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TITLE	:	Report on the fire propagation properties of the **80 mm IsoBoard** insulation material when classified in accordance with **SANS 428** using the **SANS 10177 – 10** test protocol
REQUESTED BY	:	**Isofoam South Africa (Pty) Ltd** **t/a Isofoam / IsoBoard** PO Box 1584 **DASSENBERG** 7350
CONTRACT No	:	FTC 23/196
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FIRELAB, Building 28, CSIR Campus, Meiring Naudé Road, Brummeria, Pretoria, SA +27 12 349 2929
www.firelab.co.za

SCOPE

This report classifies the fire propagation properties of **80 mm IsoBoard** insulation material tested in accordance with the requirements in **SANS 428** using the **SANS 10177 – 10** test protocol.

Section 1: Detailed information on the product received for testing

Section 2: Test protocols used for classification

Section 3: Test results

Section 4: Discussion of results

Section 5: Conclusion

Annexure "A": Company information

Annexures "B": Product information and installation instructions supplied by **Isofoam**

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1. PRODUCT DESCRIPTION

The product has the following characteristics:

Product information:

Product name:	IsoBoard
Product code:	*Not supplied*
Manufacturer:	Isofoam South Africa
Manufacturing date:	*Not supplied*
Batch number:	*Not supplied*

Generic Identification:

White Extruded Polystyrene

Physical Properties:

Actual mass:	± 36	kg/m^3
Thickness:	80	mm
Width:	600	mm
Length:	2	m

Intended use:

Residential, Commercial and suspended ceiling Insulation

Application:

Under-roof, over purlin

2. FLAME SPREAD: SANS 10177 – PART 10:2007

2.1. TEST PROCEDURE

The test sample was installed in **FIRELAB**'s inverted channel tunnel facility shown in Figure 2.2.1.1. The installation was representative of **IsoBoard** for use as over-purlin insulation.

Temperatures were measured during the test with thermocouples located 10 mm below the installation at 1 m centres. The test installation was exposed to the thermal output of three litres of n-hexane, placed in the fire source tray. Temperatures were continuously recorded and observations were made on the behaviour of the test sample.

The fire-spread properties of the product tested is classified according to **Annexure C** of **SANS 428**, *Surface Fire Properties*, also taking in to consideration the limitations regarding the use of combustible/non-combustible materials described as in **SANS 10400 – T**.

2.2. TEST EQUIPMENT

- Data logging equipment c/w controller
- Stopwatch
- Type K thermocouples
- **SANS 10177 – 10** Test Facility

