TIPSASA™

THERMAL INSULATION PRODUCTS & SYSTEMS ASSOCIATION SA

A division of the Southern African Energy Efficiency Confederation

A DIVISION OF

saee

Southern African Energy Efficiency CONFEDERATION

Compiled by: Des Schnetler
TIPSASA Chairperson

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INTRODUCTION

The Thermal Insulation Products & Systems Association SA (TIPSASA), is the only legally registered independent entity with regards to thermal insulation, in South Africa.

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TYPES OF THERMAL INSULATION

CATEGORIES OF INSULATION

1

2

3

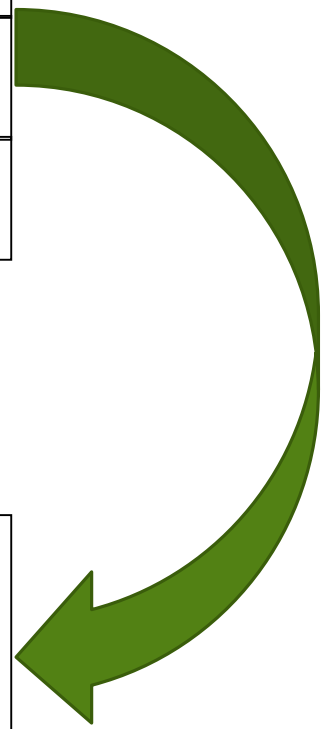
=

4

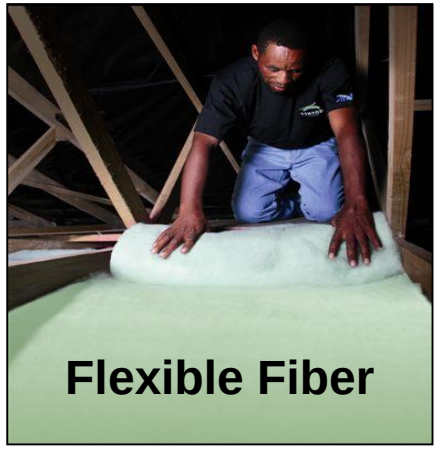
Bulk Insulation **Flexible**
Bulk Insulation **Rigid**
Reflective Foil Insulation

1 or 2 + 3 =

Composite Bulk Insulation Rigid or Flexible

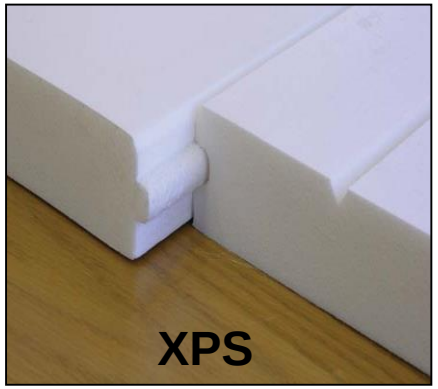


BULK INSULATION



Flexible Bulk Insulation

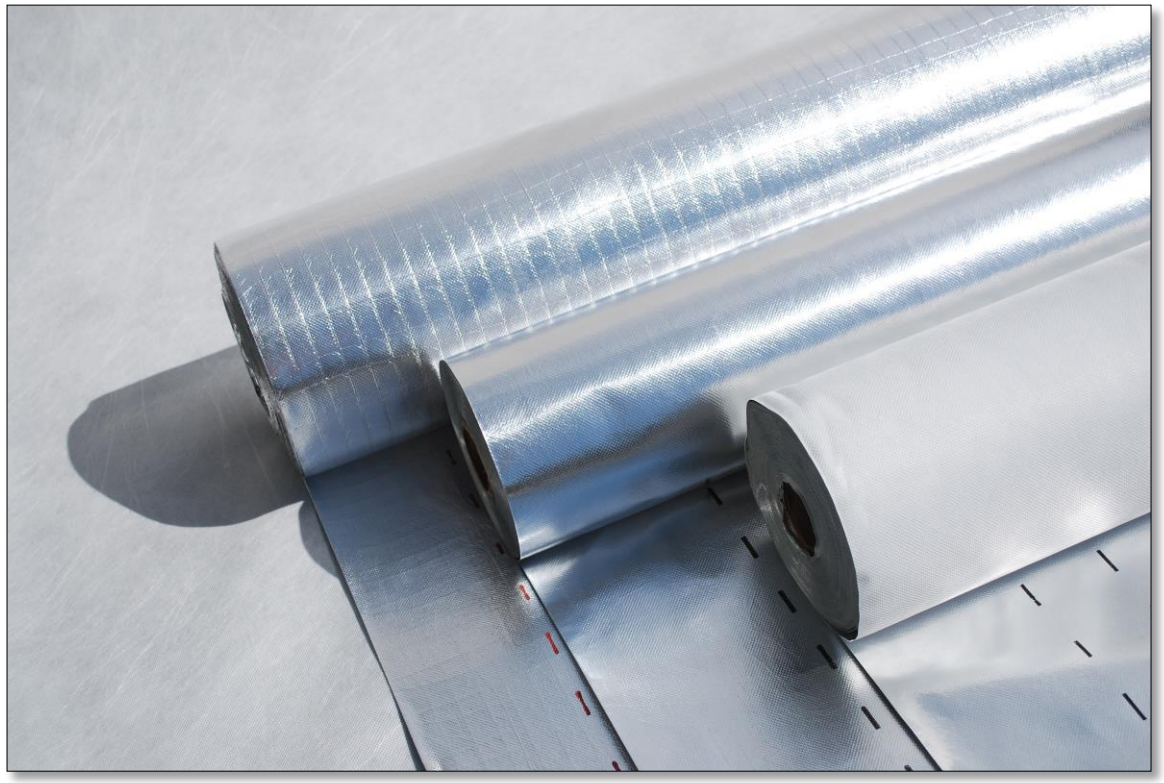
Rigid Bulk Insulation

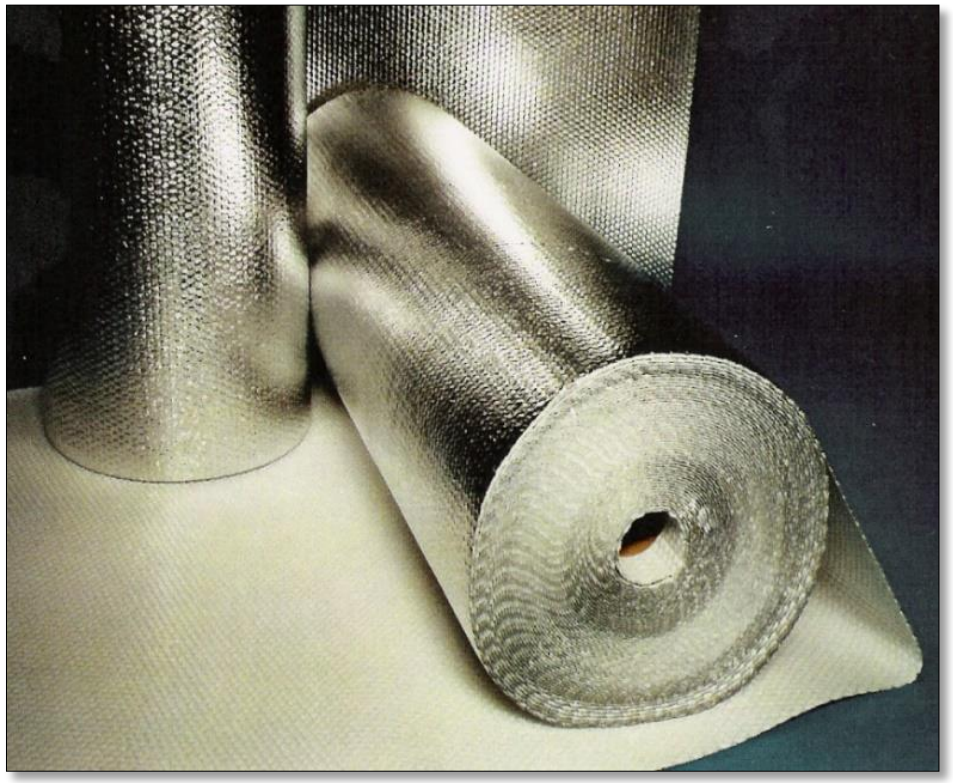


PETE
(POLYETHYLENE TEREPHTHALATE)

- SANS 1381-1
- 171 X 500ML PET Bottles = 6KG Roll

REFLECTIVE FOIL INSULATION

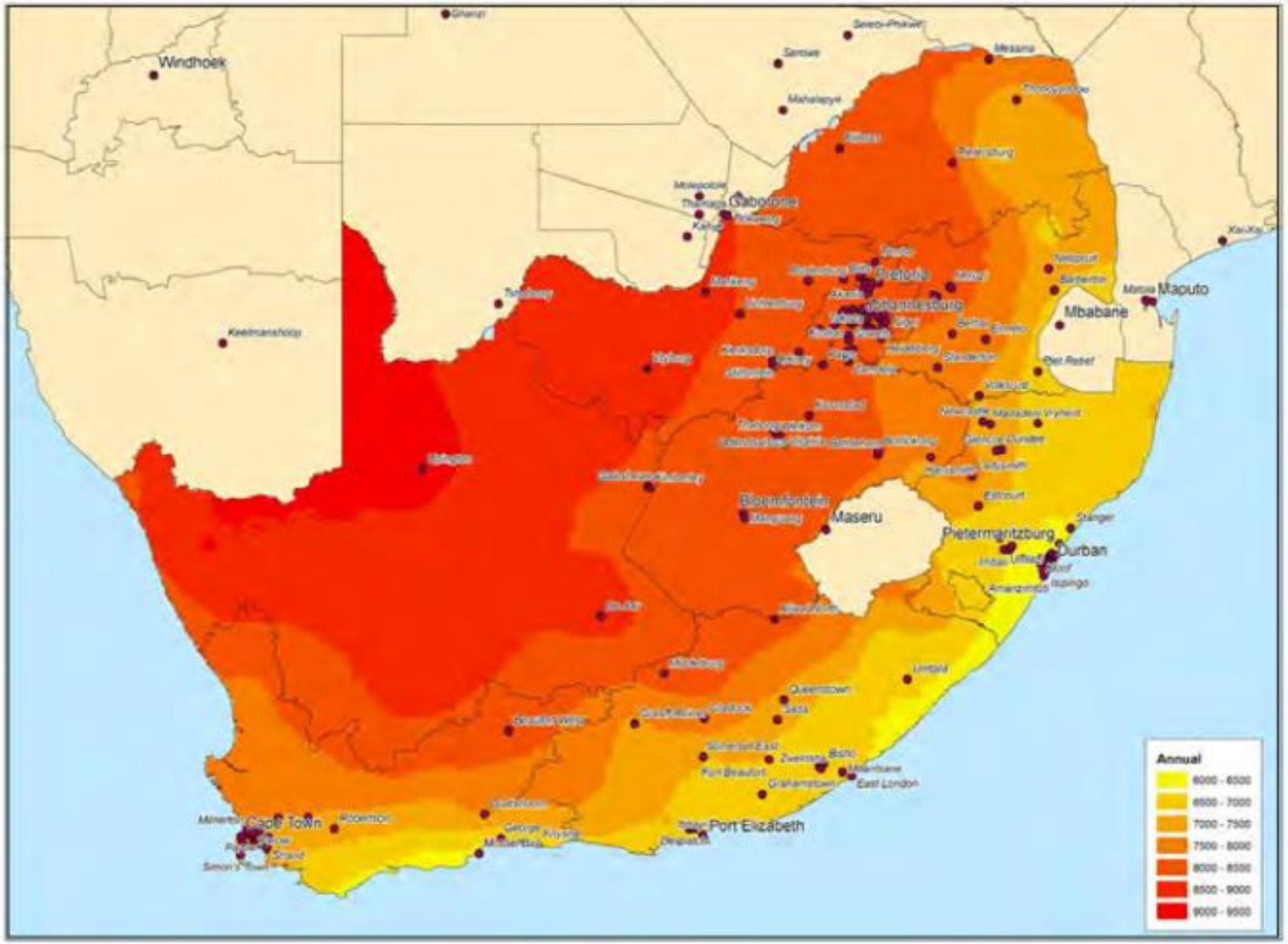




WHY DO WE USE REFLECTIVE FOILS?

RADIATION

Annual Solar Radiation Map measured in MJ/m² as provided by the CSIR.

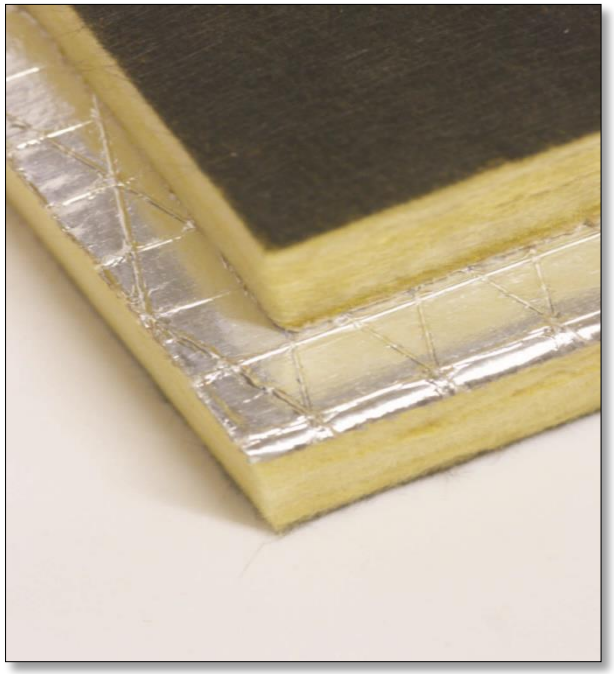


COMPOSITE BULK INSULATION

COMPOSITE BULK and reflective materials are available that combine some features of both types.

