



*Rely on it.*

# Keep it cool

RENOLIT ALKORPLAN Bright

**RENOLIT**  
**ALKORPLAN**  
roofing products





# The only 5-in-1 solution for an ecological and aesthetical roof

## RENOLIT ALKORPLAN Bright

### How a white roofing membrane can improve your building.

*A roof is no longer the dull, black flat surface of the past, invisible with only one function: protecting your home from water ingress. On the contrary, nowadays the roof is often a feature of a building through which an architect can express his personal architectural style. More and more architects and building companies are linking aesthetics to sustainability. How can it be more efficient, greener, more accessible,...? The available space on flat roofs is optimised and roofs more than ever have an energy- and environmentally friendly function, especially in expanding urban environments. Just think of green roofs, living roofs or white cool roofs. A cool roof is a roof that has been designed to absorb less heat and reflect more sunlight than a standard roof thanks to its white colour. Important for the interior of the building, but also for its surrounding environment, and this of course results in considerable energy savings.*

RENOLIT went one step further and developed the RENOLIT ALKORPLAN Bright cool roof technology: an extra, protective coating on top of a completely white roofing membrane. This brilliant idea results in a unique, cool roof membrane with all the advantages and qualities of RENOLIT ALKORPLAN, combined with an **extremely high reflection, incomparable longevity** and a surface that remains **durably clean and bright**.

No wonder a roofing membrane with economic, ecological as well as aesthetic assets is really interesting for architects, building contractors and even building owners.

### Discover 5 significant reasons for choosing RENOLIT ALKORPLAN Bright

- 1
**Future (p)roof.** p7  
 Sustainable solution to reduce the urban heat island effect and lower CO<sub>2</sub>.
- 2
**Unequaled solar reflection.** p11  
 The coolest roofing membrane with the highest SRI (115).
- 3
**Considerably more energy-efficient.** p15  
 Save up to 43% on energy bills thanks to a RENOLIT ALKORPLAN Bright roof.
- 4
**Incredibly durable.** p19  
 Incomparable longevity due to excellent UV protective coating.
- 5
**Aesthetically pleasing white.** p21  
 Easy to clean cool roof membrane with a long-lasting brightness.

# System design

## RENOLIT ALKORPLAN Bright

### Ingenious technology

*RENOLIT ALKORPLAN Bright is an enhanced version of the high-quality RENOLIT ALKORPLAN roofing membrane. RENOLIT R&D department developed a special white protection layer for this product, a technology that would provide the twin benefits of extra UV protection and extremely high reflection. An energy-efficient and ecological innovation in the world of roofing membranes.*

RENOLIT ALKORPLAN Bright is installed just like any other RENOLIT ALKORPLAN roofing membrane. It has the same speed and ease of installation, the same qualities and advantages: from absolute water tightness and flexibility to the same excellent mechanical and chemical properties. With the durable high reflection, the RENOLIT cool roof membrane is in a class of its own.

Certificates and continuous technical approvals are available online at [www.renolit.com/roofing](http://www.renolit.com/roofing).

**Please note!** RENOLIT recommends hot-air welding only. Solvent welding is not allowed. Solvents will irreversibly damage the special protective layer.

RENOLIT is also safety conscious. Slippery roof surfaces can increase the risk of accidents during installation. The Bright roofing membrane has a slip-resistant embossing that reduces the risk of slipping. Additionally Bright roofing membrane rolls are easy and safe to handle on site thanks to their weight.

■ **RENOLIT ALKORPLAN F Bright** for mechanically fixed systems. White roofing membrane of flexible PVC with a woven polyester reinforcing and protective coating.

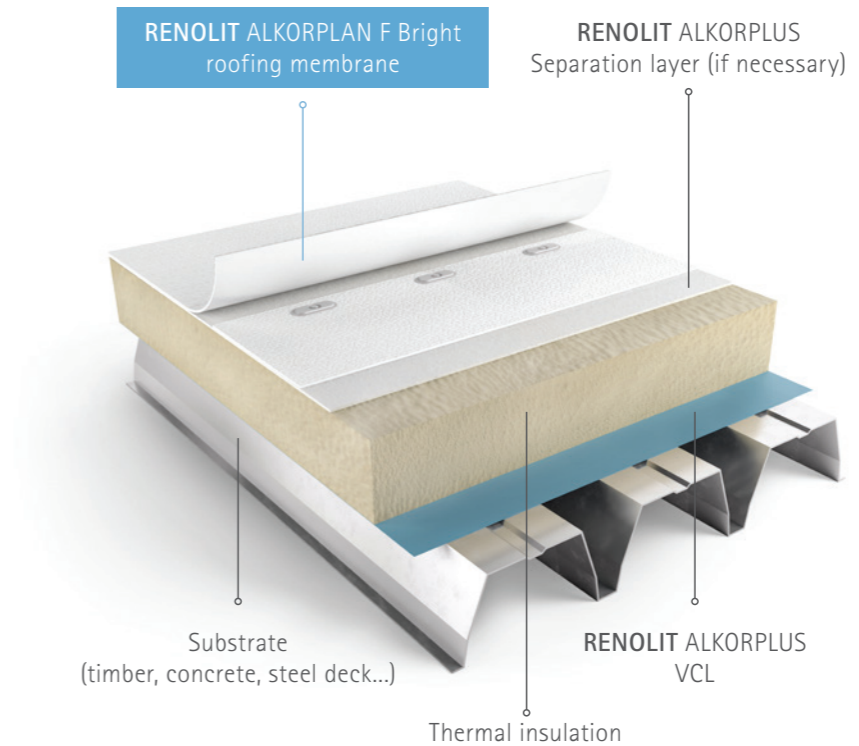


■ **RENOLIT ALKORPLAN A Bright** for fully bonded systems. White roofing membrane of flexible PVC, with a 300 g/m<sup>2</sup> polyester fleece backing and protective coating.

