



**USES:  
BITUMINOUS GEOMEMBRANE**

<b>Roll Length</b>	Min: 328 ft (100 m)
<b>Roll Width</b>	Avg: 13.1 ft (4.0 m)
<b>Coverage</b>	4304 sq ft (400 m <sup>2</sup> )
<b>Coverage Weight per Square Foot</b>	Min: 0.85 lb (4.2 kg/m <sup>2</sup> )
<b>Selvage Surfacing</b>	Removable Kraft Paper
<b>Top Surfacing</b>	Silica Parting Agent
<b>Back Surfacing</b>	Polyester Film – Anti Piercing

## TERANAP® 331 4M

### Commercial Product Data Sheet

Teranap 331 4M is a high performance modified bitumen geomembrane waterproofing ply designed for use in geotechnical applications requiring additional subgrade protection or direct concrete placement. Teranap 331 4M consists of a nonwoven polyester mat impregnated and coated with high quality styrene-butadiene-styrene (SBS) modified bitumen.

Contact Siplast for information on approved product uses.

## PRODUCT INFORMATION

### Application

Refer to the applicable Siplast Technical Guide for detailed application information and slope limitations. Teranap 331 4M is lapped 8 inches (202 mm) side and end.

### Storage and Handling

All Siplast 4 meter geomembrane products should be stored on end on a clean, flat surface. Rolls should not be dropped on ends or edges. Deformation resulting from these actions will make proper installation difficult. All products should be stored in a dry place out of direct exposure to the elements. Rolls are supplied with metal mandrels 15.7 ft (4.8 M) long with an internal diameter of 6.3 in ± 0.02 in (159 ± 0.5mm).

See product packaging and the Safety Data Sheet for specific information on the safe handling of this product.

### Packaging

Rolls Per Container: 9  
Shipping Weight Per Roll: 3969 lb (1800 kg)

**TEST STANDARDS**

Property (as Manufactured)	Values / Units	Test Method
Thickness (minimum)	130 mils (3.3 mm)	ASTM D5147 Section 6
Thickness (average)	142 mils (3.6 mm)	ASTM D5147 Section 6
*Peak Load @ 73°F (23°C) (average)	60 lbf/in (10.5 kN/m)	ASTM D5147 Section 7
*Elongation @ Peak Load 73°F (23°C) (average)	45%	ASTM D5147 Section 7
*Ultimate Elongation (average)	100%	ASTM D5147 Section 7
Elongation at Break % (nominal)	65% x 70%	ASTM D7275
Tensile Strength at Break (nominal)	30 x 27 kN/m	ASTM D7275
Static Puncture Resistance (nominal)	630 N	ASTM D4833
Tensile Tear Resistance (nominal)	1090 x 860 N	ASTM D4073
Tearing Strength Resistance (nominal)	135 x 130 N	ASTM D5884
*Tear Strength (average)	100 lbf (0.45 kN)	ASTM D5147 Section 8
Water Absorption (maximum)	1%	ASTM D5147 Section 10
Dimensional Stability (maximum)	0.5%	ASTM D5147 Section 11
Low Temperature Flexibility (maximum)	-15°F (-26°C)	ASTM D5147 Section 12
High Temperature Flexibility (minimum)	225°F (107°C)	ASTM D5147 Section 16
Gas Tightness	27.6E-6 M <sup>3</sup> /(M <sup>2</sup> .j)	ASTM D1434
Water Permeability	> 2.10 <sup>-14</sup> m/s	ASTM E96

\*The value reported is the lower of either MD or XD.