



Farming, Food and Health. **First**

Te Ahuwhenua, Te Kai me te What Ora. **Tuatahi**

# AgResearch Test Report

**AgResearch Limited**

Lincoln Research Centre

Cnr Springs Road & Gerald Street

Private Bag 4749, Christchurch 8140, New Zealand

T +64 3 321 8800 F +64 3 321 8811 www.agresearch.co.nz



## LABORATORY

**No.09/835**

(Please quote this number in all correspondence)

CLIENT:  
Pinnacle Underlay Ltd  
PO Box 10105  
Rotorua 3046

SAMPLE RECEIVED FROM:  
Pinnacle Underlay Ltd

Date: 10/08/09

Attn: Roger Brady

SAMPLE DESCRIPTION:  
One black underlay  
2<sup>nd</sup> sample

Client Order No.:

Client Reference:

1/4

**AS 4288: 2003 SOFT UNDERLAYS FOR TEXTILE FLOOR COVERINGS.**

### ISO 9073-3 1989 DETERMINATION OF BREAKING FORCE AND EXTENSION

- 5 warp and 5 weft, 50 mm width samples

- Crosshead speed 100mm/min,

Warp (Nominal)	Breaking force (kg)	Breaking force (Newtons)	% Extension at 40 N
Average	16.00	157.08	3.06
s.d.	0.77		0.36
cv%	4.79		11.81
<b>Weft (Nominal)</b>			
Average	13.15	129.05	4.81
s.d.	0.52		0.73
cv%	3.93		15.21

**Performance requirements:** Breaking Strength = 40 Newtons (4.1kg) minimum  
Elongation = 20% maximum extension at 40 Newtons



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

L A Greer, Testing Manager  
Signatory

26/08/2009

*WYR POTT*



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### AS 2111.1. 1996 DETERMINATION OF THICKNESS OF TEXTILE FLOOR COVERINGS - 10 tests in conditioned state

	Average	Minimum	Maximum	Range
Thickness mm	8.59	8.50	8.70	0.2
s.d.	0.08			
cv%	0.91			

#### Performance requirements:

Allowable range minimum to maximum

Fibrous and combined underlays = 4mm  
Non-Fibrous underlays = 3mm

Average original thickness must not deviate from nominal thickness by more than:

Fibrous and combined underlays = 15% maximum  
Non-Fibrous underlays = 12% maximum

### AS/NZS 2111.14 DETERMINATION OF THICKNESS LOSS AFTER PROLONGED, HEAVY STATIC LOADING OF TEXTILE FLOOR COVERINGS

- 5 samples, tested in conditioned state

- Load applied for 24 hours at 700 kPa pressure

	Thickness loss	
	mm	%
2 minutes recovery	5.52	61.26
60 minutes recovery	3.82	42.42
24 hours recovery	0.47	5.24

#### Performance requirements after 24 hour recovery

Fibrous Underlay = 40% maximum  
Non Fibrous Underlay = 15% maximum  
Combined Underlay = 40% maximum



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*LA Greer*



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Attn: Roger Brady

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2<sup>nd</sup> sample

Client Order No.:

Client Reference:

3/4

### AS/NZS 2111.2 DETERMINATION OF THICKNESS LOSS UNDER DYNAMIC LOADING OF TEXTILE FLOOR COVERINGS

- 2 samples tested in conditioned state
- 1000 impacts applied

	Average	sd
Thickness loss mm	0.22	
% Thickness loss	2.46	1.08

**Performance requirements:** Fibrous Underlay = 40% maximum  
Non Fibrous Underlay = 15% maximum  
Combined Underlay = 20% maximum

### AS 4288: 2003 SOFT UNDERLAYS FOR TEXTILE FLOOR COVERINGS.

### APPENDIX B- METHOD FOR DETERMINING OF RESISTANCE TO BREAKING AND CRACKING

Warp (Nominal) :- Average length: 8.5mm (18.0, 5.5, 7.0, 10.0, 5.0, 10.0, 8.0, 4.0, 16.0, 6.0, 4.0)  
Weft (Nominal) :- Average length: 7.0mm (5.0, 7.0, 11.0, 5.0)

**Performance requirements:**  
No cracks longer than 50mm  
No cracks in any backing material.



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L A Greer, Testing Manager  
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26/08/2009

*L.A. Greer*



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**AS 4288: 2003 SOFT UNDERLAYS FOR TEXTILE FLOOR COVERINGS.**

#### APPENDIX A

- 4 samples tested in conditioned state, range 2 to 100 kPa only

	Average
Average initial thickness at 2 kPa	8.51 mm
Average thickness at 2 kPa after dynamic loading	8.42 mm
Average deflection before dynamic loading at 100 kPa	3.31 mm
Average deflection after dynamic loading at 100 kPa	3.32 mm
Average work of compression before dynamic loading	128.25 J/m <sup>2</sup>
Average work of compression after dynamic loading	121.07 J/m <sup>2</sup>
% retention of original work of compression	94.40 %

#### Performance requirements:

Compression after Dynamic loading	1.5 mm minimum 9.0 mm maximum
Work of compression after dynamic loading	50 J/m <sup>2</sup> minimum 200 J/m <sup>2</sup> maximum
Retention of original work of compression	40 % minimum

#### Comments:

Designation and description of intending use/application - According to Figure 1 AS 4288: 2003

**Classification:-** HC Heavy commercial



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