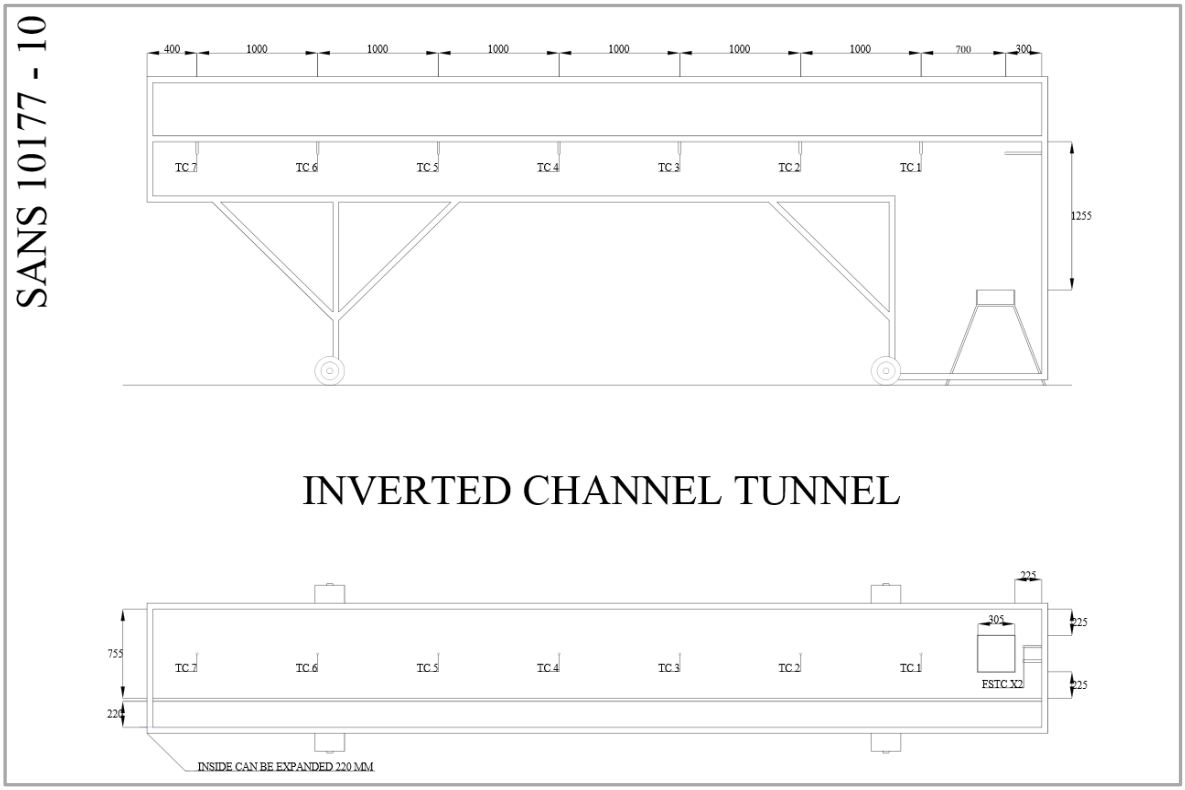

*Figure 2.2.1.1: Diagram of **SANS 10177 – 10** inverted channel testing facility*

3. TEST RESULTS

Isofoam – 80 mm IsoBoard

OBSERVATIONS DURING THE **SANS 10177 – 10** TEST

TIME (mm:ss)	**OBSERVATIONS**
00:00	**– Test Started –**
00:41	Material softening / shrinking
01:09	Joint opening above the fire source
03:23	Material coagulating
04:24	Material melting above the fire source
04:50	Material starting to drape
05:17	Molten debris in the fire source area
08:09	Material draping past 1 m
11:11	Material draping past 2 m
11:26	Joint opened to 3 m
11:55	Softened debris falling
12:16	Material draping up to 3 m
13:22	Fire Source decay
14:22	Material draping up to 4 m
14:45	Fire Source out
15:00	**– Test Concluded –**

