Mine Safety Laboratory

Mines Rescue Pty Limited
Mine Safety Laboratory
8 Hartley Drive
Thornton NSW 2322
minesafetylab@coalservices.com.au
ABN 15 099 078 261

NATA
WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No. 21084

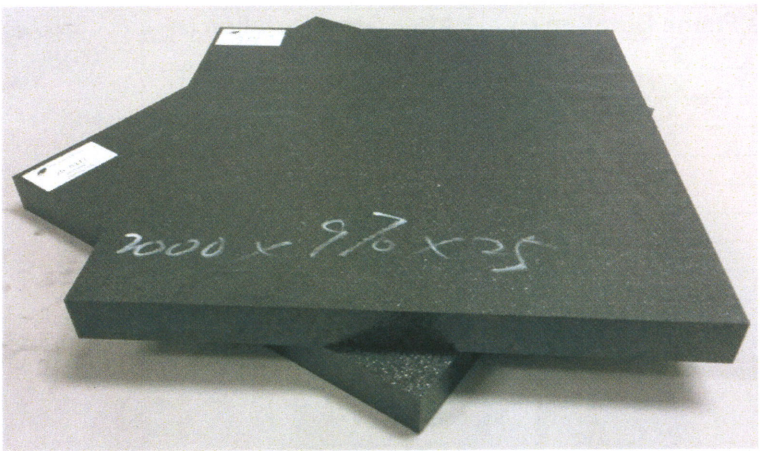
Endorsed tests indicated by logo on test page

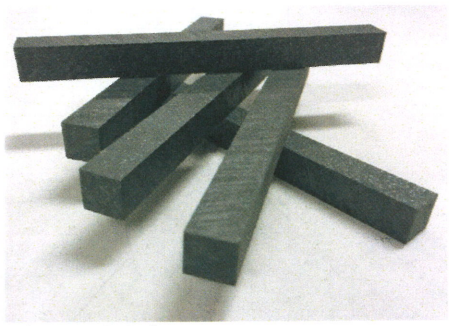
Dotmar EPP
Unit 1, 25 Loyalty Road
NORTH ROCKS N.S.W. 2151

15 July 2025

TEST REPORT No.: 25-0177/01

Report Version: 1





Figs 1a & 1b: Supplied electrical resistance and fire resistance test pieces

Customer Advised Sample Description:	*Polystone M Flametech AST FRAS* – black UHMWPE
Customer Advised Use of Material:	Conveyor accessories [refer *TRG3608*, Sect 3.3]

SUMMARY

The material **complied** with the Finger Burn Test requirements of *Technical reference guide: Non-metallic materials for underground coal mines and reclaim tunnels in coal mines* (*TRG3608*), 3.3.2.1.

The material **complied** with the Oxygen Index requirements of *TRG3608*, 3.3.2.2.

The material **complied** with the surface Electrical Resistance requirements of *TRG3608*, 3.3.2.3. 25.5 mm thick samples of the material **complied** with the through Electrical resistance performance requirements of *TRG3608*, 3.3.2.3.

Analysed by: C. Teasdale

Checked by:

Authorised by:

G. Browning
Laboratory Manager
Mine Safety Laboratory

Clause 5.1 of *AS4606:2012* states that all conveyor belting (Grade S) and conveyor accessories must be re-tested at least every 5 years and whenever a change in the formulation, raw-material supply, manufacturing process or manufacturing location occurs.

Finger Burn test

Sample: *Polystone M Flametech AST FRAS* – black UHMWPE

Test Date & Location: 14 July 2025; Mine Safety Laboratory, Thornton

Method of Analysis:

AS 1334.10-1994: Methods of testing conveyor and elevator belting – Method 10: Determination of ignitability and flame propagation characteristics of conveyor belting.

