HYLITE®

PRODUCT GUIDE

LIGHTNESS IN ALU-LOOK.

COMPOSITES

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HYLITE®

HYLITE® is an aluminium composite panel with a polypropylene core and aluminium cover layers.

HYLITE®, the world's thinnest composite panel with thicknesses of 1.2 mm and 2 mm, offers another special feature: the panel's core material can provide a hinge function, which withstands repeated bending without damage. This function is achieved by milling grooves at the same position into both outer aluminium skins. RWTÜV testing has shown that the hinge application is unimpaired even after 80.000 bends.

The sheets are used in areas like office articles –article design, technical manuals for the automobile industry, notebook stands, bicycle mudguards, high-end packaging, presentation cases and so much more.

Sustainable involvement and environmental protection have always been amongst the essential corporate objectives at 3A Composites. The minimisation of risks for man and environment as well as the reduction of environmental pollution through careful and efficient utilisation of resources is part of the corporate philosophy.

Our production site is certified according to DIN EN ISO 14001, which lays down globally recognized requirements for environmental management. In addition, management systems for Quality (DIN EN ISO 9001), Occupational Health and Safety (DIN ISO 45001) and Energy (DIN EN ISO 50001) constitute important corporate objectives.

At the HYLITE® production site in Singen, there are permanent measures in place to reduce energy and water consumption, to increase productivity, to save waste and, as a result, to reduce CO_2 emissions significantly. The CO_2 has been successfully reduced by 46 % and energy by 30 % over the past ten years. In this same period, 60 % less waste water and 14 % less waste has been generated. Heat recovery measures were also implemented in 2021 and will lead to an additional CO_2 reduction of 450 t annually. Further investment in this system is expected to save another 900 t CO_2 by 2025.

HYLITE® is a high quality product which goes through extensive quality controls during its production process. The abstention from hazardous processes and substances is one of our highest priorities.

Read more about our commitment to sustainability starting on page 8.

HYLITE® – LIGHTNESS IN ALU-LOOK.

HYLITE®

LIGHTNESS IN ALU-LOOK.

CHARACTERISTICS

- The world's thinnest composite panel with thicknesses of 1.2 mm and 2 mm
- Lightweight
- Excellent dimensional stability at temperatures between +120°C and, for a limited period, + 150°C temperature (up to 30 minutes)
- Outstanding range of applications, in particular three-dimensional formability (hinge function)
- Optimum results in direct digital printing
- Recyclable

APPLICATIONS

- Signage | Lettering
- High-end packaging
- Presentation cases
- Office articles –article design e.g. high-end CD sleeves, files and books backs etc.
- Technical manuals for the automobile industry
- Notebook stands
- Lighting
- Furniture construction
- Bicycle mudguards
- Machine cladding
- Interior linings (Bus, Caravan, Mobile Homes)
- Service trolleys in the plane
- Creative work
- and so much more

PROCESSING

- Digital printing | Screen printing
- Laminating
- Painting | Spray painting | Lacquering
- Contour milling | Water jet cutting
- Shearing | Sawing | Punching
- Gluing | Drilling | Riveting | Screwing
- Folding (V-groove) | Cold bending
- Roll bending | Round bending
- Hinge joint routing
- Powder coating
- Embossing

For more details on the processing of HYLITE®, please contact our technical team.

THICKNESSES AND WEIGHT			
Panel thickness	mm	1.2	2
Thickness of aluminium layer	mm	0.2	0.2
Weight	kg/m²	1.8	2.5
Hardness of aluminium layers		hard (H18)	
CORE			
Material		Polypropylen PP	
Thickness tolerance (EN 485-4)	mm	+/- 0.09	+/- 0.12
MECHANICAL PROPERTIES			
Section Modulus (W)	cm³/m	0.2	0.36
Rigidity incl. transversal contraction (E·I)	kNcm²/m	80	230
Alloy of aluminium layer (EN 485-2)		EN AW-5182 (AlMg4, 5Mn0.4)	
Modulus of Elasticity	N/mm²	70'000	
Tensile strength of aluminium	N/mm²	$R_m \geq 380$	
Proof Stress	N/mm²	$R_{p0.2} \geq 320$	
Elongation	%	4	
ACOUSTICAL PROPERTIES			
Anti-noise compound better structure-borne noise properties in comparison with solid metal sheets			
THERMAL PROPERTIES			
Thermal resistance (EN ISO 6946)	m²K/W	0.0036	0.0073
Wärmeausdehnungskoeffizient	1/K	24×10^{-6}	
Thermal expansion coefficient	°C	- 30 bis +120	
Temporary temperature (up to 30 minutes)	°C	+ 150 adequate to powder or immersion coating	
Flash point of core (DIN 54 836)	°C	300	
ELECTRICAL PROPERTIES			
Current flow resistance of core (DIN 53 482)	Ωcm	$> 10^{16}$	
Breakdown voltage of core (DIN 53 481, DIN VDE 0303 T21E)	kV/mm	> 35 … 40	

