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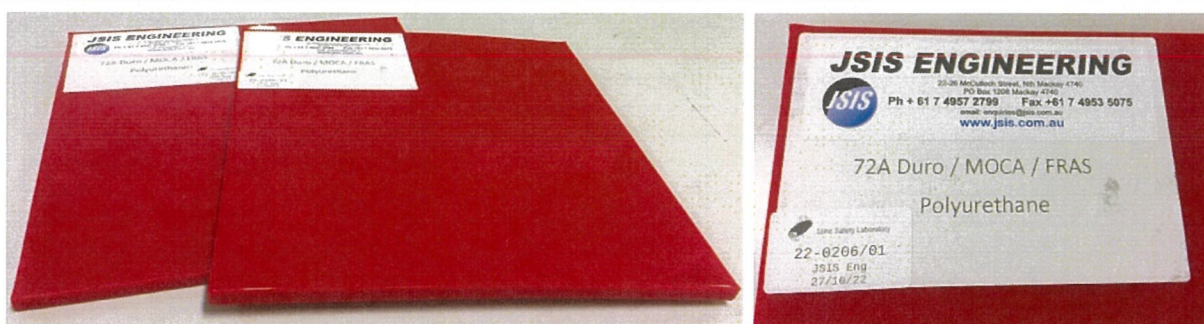


WORLD RECOGNISED
ACCREDITATION
Accredited for compliance
with ISO/IEC 17025-
Testing
Accreditation No. 21084

10 November 2022

TEST REPORT No.: 22-0206/01

Report Version: 1



Figs. 1a & 1b: Electrical resistance sample pieces and product ID

Sample Description:	72A Duro/MOCA/FRAS – red polyurethane	
Intended Use:	Minor Conveyor Accessories	[Refer to MDG3608, 3.3]
	Non-Defined Applications	[Refer to MDG3608, 7]

SUMMARY

The material **complied** with the Ignitability and Flame Propagation Characteristics (Finger Burn Test) requirements of MDG3608 Clauses 3.3.1.1 and 7.2.1.1.

The material **complied** with the Oxygen Index requirements of MDG3608 Clauses 3.3.1.2 and 7.2.1.3.

The material **complied** with the Electrical Resistivity requirements of MDG3608, 3.3.1.3 and the 'Discharge between two surfaces' requirements of MDG3608, 7.2.2.3 (- samples 10 mm thick).

Analysed by: C.Teasdale

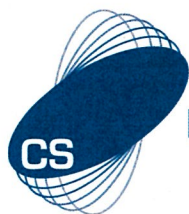
Checked by:

Authorised by:

G. Browning
Laboratory Manager
Mine Safety Laboratory

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: 72A Duro/MOCA/FRAS – red polyurethane

Test Date: 8 November 2022

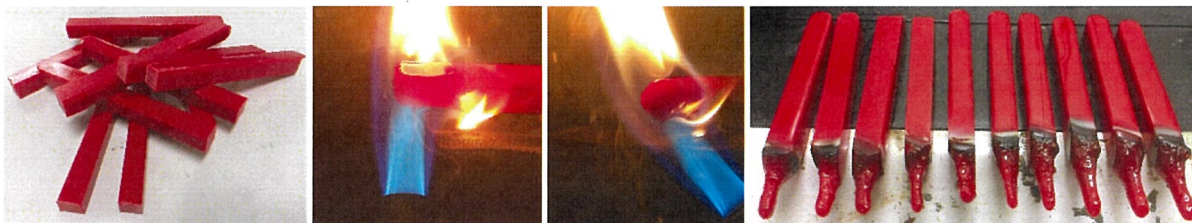
Method of Analysis:

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)	Extent of Melting (mm)
1	0	0	33
2	0	0	40
3	0	0	33
4	0	0	40
5	1	0	37
6	0	0	42
7	0	0	42
8	1	0	46
9	0	0	43
10	0	0	42
Average	< 1 s	0 s	40 mm



Figs. 2a – 2d: Sample pieces before testing, during ignition, and after testing

Notes:

- a) 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.
- b) Mean bunsen flame temperature: approx. 965°C.
- c) Sample dimensions: approx. 13.5 mm x 12.5 mm x 138 mm.