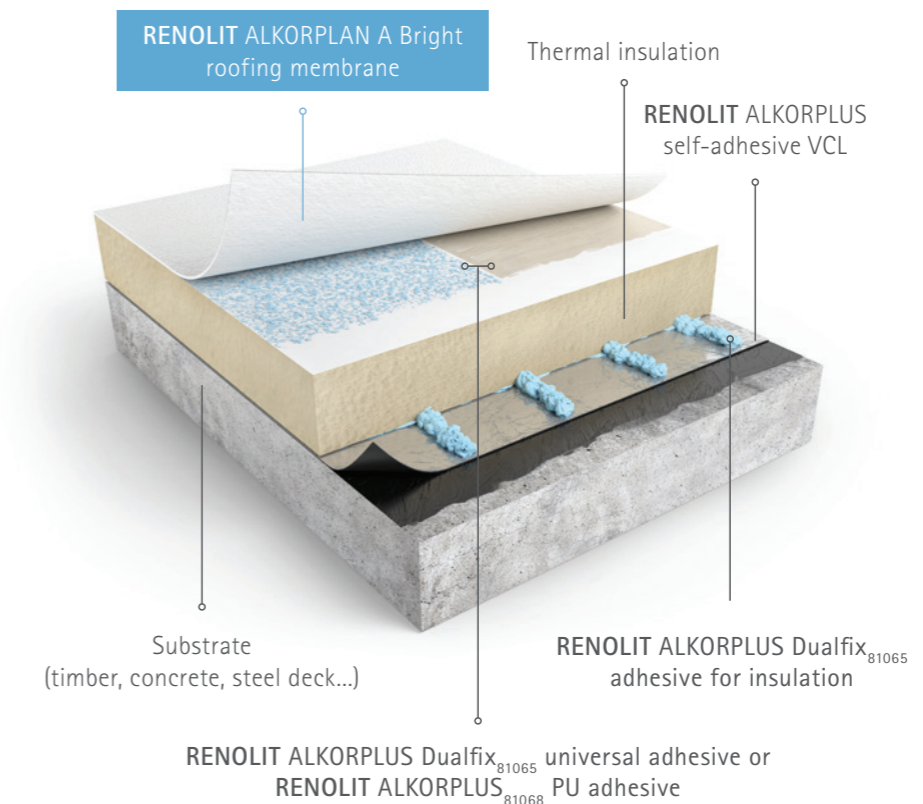


With the **RENOLIT ALKORPLAN Bright** system **RENOLIT** offers a solution for every type of roof, whether it is a new build or refurbishment:

■ Mechanically fixed system: **RENOLIT ALKORPLAN F Bright**



■ Fully bonded system: **RENOLIT ALKORPLAN A Bright**



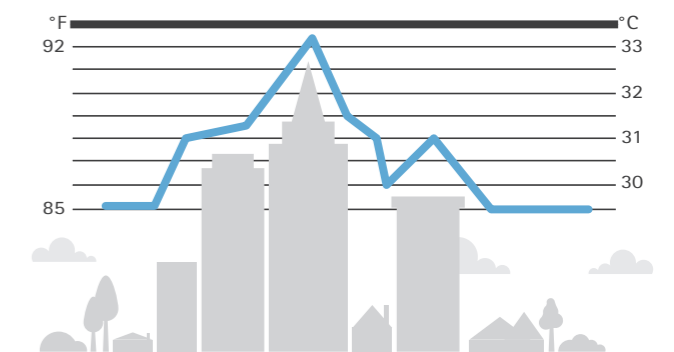
**Important!** RENOLIT advises a minimal slope of 30 mm/m

# Future (p)roof

## RENOLIT ALKORPLAN Bright

*Climate change, global warming, increased rainfall intensity, flooding. Our planet is clearly suffering. The impact can be felt in our immediate environment, in our cities, in our entire lives.*

Consider the urban heat island effect. Cities are expanding, providing more roof surface to heat up, particularly during the increasingly hot summer months. Because of this, temperatures in cities are on average 4 to 6 degrees higher than in nearby rural areas. Traditional dark roofs in particular retain heat much longer and drive up air conditioning/energy costs. More energy consumption, more emissions resulting in more climatic problems.



### Against heat island effect

Conurbation is in need of cool roofs, that much is clear, just one solution to slow down global warming. Specifically in cities with high-rise buildings and little shade, the advantage of white reflective roofs is plain to see.

**In this way, cities stay cooler, require less air conditioning and consume less energy. In turn, the additional positive result is less carbon dioxide and an impact on the greenhouse effect.** For this reason government and planning agencies around the world are trying to influence architects and building owners to replace all dark surfaces with lighter, more reflective materials and to integrate cool roofs into their designs.

