



**Makrolon® Multiwall Sheets**  
**LIVING VISIONS >>**



# FUTURE Designed

High-tech products are for the modern world! In this respect, Exolon Group is one of the leading suppliers of extruded thermoplastic solid and multiwall sheets for a wide variety of applications and industries. At Exolon Group many years of experience are combined with competence in the development, production and sale of high-quality, intelligent and, above all, sustainable solid and multiwall sheet solutions.



**Rich in experience.  
Rich in ideas.**

Over 40 years of know-how in the development and production of polycarbonate sheets form our basis; innovations are our strength. We want to set standards with our products. We ensure this by carefully selecting the most suitable raw materials, continuously optimising our production processes and constantly training our employees. We promote ideas and innovative techniques to shape our future.

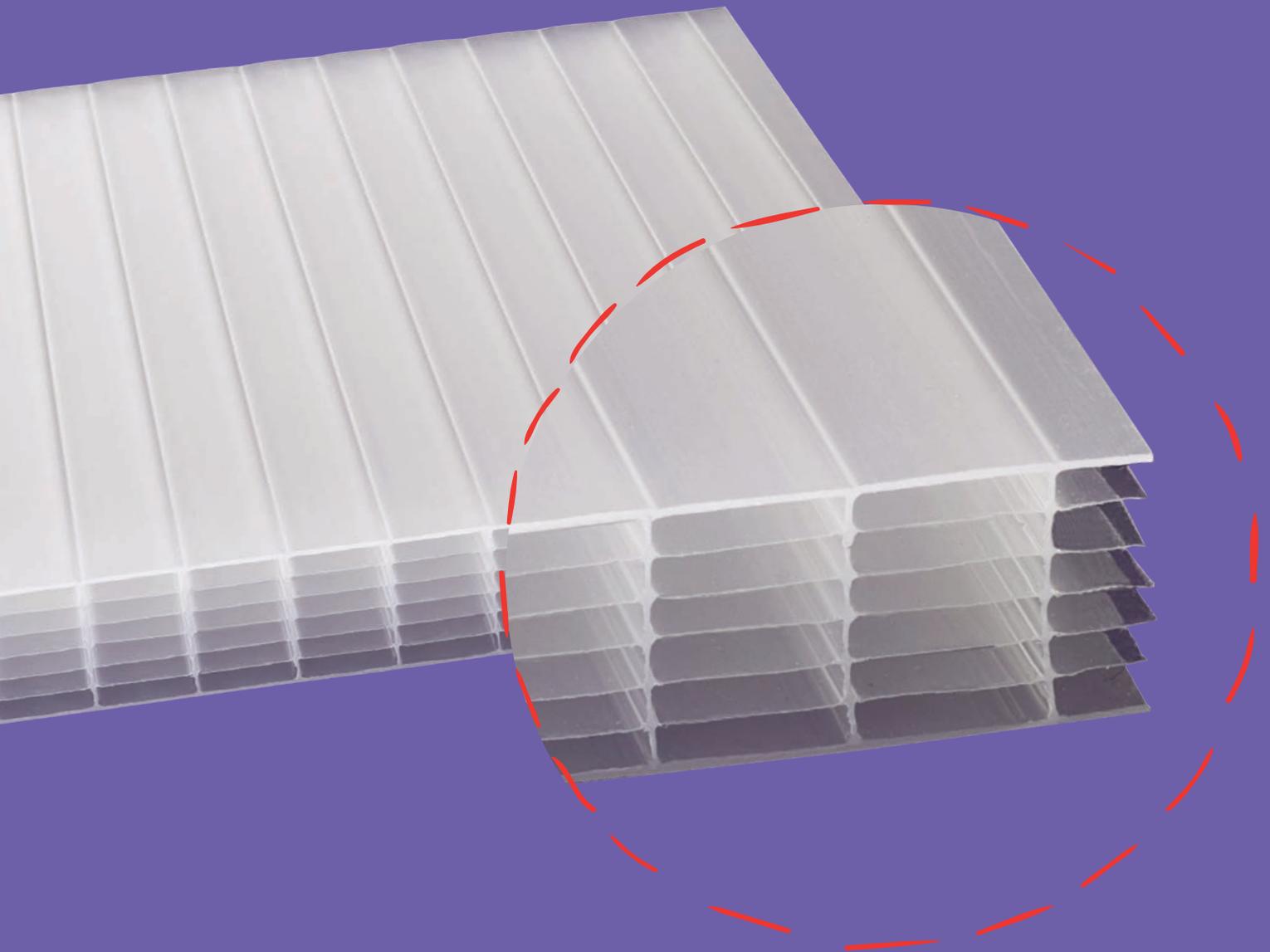
**European location.  
Close to our customers.**