Examples include:

- Foil backed blankets,
- Foil backed batts, and
- Foil-faced boards.

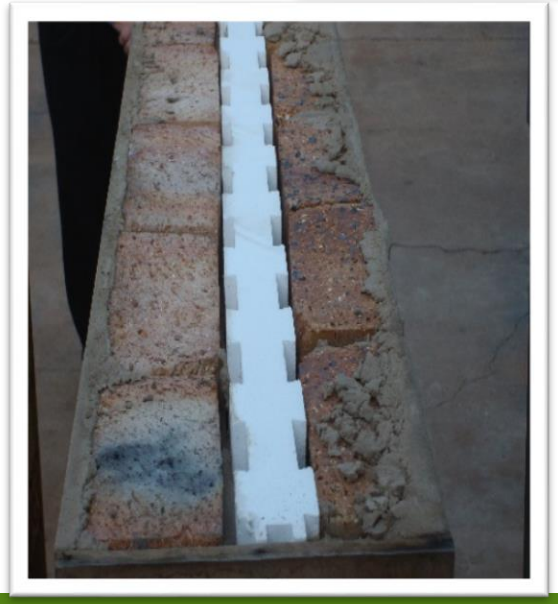


EPS (EXPANDED POLYSTYRENE)

EPS is a lightweight, rigid, foam insulation material produced from solid beads of Polystyrene. The EPS beads are then moulded into blocks or boards in three standard densites.

Used in:

- Roofs
- Walls
- Floors

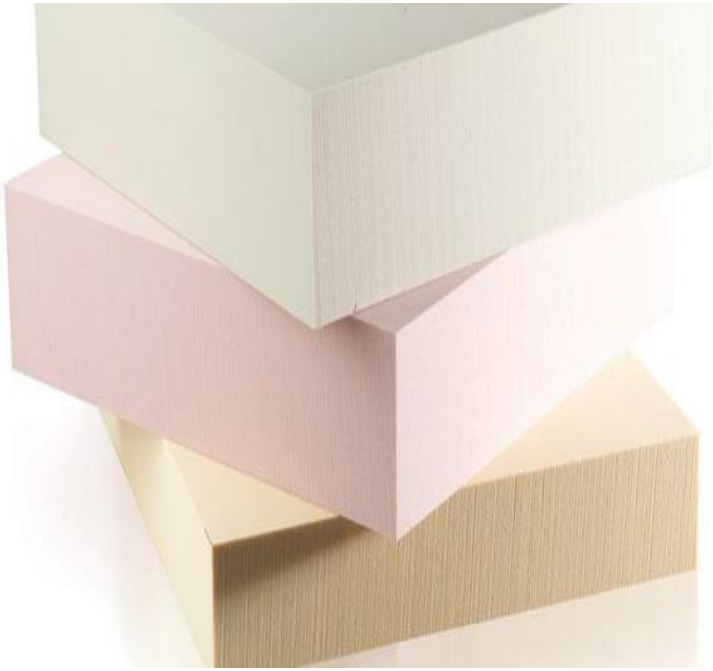


XPS (EXTRUDED POLYSTYRENE)

Extruded Polystyrene is a closed cell polystyrene rigid foam board, produced on a continuous, fully automate extrusion process. It has high compressive strength and excellent long term thermal resistance performance, due to its inherent resistance to moisture transfer.

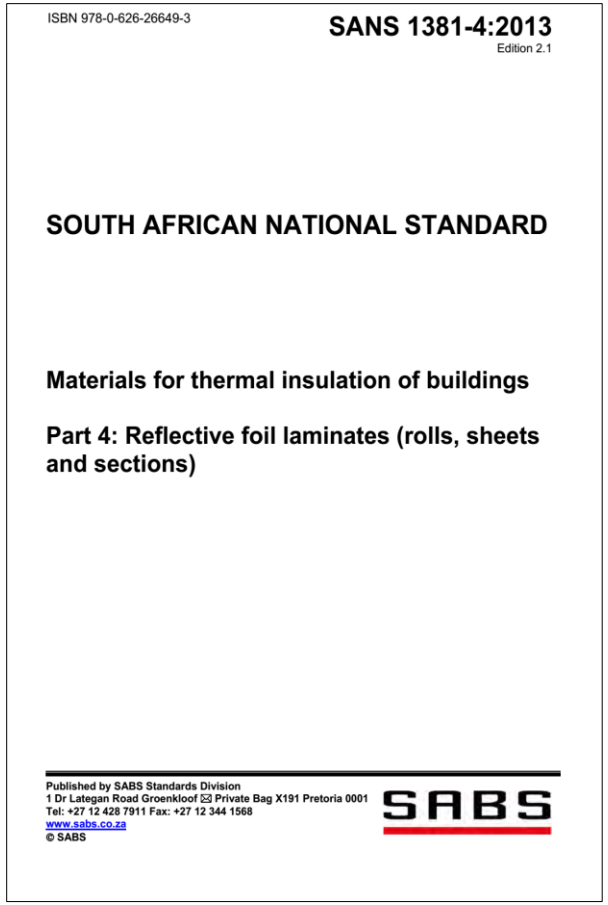
PUR (POLYURETHANE)
PIR (POLYISOCYANURATE)

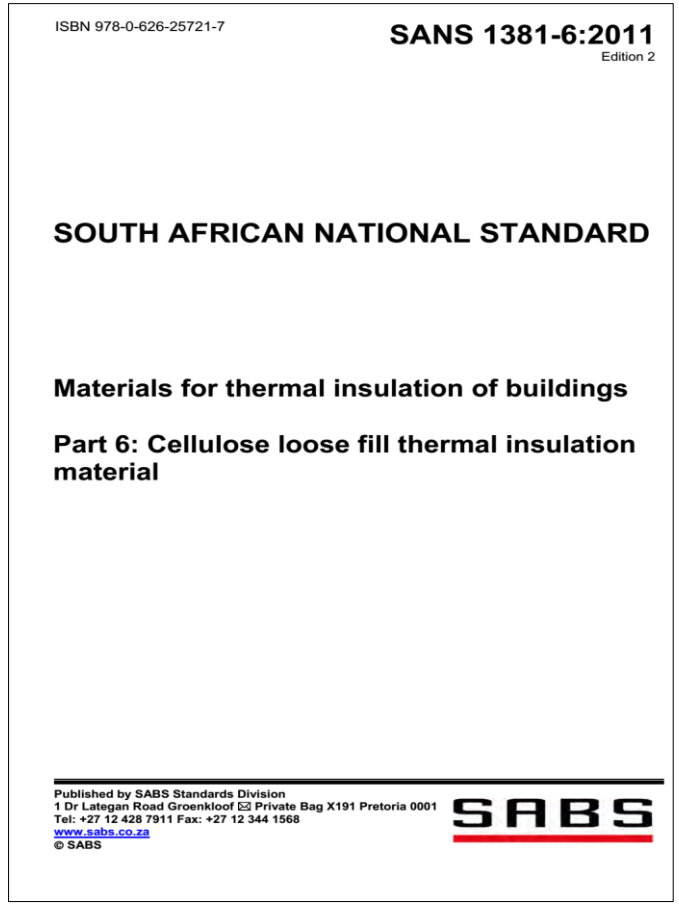
These insulations are manufactured by chemical reactions between poly-alcohols and isocyanurates creating or forming tiny air cells. The cells contain refrigerant gases (fluorocarbons) instead of air.



The boards are usually double-faced with foil, or sometimes come bonded with an interior or exterior finishing material.

EXAMPLE OF PRODUCT STANDARDS: THERMAL INSULATION





EXAMPLE OF PRODUCT STANDARDS: Thermal Insulation

- **SANS 1381-1:2013**

Fiber thermal insulation mats

- **SANS 1381-4:2013**

Reflective foil laminates

- **SANS 1381-6:2011**

Cellulose loose fill

THE IMPORTANCE OF COMPLIANCE WITH STANDARDS

What is a standard?

It is a published document that contains a technical specification or other precise criteria designed to be used consistently as a rule, guideline, or definition.

Why are there Standards in place?

Standards, be it voluntary or compulsory, are the basis for consumer protection, health, safety and environmental issues.

Why is compliance with standards necessary?

Quality assurance!

REFLECTIVE FOIL INSULATION
LDPE (Low Density Polyethylene)

Example: SANS 1381-4

Low density polyethylene air cells laminated on both sides with aluminium foil or alternatively on one side with a white polyethylene layer which provides an aesthetically pleasing finish to the underside.

UV treatment crucial to avoid deterioration.

EXAMPLE OF NON-COMPLIANCE WITH RELEVANT SABS STANDARD

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TYPES OF THERMAL INSULATED PANELS

THERMAL INSULATED PANELS

- Insulated (sandwich) panels comprises of **two metal faces and an insulating core.**

- The insulating core is typically bonded to the facings using a conventional adhesive bond.

- The **fire properties of core materials vary significantly.**

TYPES OF INSULATING CORE MATERIALS

- CG (Cellular Glass thermal insulation)
- EPS (Expanded Polystyrene)
- MW (Mineral Wool)
- PIR (Polyisocyanurate)
- PF (Phenolic Foam)
- PUR (Polyurethane)
- XPS (Extruded Polystyrene)

SABS STANDARD SANS 54509 ADOPTION OF EN 14509

Self-supporting double skin metal faced insulating panels - factory made products – specifications

EN Fire Tests

Or

South African National Standard

- SANS 428
- SANS 10177-11

Very few have proper fire test reports

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REGULATIONS

SOUTH AFRICAN NATIONAL BUILDING REGULATIONS

NATIONAL BUILDING REGULATIONS

The **National Building Regulations and Building Standards Act, Act no 103 of 1977 clause 7** of the act effectively state that there are **three** major reasons on which basis a local authority may deem a building unacceptable.

1. The building does not tone in **aesthetically** with the area in which it is built.
2. The building does not tone in **functionally** with the area in which it is built.
3. The building is **unsafe** in respect of life and property.

DESIGN OF BUILDING

Any building shall be so designed, constructed and equipped that in case of fire

1. The protection of occupants or users therein is ensured and that provision is made for the **safe evacuation** of such occupants or users;

2. The spread and intensity of such fire within such building and the **spread of fire to any other building will be minimized;**

DESIGN OF BUILDING (Cont.)

3. Sufficient stability will be retained to ensure that such building will not endanger any other building: provided that in the case of any multi-storey building **no major failure of the structural system** shall occur;

4. The generation and spread of **smoke** will be **minimized or controlled** to the greatest extent reasonably practicable; and

5. Adequate means of **access** and **equipment** for detecting, fighting, controlling and **extinguishing** such fire is provided.

Spread of fire minimized

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SABS

South African Bureau of Standards

SANS 10400

APPLICATION OF THE SOUTH AFRICAN NATIONAL BUILDING REGULATIONS

21 PARTS
5 Applicable to Thermal Insulation

Part A: General Principles and requirements

Part B: Structural design

Part C: Dimensions

Part D: Public safety

Part F: Site operations

Part G: Excavations

Part H: Foundations

Part J: Floors

Part K: Walls

Part L: Roofs

Part M: Stairways

Part N: Glazing

Part O: Lighting and ventilation

Part P: Drainage

Part Q: Non-water-borne means of sanitary disposal

Part R: Storm water disposal

Part S: Facilities for persons with disabilities

Part T: Fire protection

Part V: Space heating

Part W: Fire installation

Part XA: Energy usage in buildings

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South African Bureau of Standards

SANS 10400-A

GENERAL PRINCIPLES AND REQUIRMENTS

REGULATION A2
PLANS AND PARTICULARS TO BE FURNISHED

- A2(1) **Any** person intending to erect any building, shall submit to the local authority the following plans and particulars, together with the application:

- (g) a declaration by a person registered in a professional category of registration in terms of one of the councils for the professions identified in the council for the built environment act, 2000 (act no. 43 of 2000) in the relevant portion of **Form 1** contained in SANS 10400-A as to how the applicable functional regulations shall be satisfied.

ANNEXURE D

Forms 1 - 3 DECLARATIONS

Part XA
NOW
INCLUDED

SANS 10400-A:2016
Edition 3.1

SCHEDULE A: MEANS BY WHICH REGULATION AZ4 IS TO BE SATISFIED

Occupancy/Building classification . . . . . (see Regulation A20)

REGULATION A4
LOCAL AUTHORITY MAY REQUIRE ADDITIONAL DOCUMENTS & INFORMATION

- A4 (9) (a) where a local authority is not satisfied as to the adequacy or safety in use of any construction system, method, material, article or product which is proposed to be used in the erection of any building the local authority may require a test report or evaluation certificate in respect thereof.

The test reports and certificates referred to are:

- An SABS test report; or
- A CSIR report; or
- An Agrément certificate (only acceptable in the absence of a South African National Standard – i.e. Fit for purpose).