Cool roofs are a simple concept, easily accessible for everyone and definitely a durable solution for the environment - why would we not go for it?

### BREEAM, LEED, VERDE compliant

The EU, governments and local planning are constantly focusing on solutions to alleviate climate change. Environmental goals aim to keep global warming below 2 °C and to reduce CO<sub>2</sub> emissions by as much as 80-95%. All to achieve climate neutrality by 2050. The attention is, however, strongly directed toward the construction sector.

Increasingly governments and building owners require construction to have green credentials and demonstrate a true commitment to protect the environment and meet specific targets.

Due to the production process and the high SRI reflection value, **RENOLIT ALKORPLAN Bright** roofing membrane meets the international BREEAM, LEED and VERDE green building rating system. This cool roof membrane helps your building to achieve the optimum sustainability score.



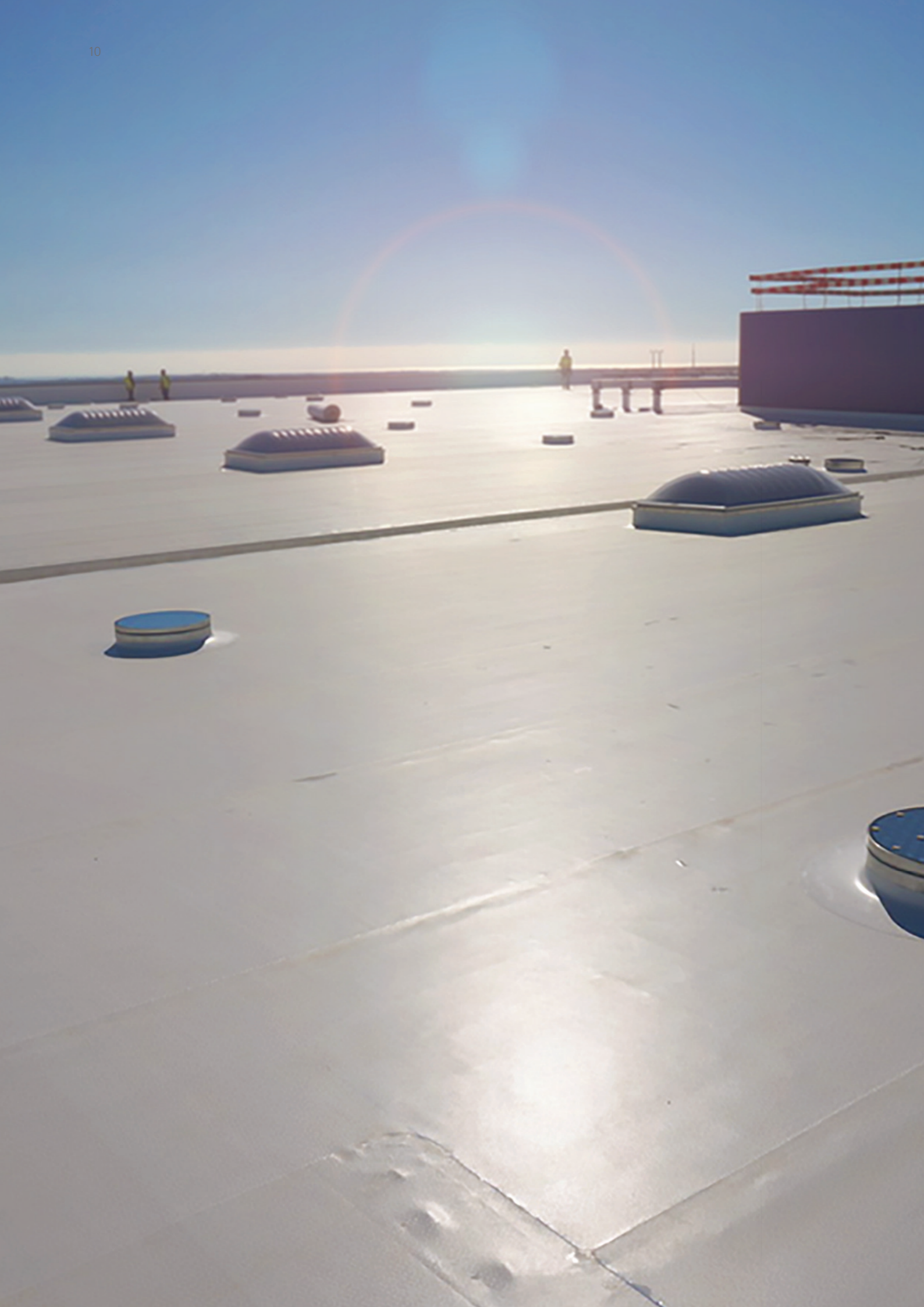
### Recyclable

At the end of life the **RENOLIT ALKORPLAN Bright** roofing membrane is fully recyclable into other new useful products. **RENOLIT** as a company is fully committed to sustainability through VinylPlus, ROOFCOLLECT and the Circular Plastics Alliance.



Taking into account the whole lifecycle of the product and the benefits provided during its lifetime, the environmental balance of the **RENOLIT ALKORPLAN Bright** is extremely positive: it lasts long, it saves energy and it is fully recyclable.