Note(s): Tested on 15/11/2023, ambient temperature prior to testing = 29.8 °C

*Table 3.1: Observations made during the **SANS 10177 – 10** test*

Figure 3.1: The test installation prior to ignition of the Fire Source

Figure 3.2: Joint opening

Figure 3.3: Discolouration and melting

Figure 3.4: Melting and draping over the Fire Source

Figure 3.5: Draping up to 1 m

Figure 3.6: Molten debris around the fire source

Figure 3.7: Draping up to 3 m

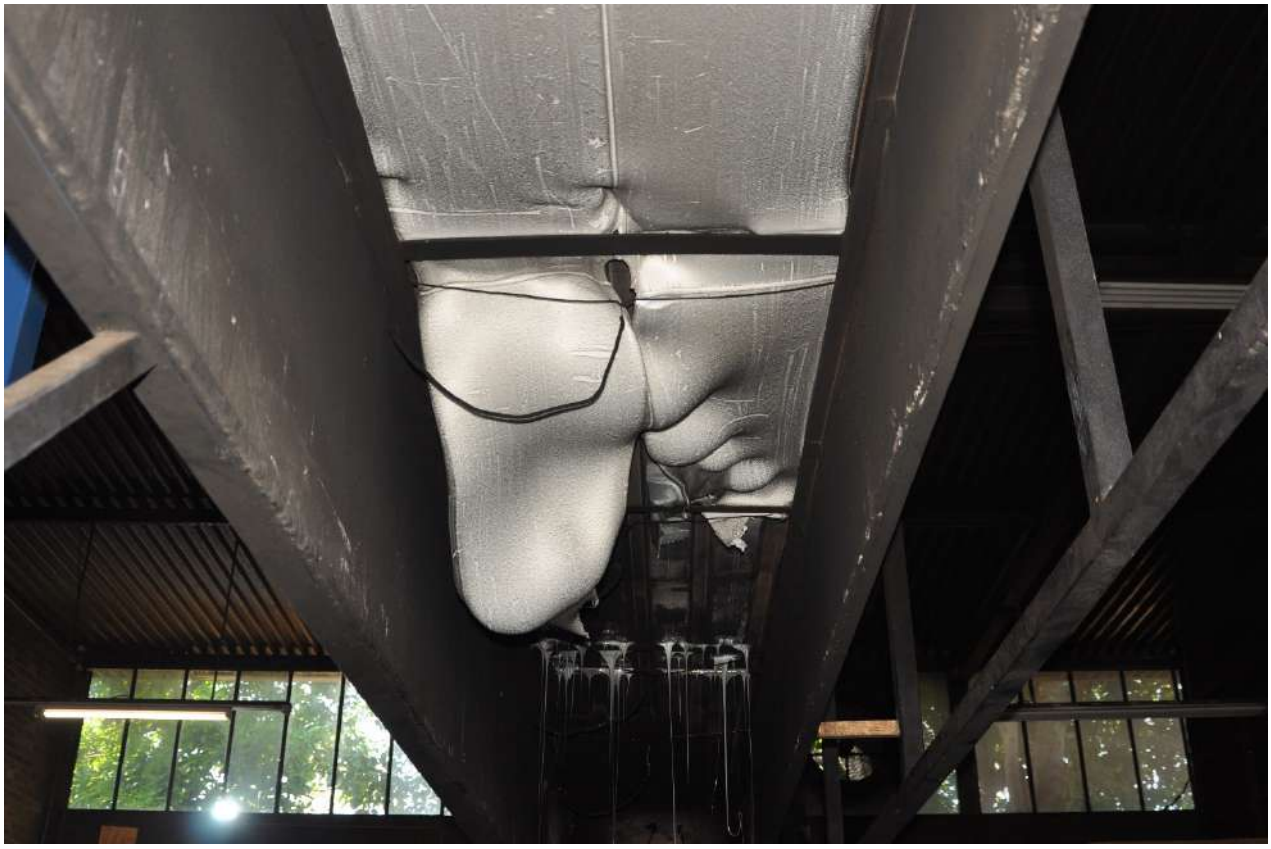

Figure 3.8: Heat damage at 5 m

*Figure 3.9: Test sample at conclusion of the **SANS 10177 – 10** test*

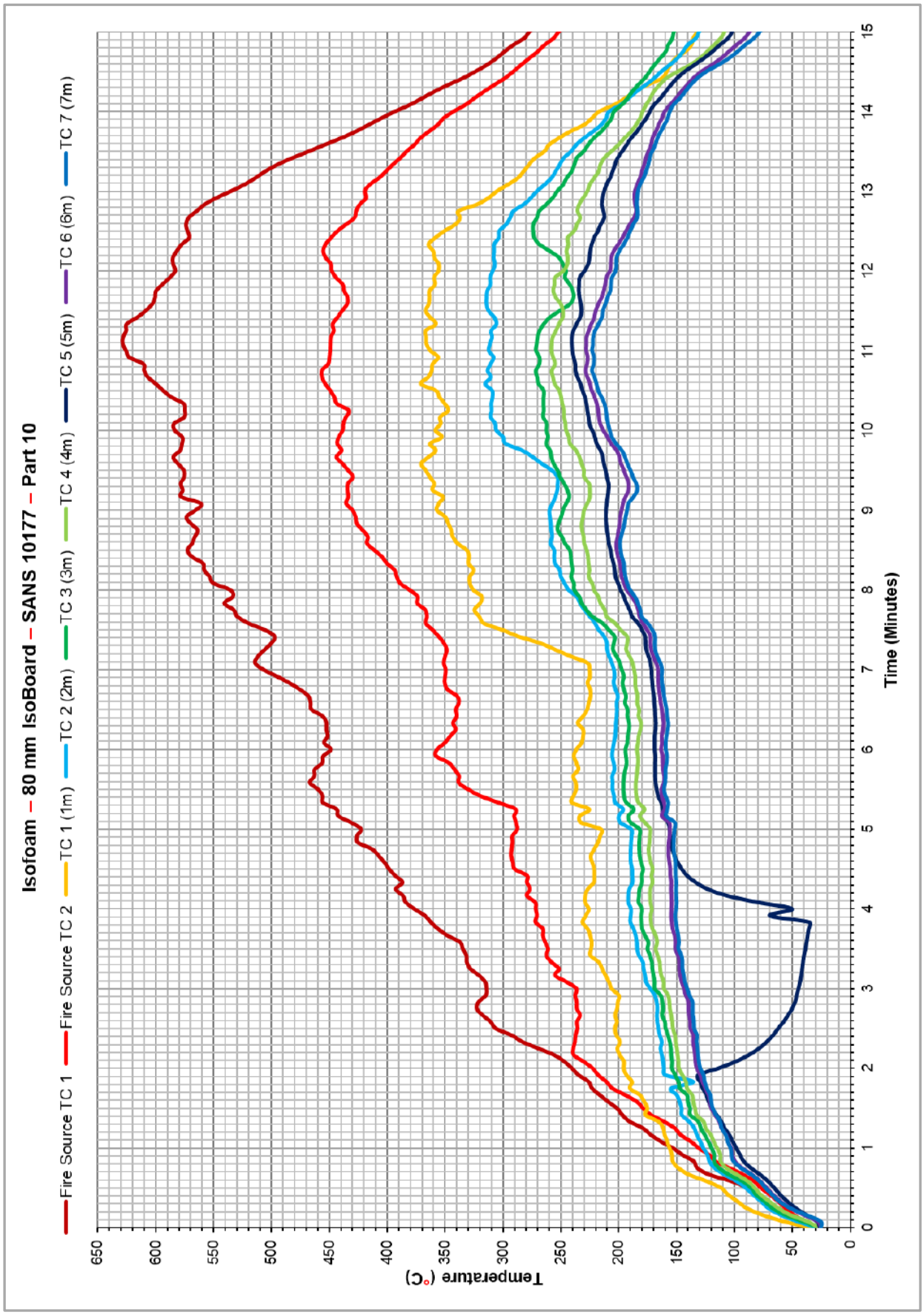

*Figure 3.10: Temperatures recorded during the **SANS 10177 – 10** test*

4. DISCUSSION OF RESULTS

The sample first started separating at the joint and the material started coagulated above the Fire Source. At 4 minutes and 50 seconds both materials started draping down.

No ignition was noted for the duration of the test.

The materials continued to drape up to 4 meters.

All molten debris dropped in the Fire Source Area.

5. CONCLUSION

The **80 mm IsoBoard** insulation material supplied by **Isofoam South Africa** was classified in accordance with **SANS 428** using the **SANS 10177 – 10** test protocol.

Classification in accordance with **SANS 428**:

- **SANS 10177 – 5** » **B (Combustible)** *Not tested*
- **SANS 10177 – 10** » **B/ B1**

Notes:

» The above result verifies that the product remains unchanged and retains the classification achieved in report **FTC 15/029**, tested in 2015. This verification remains valid until 2025, when it must be re-tested using the **SANS 10177 – 11** test protocol.

» The above does not relate to Fire Resistance. Should Fire Resistance be a requirement, the system needs to be tested using the **SANS 10177 – 2** test protocol.