Europe is a dynamic market that, correspondingly, requires a mobile organisation. We coordinate our market activities from our central sales location in Leverkusen, Germany. However, our account managers are responsible for the personal on-site support that our customers receive in each region. Added to this, our production sites in Nera Montoro, Italy, and Tielt, Belgium, are where we ensure that performance is aligned to market requirements. We provide comprehensive service and support – offering our customers the contact that leads to successful, long-term collaboration.

**Makrolon® multi UV multiwall sheets.  
Living visions.**

We want to make the world a better place in which to live – with a high-quality and sustainable Makrolon® product range that can meet the needs of our customers today and in the future. We want to use and deliver innovative technologies that will benefit society and future generations. We strive to reduce environmental impact and create consistent value. What is your vision?

QUALITY >> Guaranteed



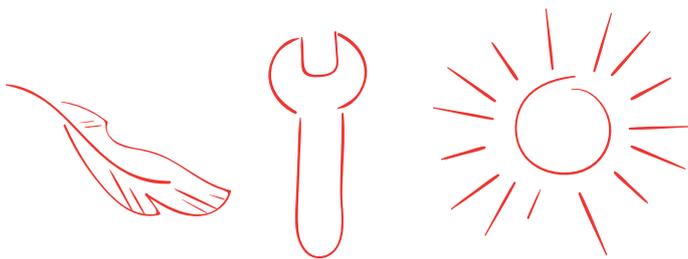
## Makrolon® multi UV multiwall sheets – BENEFITS AT A GLANCE



- High impact resistance, virtually unbreakable and hail-resistant
- Lightweight with high level of stiffness
- Good thermal insulation properties
- High level of light transmission and transparency
- Easy to process with standard tools
- Good fire- and smoke-resistance
- Good sound insulation
- Proven quality
- 10-year warranty on standard material and 20-year warranty on specific types
- Temperature resistance from  $-100^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$



**Makrolon® multi UV – our versatile range of high-quality polycarbonate sheets. This material meets a wide range of requirements and outperforms other transparent plastic materials in terms of weather resistance, a high level of stability with low weight and comprehensive safety aspects. The consistent quality of all Makrolon® products is based on our special extrusion know-how, comprehensive quality management and DIN ISO 9001-certified production processes.**



### **Simple tunnel structure? Or complex geometry?**

Depending on the application, the Makrolon® multi UV product range offers different types of geometry, which, for example, have high thermal and/or heat insulation. The multiwall sheets are available in clear and transparent, opal-white or coloured types. Thanks to their versatility, they are suitable for a wide variety of glazing and roofing projects – from conservatories and verandas to canopies and greenhouses as well as from skylights and barrel vaults to sports halls and stadiums.

### **As strong as required. As light as possible.**

Even at a low weight, Makrolon® multi UV multiwall sheets are virtually unbreakable, while being flexible and bendable. Thanks to the co-extruded protective layer and strict quality controls on the raw materials used, they are extremely durable. Field and laboratory weathering tests have shown that, even after 20 years of extreme climate conditions, our sheets perform well. Makrolon® multiwall sheets have a standard 10- to 20-year warranty against weather and hail damage. Custom warranty extensions are also possible.

### **Special requirements? Special features!**

The Makrolon® multi UV product range offers sheet variants with special optional/additional features:

- **IQ-Relax:** This opal-white sheet type has a built-in 'smart' system that automatically adjusts to the climate. Sunbeams are reflected; a high level of light transmission and good thermal insulation are guaranteed. It is ideal for glazing roofs of enclosed buildings such as greenhouses, conservatories, pergolas or industrial buildings.
- **ClimateControl:** In this variant, our clear, transparent multiwall sheets absorb a large amount of infrared light. They reduce the heat input significantly, but still ensure a high level of light transmission. It is suitable for any application in which a pleasant room climate is combined with cool transparency and brightness.
- **No drop:** The special coating prevents water droplets from condensing in damp air. Instead, a uniform film is formed on the sheet, which has a minimal effect on the light transmission. Occurrences of water droplet damage, such as to sensitive plants in greenhouses, is therefore avoided as the condensed water runs in a controlled manner. No drop multiwall sheets dry quickly, minimising unsightly sheet staining.

