

# EFFISUS EASYREPAIR

## SEALING JOINTS ON POLYCARBONATE

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#### A - Polycarbonate on roofs - Benefits and drawbacks

Polycarbonate has a series of advantages that makes it a very interesting choice for certain roofing applications, when compared with glass or acrylic. It is:

- a very strong and resilient thermoplastic material - virtually unbreakable with 250 times the impact strength of float glass and 30 times that of acrylic
- can withstand force
- extremely lightweight
- capable of withstanding extreme temperatures
- resistant to heat, sunlight, snow, and rain - lasts without fading or discoloring
- has an UV blockage feature

As said before, due to above mentioned qualities it is an effective roofing material for many applications, being used more and

more on structures such as:

- decks
- garages
- patios
- sheds
- conservatories
- pool covers
- roofing on industrial warehouses
- awnings in commercial buildings

As the panels are extremely light in weight, they can be easily transported and installed wherever they are required.

Nevertheless polycarbonate panels have a few disadvantages when they're compared to plastic or glass:

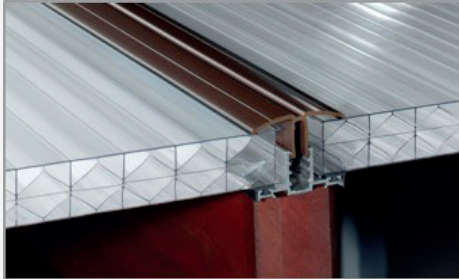
- they are not scratch resistant
- have a quite high coefficient of linear thermal expansion - its value equals 0,067 mm/m°C,

which is one of the highest values of this parameter among currently used construction materials.

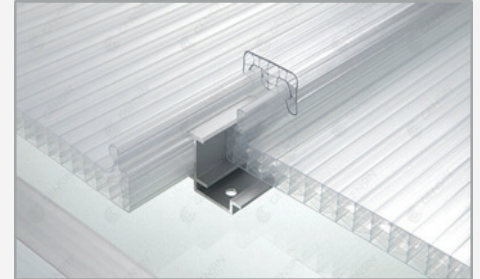
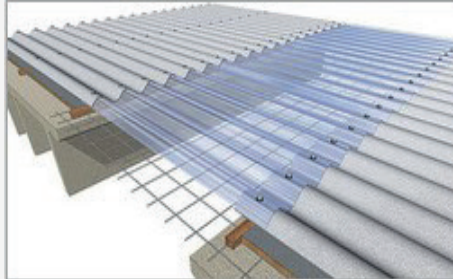
- its particular surface properties represent a major difficult for the bonding of adhesives or sealants



**B – Joints on polycarbonate – The no.1 challenge when working with polycarbonate roofing structures**



Typical joints on polycarbonate structures



High linear thermal expansion of polycarbonate has to be taken into account during the process of installation - sheets should be loosely, rather than rigidly installed within the profiles, which enables the expansion of the material under temperature changes. The aluminum profiles system should be designed with regard to these conditions.

However, most of the times, the high expansion and movement of the panels puts so much pressure on joining materials, making it

to failure and break. Many times the sheets start coming out or bulging. This is the no.1 pathology associated with polycarbonate roofing structures.

A failure of the joints of such systems represent a major failure of the system, as it represents water leakages, damages on roof components and its interior, contributing to the rapid degradation of the building. To the roofing contractor water leakages are the no.1 cause for additional

costs after the installation is concluded.

Most of the times, the solution will be sealing these joints with silicone or similar materials, or using standard bitumen or butyl sealing tapes. These solutions are not able to absorb the movement – silicones - and do not adhere properly to polycarbonate - tapes will get loose from the substrate very soon.



Typical pathologies on joints of polycarbonate structures



**C - Sealing polycarbonate joints – Effisus Easyrepair: the solution**

The Effisus Easyrepair Tape is the ideal solution to seal joints on polycarbonate sheets. It creates a waterproof, moisture, and airtight barrier, with no additional sealing required. It has an exceptional adhesiveness to polycarbonate

and is installed in a fast and easy process.