# Unequaled solar reflection

## RENOLIT ALKORPLAN Bright

Generally speaking, the darker the colour of a roofing membrane, the less sunlight will be reflected. A conventional dark roof absorbs almost all the sun's rays and transfers them into heat. For buildings that are not equipped with an air conditioning system, this can be quite uncomfortable, creating an extremely unpleasant working environment during the summer months.

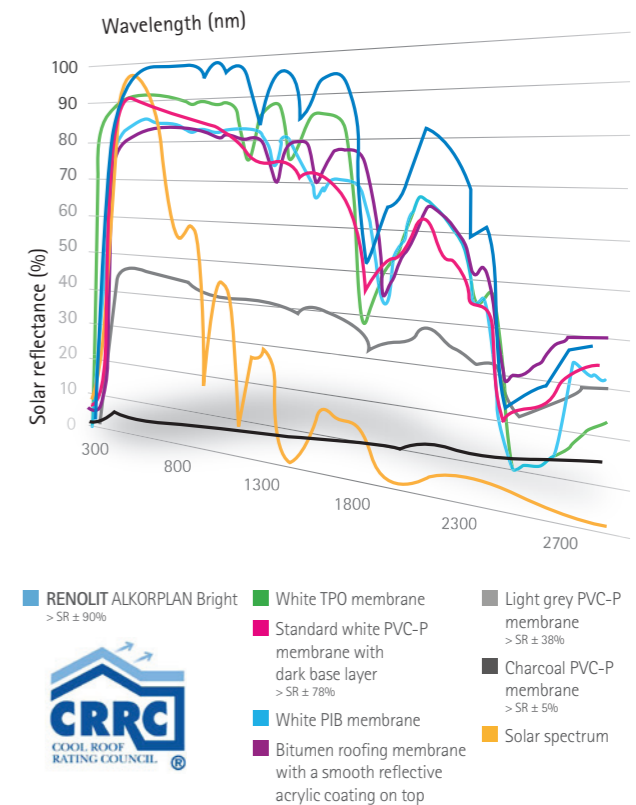
### White throughout

In such cases, a white cool roof membrane offers relief. As it reflects more UV, the roof will heat up less and therefore also release less heat into the building and surrounding environment. A temperature difference of a few degrees ensures a more comfortable indoor climate. It is important, however, that the roofing membrane is **completely white**, as with **RENOLIT ALKORPLAN Bright**. A standard white roofing membrane with a dark coloured base layer is less efficient.

### The coolest cool roof

Reflectivity may be analysed. A method of evaluating coolness is the solar reflectance index (SRI), which incorporates the capacity of materials to reflect solar heat (thermal emittance) and solar rays (solar reflectance) in a single value.

The lower the SRI, the hotter a material is likely to become in the sunshine. A perfect SRI is approximately 122, the value for a perfect mirror, which absorbs no sunlight and has very low emissivity. **With a solar reflectance of 91% and a solar reflectance index of 115, RENOLIT ALKORPLAN Bright is the leader among the cool roof membranes**, providing a solution for industrial buildings as well as housing applications. After all, everyone benefits from a cool living or work environment.



### RENOLIT ALKORPLAN Bright

Solar reflectance <sup>1</sup> (or Albedo)		Thermal Emittance <sup>2</sup>		Solar Reflectance Index (SRI)	
Initial	3-year	Initial	3-year	Initial	3-year
0,91	0,73	0,84	0,78	115	87

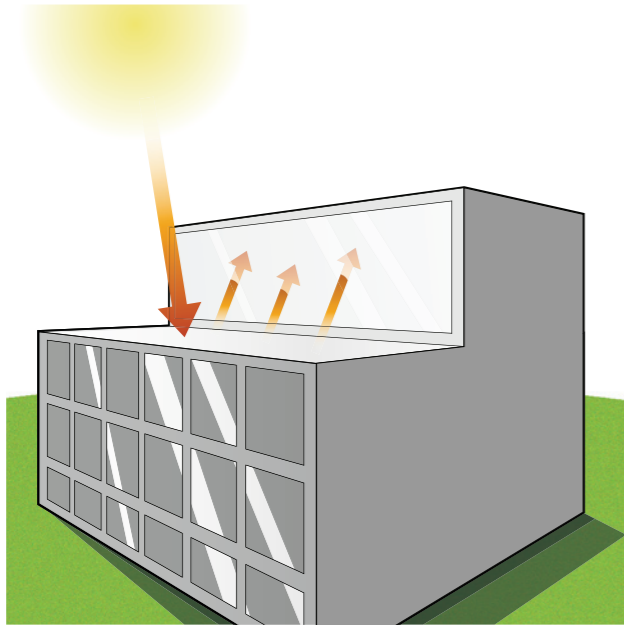
<sup>1</sup> Solar Reflectance testing according to ASTM C1549

<sup>2</sup> Thermal Emittance testing according to ASTM C1371



### Easy to clean

High SRI values can be significantly reduced if a roof becomes soiled. Location, environmental factors and pollution are decisive here. To keep reflection high, yearly maintenance and cleaning are necessary. **RENOLIT ALKORPLAN Bright** benefits from a special protective coating which helps shed grime and makes the cleaning process easier and quicker. An annual maintenance ensures your roof remains not only attractive but above all functional for decades.