# DREAMS >> Realised



## Makrolon® multi UV multiwall sheets – BENEFITS FOR LIFE

### >> Comfortable

- Optimal UV and heat protection
- Low noise, no drumming effect in heavy rain

### >> Safe

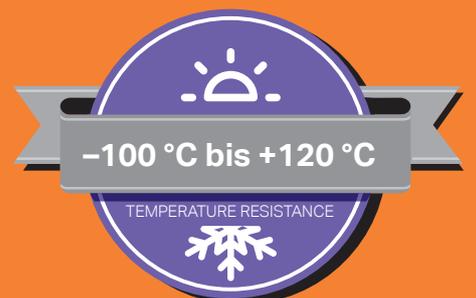
- Excellent load capacity
- Very good fire resistance

### >> Economic

- Easy handling
- Low processing costs
- Long durability

### >> Aesthetic

- Glossy surfaces
- Light transparency
- Large selection of colours





**Makrolon® multi UV multiwall sheets are made for life – and life is diverse! Whether in outdoor or indoor pools, on terraces or verandas, in conservatories or greenhouses, under pergolas or carports, Makrolon® multi UV multiwall sheets can be used to create weatherproof and aesthetically pleasing roofing solutions. Within a wide variety of private living areas many dreams can be realised.**

### **Small roof? Large roof?**

Makrolon® multi UV multiwall sheets are available in a variety of thicknesses, geometries and colours, various structures and surfaces for almost every small or large overhead roof. They are suitable for both open and closed constructions. All sheet designs meet high demands for being functional, economic and aesthetically pleasing and are also easy to work with, ensuring that creative design ideas can be realised with certainty! In addition, where optimal climate control for closed constructions is required, even in the hottest summer or coldest winter, the special variants IQ Relax or ClimateControl are suitable.

### **Feel safe. Feel good.**

Thanks to the very high load-bearing capacity and impact resistance of the material, Makrolon® multi UV can withstand even the most extreme weather conditions. Be it heat, hailstorm or snow load ... up to 20 years warranty on weathering and hail resistance speaks for itself! In addition, Makrolon® multi UV canopies are proven to be particularly quiet, even with heavy rain – a blessing for the ears.

### **Economically designed. Made easy.**

Equipped with UV protection, Makrolon® multi UV multiwall sheets ensure an optimal feel-good climate any time of the year. The optional double-sided UV protective coating provides a significant processing advantage. When installing the sheets, you do not have to worry about which side is which. The material can be used up to the last metre. Therefore, leftover, unusable sheets are a thing of the past.

## **VERSATILE FOR PRIVATE APPLICATIONS:**

**VERANDAS, TERRASSES AND PERGOLAS • WINTER GARDENS AND GREENHOUSES  
INDOOR POOL AND SWIMMING POOL COVERS • CANOPIES AND CARPORTS**

# REQUIREMENTS



# Exceeded

## Makrolon® multi UV multiwall sheets – PLANNING WITH SAFETY

### >> Certified

- Fire protection: EN 13501-1, B-s1, d0 or B-s2, d0
- Hail-resistant according to VKF2009 depending on the sheet type
- Load capacity according to ETAG10
- Light transmission and energy transmittance measured according to EN410
- Thermal properties according to EN10077-2
- CE mark EN 16153



**Functionality, safe roofing and daylighting solutions are in high demand, not only in industry but also in many areas of work and urban life. Architects, lighting designers and fabricators want maximum design options in terms of shape, colour and ease of construction. Sustainable construction with stable, safe materials and economic efficiency; Makrolon® multi UV multiwall sheets not only meet a wide range of requirements, they exceed them.**

### **Light creates air.**

Well thought-out and safely constructed daylight systems ensure a good working and pleasant climate in industrial and public buildings. Whether for industrial and office buildings, production halls or covered areas; Makrolon® multi UV multiwall sheets are ideal for installing in complex daylight systems of closed or open construction. Thanks to the good cold bending and processing properties, a wide variety of roofing solutions can be implemented – from gable roofs and arched forms to elaborate dome constructions.

### **Beautifully designed. Made safe.**

Thanks to their high level of sheet stiffness and low weight, Makrolon® multi UV multiwall sheets meet all energy and static requirements for planners, fabricators and building contractors. They even adhere to the most stringent customer specifications and specified tolerances, ensuring resistance to breakage, impact resistance and high dimensional stability. Another plus is that Makrolon® multi UV absorbs dangerous UV radiation. Due to its cold bending properties, the sheets are ideal for use as barrel vaults and can be processed directly on construction sites.