It can be used to seal joints between polycarbonate sheets, or joints between polycarbonate sheets and other construction

materials, such as metal, concrete, plastics, etc.

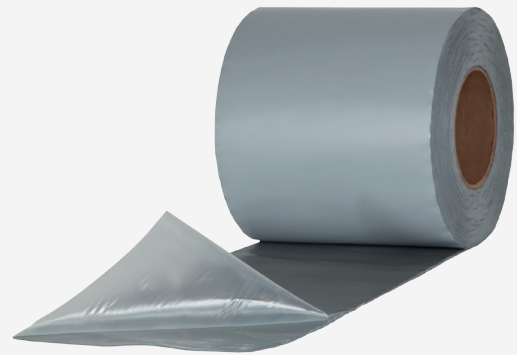
## ACTIVE SEALANTS TECHNOLOGY

The Effisus Easyrepair Membrane uses an innovative technology with active sealants. This technology uses sealants that don't have double connections between their carbon atoms, which results in an extremely stable molecular structure, that is resistant to light, ozone and heat.

Through the encapsulation of a special primer, an adhesive that "melts" with the surface where it is applied on, is obtained. This originates an instant bonding, to most known materials used in construction. It can be applied in environments with temperatures from -56°C up to +93°C.

### Effisus Easyrepair – Main advantages:

- Exceptional adhesiveness on polycarbonate and other construction materials
- Permanent sealing of any joint or leakage point
- Easy and fast installation, with no need for accessories



### D - Effisus Easyrepair on polycarbonate joints – Typical applications



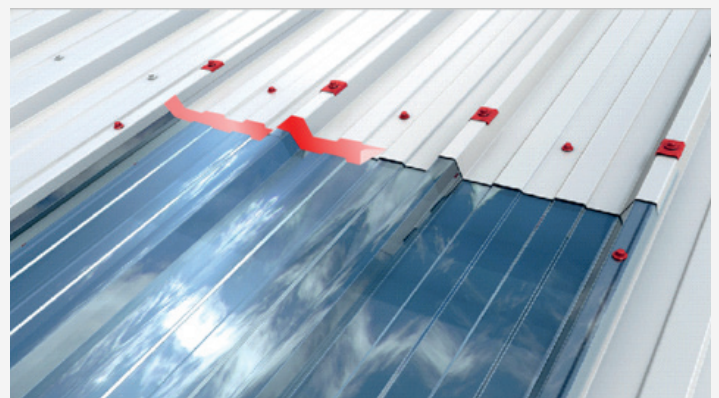
1 – Sealing joints on polycarbonate curve skylights



2 – Sealing joints between metal flashing and polycarbonate skylights



3 – Sealing joints between polycarbonate sheets and corrugated metal roofs



4 – Sealing joints between polycarbonate sheets

**EFFISUS EASYREPAIR:  
SEALING POLYCARBONATE  
JOINTS - CASE STUDY 1**



1 – Industrial building – Joints between polycarbonate panels



Project requirement	<ul style="list-style-type: none"> <li>To seal longitudinal joints between polycarbonate panels – panels had started to bulging</li> </ul>
Substrates on the joints	<ul style="list-style-type: none"> <li>Polycarbonate/Polycarbonate</li> </ul>
Traditional solutions – Why not?	<ul style="list-style-type: none"> <li>Silicones: can not absorb the large movement on the joint</li> <li>Bitumen / butyl adhesive tapes: do not adhere properly to polycarbonate – tapes will become loose from the substrate after a short period of time</li> </ul>
Solution used	<ul style="list-style-type: none"> <li>Effisus Easyrepair</li> <li>Details:</li> <li>Effisus 2Bond DS 5.0cm tape applied directly over the joint</li> <li>Effisus Easyrepair 15.0cm White Tape – 2 x</li> </ul>
Advantages on the use of Effisus Easyrepair	<ul style="list-style-type: none"> <li>Exceptional adhesiveness on polycarbonate</li> <li>Permanent sealing solution</li> <li>Easy and fast installation - with no need for accessories, special tools or specialized labor</li> <li>Tape supplied with the ideal width for the specific application</li> <li>Aesthetically pleasant</li> </ul>

