

TECHNICAL DATA SHEET

UREPAC® RIGID 33 45 (AUE276)

PRODUCT DESCRIPTION

UrePac® Rigid 33 45 (AUE276) is a two component, fire retardant, rigid polyurethane foam system, producing a foam with nominal free rise density of 34-36kg/m³. The system has been formulated as a general purpose pour/injection/void filling foam that can be 'hand mixed' and can also be processed through polyurethane injection machines at 1:1 volume ratios.

UrePac® Rigid 33 45 (AUE276) is formulated with Ecomate, a zero ODP, Zero GWP and VOC exempt blowing agent.

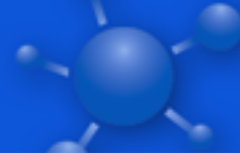
PRODUCT FEATURES

- Fully tested for Marine buoyancy applications.
- Excellent insulation properties for temperatures ranging from -30°C to +85°C
- Low weight and high stiffness.

UREPAC RIGID 33 45 (AUE276) POLYOL SPECIFICATION

Appearance:	Clear pale straw liquid
Specific Gravity (22°C):	1.10 ± 0.02 g/mL
Viscosity (Brookfield) (22°C):	800 ± 150 mPa.s

Spindle 2 Speed 30



UREPAC ISO2001 MDI (ISOCYANATE) SPECIFICATION

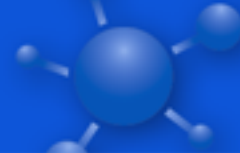
Appearance:	Clear brown liquid
Specific Gravity (22°C):	1.23 ± 0.02 g/mL
Viscosity (Brookfield) (22°C):	210 ± 70 mPa.s
<i>Spindle 1 Speed 50</i>	

MIXED SYSTEM SPECIFICATION

Mix Ratio:	By Weight	100 Polyol : 115 Isocyanate
	By Volume	100 Polyol : 100 Isocyanate

Test	Specification	Units
Cream Time (22°C): <i>Time from when mixing commences till the liquid starts to expand.</i>	33 ± 3	seconds
String time (22°C): <i>Time from when mixing commences till "strings can be pulled from the surface of the rising foam.</i>	190 ± 10	seconds
Rise time (22°C): <i>Time from when mixing commences till the foam finishes expanding.</i>	280 ± 20	seconds
Typical Demould 22°C)	30	minutes
Free Rise Density (22°C):	45 ± 2	kg/m ³

(Obtained from Laboratory 65g cup test, results will vary depending on mix quantities)



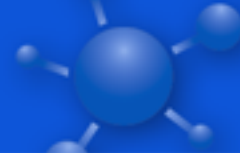
TYPICAL CURED FOAM PROPERTIES

Test	Method	Specification
Core Density:	ASTM D1622	32 ± 2 kg/m ³
Dimensional Stability (-20°C) (100°C)	+/-5% Volume (@ 14 days exposure)	Pass Pass
Closed Cell Content:	ASTM D6226	>95%
Initial K Value:	ASTM C518 (22°C mean temperature)	0.0230 W/mK
R Value (@ 50mm)	Insulation thickness in meters divided by the K value	2.17
Compressive Strength:	ASTM D1621 Parallel Perpendicular	325kPa 135kPa

After 7 days cure @ 22°C unless otherwise specified.

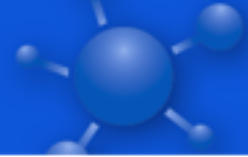
PACKAGING OPTIONS

Packaging	UrePac Rigid 33 45 (AUE276) Polyol	UrePac ISO2001 MDI Isocyanate
25L Closed Head Drum	25kg	28kg
60L Closed Head Drum	60kg	66kg
205L Closed Head Drum	215kg	254kg
1000L IBC	1050kg	1250kg



ABYC MARINE 'BUOYANCY' TEST RESULTS

ABYC Standard Test Method - Section 8.10 - Materials: Immersion in 5% Trisodium Phosphate Solution	
Solution Temperature	25°C
Immersion Time	30 Days
Sample Density	41.9kg/m ³
% Volume Change after 30 days	< + 2% = PASS
% Volume Solution Up-take [w/v]	< 15 kg / m ³
Change in Buoyancy Effect [No ABYC Standard]	
after 72 hours: - 2.0 %	after 30 days: - 2.6 %
Surface Absorption Rate after 30 days immersion	328 grams per square metre of exposed surface
Water Absorption - AUS Test - see Note 1	
Water Temperature	25°C
Exposure Time	30 Days
Sample Density	41.8kg/m ³
% Volume Change after 30 days [No ABYC Standard]	No Change
% Volume Water Up-take [w/v]	< 14 kg / m ³
Change in Buoyancy Effect [No ABYC Standard]	
after 72 hours: - 1.3 %	after 30 days: - 1.6 %
Surface Absorption Rate after 30 days Immersion	302 grams per square metre of exposed surface



STORAGE

POLYOL should be stored in closed containers under dry conditions out of direct sunlight between 18 and 25°C.