SABS Tested or SABS Approved?

SABS TEST REPORT

Applicable to materials tested and in compliance with the pass/fail criteria of the relevant South African National Standard (SANS) as published by the SABS. **A requirement in accordance with the regulation for "materials" which includes thermal insulation.**

SABS MARK OF APPROVAL

Not a requirement in accordance with the regulation. **A "prestigious tool" to use as marketing**. An assessment: when in compliance with all the test criteria of a South African National Standard.

SABS Tested or SABS Approved?

SABS TEST REPORT


SABS

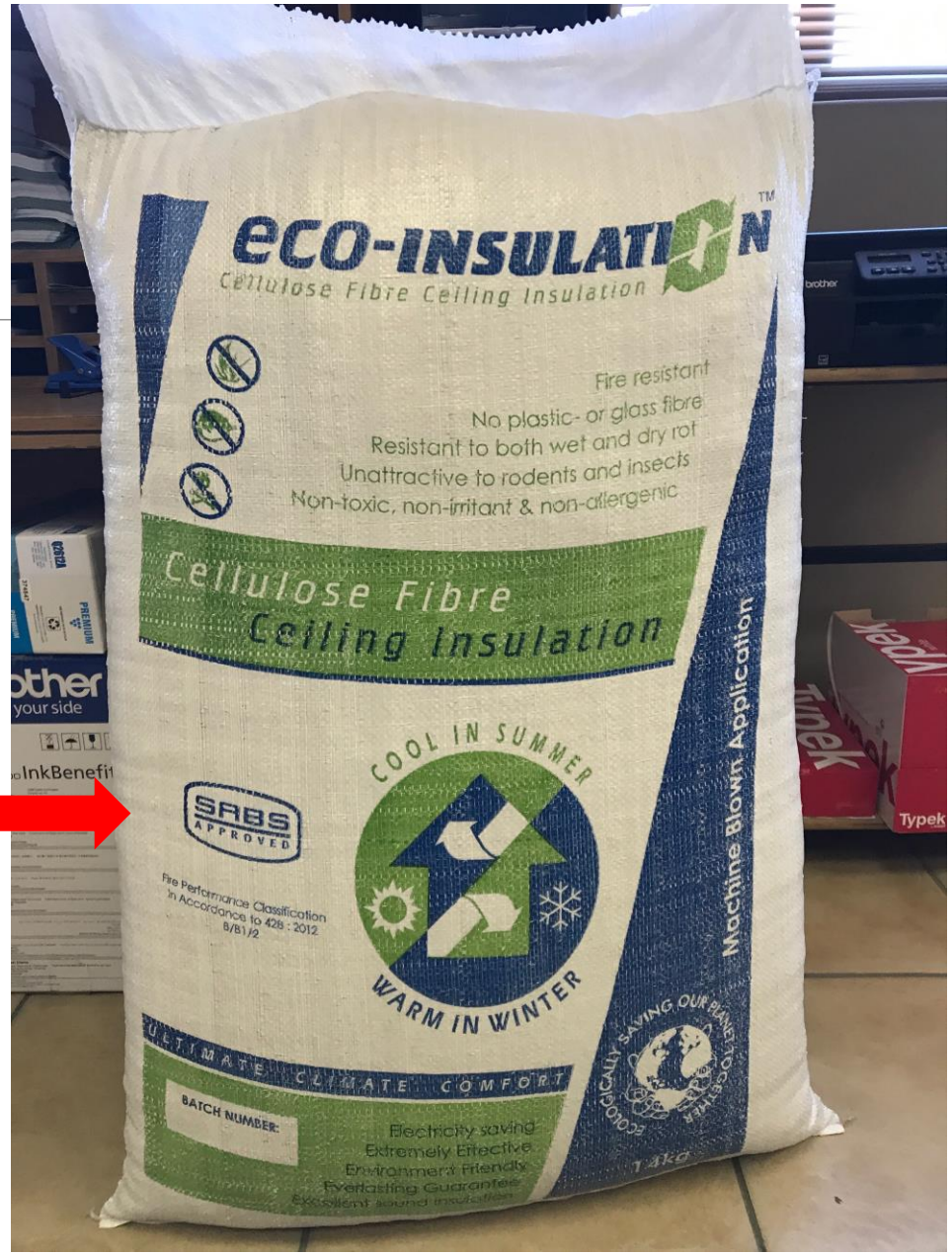
TEST REPORT

Your ref : Permit no12681
Report no : BCT-160914-00033
Enquiries : J Maswikaneng
Tel no : (012) 428 6010
Page : 1 of 4
Date : 2016/03/08

SABS MARK OF APPROVAL

SABS
APPROVED

SABS APPROVED



REGULATION A13
BUILDING MATERIALS AND TESTS

- A13 (1) (a) Material used in the erection of a building shall be suitable for the purpose for which it is to be used.

- (c) The requirements of sub regulation (1)(a)) shall be deemed to be satisfied if such material complies with and is incorporated into buildings in accordance with the requirements of SANS 10400.

REGULATION A19

APPOINTMENT OF PERSONS RESPONSIBLE FOR DESIGN, INSPECTION AND ASSESSMENT DUTIES

- A19 (13) Where any person provides any information or certificate required in terms of this regulation or which he or she knows to be incomplete or false, such person shall be guilty of an offence.

REGULATION A20 CLASSIFICATION AND DESIGNATION OF OCCUPANCIES

Table 1 — Occupancy or Building Classification			
A1	Entertainment & Public Assembly	E3	Other institutional (residential)
A2	Theatrical & indoor sport	E4	Health care
A3	Places of instruction	F1	Large shop
A4	Worship	F2	Small shop
A5	Outdoor sport	F3	Wholesalers' store
B1	High risk commercial service	G1	Offices
B2	Moderate risk commercial service	H1	Hotel
B3	Low risk commercial service	H2	Dormitory
C1	Exhibition hall	H3	Domestic residence
C2	Museum	H4	Dwelling house
D1	High risk industrial	H5	Hospitality
D2	Moderate risk industrial	J1	High risk storage
D3	Low risk industrial	J2	Moderate risk storage
D4	Plant room	J3	Low risk storage
E1	Place of detention	J4	Parking garage
E2	Hospital		

REGULATION A25
GENERAL ENFORCEMENT

- A25 (1) No person shall use any building or cause or permit any building to be used for a purpose other than the purpose shown on the approved plans of such building, or for a purpose which causes a change in the class of occupancy as contemplated in these regulations

- A25 (5) Any person who, having obtained approval in terms of the act for the erection of any building, deviates to any material degree from any plan, drawing or particulars approved by the local authority shall, except where such deviation has been approved, be guilty of an offence.

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SANS 10400-B

STRUCTURAL DESIGN

SANS 10400-B
STRUCTURAL DESIGN

4.2.1 General

4.2.1.1 The design working life of a building other than a category 1 building shall be not less than 30 years in respect of the structural system and non-accessible components, and **15 years for repairable or replaceable components and materials, such as claddings, roofing materials**, exterior trims, and integrated components, such as windows and doors. Category 1 buildings may have a design life of not less than 10 years in respect of repairable or replaceable components, provided that provision for upgrading is made at the design stage and such upgrading does not require the removal or dismantling of the existing structure and does not require highly specialized skills to be applied.

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SANS 10400-L

ROOFS

SANS 10400 PART L
ROOFS

4.5 Fire resistance and combustibility

4.5.1 The fire resistance of any **roof or ceiling assembly (or both) (insulation forms part of the roof assembly**), complete with light fittings or any other component which penetrates the ceiling, and the degree of non-combustibility of such assembly shall comply with the relevant requirements in **SANS 10400-T** and SANS 10400-V, as applicable.

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SANS 10400-T

FIRE PROTECTION

SANS 10400 PART T
FIRE PROTECTION

4.5.3 Any insulation, insulating panel or lining used as a thermal insulation system under an external covering as part of a roof or wall assembly (thermal insulated building envelope), tested in accordance with **SANS 10177-5** and found to be combustible, shall be acceptable if, when classified in terms of the **SANS 428** protocol, its use and application are acceptable

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SABS FIRE STANDARDS

SANS 10400-T: FIRE PROTECTION

SANS 10177-3 (1981 -2006)

In the past the Surface Fire Index Classification of thermal insulation materials was determined in accordance with SANS 10177-3 Fire-testing of materials, components and elements used in buildings Part 3: Surface fire index of finishing materials.

SANS 10177-3
Photo: Courtesy Firelab

CLASSIFICATION OF FINISHING MATERIALS

1	2	3	4	5
Maximum Values				
Class	Spread of flame Index, If	Heat Contributed Index, Ih	Smoke emitted Index, Is	Surface fire Index, F
1	0.1	0.1	0.2	0.1
2	0.7	0.8	1.0	0.6
3	1.5	1.7	2.0	1.2
4	3.5	3.8	4.0	2.9
5	5.5	5.8	6.0	4.5

CLASSIFICATION OF FINISHING MATERIALS

Flexible foils and flexible blanket-type insulation were tested separately and received a Class 1 rating, however, when these products are added together as a composite system, by either lamination or installed as a loose-lay, known as composite bulk and not tested as such, they often result in fire hazards.

Results of SABS 0177 Part 3

Spread of flame index	: Nil
Heat contribution index	: Nil
Smoke emission index	: Nil
Surface fire index	: Nil
Class	: 1

1994, 2001 & 2004

SANS 10400-T: FIRE PROTECTION
FIRE RESISTANCE: SANS 10177-2

Insulation is not intended as fire barriers, unless designed and tested in accordance with:

SANS 10177-2: **Fire Resistance** test for building elements – The **shortest period** for which a building insulation element or component will comply with the requirements for stability, and integrity.

FIRE RESISTANCE VS FIRE SPREAD

Fire resistance is often confused with flame spread and fire retardant abilities.

Flame spread is controlled with a fire retardant. The incorporation of a fire retardant does not make a product “safe” or non-combustible, it may make it more difficult to ignite and slow down the rate of combustion or ease of ignition.

FIRE RESISTANCE: SANS 10177-2

Criteria in terms of Part T, Fire safety – **Single up to 3 storeys buildings**

- External walls – 30 minutes, Type FR or F
- Internal Division or Occupancy separating walls – 60,90 or 120 minutes, Type FR

Criteria in terms of Part T, Fire safety – **Multi Storey (More than 3) buildings**

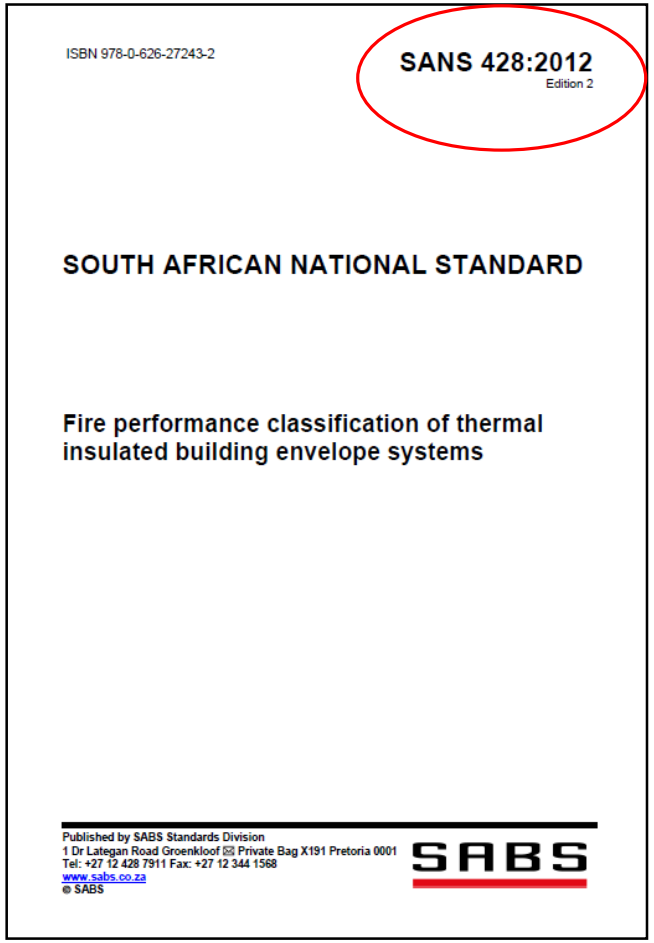
- External walls – **Non Combustible** only (or approved systems only) 30 minutes, Type FR Internal
- Division or Occupancy separating walls – **non-combustible**, 60,90 or 120 minutes, Type FR