### **CE marking. According to EN 16153.**

Of course, Makrolon® multi UV multiwall sheets are CE-marked and comply with the European standard EN 16153 – Light transmitting flat multiwall polycarbonate (PC) sheets for internal and external use in roofs, walls and ceilings – Requirements and test methods. Thus, when integrating our material into your glazing system, you can be sure that it meets the requirements of all European standards.

### **Quality is standard. Service is key.**

Professional service competence and timely responses to customer needs make us a reliable partner for planners, processors, manufacturers and builders. Makrolon® multi UV is the multiwall sheet range for almost unlimited applications. However and wherever Makrolon® is used, we are happy to advise and assist you.

## **VERSATILE FOR INDUSTRIAL APPLICATIONS:**

**SKYLIGHT/DAYLIGHT SYSTEMS • BARREL VAULTS AND ARCHES • INDUSTRIAL GLAZING SUSPENSIONS**

# ATMOSPHERE >> Created

## Makrolon® multi UV multiwall sheets – SOLUTIONS FOR MORE ATMOSPHERE

Inspiring aesthetics that impress! In event arenas or sports stadiums, in train stations, airports or shopping centres, and in architectural projects and services, Makrolon® multi UV multiwall sheets score highly in many areas. People should feel comfortable and secure, thus the stability and safety of the installed materials are important, as well as a pleasant, air-conditioned atmosphere.



### **Hard to beat. Easy to handle.**

Polycarbonate is more versatile than almost any other plastic. There are almost no limits to your individual designs and creations. Closed? Open? Transparent or coloured? Futuristic or classic? Your project and your desired architecture define the requirements – Makrolon® multi UV multiwall sheets fulfil them. Makrolon® multi UV multiwall sheets have been designed to provide optimum load carrying capacity while maintaining the lowest possible weight. This makes very light and open constructions possible even in larger buildings, where attractive roof glazing does not require heavy support structures.

### **Safety first. Fire-resistant.**

Of course, Makrolon® multi UV multiwall sheets comply with the strict EU standards in the area of fire protection according to EN 13501-1. In realistic large fire testing, our products were classified as a flame-retardant building material. The use of Makrolon® reduces the thermal load on buildings and the required fire resistance of building components. Suitable fire protection methods must be accounted for when considering the total fire protection concept for each building.

### **Brightness. For the climate and atmosphere.**

Makrolon® multi UV multiwall sheets have very good light transmission properties depending on their structure, colour and thickness. The special construction of the sheets ensures that transmitted light is distributed very evenly, avoiding areas of excessive light or heat. Coloured and/or translucent sheets reduce the light intensity and heat, ensuring a pleasant indoor climate at all times, even in closed rooms. Speaking of climate, in recent years, we have continued to develop our Makrolon® multiwall sheets with improved thermal insulation – aiming to further reduce CO<sub>2</sub> emissions and thus contribute to global climate protection.

### **Outlook. For even more possibilities.**

Makrolon® multi UV multiwall sheets are constantly evolving to meet the needs of architects, engineers and OEMs. We are open to completely new, creative and special applications. Whether your project requires even greater load capacity, enhanced weather resistance or different permeability values, we are sure to have the right multiwall sheet solution for you!



## **VERSATILE FOR PUBLIC BUILDINGS AND PROJECTS:**

**ARENAS AND STADIUMS • AIRPORTS AND RAILWAY STATIONS • BUS STOPS • INDOOR SWIMMING POOLS  
AND LEISURE PARKS • OPEN-AIR THEATERS**

Advice and  
delivery by:



Image source cover: Shelter 'The Lighthouse of Fragility', 2013. Susanne M. Winterling in association with Ström Architects and Barton Engineers. Commissioned by artSOUTH. Photo: Baxter Bradford.

The manner in and the purpose for which you utilise our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Exolon Group. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale, which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorised and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No licence is implied or in fact granted under the claims of any patent. Makrolon® is a registered trademark owned and licensed by Covestro Group.

**Edition: 2019 · Order-No.: MF0364 e · Printed in Germany**



Exolon Group GmbH  
Rommerskirchener Str. 21  
50259 Pulheim · Germany

sales@exolongroup.com  
www.exolongroup.com