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

Requirements:

When tested in accordance with AS 1334.10–1994:

- (a) the average duration of the visible flame shall be ≤30 s for ‘Minor Conveyor Accessories’ materials, and shall be ≤10 s for ‘Non-Defined Applications’; the average duration of the visible after glow shall be ≤120 s for ‘Minor Conveyor Accessories’ materials.
- (b) the visible flame duration of any test piece shall be ≤45s for ‘Minor Conveyor Accessories’, and shall be ≤15 s for ‘Non-Defined Applications’; the visible afterglow duration of any test piece shall be ≤180 s for ‘Minor Conveyor Accessories’ materials.

Sample Status:

The material **complied** with the Ignitability and Flame Propagation Characteristics (Finger Burn Test) requirements of MDG3608 Clauses 3.3.1.1 and 7.2.1.1.



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: 72A Duro/MOCA/FRAS – red polyurethane

Test Date: 9 November 2022

Method of Analysis:

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

Results:

	% O ₂
Oxygen Index	35.0

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 0.15.
- d) The material exhibited flaming combustion, with the Oxygen Index being determined by the extent of the propagation of flaming along the sample length.
- e) Sample size: approx. 12.5 mm x 13.5 mm x 137.5 mm.
- f) 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.
- g) Tested in ambient 22.5°C, 52% relative humidity.
- h) Samples conditioned at 22°C and 50% relative humidity for > 88 hours.



Fig. 3: Propagation of flaming along sample piece during testing

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

Requirements:

- i. The calculated oxygen index shall not be less than 28.0%
- 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 28.0%.

Sample Status:

The material **complied** with the Oxygen Index requirements of MDG3608, 3.3.1.2 and 7.2.1.3.

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.





ELECTRICAL RESISTIVITY Surface Resistance

Sample:

72A Duro/MOCA/FRAS – red polyurethane

Test Date:

4 November 2022

Method of Analysis:

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

Results:

TABLE 2

Test Piece	Electrical Resistance (MΩ)	
	Upper (smooth) Surface	Lower (rough) Surface
1	223	270
2	213	250
Mean	218 MΩ	260 MΩ

Notes:

- a) Conditioned (for > 2 hours) at 22°C and 50% relative humidity.
- b) Tested in atmosphere of 22°C with 51% relative humidity.
- c) Approx. sample sizes - #1: 319 mm x 318 mm ; #2: 318 mm x 317 mm.
- d) No conductive solution was applied between sample surface and electrodes.

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 surface Electrical Resistivity requirements of MDG3608, 3.3.1.3.



ELECTRICAL RESISTIVITY
Through Resistance
Discharge between two surfaces

Sample:

72A Duro/MOCA/FRAS – red polyurethane; approx. 10 mm thick.



Fig. 4: Thicknesses of sample pieces

Test Dates:

7 November 2022

Method of Analysis:

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

Results:

TABLE 3

Test Piece	'Through' Electrical Resistance (MΩ)
1	66.5
2	62.0
Mean	64.3 MΩ

Notes:

- a) Conditioned at (23 ± 2)°C and (50 ± 5)% relative humidity for > 16 hours.
- b) Tested at ambient temperature of 23°C with 50% relative humidity.
- c) No conductive solution was applied between electrodes and sample surfaces.
- d) Resistance readings taken (5 ± 1) s after application of voltage between electrodes.

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).

Sample Status:

Up to 10 mm thick material **complied** with the 'through' Electrical Resistivity requirements of MDG3608, 3.3.1.3 and the 'Discharge between two surfaces' requirements of MDG3608, 7.2.2.3.

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.