Note: These technical data of our products are typical ones for HYLITE®.
The actually measured values are subject to production variations.

SUSTAINABILITY

MISSION: TOGETHER. RESPONSIBLE.

Sustainability is at the core of everything we do. Our corporate ecological commitment is summed up by the **MISSION: TOGETHER. RESPONSIBLE.** As we also apply and comply with this mission in regard to our products, we have created a classification system. The five different categories in our **FIVE-DOT-MISSION** system indicate the factors with the greatest impact on sustainability. Our intention is to offer our partners guidance with their purchasing decision-making and to provide a transparent system. A system which focuses on the use of materials, the CO_2 content, the product life cycle and, of course, recycling, a topic of particular relevance for our products. Our FIVE-DOT-MISSION makes an assessment of a product on the basis of five categories and awards points per category, the product is then assigned to one of the five coloured DOTs. By this means we achieve a transparent, quick valuation logic which we can also use to gauge product innovation and improvement at 3A Composites.

THE FIVE-DOT CATEGORIES ARE:

1. BIOBASED CONTENT

Depending on the product, different raw materials are used to manufacture our panels. In this case, we look at the percentage of renewable raw materials used in our products. Our aim is to increase the percentage whenever possible and appropriate.

2. RECYCLED CONTENT

The industry selects recycled raw materials for use in the manufacture of new products which also fulfil requirements such as fire ratings, processing prerequisites and customer expectations in terms of functionality and appearance. This category is where we gauge the proportion of high quality recycled raw material in our products' total material input.

3. FOSSIL CO_2 BOUND IN THE MATERIAL

This category shows the weight of fossil CO_2 embedded in our panels. Differences here are principally due to the raw material type and origin, the density, the composition and the proportion of recycled content.

4. PRODUCT LIFE CYCLE

The plastic sheets and composite panels we produce are used by our customers for a longer period of time. In contrast to products used in the short term, these longer-term alternatives make an active contribution to saving resources. In this category we show our panels' average service life. Material properties result in disparities, so life cycles range from <1 year to even >30 years.

5. RECYCLABILITY

One of the most important aspects of sustainability is contributing to environmental protection by saving valuable raw materials and avoiding waste. Unlike the second category "recycled content", in this assessment category, we show options for recycling the panels after they have been in use. There are already, for instance, established recycling loops for paper and metals. At some production sites, the material can already be returned, so that material for new panels can be created from it. As a company, we came to the conclusion that thermal recycling does not seem sustainable enough, so it is not included in our FIVE-DOT classification. Instead, we are actively working with partner companies to establish a closed-loop, sustainable and future-oriented recycling economy.

As many as 3 points can be achieved in each of the categories presented, totalling a maximum of 15 points. According to the total number of points achieved (1-15), the FIVE-DOT classification is conducted using the following colour gradation.

Transparency is important to us! We will review the product assessment annually to see in which areas the product can be improved. We have set ourselves the goal of achieving the majority of our sales with products which achieve a rating of ≥ 7 points in the FIVE-DOT classification by 2030.

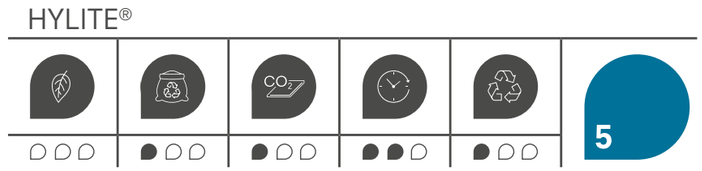
Join us on our sustainable mission!

mission™
TOGETHER. RESPONSIBLE.