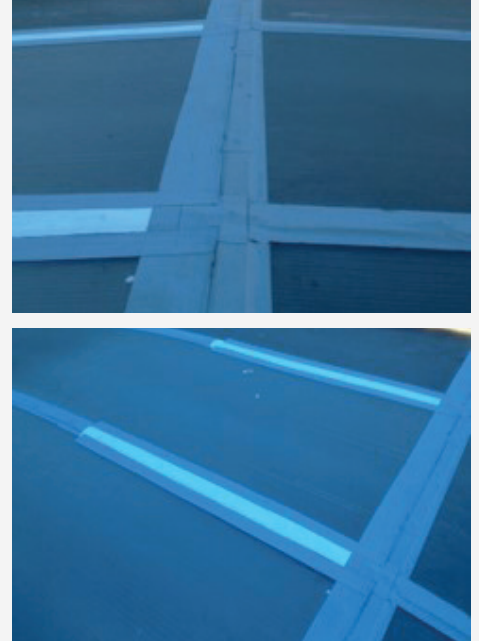
## EFFISUS EASYREPAIR: SEALING POLYCARBONATE JOINTS - CASE STUDY 2



1 – Football stadium – Joints between polycarbonate and metal

Project requirement	<ul style="list-style-type: none"> <li>To seal joints between metal elements on the roof and polycarbonate panels</li> </ul>
Roof substrate	<ul style="list-style-type: none"> <li>Metal/Polycarbonate</li> </ul>
Traditional solutions – Why not?	<ul style="list-style-type: none"> <li>Silicones: can not absorb the large movement on the joint</li> <li>Bitumen / butyl adhesive tapes: do not adhere properly to polycarbonate – tapes will become loose from the substrate after a short period of time</li> </ul>
Solution used	<ul style="list-style-type: none"> <li>Effisus Easyrepair</li> <li>Details:</li> <li>Effisus Easyrepair 15.0cm White Tape</li> </ul>
Advantages on the use of Effisus Easyrepair	<ul style="list-style-type: none"> <li>Exceptional adhesiveness on polycarbonate</li> <li>Permanent sealing solution</li> <li>Easy and fast installation - with no need for accessories, special tools or specialized labor</li> <li>Tape supplied with the ideal width for the specific application</li> <li>Aesthetically pleasant</li> </ul>

**EFFISUS EASYREPAIR:  
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JOINTS - CASE STUDY 3**



1 – Hotel – Joints between polycarbonate and metal

Project requirement	<ul style="list-style-type: none"> <li>• To seal joints between metal flashing and polycarbonate panels</li> <li>• To seal joints between polycarbonate panels</li> </ul>
Roof substrate	<ul style="list-style-type: none"> <li>• Metal flashing / Polycarbonate</li> <li>• Polycarbonate / Polycarbonate</li> </ul>
Traditional solutions – Why not?	<ul style="list-style-type: none"> <li>• Silicones: can not absorb the large movement on the joint</li> <li>• Bitumen / butyl adhesive tapes: do not adhere properly to polycarbonate – tapes will become loose from the substrate after a short period of time</li> </ul>
Solution used	<ul style="list-style-type: none"> <li>• Effisus Easyrepair</li> <li>• Details:</li> <li>• Effisus Easyrepair 15.0cm White Tape</li> <li>• Effisus Easyrepair 15.0cm Grey Tape</li> </ul>
Advantages on the use of Effisus Easyrepair	<ul style="list-style-type: none"> <li>• Exceptional adhesiveness on polycarbonate</li> <li>• Permanent sealing solution</li> <li>• Easy and fast installation - with no need for accessories, special tools or specialized labor</li> <li>• Tape supplied with the ideal width for the specific application</li> </ul>