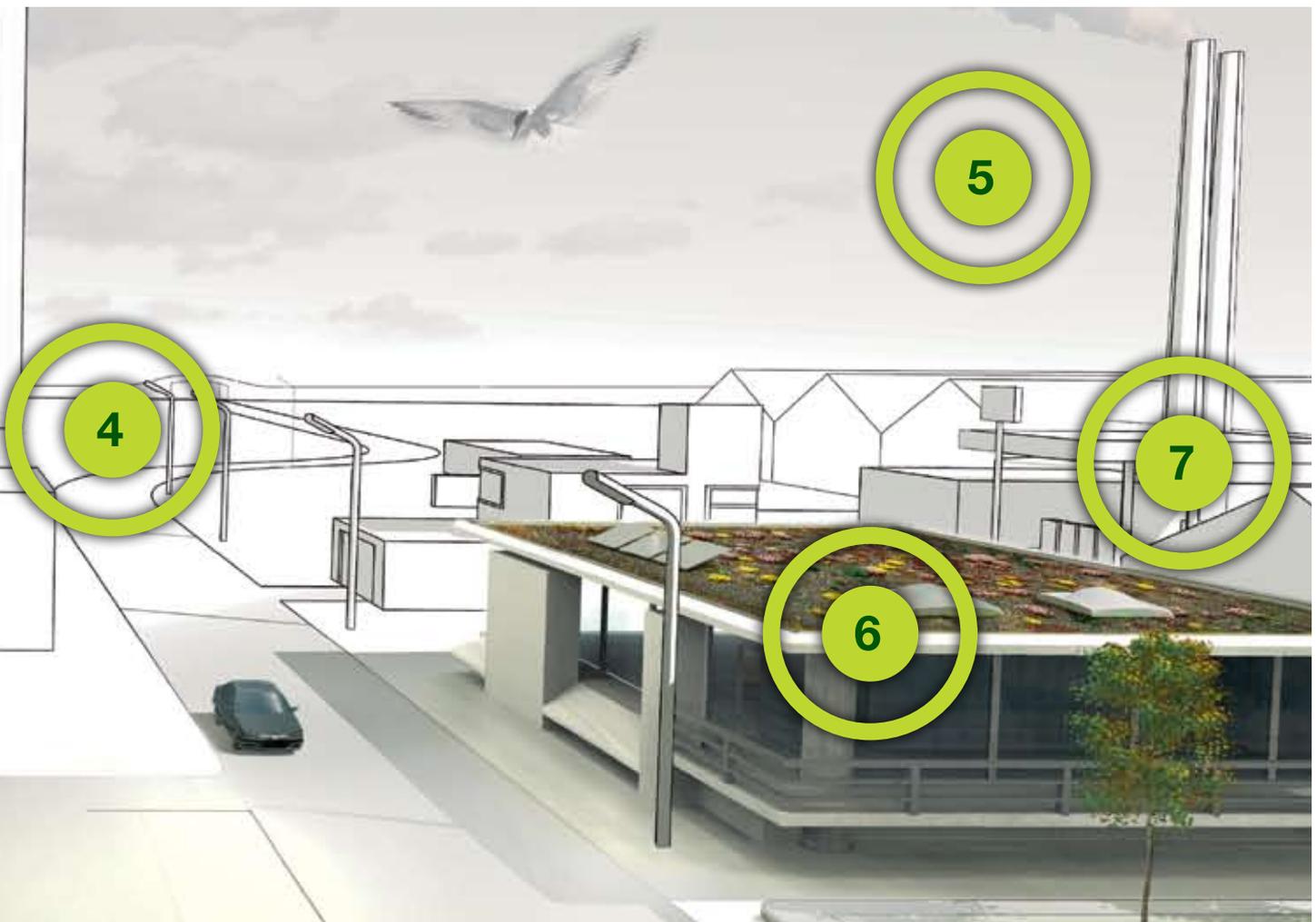
Green roofs protect roof membranes from UV and IR radiation, ozone, extreme temperature fluctuations, punctures and other physical damage.

The ALKORGREEN roof system can thus significantly increase the life expectancy of roof membranes, diminishing the need for costly roof replacements and maintenance.

5

Oxygen production

Green roofs contribute to an improved air quality, especially in urban environments where the quality of the air is often unsatisfactory. The vegetation on the rooftop produces oxygen on the one hand and absorbs polluted particles from the air on the other hand.



6

Reduction of rain water run off.

Green roofs absorb large quantities of the rain water and keep it from heading immediately into the drainage systems and into the rivers. A large quantity of this water is absorbed by the plants. The remaining water evaporates later over a period of time. In the case of significant rainfall, the runoff is delayed further reducing the pressure on storm drains, etc.

Green roofs introduced on a large scale, can greatly reduce the risk of flooding, sewer overflows, and subsequent discharges.

7

New environment for the fauna and flora

A living roof brings nature into the cities and industrial areas. It offers a high biodiversity that may prevent some animals from disappearing from the urban environment.

Birds, insects, bees and other wildlife that need vegetation to survive, can find a place to rest and create a new natural habitat on top of the roofs.

Apart from this, green roofs may offer high-rise flat residents a functional space or entertaining area, replacing the traditional garden.

The information contained in the present commercial literature has been given in good faith and with the intention of providing information. It is based on current knowledge at the time of issue, and may be subject to change without notice. Nothing contained herein may induce the application of our products without observing existing patents, certificates, legal regulations, national or local rules, technical approvals or technical specifications or the rules and practices of good workmanship for this profession. The purchaser should verify whether import, advertising, packaging, labelling, composition, possession, ownership and the use of our products or the commercialisation of them are subject to specific territorial rules. He is also the sole person responsible for informing and advising the final end user. When faced with specific cases or application details not dealt with in the present guidelines, it is important to contact our technical services, who will give advice, based on the information at hand and within the limitations of their field of expertise. Our technical services cannot be held responsible for the conception of, nor the execution of the works. In the case of negligence of rules, regulations and duties on the part of the purchaser we will disclaim all responsibility. The colours respect the UV resistance required by EOTA, but are still subject to the natural change over time. Are excluded from the guarantee: aesthetic considerations in case of partial repair of deficient membrane covered by the guarantee.

WWW.ALKORPROOF.COM



The British Board of Agrément have assessed the life expectancy of alkorPLAN® to be in excess of 30 years.



alkorPLAN® roofing products and Systems have a standard guarantee of 10 years, and are installed by approved contractors and installers who are trained and assessed by **RENOLIT**.



All **RENOLIT** waterproofing membranes for roofing are part of the RoofCollect® collection and recycling programme.



The **RENOLIT** division responsible for the roofing activity has been ap



RENOLIT RENOLIT (UK) Ltd - RENOLIT House, Hammond Road
Elms Farm Industrial Estate - Bedford MK41 0UD - United Kingdom
T +44 1234 244230 - F +44 1234 357313 - info@renolit.co.uk

LAYDEX Ltd. - Unit 3 - Allied Industrial Estate - Kylemore Road - Dublin 10
T +353(0) 1 642 6600 - F +353 (0) 1 642 6601 - sales@laydex.ie

LAYDEX (NI) Ltd. - Units 4 & 5 Falcon Way - Belfast BT 12 6 SQ
T + 44 (0) 2890 382 223 - F + 44 (0) 2890 382 230

RENOLIT Belgium N.V. - Export Dpt. - Industriepark De Bruwaan 9 - 9700 Oudenaarde - Belgium
T +32 (0)55 33 98 51 - F +32 (0)55 31 86 58 - renolit.belgium@renolit.com

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