30, 60 or 90 minutes

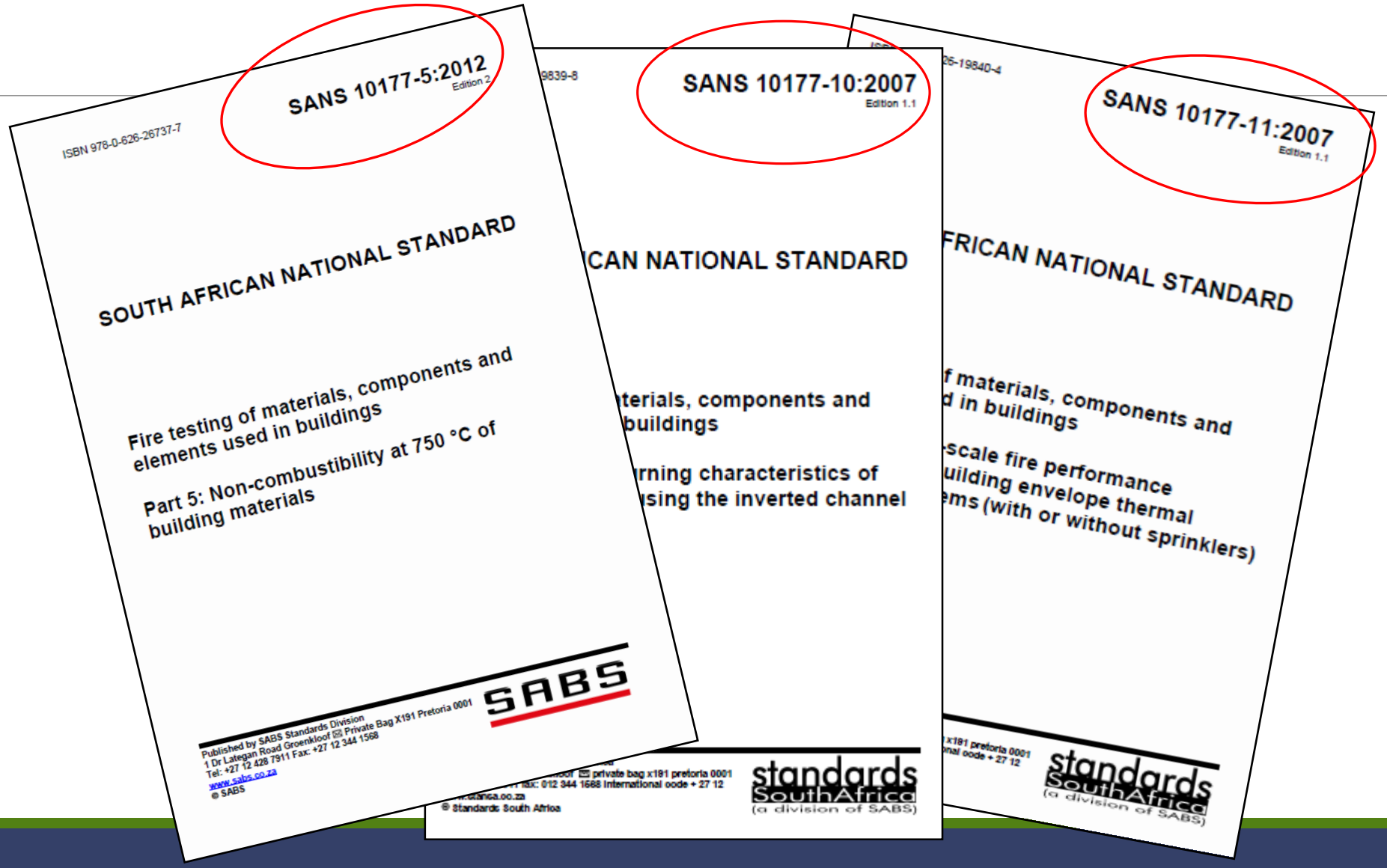
SANS 10177- 2
Photos: Courtesy Firelab

SANS 10400 – T: FIRE PROTECTION FLAME SPREAD: SANS 428 (2006 – 2017)

When **ANY** insulation, roof lining or waterproof membrane not used as a ceiling and used under a roof covering as part of a roof assembly, is tested in accordance with SANS 10177-5 and found to be **combustible,** such material shall be acceptable should it be classified, marked and installed in accordance with the requirements of **SANS 428.**

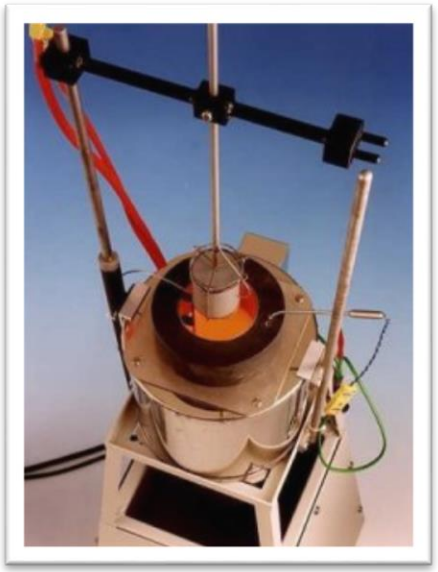


PROTOCOL OF TESTING



SANS 10177-5:2012 COMBUSTIBILITY

- Fire testing of materials components and elements used in buildings
- Part 5: Non-combustibility at 750 ºc of building materials.

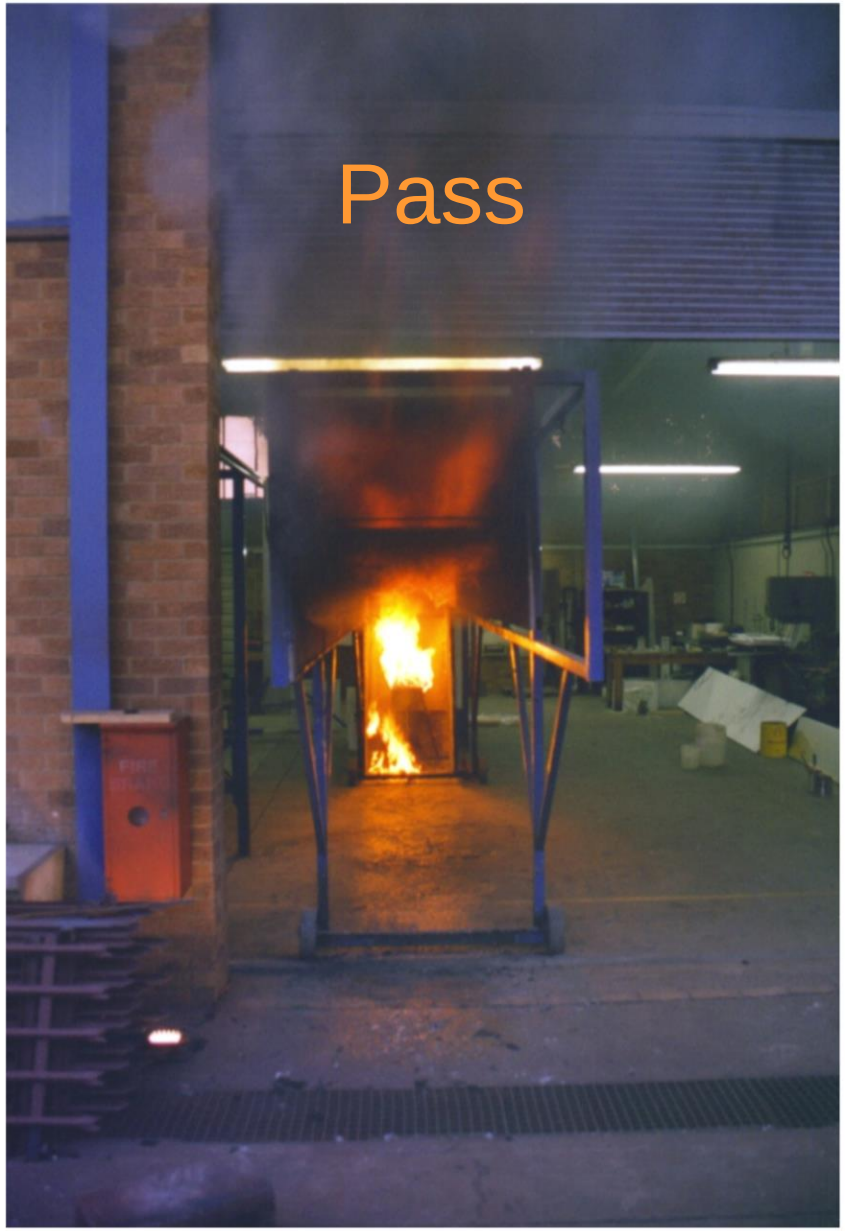


SANS 10177-10:2007
SURFACE FIRE PROPERTIES

- Fire testing of materials, components and elements used in buildings
- Part 10: Surface burning characteristics of building materials using the inverted channel tunnel test

SANS 10177- 10 Photo: Courtesy Firelab

Pass

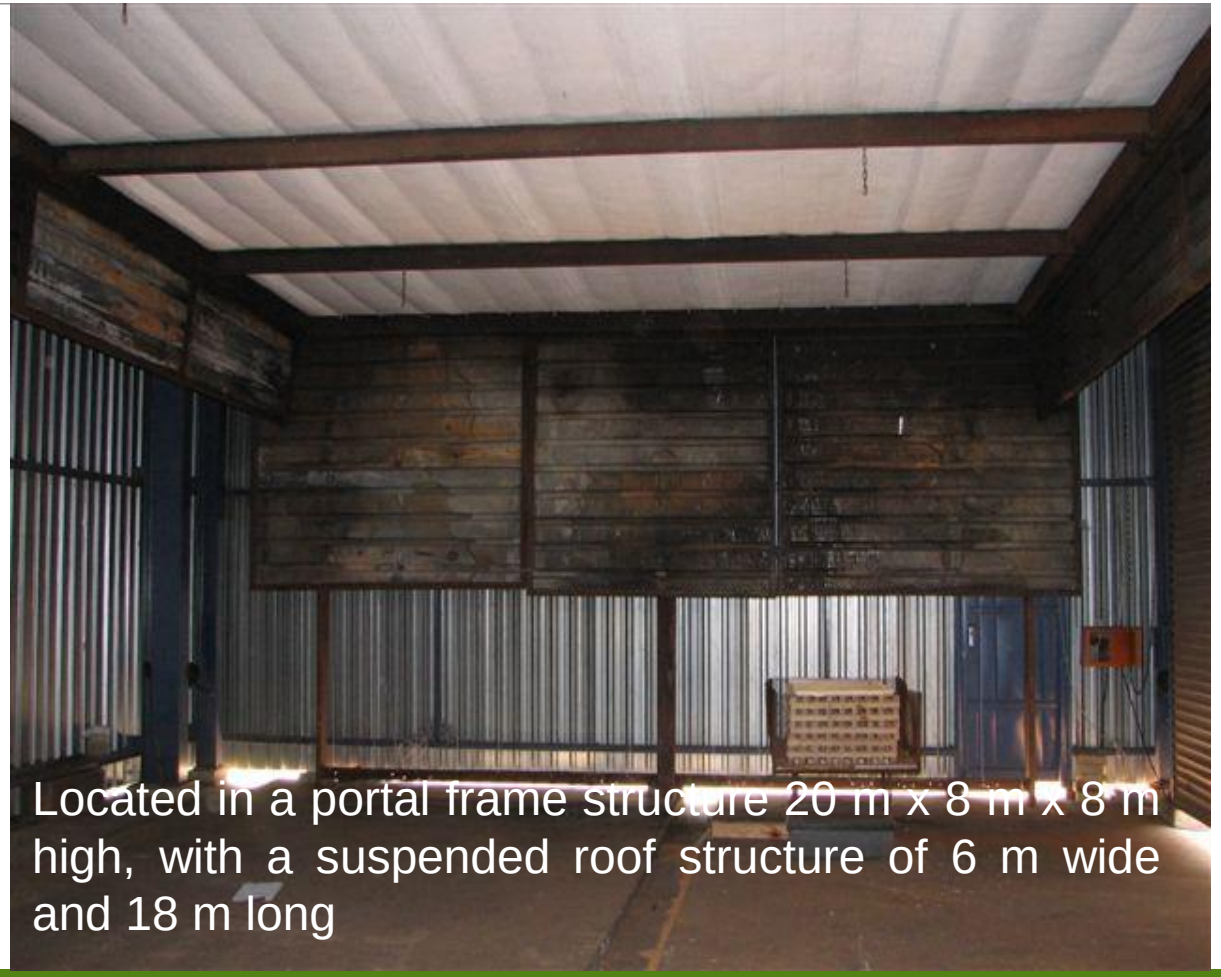


Fail

SANS 10177-11:2007 DESIGNATED USE & APPLICATION

Fire testing of materials, components and elements used in buildings

Part 11: Large-scale fire performance evaluation of building envelope thermal insulation systems (with (SP) or without sprinklers USP))



SANS 10177- 11 Photo: Courtesy Firelab

FAILURE IN THE LARGE SCALE TEST SURFACE FIRE SPREAD AT CEILING LEVEL

SANS 428
SYMBOLIC CLASSIFICATION

Combustibility as determined by SANS 10177 Part 5

Class	Combustibility
A	Non-combustible
B	Combustible

SURFACE FIRE PROPERTIES

Small-scale application	Large-scale application	Behaviour of material	Classification
≤ 2 000	≤ 4 000	No flame spread	B1
≤ 3 000	≤ 6 000	Low flame spread (no flaming droplets or burning brand)	B2
		Low flame spread (with flaming droplets or burning brand)	B3
≤ 4 000	≤ 8 000	Average flame spread (no flaming droplets or burning brand)	B4
		Average flame spread (with flaming droplets or burning brand)	B5
> 4 000	> 8 000	Rapid fire spread	B6

SANS 428 - Designated use of materials in single or double storey buildings.

