



**ROHACELL®**  
**The Champions Choice!**

High performance foam cores  
for sports and leisure equipment.

**ROHACELL®**



# Winning Advantages With ROHACELL®

**The trend towards lighter, better performing and more robust equipment for many sports remains unbroken.**

**Yet the manufacturing process to create these innovative new products must continue to be cost efficient and reliable.**

In many cases, these demanding requirements call for fiber-reinforced plastic (FRP) sandwich construction to deliver the ideal solution. Whether the goal is excellent bending stiffness and strength, stabilization of very thin FRP sheets against external forces, or generating complex 3-dimensional geometries with minimized effort – a ROHACELL® sandwich can do that trick.

## **Mechanical performance**

The unrivalled mechanical properties of ROHACELL® allow you to use very low density cores, enabling ultimate lightweight construction.

## **Processing robustness**

During curing of the face sheet resin, ROHACELL® withstands even the toughest temperatures and pressures – resulting in reduced cycle times and maximized output.

## **Cell structure**

ROHACELL® foams are available in a wide range of tailored cell sizes. For every set of requirements, the perfect balance between minimized resin absorption and bonding strength to the face sheets can be achieved. ROHACELL®'s 100% closed cell structure keeps the resin where you want it – in the interface.

## **Thermoformability**

Heated to the correct temperature, ROHACELL® can be thermoformed to the desired geometry in a one-step fast and economic process.

## **ROHACELL® properties**

ROHACELL® is a Polymethacrylimide (PMI) based, rigid, closed-cell polymeric foam. It can be processed with all commonly used resin systems and is easy to shape by milling, sawing and other cutting techniques.

## **Processing**

IG and IG-F are standard ROHACELL® grades and can be processed with all common curing methods, including vacuum infusion, resin transfer molding (RTM), autoclaving, and hot pressing up to 130°C and 3 bars depending on foam density. Higher performing foam grades are available for more demanding process conditions up to 190°C and 10 bars.



**Typical properties of ROHACELL® IG/IG-F subject to normal manufacturing variation**

Properties	Unit	ROHACELL® 31 IG/IG-F	ROHACELL® 51 IG/IG-F	ROHACELL® 71 IG/IG-F	ROHACELL® 110 IG/IG-F	Standard
Density	kg/m <sup>3</sup> lbs./cu.ft.	32 2.0	52 3.25	75 4.68	110 6.87	ISO 845 ASTM D 1622
Compressive strength	MPa psi	0.4 58	0.9 130	1.5 217	3.0 435	ISO 844 ASTM D 1621
Tensile strength	MPa psi	1.0 145	1.9 275	2.8 406	3.5 507	ISO 527-2 ASTM D 638
Shear strength	MPa psi	0.4 58	0.8 116	1.3 188	2.4 348	DIN 53294 ASTM C 273
Elastic modulus	MPa psi	36 5.220	70 10.150	92 13.340	160 23.200	ISO 527-2 ASTM D 638
Shear modulus	MPa psi	13 1.885	19 2.755	29 4.205	50 7.250	DIN 53294 ASTM C 273
Elongation at break	%	3.0	3.0	3.0	3.0	ISO 527-2 ASTM D 638





# ROHACELL® Supporting Success

ROHACELL® is the perfect match for an ever increasing variety of sports equipment.

From cross-country and alpine skis to carbon bicycle wheels and ice hockey sticks, from remote controlled model aircraft and fishing floats to solar powered and conventionally fueled racing vehicles. All of these applications, and more, make use of ROHACELL®'s unique properties to create products with outstanding value and performance.





*“ROHACELL® foams, high-tech craftsmanship and experience enable us to build the lightest, best-performing carbon bike wheels in the world. Period.”*

Erhard Wissler, managing director Carbon Sports  
(Lightweight brand bike wheels)



*“ROHACELL® significantly contributes to the outstanding low weight and the excellent dynamic properties of our cross-country skis. Furthermore, its 100% closed cell structure is essential to the rigorous precision we need for our high performance models.”*

Gunnar Bjertnaes,  
Technical Director Madshus



*“The production efficiency and performance in the field of our world-class ice hockey sticks is greatly enhanced by the use of ROHACELL® foams.”*

Adam Gans, Director  
Product Development Bauer Hockey





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