Results:

TABLE 1

Test	Visible Flame Duration (s)	After Glow Duration (s)
1	23	0
2	27	0
3	4	0
4	8	0
5	14	0
6	37	0
7	41	0
8	23	0
9	12	0
10	18	0
Average	**21 s**	**0 s**

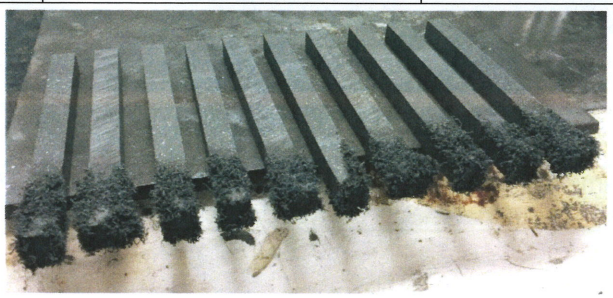


Fig. 2: Sample pieces after testing

Notes:

a) Results apply only to the sample as received.
b) These test results on their own do not indicate the fire hazard of the material or product under actual fire conditions and consequently should not be applied to the assessment of fire hazard without taking into account supportive information.
c) Bunsen flame temperature: approx. (957 – 971)°C.
d) Approx. sample dimensions: 13 mm x 13.5 mm x 150 mm.

Any variation from Standard/Test Method: None.

Requirements:

Cls 6.2.2 of *AS4606:2012* requires that, when tested in accordance with *AS 1334.10*:

(a) the average duration of the visible flame (including material dripping from test piece) shall be ≤ 30 s and the average duration of the visible after glow shall be ≤ 120 s for 'Conveyor Accessories' materials.
(b) the visible flame duration of any test piece (including material dripping from test piece) shall be ≤ 45s and the visible afterglow duration of any test piece shall be ≤ 180 s for 'Conveyor Accessories' materials.

Sample Status:

The material **complied** with the Finger burn test requirements of *TRG3608*, 3.3.2.1.

Clause 5.1 of *AS4606:2012* states that all conveyor belting (Grade S) and conveyor accessories must be re-tested at least every 5 years and whenever a change in the formulation, raw-material supply, manufacturing process or manufacturing location occurs.

Oxygen index

Sample: *Polystone M Flametech AST FRAS* – black UHMWPE

Test Date & Location: 14 July 2025; Mine Safety Laboratory, Thornton

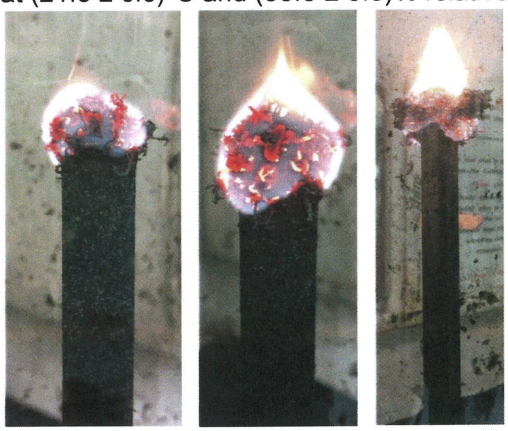
Method of Analysis: *ISO 4589-2:2017 Determination of Burning Behaviour by Oxygen Index – Part 2 Ambient- temperature test.*

Results:

	% O_2
Oxygen Index	31.6

Notes:

a) Oxygen concentrations are percentage by volume.
b) Results apply only to the sample as received.
c) Top surface ignition [*ISO4589-2* ignition 'Procedure A'].
d) The estimated standard deviation of the Oxygen Index concentration measurements is 0.15.
e) The estimated expanded uncertainty in the Oxygen Index measurement is ± 0.5% absolute, using a coverage factor of 3 and giving a confidence level of 99%.
Uncertainty is excluded from the assessment of compliance against any requirement.
f) The material exhibited flaming combustion, with the Oxygen Index being determined by the duration of flaming.
g) Sample size: approx. 13 mm x 13.5 mm x 150 mm.
h) The result relates only to the behaviour of the test specimens under the conditions of the test and these results shall not be used to infer the fire hazards of the materials in other or under other fire conditions.
i) Samples conditioned at (21.5 ± 0.3)°C and (50.6 ± 0.5)% relative humidity for > 88 hours.



Figs 3a – 3c: Flaming of sample pieces during testing

Any variation from Standard/Test Method: Sample dimensions as received.

Requirements:

Cls 6.2.3 of *AS4606:2012* requires that, when tested in accordance with *ISO 4589-2*:

i. The calculated oxygen index shall not be less than 28%
ii. When the material is re-tested at a later stage, the result shall be within ± 3 points of that originally obtained, but in no case shall be less than 28%.

Sample Status:

The material **complied** with the Oxygen Index requirements of *TRG3608*, 3.3.2.2.

Clause 5.1 of *AS4606:2012* states that all conveyor belting (Grade S) and conveyor accessories must be re-tested at least every 5 years and whenever a change in the formulation, raw-material supply, manufacturing process or manufacturing location occurs.