Class of Occupancy	Type of Occupancy	Use	Class of Occupancy	Type of Occupancy	Use
A1	Entertainment & Public Assembly	1	E3	Other institutional (residential)	1
A2	Theatrical & indoor sport	2	E4	Health care	2
A3	Places of instruction	2	F1	Large shop	3
A4	Worship	2	F2	Small shop	3
A5	Outdoor sport	4	F3	Wholesalers' store	3
B1	High risk commercial	2	G1	Offices	3
B2	Moderate risk commercial	2	H1	Hotel	1
B3	Low risk commercial	3	H2	Dormitory	1
C1	Exhibition hall	2	H3	Domestic residence	3
C2	Museum	2	H4	Dwelling house	3
D1	High risk industrial	2	H5	Hospitality	3
D2	Moderate risk industrial	2	J1	High risk storage	2
D3	Low risk industrial	3	J2	Moderate risk storage	2
D4	Plant room	1	J3	Low risk storage	3
E1	Place of detention	1	J4	Parking garage	4
E2	Hospital	1			

CLASSIFICATION EXAMPLE (cont.)

Class	Material Application
H	Horizontal
V	Vertical
H & V	Horizontal & Vertical
SP	With Sprinklers
USP	Without Sprinklers

CLASSIFICATION EXAMPLE

B/B1/2/H

B **B1** **2** **H**

Combustible

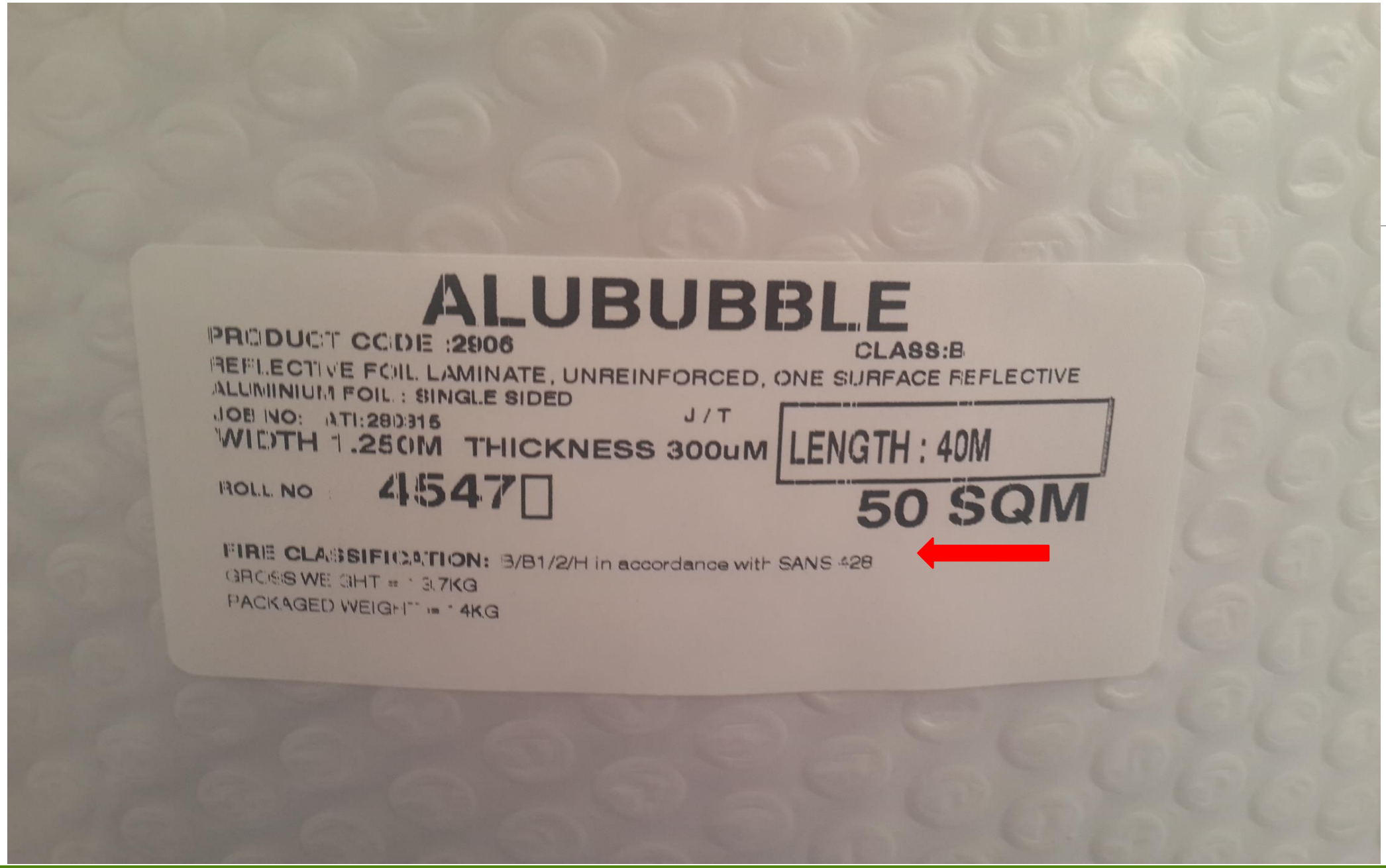
Surface fire properties

Use of material & Application of material

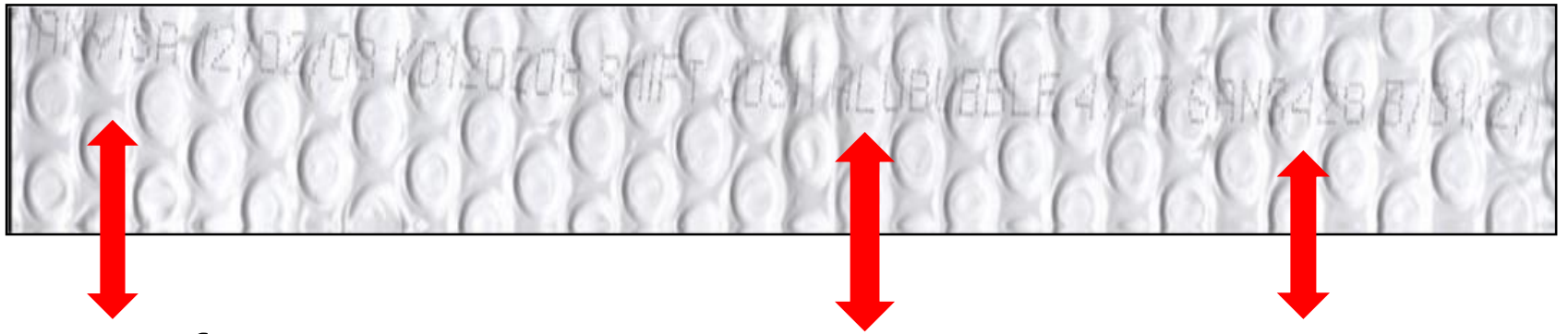
This classification will appear on all products and/or packaging and data sheets

SANS 428
MARKING & INSTALLATION INSTRUCTIONS

Each product or system tested shall bear the manufacturer's name and product identification, classification, use and application.


ALUBUBBLE
PRODUCT CODE :2906
CLASS:B
REFLECTIVE FOIL LAMINATE, UNREINFORCED, ONE SURFACE REFLECTIVE
ALUMINIUM FOIL : SINGLE SIDED
JOB NO: ATI:280315
J / T
WIDTH 1.250M THICKNESS 300uM
LENGTH : 40M
ROLL NO : 4547
50 SQM
FIRE CLASSIFICATION: B/B1/2/H in accordance with SANS 428
GROSS WEIGHT = 3.7KG
PACKAGED WEIGHT = 4KG

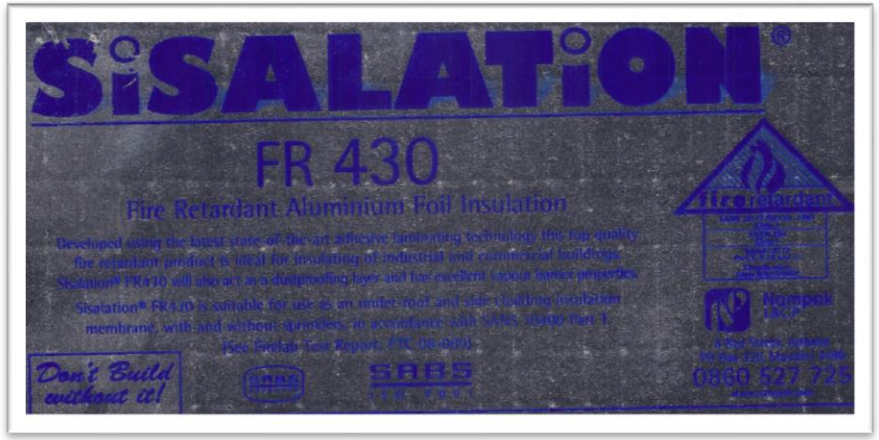
SANS 428
MARKING OF PRODUCTS (cont.)



Name of Manufacturer

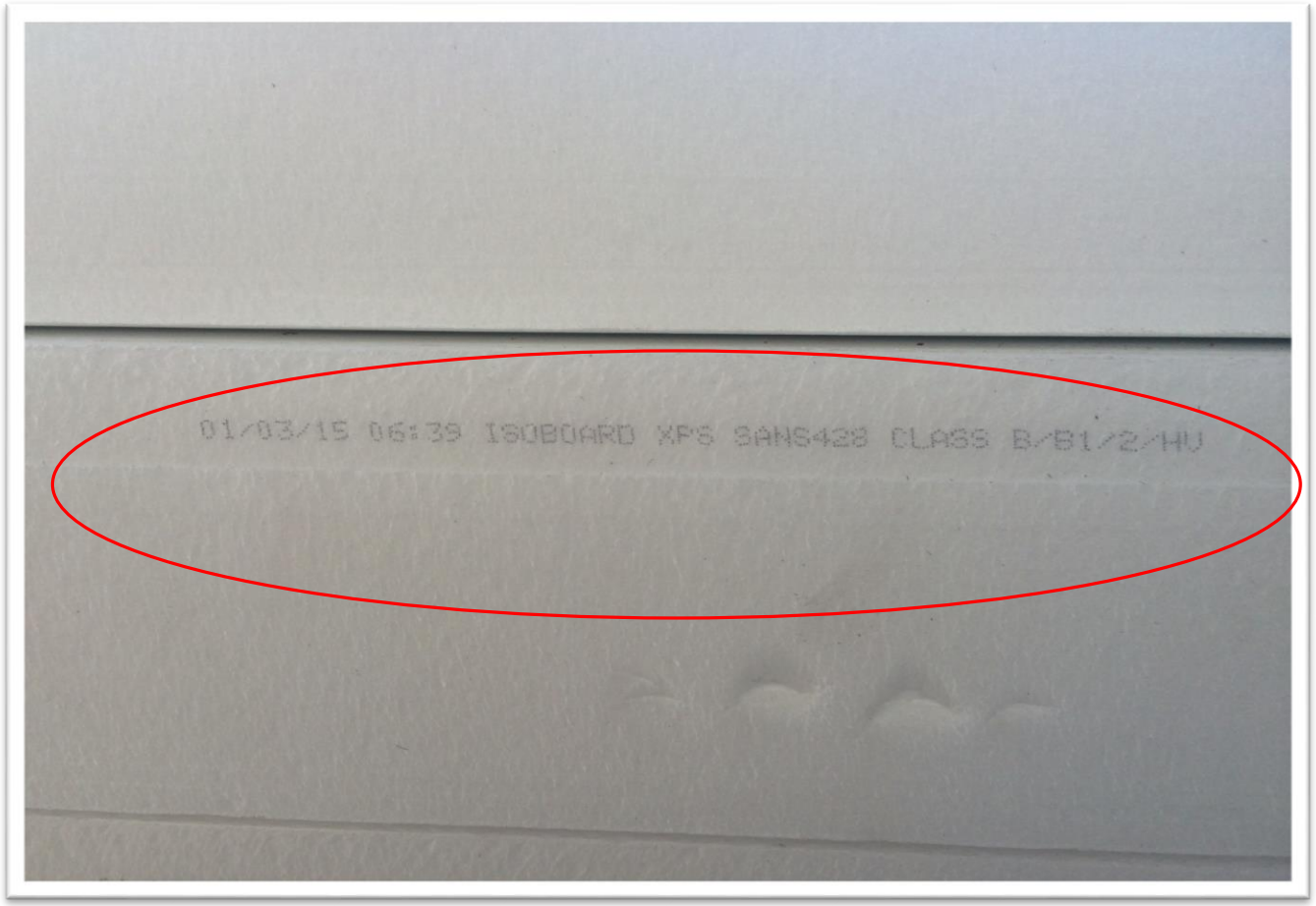
Name of Product

SANS 428 Fire Classification



Some products are easier identifiable than others – information printed on un-exposed back of product

SANS 428
MARKING OF PRODUCTS (cont.)



EXAMPLE: TYPICAL PERFORMANCE NON-COMBUSTIBLE MATERIAL: A1

EXAMPLE: TYPICAL PERFORMANCE COMBUSTIBLE MATERIAL – NO FLAME SPREAD: B1

FLAME SPREAD WITH DROPLETS & BURNING BRAND


RAPID FIRE SPREAD & SMOKE
B6 CLASSIFICATION
NOT ACCEPTABLE FOR ANY APPLICATION

FIRE TESTING OF INSULATED PANELS

- Only non-combustible cores are allowed to be used in: cooking areas, hot areas, bakeries, fire breaks in combustible insulating panels and fire stop insulating panels.