SUSTAINABILITY

HYLITE® FIVE-DOT-MISSION

HYLITE®, the world's thinnest composite panel, has been assessed in line with the criteria described above. The product currently achieves a FIVE-DOT classification with a total of 5 points.



RECYCLED CONTENT

The aluminium used in the aluminium cover sheets in HYLITE® is also in part recycled. Aluminium is one of the materials best suited to recycling because regardless of how often it is recycled, there are no detrimental effects on its material properties. We intend to increase the proportion of recycled aluminium in our cover sheets in the future. All HYLITE® panels comply with the requirements in the current version of the REACH & RoHS directives.

FOSSIL CO_2 BOUND IN THE MATERIAL

As the production of aluminium and the core material polypropylene are energy-intensive, there is embedded fossil carbon in HYLITE®. HYLITE®, available in the thicknesses of 1.2 and 2 mm, is the world's thinnest aluminium composite sheet. As a result, the energy and material used in manufacturing the material are kept to a minimum and HYLITE® can contribute to reducing the carbon footprint.

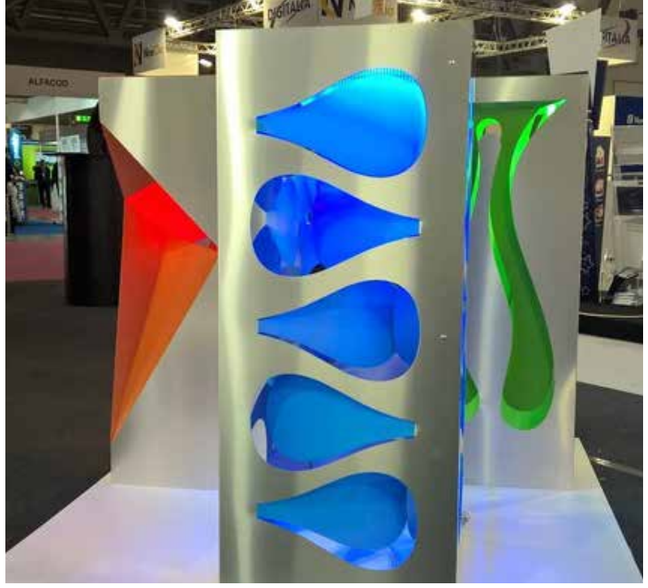
PRODUCT LIFE CYCLE

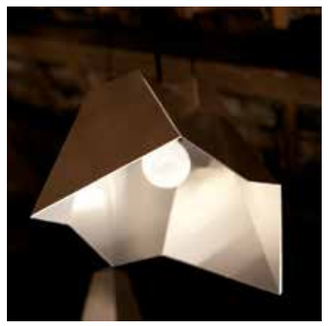
Our HYLITE® sheet material is used in medium-term interior and exterior applications. The material's good temperature resistance (up to 150°C for a limited period) makes HYLITE® the first choice for a wide number of applications.

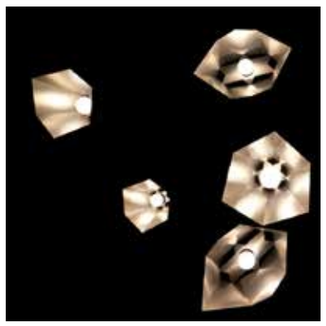
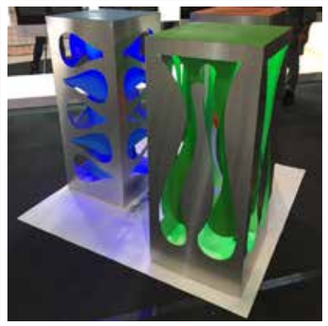
RECYCLABILITY

HYLITE® is recyclable, i.e. both the core material and the aluminium cover sheets are recycled and used to produce new material. The material can be separated by cutting it into small pieces using, e.g. granulators or shredders, and then sorting it by type for reuse or recycling. There are standard practices and specialised recycling companies for this purpose.





















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