In some specific architectural designs, reflected light can also have another interesting added benefit. With the Bright roofing membrane, sunlight can be deflected into the interior spaces of a building. Providing additional natural light through reflection. An efficient solution and creative challenge for architects!



KMSK Museum Antwerp (B): Due to **RENOLIT ALKORPLAN Bright** northern oriented roof lights allow deflected natural light into the museum rooms.



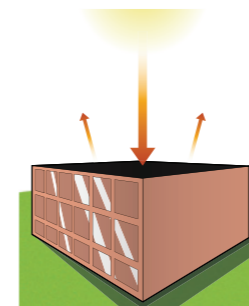
# Considerably more energy-efficient

## RENOLIT ALKORPLAN Bright

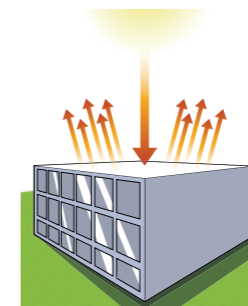
Traditionally flat roofs have been black or dark grey. A building with a black roof absorbs an enormous amount of heat which it transmits to the underlying space. In this situation air conditioning may be essential. This will contribute to a significant portion of the energy budget. Especially in the case of industrial buildings which usually have large areas exposed. Just think of cool buildings or refrigerated warehouses where a black roof will seriously increase the cooling costs.

### Easy way to save energy

White reflective **RENOLIT ALKORPLAN Bright**, suitable for residential, commercial or industrial buildings, is an affordable roofing solution that may save a great deal of money. On an average summer's day the difference in surface temperature between a black roofing membrane and **RENOLIT ALKORPLAN Bright** can be up to 45 °C. For the interior of a building this can make a difference of up to 5 °C .

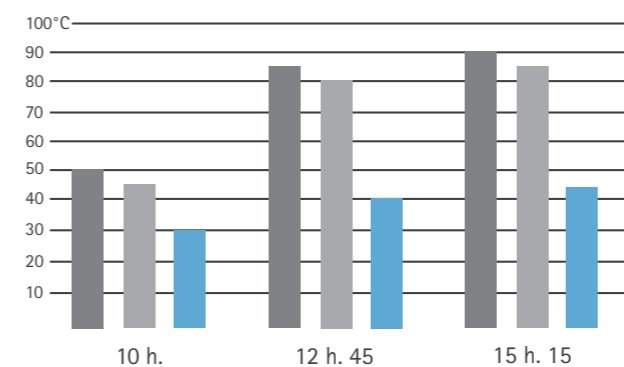


Temperature with a black roofing membrane  
Surface of the roof = 85°C  
Inside the building = 30 °C

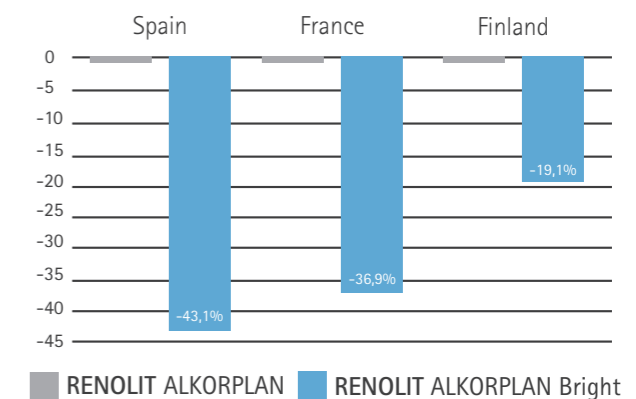


Temperature with **RENOLIT ALKORPLAN Bright**  
Surface of the roof = 45°C  
Inside the building = 25°C

■ Black roofing membrane  
■ Grey roofing membrane  
■ **RENOLIT ALKORBRIGHT**



Δ COOLING DEMAND (kWh/m<sup>2</sup> year)



■ RENOLIT ALKORPLAN ■ **RENOLIT ALKORPLAN Bright**

Test result obtained from a 43,000 sq.m. warehouse with office area, with a thermal transmittance or U-value:  
0.35 in Spain  
0.25 in France  
0.14 in Finland

### Unique protective coating

A **RENOLIT ALKORPLAN Bright** roof is no ordinary cool roof membrane. Due to its **unique, additional reflective protective coating** and the low absorption of solar radiation, the roof heats up less quickly and heat will need considerably more time to enter the building, which means significant savings can be made on air conditioning costs of up to 43 % ! In addition, for non-air conditioned buildings a cool roof may avoid having to purchase a unit.

A cool roof provides a more comfortable living or working environment, eliminates any air conditioning-related health problems and increases productivity.

**Conclusion:** The colder the roof surface, the cooler the underlying spaces and the more energy and consequently money is saved. A win-win situation for everyone.