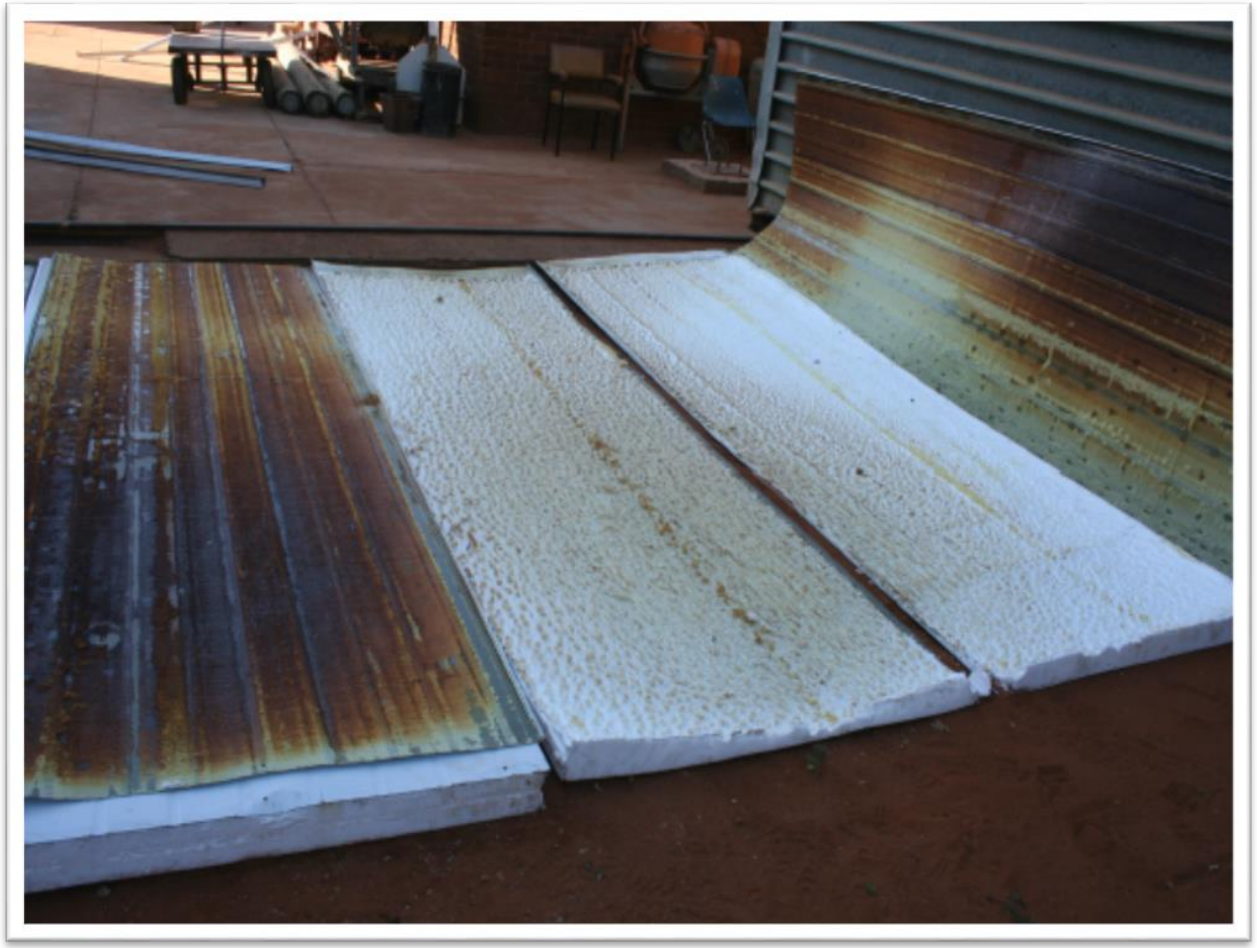
FIRE TESTING OF INSULATED PANELS

- The practical performance of the complete insulated panel system should only be evaluated by a full-scale fire test
- Fire Resistance test for panels is evaluated on the system performance in minutes for structural stability (load bearing capabilities under fire) , integrity (ability to retard the passage of hot flames and gases) and insulation (ability to limit the temperature rise from the exposed face/fire side, to the non-exposed/non-fire side)

LARGE SCALE FIRE TEST OF INSULATED SANDWICH PANEL SYSTEM

ROOF PANEL AFTER FIRE TEST

WALL PANEL AFTER FIRE TEST



TIPSA

THERMAL INSULATION PRODUCTS & SYSTEMS ASSOCIATION SA

A division of the Southern African Energy Efficiency Confederation

SANS 10400-XA

ENERGY USAGE IN BUILDINGS

SANS 10400-XA
ENERGY USAGE IN BUILDINGS

- The Department of Trade and Industry has published an amendment to the National Building Regulations on 9 September 2011 to introduce requirements for energy usage in buildings.
- This regulation “Energy usage in buildings” was promulgated on 9 November 2011.
- All new buildings and extensions have to comply with the new regulation (see table with building occupancy classes applicable to the new legislation).
- Roof assemblies, i.e. roof covering materials such as tiles or metal sheeting, ceilings and added insulation, are required to meet a minimum total thermal resistance as specified for the various climatic zones.

BUILDING OCCUPANCY CLASSES
(REGULATION APPLICABLE TO GREEN HIGHLIGHTED SECTIONS)

Occupancy or Building Classification applicable to Regulation XA1			
A1	Entertainment & Public Assembly	E3	Other institutional (residential)
A2	Theatrical & indoor sport	E4	Health care
A3	Places of instruction	F1	Large shop
A4	Worship	F2	Small shop
A5	Outdoor sport	F3	Wholesalers' store
B1	High risk commercial service	G1	Offices
B2	Moderate risk commercial service	H1	Hotel
B3	Low risk commercial service	H2	Dormitory
C1	Exhibition hall	H3	Domestic residence
C2	Museum	H4	Dwelling house
D1	High risk industrial	H5	Hospitality
D2	Moderate risk industrial	J1	High risk storage
D3	Low risk industrial	J2	Moderate risk storage
D4	Plant room	J3	Low risk storage
E1	Place of detention	J4	Parking garage
E2	Hospital		

MINIMUM REQUIREMENT

www.tipsasa.co.za

TIPSASA THERMAL SPECIFICATION GUIDE 0861 000 334

TIPSASA	RECOMMENDED LEVELS OF INSULATION TO ACHIEVE DEEMED-TO-SATISFY RULE FOR ENERGY EFFICIENCY IN ROOF/CEILING, WALL & FLOOR CONSTRUCTIONS – SANS 10400-XA ENERGY USAGE IN BUILDINGS & SANS 204 ENERGY EFFICIENCY IN BUILDINGS.																							
CLIMATE ZONES	**1**				**2**				**3**				**4**				**5**				**6**			
Minimum required Total R-value m²K/W (for roof solar absorptance of more than 0.55)	**3.7**				**3.2**				**2.7**				**3.7**				**2.7**				**3.5**			
Direction of heat flow	Upwards				Upwards				Down and Upwards				Upwards				Downwards				Upwards			
Total R-Value m²K/W of roof and ceiling materials (Roof covering & plasterboard only)	0.35				0.35				0.35				0.35				0.39				0.35			
Minimum added R-Value m²K/W of Insulation only in **Roofs**	3.35				2.85				2.35				3.35				2.31				3.15			
Minimum added R-Value m²K/W of Insulation only in **Walls**	2.2				1.9				1.9				1.9				1.9				2.2			
Minimum added R-Value m²K/W of Insulation only in **Floors**	1				1				1				1				1				1			
Generic Insulation	Density Kg/m³	Thermal Conductivity	Recommended levels (thickness in mm) of thermal insulation materials to be used. Thermal conductivity values used are generic. *Thermal efficiencies are reliant on material thickness, density, age, operating temperature and moisture. Thicknesses rounded-up to nearest production standard.																							
FLEXIBLE / LOOSE-FILL PRODUCTS			**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**
Cellulose Fibre	27.5	0.040	135	100	NR	NR	115	95	NR	NR	100	70	NR	NR	135	100	NR	NR	100	65	NR	0	130	100	NR	NR
Fiber Glass	10-18	0.040	135	100	100	40	115	95	100	40	100	70	100	40	135	100	100	40	100	65	100	0	130	100	100	40
Polyester	11.5	0.046	160	120	100	50	140	100	100	50	120	80	100	50	160	120	100	50	110	75	100	0	150	120	100	50
Polyester BOQ	24	0.038	130	95	85	35	110	90	85	35	90	65	85	35	130	95	85	35	90	60	85	0	125	100	85	35
RIGID BATT OR BOARD PRODUCTS			**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**	**R**	**RFL**	**W**	**F**
EPS Standard	15	*0.035	120	90	80	35	100	80	80	35	90	60	80	35	120	90	80	35	80	35	80	0	115	90	80	35
Fiber Glass	47.5	0.033	115	85	75	35	100	80	75	35	80	75	75	35	115	85	75	35	80	55	75	0	100	90	75	35
Mineral Wool	≥60	0.033	115	85	75	35	100	80	75	35	80	75	75	35	115	85	75	35	80	55	75	0	100	90	75	35
Polyester BOQ	61	0.034	115	90	75	35	100	80	75	35	80	60	75	35	115	90	75	35	80	55	75	0	110	90	75	35
Polyurethane	32	*0.025	85	60	55	25	70	60	55	25	60	45	55	25	85	60	55	25	60	40	55	0	80	65	55	25
XPS	32	*0.028	100	70	65	30	80	65	65	30	70	50	65	30	100	70	65	30	65	45	65	0	90	75	65	30
KEY: R=Roof. RFL= Reflective Foil Laminates installed over rafters in pitch roofs as a radiant barrier allows reduced bulk insulation requirements. W= Non-masonry walls. F= Floor insulation to be used if under floor heating is installed. Wall and floor recommended thickness are given without consideration of system inherent R value.																										
PIPE INSULATION – Internal Ø of pipe			**≤ 80 mm**		**>80 mm**		**≤ 80 mm**		**>80 mm**		**≤ 80 mm**		**>80 mm**		**≤ 80 mm**		**>80 mm**		**≤ 80 mm**		**>80 mm**		**≤ 80 mm**		**>80 mm**	
R-Value Requirement m²K/W			1		1.5		1		1.5		1		1.5		1		1.5		1		1.5		1		1.5	
EPS	All exposed pipes to and from the hot water cylinders and central heating systems shall be insulated with pipe insulation material.		35		55		35		55		35		55		35		55		35		55		35		55	
Fiber Glass			40		60		40		60		40		60		40		60		40		60		40		60	
Polyester			50		70		50		70		50		70		50		70		50		70		50		70	
Polyurethane			25		25		25		25		25		25		25		25		25		25		25		25	

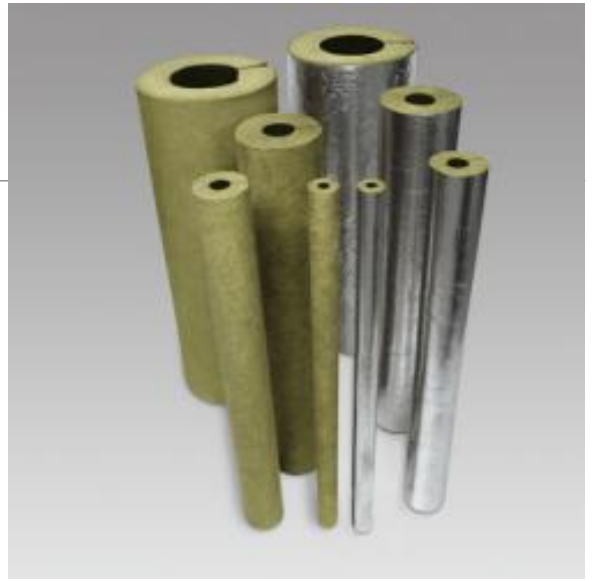
PIPE INSULATION

Hot water pipe cladding or insulation significantly reduces heat losses to the atmosphere while hot water is in transit to outlets and taps.