ISOCYANATE should be stored separately from the polyol component, but under the same conditions.

Both products will have a minimum shelf life of six months when stored under these conditions.

CURED PRODUCT: Like all polyurethanes based on aromatic isocyanates this foam is **not** UV stable and will have surface discolouration and degradation if exposed to UV radiation and sunlight. Please speak to our technical consultants regarding your options if this product is required for use in external applications.

PROCESSING CONDITIONS

All processing conditions are given as a guide only, it is the responsibility of the customer to satisfy themselves that the product is suitable for their requirements by running closely monitored trials prior to production.

COMPONENT PREPARATION

POLYOL should be mixed each day prior to use as the components can separate out overnight. If this component is held in day tanks they should be continuously agitated to prevent any separation during production.

ISOCYANATE does not need to be mixed prior to use.

Both Components should be preconditioned to 22-25°C to ensure that the components will have consistent reactivity and performance. If processing in a machine this usually requires recirculation for at least an hour prior to production commencing.

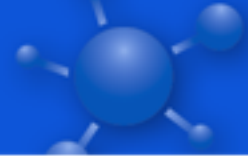
MOULD TEMPERATURES

Mould temperatures should be conditioned to 35-45°C to ensure optimal skin definition and demould times for this product.

DISPOSAL

Liquid Systems: Liquid polyol or isocyanates should be disposed of with an EPA approved industrial waste company which meet all applicable federal, state and local laws and regulations.

Cured Urethanes: Fully reacted and cured polyurethanes are inert and can be disposed of as regular landfill.



Container: Dispose of decontaminated drums in accordance with all applicable federal, state and local laws and regulations.

Do Not Re-use Empty Container. Do Not Cut or Weld Empty Container.

WATER CONTAMINATION CAN CAUSES DANGEROUS PRESSURE BUILD UP IN ISOCYANATE DRUMS

DISCLAIMER

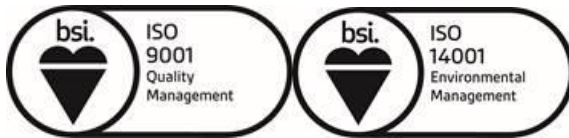
This information is given in good faith but without warranty and is supplied to users based on our general experience and, where applicable, on the results of tests on samples of typical manufacture. However, because of the many factors which are outside our knowledge and control that can affect the use of these products, it is imperative that the end user is satisfied that the material will meet their individual processing and performance requirements. Pacific Urethanes Pty Ltd cannot accept liability for any injury, loss or damage resulting from reliance upon this information.

All sales of this product shall be subject to Pacific Urethanes' Terms and Conditions of Sale. For a copy of these terms please contact us at info@pacificurethanes.com.

For additional information, consult the Material Safety Data Sheet for this product.

Revision Number: 03 (Updated Description)

Revision Date: 29/01/20



Note 1 Testing in Tap Water does not form part of the ABYC Test requirements.

Notes regarding ABYC Marine 'Buoyancy' Testing

Under the ABYC¹ Standards, Section H-8 –BUOYANCY IN THEEVENT OF SWAMPING sets out in Section 8.10 - Materials, the properties of materials that can be used in nominated sections of the boat.

In Section 8.10.3 - Performance Specifications this sets out the requirements for Flotation material installed in and outside the engine compartment. Section 8.10.3.1 states "Flotation material installed in an engine compartment less than 12 inches [.30m] above the lowest point where liquid can collect in that compartment [area A in Figure 16] when the boat is in its static floating position must not reduce in volume by more than five percent after being immersed in any of the following liquids for 30 days at 84°F [29°C]. [See the note following H-8.10.3.2.3]"Section 8.10.3.2 states "Flotation material installed outside the engine compartment [this includes inside the hull of outboard boats] less than four inches above the lowest point where liquid can collect in that compartment [area B in Figure 16] when the boat is in its static floating position must not reduce in volume by more than five percent after being immersed in any of the following liquids for 24 hours at 84°F [29°C] [See the note following H-8.10.3.2.3]"

¹ Under Items H - 8.10.3.1.3 and H - 8.10.3.2.3, the nominated Test Liquid is a five percent aqueous solution of Trisodium Phosphate. This solution is generally referred to as a 'Bilge Cleaner'.