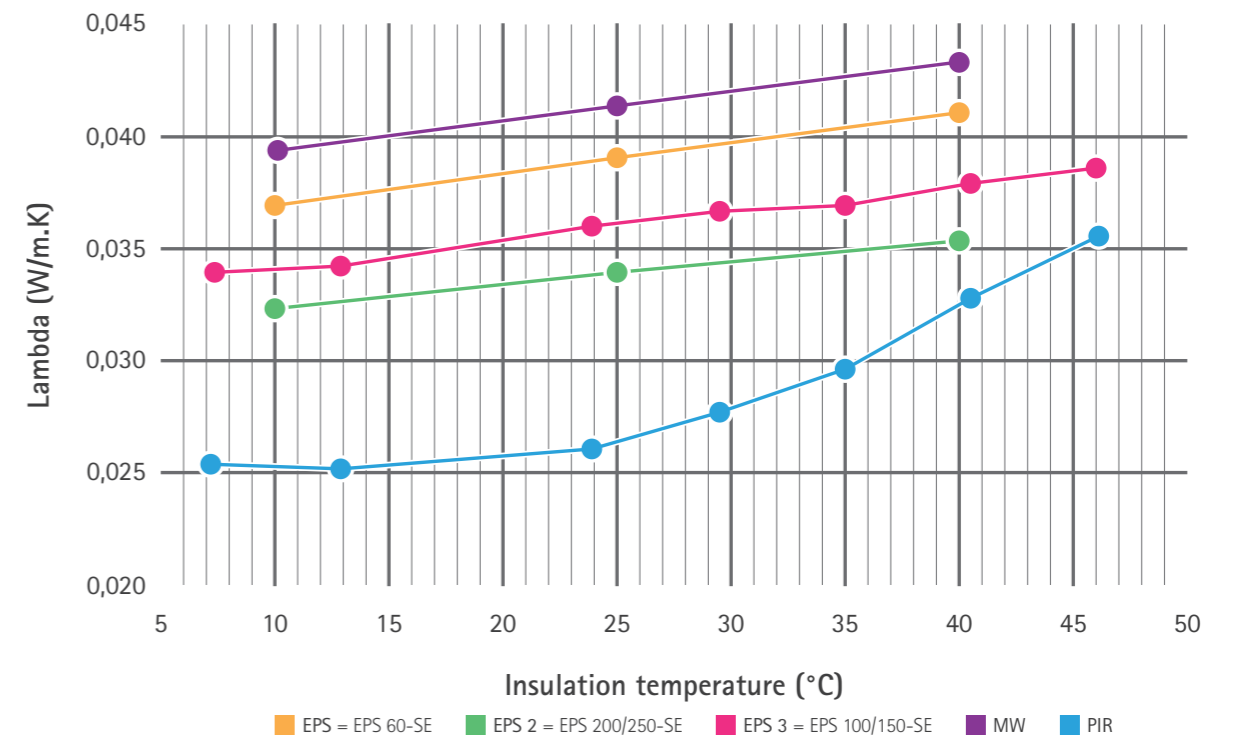
**Tip!** The **RENOLIT ALKORPLAN A Bright** cool roof membrane with fleece-backing has been designed specifically for adhered systems and is the perfect solution for cool buildings or refrigerated warehouses. Thanks to the adhered system you avoid the use of mechanical fasteners and the risk of energy loss due to thermal bridging, often the cause of an increasing energy bill. Double gain!



**Tip!** Even if your roof is still in good condition, you can have a white reflective **RENOLIT ALKORPLAN Bright** roofing membrane installed on the roof section where solar panels will be fitted. This way, you will also generate a higher return.

### Long-lasting thermal comfort

Furthermore, by choosing **RENOLIT ALKORPLAN Bright** this will avoid any long term loss of insulation value. By reducing the temperature of the roof, the insulation resistance will last longer, ensuring a positive impact on the overall performance of the roof system.



### Increased return

Thinking of installing solar panels? Then you should know that in combination with the **RENOLIT ALKORPLAN Bright** roofing membrane the return is extremely attractive.

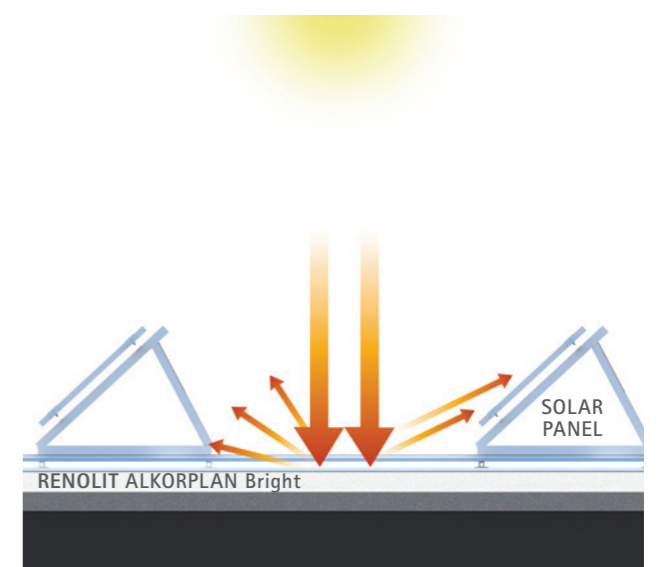
Figures show that solar panels perform much better on white reflective surfaces rather than on darker colours.

Two reasons:

Solar panels receive part of their energy from reflection of the sun's rays off a white roof. **RENOLIT ALKORPLAN Bright** with an albedo of more than 0.8 can provide up to 3 to 4% more return than roofs with a low solar reflection.

In addition, photovoltaic modules perform better in cooler temperatures and optimally at 25°C. Every 1°C more in air temperature results in a loss of 0.5% in solar panel performance. The white cool roof technology of the Bright membrane keeps the temperature around the photovoltaic panels low and thus provides additional benefit.