All exposed pipes to and from the hot water cylinders and central heating systems must be insulated within 1 metre of the connection to the heating or cooling system, with insulation material with an R-Value in accordance with the table in XA

Minimum R-Values for Pipe Insulation	
Internal Diameter of Pipe (mm)	Minimum R-Value of Insulation [a]
≤80	1.00
>80	1.50
[a] Determined with a hot surface temperature of 60°C and an ambient temperature of 15°C	

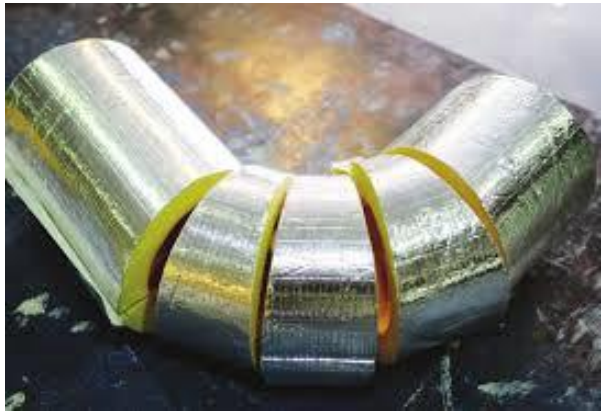
EXAMPLES:

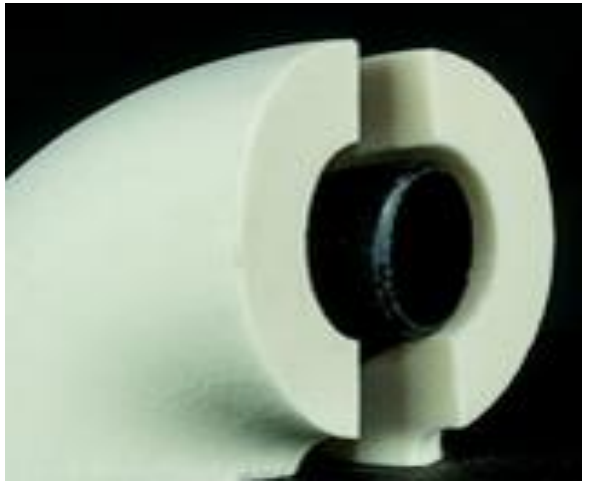


Snap on pipe insulation is a pre-formed, rigid, resin bonded Glasswool section of 1 metre in length. A single longitudinal slit allows the section to open to encompass the pipe and snap closed after placement. Standard finishing options are available in plain, canvas and reinforced foil.

Other insulation cores are:

- Polystyrene
- Polyurethane
- Polyisocyanurate





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THE FUTURE –
ENERGY RATED BUILDINGS

WHAT THE FUTURE HOLDS

The draft NEES (National Energy Efficiency Strategy) proposes various measures and implementation targets, varying between 3 months to 5 years, pending on ease of implementation. What is important to note for our Industry are the following:

- Tightening of building standards
- Tax incentives for building retrofits
- Energy Performance Certificates (EPC's) for residential buildings
- Training Academy
- Accredited contractors

SANS 1544 - ENERGY PERFORMANCE CERTIFICATE FOR BUILDING

ISBN 978-0-626-XXXXX-X

SANS 1544:2014
Edition 1

SOUTH AFRICAN NATIONAL STANDARD

Energy performance certificates for buildings

WARNING
This standard references other documents normatively.

Published by SABS Standards Division
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001
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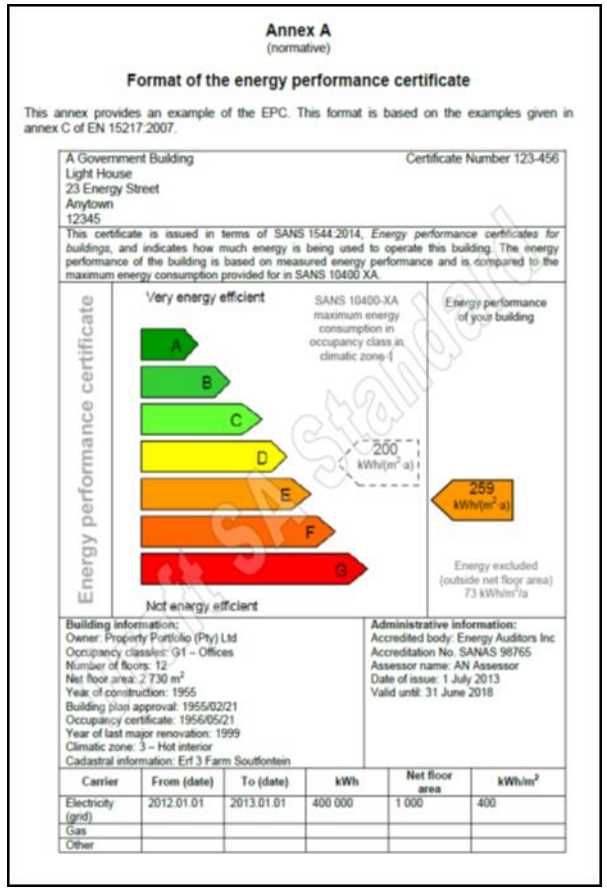
www.sabs.co.za

SABS



Annex A
(normative)

Format of the energy performance certificate

This annex provides an example of the EPC. This format is based on the examples given in annex C of EN 15217:2007.

A Government Building
Light House
23 Energy Street
Anytown
12345

Certificate Number 123-456

This certificate is issued in terms of SANS 1544:2014, *Energy performance certificates for buildings*, and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy performance and is compared to the maximum energy consumption provided for in SANS 10400 XA.

Energy performance certificate

Very energy efficient

SANS 10400-XA maximum energy consumption in occupancy class in climatic zone 1

Energy performance of your building

A
B
C
D
E
F
G

200 kWh/(m² a)

259 kWh/(m² a)

Energy excluded (outside net floor area) 73 kWh/m²/a

Not energy efficient

Building information:
Owner: Property Portfolio (Pty) Ltd
Occupancy classes: G1 – Offices
Number of floors: 12
Net floor area: 2 730 m²
Year of construction: 1955
Building plan approval: 1955/02/21
Occupancy certificate: 1956/05/21
Year of last major renovation: 1999
Climatic zone: 3 – Hot interior
Cadastral information: Erf 3 Farm Soutfontein

Administrative information:
Accredited body: Energy Auditors Inc
Accreditation No. SANAS 98765
Assessor name: AN Assessor
Date of issue: 1 July 2013
Valid until: 31 June 2018

Carrier	From (date)	To (date)	kWh	Net floor area	kWh/m²
Electricity (grid)	2012.01.01	2013.01.01	400 000	1 000	400
Gas					
Other					

ENERGY EFFICIENCY "BUZZ" WORDS

- "GREEN"
- SUSTAINABILITY
- ENVIRONMENTALLY FRIENDLY
- RECYCLED MATERIALS
- FOOT PRINT

Green is a colour; just because it says "green" doesn't mean it's right or good!

HOW TO SELECT THERMAL INSULATION

When selecting insulation, ensure that the material:

1. Is in compliance with relevant **South African National Standard** i.e. Product standard;
2. Is appropriate for the intended **occupancy class** in accordance with **SANS 10400 part A**
3. Complies with the **Fire safety requirements** given in **SANS 10400 part T and SANS 428**.
4. Complies with the recommended **R-Value** for the relevant climatic zones in accordance with **SANS 10400 part XA**

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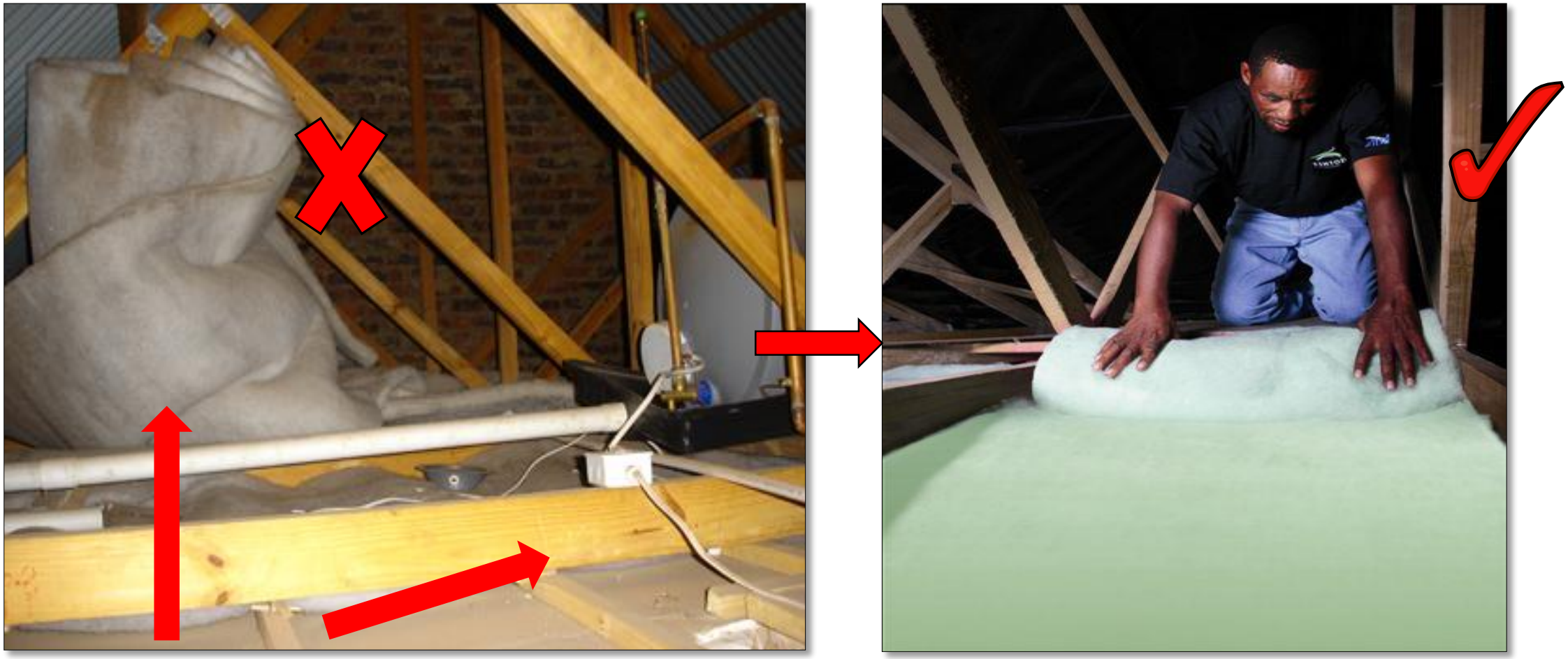
CASE STUDIES

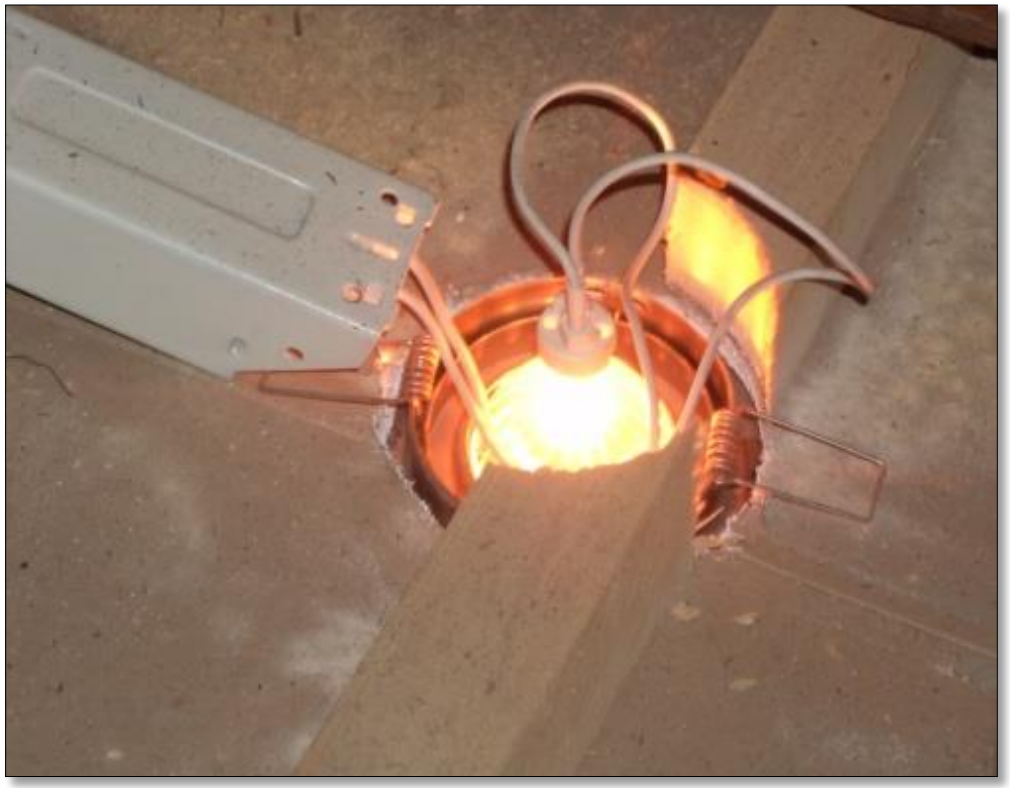
WHAT LURKS ABOVE THE CEILING?