Electrical resistance
'Surface' resistance

Sample:
Polystone M Flametech AST FRAS – black UHMWPE

Test Date & Location:
4 July 2025; Mine Safety Laboratory, Thornton

Method of Analysis:
AS 1334.9-1982 (Determination of electrical resistance of conveyor belting).

Results:

TABLE 2

Test Piece	Electrical Resistance (MΩ)	
	Upper Surface	Lower Surface
1	< 0.1	< 0.1
2	< 0.1	< 0.1
Mean	**< 0.1 MΩ**	**< 0.1 MΩ**

Notes:
a) Results apply only to the samples as received.
b) Conditioned (for > 2 hours) in atmosphere of (21.5±0.2)°C with (50.5±0.4)% relative humidity.
c) Tested in atmosphere of approx. 21.9°C with 53.1% relative humidity.
d) Approx. sample sizes: 300 mm x 300 mm.
e) No conductive solution was applied between electrodes and sample surfaces.

Any variation from Standard/Test Method:
None.

Requirements:
Cls 6.2.4.1 of *AS4606:2012* states that, when tested in accordance with *AS 1334.9*, the mean Electrical Resistance values on both upper and lower surfaces of the material shall be ≤ 300 MΩ.

Sample Status:
The material **complied** with the surface Electrical Resistance requirements of *TRG3608*, 3.3.2.3.

Clause 5.1 of *AS4606:2012* states that all conveyor belting (Grade S) and conveyor accessories must be re-tested at least every 5 years and whenever a change in the formulation, raw-material supply, manufacturing process or manufacturing location occurs.

Electrical resistance - 'Through' resistance

Sample:

Polystone M Flametech AST FRAS – black UHMWPE

Test Date & Location:

4 July 2025; Mine Safety Laboratory, Thornton

Method of Analysis:

ISO 2878:2017 (Rubber, vulcanized or thermoplastic - Antistatic and conductive products – Determination of electrical resistance), Cls 9.2

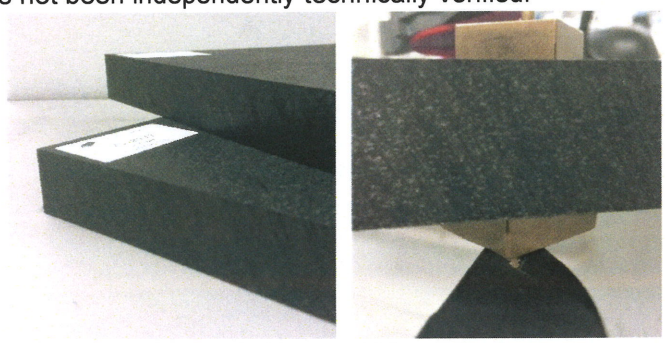
Results:

TABLE 3

Test	Test Piece	Test Piece Thickness (mm)	'Through' Electrical Resistance (MΩ)
1	#1	25.5	< 0.1
2	#1	25.5	< 0.1
3	#1	25.5	< 0.1
4	#2	25.5	< 0.1
5	#2	25.5	< 0.1
		Mean	**< 0.1 MΩ**

Notes:

a) Results apply only to the samples as received.
b) Conditioned at (23 ± 2)°C and (50 ± 5)% relative humidity for > 16 hours.
c) Tested at ambient temperature of approx. 21.9°C with 53.1% relative humidity.
d) No conductivity solution was applied between electrodes & sample surfaces.
e) Resistance readings taken (5 ± 1) s after application of voltage between electrodes.
f) This testing has not been independently technically verified.



Figs 4a & 4b: 25.5 mm thick sample pieces

Any variation from Standard/Test Method:

Clause 9.2 ('Test Between Two Surfaces') performed only.

Requirements:

Clause 6.3.3.3 of *TRG3608* states that, where the normal electrical discharge path is between two surfaces the average resistance measurements shall not exceed 300 MΩ when tested in accordance with *ISO 2878*.

Sample Status:

25.5 mm thick material **complied** with the through Electrical resistance performance requirements of *TRG3608*, 3.3.2.3.

Clause 5.1 of *AS4606:2012* states that all conveyor belting (Grade S) and conveyor accessories must be re-tested at least every 5 years and whenever a change in the formulation, raw-material supply, manufacturing process or manufacturing location occurs.