**The cooler your roof surface, the more return.**



**Important!** When installing **RENOLIT ALKORPLAN Bright** in combination with photovoltaic panels, a slope of 60 mm/m must be maintained.

# Incredibly durable

## RENOLIT ALKORPLAN Bright

*The main requirement of a roofing material is to provide a water-tight seal. A roof is also expected to have longevity. This however is not always the case. Environmental pollution, UV-radiation and severe temperature changes can be stressful to a membrane and result in degradation affecting the overall lifespan of the roof.*

### Incomparable longevity

Thanks to the special white lacquer layer, the **RENOLIT ALKORPLAN Bright** cool roof membrane has excellent longevity. This white layer protects the surface of this membrane from UV rays and reflects heat. As a result **RENOLIT ALKORPLAN Bright** does not experience high temperatures during the day and consequently is less affected by cooling during the night. Stress due to thermal shock is hugely reduced. A membrane that does not become overheated maintains its initial properties. **No reduction in quality implies no acceleration of the ageing process.**

Your **RENOLIT ALKORPLAN Bright** roof remains in perfect condition for decades, protected from the harmful effects of UV radiation.



Bright white coating: the best protection against ageing of the roof membrane

Ghelamco stadium - Belgium.  
While the grey metal canopy protects the grandstand, the reflective white roof offers cooling advantages for the offices, warehouses, restaurants and retail shops within the building.



# Aesthetically pleasing white

## RENOLIT ALKORPLAN Bright

*In contemporary architecture, white is a synonym for modern, stylish and clean. Architects love to use white in their designs, even for the roof, irrespective of whether it is a spectacular visible creation or a more common flat roof. Of course, white roofs should not lose their beautiful appearance over time. They will be subject to pollution after a relatively short period. In fact it already starts during the installation and this will be followed by environmental pollution.*

### Durable reflection

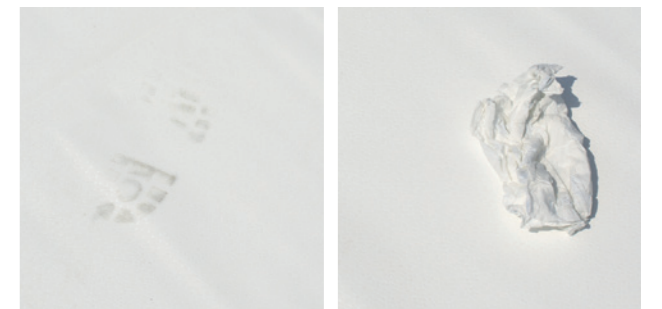
This is exactly where the Bright membrane performs perfectly! **Due to its special coating, this membrane remains visually attractive for many years.** Less particulate can remain on the roof surface because it is washed away by rain(\*). An important feature in also maintaining high reflection. However, if the roof does become polluted, it can be easily cleaned with just water and a soft brush. A **RENOLIT ALKORPLAN Bright** roof is maintenance friendly, typically only requiring an annual service to keep performance.

(\*). To maintain durable reflection a minimum slope of 30 mm/m is recommended.

### Inspiring white

The benefits of a special coating and long-lasting aesthetical features is important as **RENOLIT ALKORPLAN Bright** is applied on spectacular architectural designs and impressive major projects. Additional advantages are of course the flexibility and being light weight. Every possible design can shine without any limitation. **RENOLIT** cool roof membrane is not just a white top layer like many other cool roof membranes on the market. It is through white, a unique feature. Consequently, no dark weld seams appear during welding, resulting in an aesthetic and homogeneous white roof surface with maximum reflection.

### Maintenance friendly



### No dark weld seams



White roofing membrane with a dark underlayer: the welded seams stand out against the white surface.

Through white **RENOLIT ALKORPLAN Bright** membrane: the welded seams are barely visible.

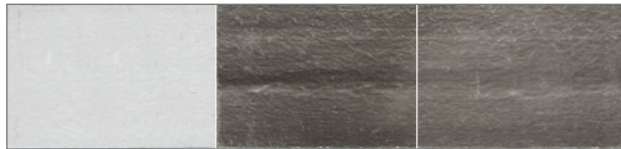
### Striking difference

Even a Bright roof cannot stay white after years of pollution. The influence of environmental pollution over time can be simulated with a test according to ISO 11378/2. In this test the roofing membrane is exposed to a mixture of water, mud, silica gel, cement and carbon black during a period of four hours. A comparative study of some existing roofing membranes clearly reveals that there are significant differences:

New product      Before cleaning      After cleaning with H2O



RENOLIT ALKORPLAN Bright



Bitumen roofing membrane with a smooth, reflecting acrylic coating on top



White TPO roofing membrane



White PVC- P roofing membrane without protective coating



Ten years after the refurbishment of the sports and event hall Sportpaleis in Antwerp (B) with RENOLIT ALKORPLAN (Bright white and different shades of blue), the roof has been professionally cleaned for the first time. Pollution from the adjacent highway had taken its toll. After cleaning the roof looks like new again...



