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16th of March, 2017

M.S.T.C. TEST REPORT T17-00161/0001

Company:	Rebain International (Aust.) Pty. Ltd.
Sample Description:	Imuthane 32-85A Clear
Intended Use:	Minor Conveyor Accessories [Refer to requirements of MDG3608, Section 3.3]
Sample No.:	T17-00161/0001



SUMMARY

The material **complied** with the Ignitability and Flame Propagation Characteristics (Finger Burn Test) requirements of MDG3608, Clause 3.3.1.1.

The material **complied** with the Oxygen Index requirements of MDG3608, 3.3.1.2.

Approx. 13mm thick samples of the material **complied** with the Electrical Resistivity requirements of MDG3608, Clause 3.3.1.3.

Analysed by: A.Thompson
C.Teasdale

Checked by:



Authorised by:



G. Slater •
Manager, Mine Safety Technology Centre



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Accreditation No. 2325

Endorsed tests indicated by logo on test page

Clause 3.1.2 of MDG3608 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.

IGNITION & FLAME PROPAGATION CHARACTERISTICS (Finger Burn test)

Sample:

Imuthane 32-85A Clear

Test Date:

13th of March, 2017

Results:

Test	Persistence of Flame (s)	Persistence of After Glow (s)	Extent of Melting (mm)
1	0	0	40
2	0	0	41
3	0	0	41
4	7	0	41
5	0	0	43
6	1	0	42
7	8	0	44
8	3	0	46
9	0	0	42
10	11	0	40
Mean	3 s	0 s	42 mm

Notes:

- 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.
- Mean bunsen flame temperature: approx. 987°C.
- Sample dimensions: 14 mm x 15 mm x 153 mm.



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.*

Any variation from Standard/Test Method:

Sample dimensions as received; Bunsen position rotated 45° about longitudinal axis of test 'finger' to prevent molten material falling into burner (- per MDG3608, 3.3.1.1).

Requirements:

When tested in accordance with AS 1334.10-1994:

- the average duration of the visible flame shall not exceed 30 s and the average duration of the visible afterglow shall not exceed 120 s for 'Minor Conveyor Accessories'.
- the visible flame duration of any test piece shall not exceed 45s and the visible afterglow duration of any test piece shall not exceed 180 s for 'Minor Conveyor Accessories'.

Sample Status:

The material **complied** with the Ignitability and Flame Propagation Characteristics (Finger Burn Test) requirements of MDG3608, Clause 3.3.1.1.

Clause 3.1.2 of MDG3608 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:

Imuthane 32-85A Clear

Test Date:

15th of March, 2017

Results:

	% O ₂
Oxygen Index	38.5

Notes:

- a) Oxygen concentrations are percentage by volume.
- b) Top surface ignition [ISO4589-2:1996 ignition 'Procedure A'].
- c) The estimated standard deviation of the Oxygen Index concentration measurements is 0.20.
- d) The material exhibited flaming combustion, with the Oxygen Index being determined by the propagation of flaming material along the length of sample.
- e) Sample size: approx. 14 mm x 15 mm x 153 mm.



- f) The result relate 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.
- g) Tested in ambient 23°C, 63% relative humidity.
- h) Samples conditioned at 23°C and 50% relative humidity for > 88 hours.

Method of Analysis:

ISO 4589-2:1996(E) Determination of Burning Behaviour by Oxygen Index – Part 2 Ambient-temperature test.

Any variation from Standard/Test Method:

Sample sizes as described – as specified in AS4606:2012.

Requirements:

- 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 MDG3608, 3.3.1.2.



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Clause 3.1.2 of MDG3608 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 RESISTIVITY
Surface Resistance

Sample:

Imuthane 32-85A Clear

Test Date:

13th of March, 2017

Results:

Test Piece	Electrical Resistance (MΩ)	
	Upper Surface	Lower Surface
1	48.0	42.3
2	46.6	39.2
Mean	47.3 MΩ	40.8 MΩ

Notes:

- Conditioned (for > 2 hours) at 23°C and 50% relative humidity.
- Tested in atmosphere of 22°C with 60% relative humidity.
- No conductivity solution was applied between the electrodes and the sample surface.
- Sample sizes: approx. 300 mm x 300 mm x 13 mm.



Method of Analysis:

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

Any variation from Standard/Test Method:

None.

Requirements:

The mean value for the Electrical Resistance on both upper and lower surfaces of the material shall not be greater than 300 MΩ (300 x 10⁶ ohms).

Sample Status:

The material **complied** with the requirements for surface Electrical Resistivity of MDG3608, 3.3.1.3.

ELECTRICAL RESISTIVITY
Through Resistance

Sample:

Imuthane 32-85A Clear
Approx. 13 mm thick samples

Test Date:

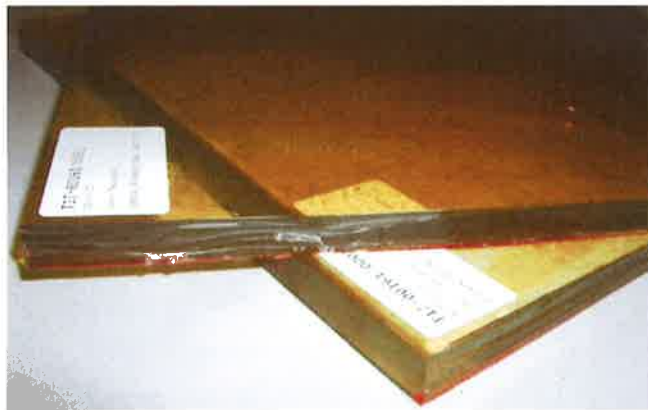
10th of March, 2017

Results:

Test Piece	'Through' Electrical Resistance (MΩ)
1	13.2
2	11.2
Mean	12.2 MΩ

Notes:

- Conditioned at (23 ± 2)°C and (50 ± 5)% relative humidity for > 16 hours.
- Tested at ambient temperature of 23°C with 58% relative humidity.
- Electrodes had approx. 13 mm separation through sample.
- Conductivity solution applied between electrodes and samples surfaces.
- Resistance readings taken (5 ± 1) s after application of voltage between electrodes.



Method of Analysis:

ISO 2878:2011 (Rubber, vulcanized or thermoplastic - Antistatic and conductive products – Determination of electrical resistance), Clause 8.2

Any variation from Standard/Test Method:

Clause 8.2 ('Test Between Two Surfaces') performed only.

Requirements:

Where the normal electrical discharge path is between two surfaces, the average of two resistance measurements shall not exceed 300 MΩ (300 megohm; 300 x 10⁶ ohms) for 'Minor Conveyor Accessories'.

Sample Status:

Approx. 13 mm thick samples of the material **complied** with the Electrical Resistivity requirements for through resistance of MDG3608, 3.3.1.3.

Clause 3.1.2 of MDG3608 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.