

# FEEL THE INTENSITY OF THE SPORT NOT THE IMPACT



PORON<sup>®</sup> XRD™ Extreme Impact Protection Material is a breakthrough technology that has been tested to absorb up to 90 percent of energy when impacted at high strain rates<sup>1</sup>. The extreme impact protection developed by the Rogers Corporation High Performance Foams Research and Development Team is ideal for use in sporting goods, outdoor industry products and other applications where protection, comfort, and consistent performance are required.

PORON XRD material gives athletes the power to concentrate on the next play, and not be inhibited by the last hit. It is an ideal added protection material for the shoulders, elbows, hips, knees, shins and other common impact injury areas for athletes and outdoor adventurers.

## Performance Advantage

- Consistent repeated impact absorption for dependable protection throughout the life of the product.
- A multi-purpose foam that outperforms the competition in a variety of markets and test methods.

## Wearable Protection Advantage

- The PORON XRD design difference offers a thin and flexible alternative to traditional padding, so your customers can say good bye to uncomfortable, bulky protection.
- Microban<sup>®</sup> antimicrobial protection to help prevent the growth of bacteria that causes stains, odors and product deterioration.
- When things heat up, keeping cool is crucial. Breathable PORON XRD Technology fits like a second skin, ensuring ease of motion and air flow.
- Contouring, soft and flexible to the touch, PORON XRD Material offers the wearer a customized fit.

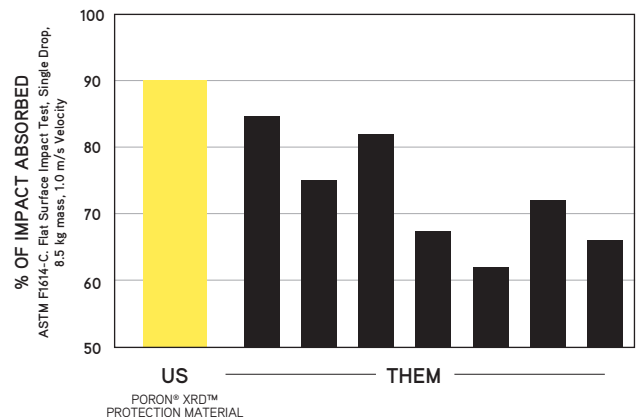
## Design Advantage

- Lightweight and low profile material technology that adds a powerful advantage to any product with virtually no trade-offs in design.
- Available in a wide range of standard thickness/density combinations and standard molded shapes to meet your unique design and impact absorption requirements. Contact your Rogers Customer Service or Sales Representative for a complete list of available products.

## Technology Inside

- Soft to the touch, but firm on impact, PORON XRD Material conforms to your body's every move, yet upon impact, forms a comfortable shell that protects the body.
- Maintains all the standard PORON Cushioning properties that you've come to rely on: open-cell, breathable technology, excellent compression-set resistance, antifungal and does not contain latex, PVCs, VOCs or heavy metals.

### MAXIMUM PROTECTION THAT BEATS THE COMPETITION



For additional testing and product performance information, please visit [www.poronxrd.com](http://www.poronxrd.com) or contact your Rogers Sales Engineer.

## PORON® XRD™ EXTREME IMPACT PROTECTION - TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	PRODUCT				
<b>*DENSITY, lb. / ft<sup>3</sup></b>	ASTM D3574-95 Test A	9	12	15	20	25
Specific Gravity		0.14	0.19	0.24	0.32	0.40
Tolerance, %		± 10				
<b>*STANDARD THICKNESS</b>		See Product Availability				
Tolerance, %		± 10				
<b>STANDARD COLOR</b>		Vivid Yellow (65)				
<b>AIR PERMEABILITY</b>	Internal using Gurley Densometer	Open-Cell, Breathable				
<b>*COMPRESSION SET, % max.</b>	ASTM D3574 Test D @ 158°F (70°C)	< 10				
<b>*COMPRESSION FORCE DEFLECTION, psi</b>	0.2"/min. Strain Rate Force Measured @ 25% Deflection	1.1-3.4	1.5-5.5	4-9	5-12	10-20
kPa		8-23	10-38	28-62	34-83	69-138
<b>HARDNESS, Durometer</b>	Shore "O"	10	19	32	**	
<b>HYDROLYSIS RESISTANCE</b>	ASTM D3574 Test J / Test D after autoclaved 5 hrs @ 250°F (121°C)	< 5				
Compression Set, % Max						
<b>RESILIENCE, Shore Instrument Resiliometer, avg (Ball Rebound Tester)</b>	ASTM D 2632-96, Vertical Rebound	**				
<b>WATER VAPOR TRANSFER, Typical g/ft<sup>2</sup>/24hrs (g/m<sup>2</sup>/24hrs)</b>	Sample Thickness, inches (mm)	0.158 (4.0)	0.118 (3.0)	0.118 (3.0)	**	
	Based on ASTM E96-00 Upright/37°C/0% RH	4150	3400	3100	**	
<b>WATER ABSORPTION, % Wt Gain</b>	Based on ASTM D570 - 2hr water immersion @ room temperature	Typical Value 10				
<b>SKIN CONTACT</b>	Primary Skin Irritation – FHSA. Based on ISO 10993-10 (2002), ISO 10993-12 (2007), ISO/IEC 17025 (2005)	Negligible Irritant. Primary Irritation Index = 0				
<b>TEAR STRENGTH, pli, min.</b>	ASTM D624 Die C	4.5	5	5	10	14
kN/m		0.8	0.9	0.9	1.8	2.5
<b>*TENSILE ELONGATION, % min.</b>	ASTM D3574 Test E	>145				
<b>*TENSILE STRENGTH, psi, min.</b>	ASTM D3574 Test E	30	45	70	100	140
kPa		207	310	483	689	965
<b>RESTRICTED SUBSTANCES COMPLIANCE</b>	Restricted substances requirements of Nike and Adidas; Restrictions on Latex, PVC, Heavy metals, Ozon depleting VOCs	Meets the requirement				
<b>CHEMICAL RESISTANCE</b>		PORON Urethanes are unaffected by mild organic acids and bases. They show modest swelling with oils and greases and other linear hydrocarbons. Strong polar solvents will greatly swell PORON Urethanes. In most cases, physical properties recover to a great extent as the solvents evaporate.				
<b>ANTIMICROBIAL PROTECTION</b>	AATCC TM90	PASS				
	JIS Z 2801					
	AATCC TM30(iii)					

Notes: 1. ASTM F1614-C. Flat Surface Impact Test, Single Drop, 8.5 kg mass, 1.0 m/s Velocity 2. All metric conversions are approximate. 3. Additional technical services are available. 4. Information listed based on typical physical properties. 5. \*Standard testing property; Certificate of Compliance available per lot. 6. \*\*Indicates testing in progress to confirm reported results

*Additional PORON® XRD™ Material variations may be available upon special order. Rogers recommends textile or leather covering for additional comfort wear and strength. Please contact your Rogers Customer Service Representative for more details.*