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Compiled by: **J. Vogel** Approved by: **J.S. Strydom**

– Company Information –	FIRELAB
Company Name:	Isofoam South Africa Pty Ltd
Company Trading Name:	Isofoam, or IsoBoard
Company Registration Nr.:	95/03958/07
Company VAT Nr.:	4140154644
Core Business Activities:	XPS thermal insulation manufacturer and distributor
Postal Address:	PO Box 1584 Dassenberg 7350
Physical Address:	c/o Niel Hare & Louwtjie Rothman, Atlantis
Company contact number:	0215771105
Direct Contact Details	
Technical (name):	Mark Russell
Cell phone number:	0823470186
Email address:	mark@isoboard.com
Financial (name):	Beth Hewitt-Colman
Cell phone number:	
Email address:	accounts@isoboard.com
– Test & Sample Information –	
Test Required:	Part 10
Sample/Product name:	IsoBoard 80mm
Intended Use:	Over Purlin, over rafter, ceiling
Sample/Product Description: *(Short description of sample or product submitted for testing, and type of material to be tested)*	White Extruded Polystyrene blocks 2000mm x 80mm

– SANS 10177 Part 10 & 11 – – Product Information –		FIRELAB
Proposed application:	Residential	Yes
	Commercial/Industrial	Yes
	Suspended Ceilings	Yes
Other:	Cavity wall, inverted roof, underfloor insulation.	
Product description:		
Product name:	IsoBoard	
Product Manufacturer:	Isofoam South Africa	
Production Date:		
Product Code No.:		
Batch No.:		
Generic Identification:		
Adhesive Type:		
Facing:	None	
Physical description:		
Actual Mass (g/m^2):	36kgm3	
Thickness (mm):	80mm	
Width (mm):	600mm	
Length (mm):	2000mm	
Product composition (if multilayer insulation):		
Layer 1:		
Layer 2:		
Layer 3:		
Layer 4:		
Layer 5:		
Layer 6:		
Layer 7:		
Layer 8:		
Layer 9:		
Layer 10:		
Layer 11:		