Cultural Centre - France  
1,800 m<sup>2</sup> RENOLIT ALKORPLAN A Bright

# Some of our references

RENOLIT ALKORPLAN Bright



Industrial building - Belgium  
1,950 m<sup>2</sup> RENOLIT ALKORPLAN A Bright



Ghelamco football stadium - Belgium  
13,000 m<sup>2</sup> RENOLIT ALKORPLAN F Bright



Private home - Italy  
150 m<sup>2</sup> RENOLIT ALKORPLAN F Bright



Campina cool warehouse - The Netherlands  
8,000 m<sup>2</sup> RENOLIT ALKORPLAN A Bright



Shopping centre - Italy  
19,929 m<sup>2</sup> RENOLIT ALKORPLAN A Bright



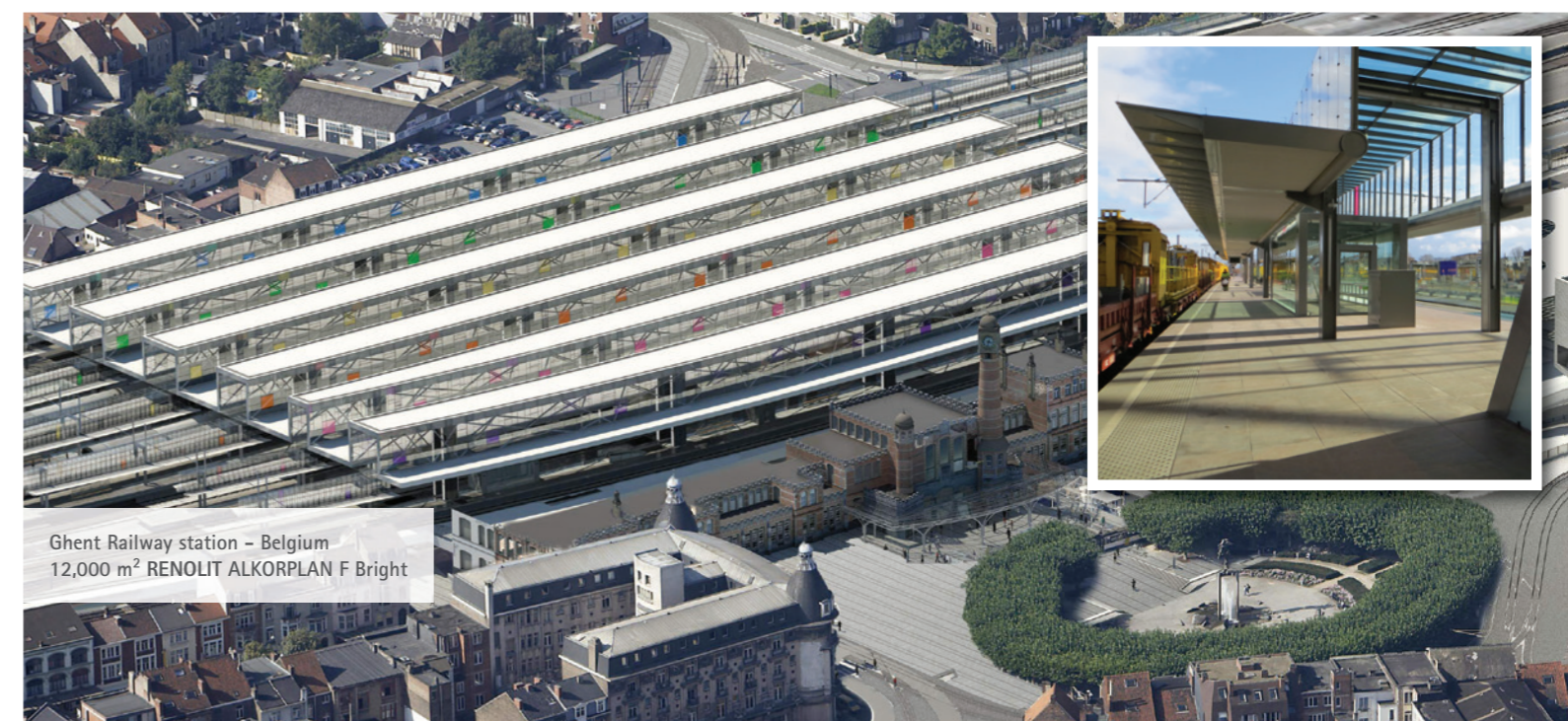
Commercial building - France  
14,000 m<sup>2</sup> RENOLIT ALKORPLAN F Bright



Honda Assembly Plant - Belgium  
35,000 m<sup>2</sup> RENOLIT ALKORPLAN F Bright



Ikea furniture store  
12,500 m<sup>2</sup> RENOLIT ALKORPLAN F Bright



Ghent Railway station - Belgium  
12,000 m<sup>2</sup> RENOLIT ALKORPLAN F Bright





The British Board of Agrément have assessed the life expectancy of **RENOLIT ALKORPLAN F** used in the United Kingdom to be in excess of 40 year with extended maintenance.

**RENOLIT ALKORPLAN** roofing membranes have a standard warranty of 10 years when installed by approved contractors and installers who are trained and assessed by **RENOLIT**. If additional conditions are fulfilled, the warranty period for **RENOLIT ALKORPLAN Bright** membranes can be extended up to 15 years.

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

The **RENOLIT Iberica S.A.** factory in Barcelona is approved to ISO 9001/14001.

## [www.renolit.com/roofing](http://www.renolit.com/roofing)

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*Rely on it.*