INSTALLATION OF CEILING INSULATION



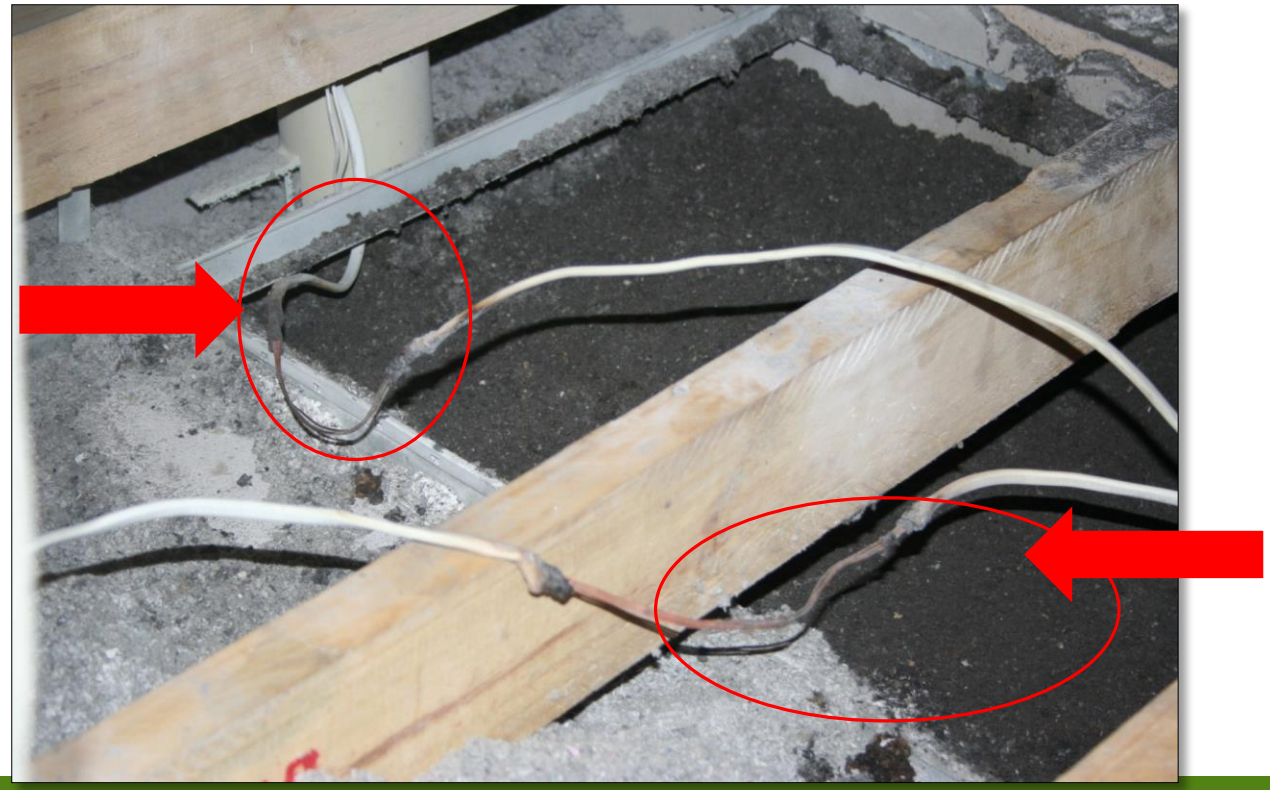
WARNING SAFETY ALERT

DO NOT install insulation over **down lighters and transformers.**

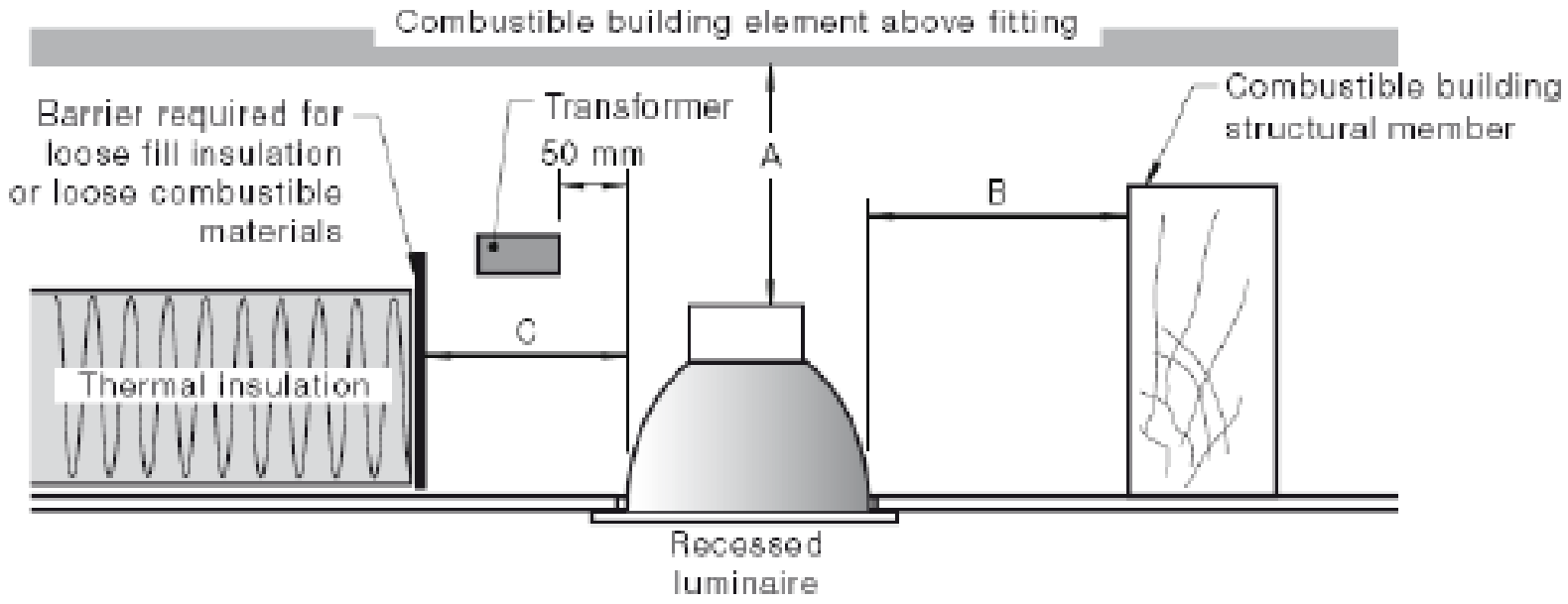


DOWN-LIGHTERS!

A Halogen down-lighter reaches 320 °C Replace Halogen down-light globes with new LED (±80 ºC)



DEFAULT MINIMUM CLEARANCES FOR RECESSED LUMINAIRES		
Dimension	Incandescent lamp	Halogen lamp
A – clearance above luminaire	50 mm	200 mm
B – side clearance to structural member	100 mm	200 mm
C – clearance to thermal insulation	50 mm	200 mm
D – clearance to supply transformer	50 mm	



NON-COMBUSTIBLE DOWNLIGHT COVERS

NOT INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION SPECIFICATIONS

RESULTS OF FAILURE TO COMPLY

FIRE SPREAD ABOVE CEILING CONTAINED WITH SPRINKLERS

EXAMPLE: STRUCTURAL FAILURE WITHIN 20 MIN!


WARNING !!!
N--E--V--E--R
change a specification for
“something similar but
cheaper” without checking !

Paarl Print – 17 April 2009
Specification changed for something similar but cheaper!

It might be similar and cheaper **BUT FIRE RATING IS DIFFERENT!!**

Security camera footage of a fire at Paarl Print at Paarl, South Africa on 17 April 2009. Thirteen (13) workers died, when roof insulation material ignited after a fire in the canteen.

The link is:
www.youtube.com/watch?v=iIE4EP3c6DY

Can this happen in SA?


GRENFELL TOWER
PRE-REFURB IN 2011
POST REFURB WITH
NEW CLADDING


SHOCKING SCENES

External Thermal Insulation Composite Systems (ETICS)

The ETICS system is fast gaining ground in the alternative building technology market, **with architects and engineers recognizing its benefits including increased insulation of buildings against energy loss**, the multiple options it provides to the intricate features of specific façade designs, as well as the provision of actively contributing to the conservation of nature and natural resources.

EXAMPLES OF BUILDINGS

- The Kuruman Casino project
- The Cell C building seen from the highway situated at the Buccleuch interchange in Gauteng
- The SANRAL building at the Samrand offramp - N1 freeway
- The Deloitte building in Pretoria
- Sasol’s ChemCity in Sasolburg
- Assupol Building in Pretoria

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PROPOSED NEW FIRE CLASSIFICATION SYSTEM

EURO CLASSIFICATION

REASONS FOR CHANGE

1. Transparency of fire performance classification of products
2. Current testing regime is a Trade Barrier and in contravention with the WTO
3. Insurance Companies - The “defacto” insurance company standard is to have full compliance with Factory Mutual, (FM) internal approval standard, FM 4880. Only applicable to type of installation i.e. “fit for purpose”.
4. Current test regime extremely expensive

PROPOSED NEW CLASSIFICATION SYSTEM

Euroclass	Contribution to fire	Types of products
A1	Non Combustible	Stone wool, Glass wool, Foam Glass
A2	Limited Combustible No Flashover	High density & high binder or faced stone and Glass wool
B	No Flashover	Some Phenolic foams
C	Flashover after 10 minutes	Some PIR foams
D	Flashover before 10 minutes	Most PIR foams
E	Flashover before 2 minutes	Flame Retarded EPS, PUR
F	No Performance Determined	Non Flame Retarded EPS, some Phenolic foams

In addition: s – smoke & d - droplets

EXAMPLE: NEW CLASSIFICATION

The main part of the classification is its letter – A1, A2, B, C, D, E and F.

A1 is the highest level of performance, with F the lowest performance level.

There is a smoke classification of s1, s2 or s3.

s1 is the highest level of performance and s3 is the lowest performance level.

A2 – s1, d0

There is a classification of flaming droplets of d0, d1 or d2.

d0 is the highest level of performance and d2 is the lowest performance level.

CLOSING

Some 30 years ago 177 people were killed and 235 were injured in a fire at Kinross gold mine.

A3	Places of instruction	2
Current	**B / B1 / 2 / H**	
Future	**D – s3, d2**	

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LAW

OHSA & CPA

CONSUMER PROTECTION ACT (CPA)

The CPA legislation took effect in South Africa on **1 April 2011.**

Strict liability is introduced in section 61 of the act. It states that any producer, distributor or supplier of a good is strictly liable for any damage caused wholly or partly as a consequence of a product failure, defect or hazard in a good or as a result of inadequate instructions or warnings provided to the consumer pertaining to any hazard. So they could be liable for a person's death or injury, or a loss or damage to property, or an economic loss.

OCCUPATIONAL HEALTH & SAFETY ACT

SECTION 10: GENERAL DUTIES OF MANUFACTURERS AND OTHERS REGARDING ARTICLES AND SUBSTANCES FOR USE AT WORK

- Any person who designs, manufactures, imports, sells or supplies any article –
- Any person who erects or installs any article at work or in any premises -

➢ ensure article is safe and without risk to health & safety

QUESTION?

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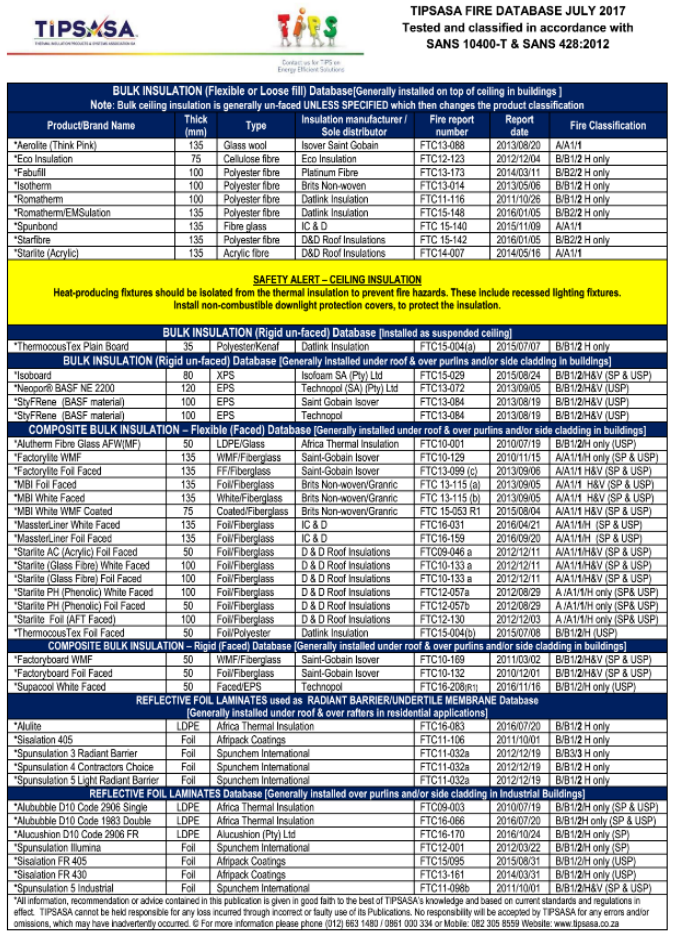
HOW CAN WE ASSIST YOU

TIPSASA FIRE DATABASE

Published on front page of website www.tipsasa.co.za



TIPSASA FIRE DATABASE JULY 2017
Tested and classified in accordance with
SANS 10400-T & SANS 428:2012

Product/Brand Name	Thick (mm)	Type	Insulation manufacturer / Sole distributor	Fire report number	Report date	Fire Classification
BULK INSULATION (Flexible or Loose fill) Database[Generally installed on top of ceiling in buildings]						
Note: Bulk ceiling insulation is generally un-faced UNLESS SPECIFIED which then changes the product classification						
*Aerolite (Think Pink)	135	Glass wool	Isover Saint Gobain	FTC13-088	2013/08/20	A/A1/1
*Eco Insulation	75	Cellulose fibre	Eco Insulation	FTC12-123	2012/12/04	B/B1/2 H only
*Fabufill	100	Polyester fibre	Platinum Fibre	FTC13-173	2014/03/11	B/B2/2 H only
*Isotherm	100	Polyester fibre	Brits Non-woven	FTC13-014	2013/05/06	B/B1/2 H only
*Romatherm	100	Polyester fibre	Datlink Insulation	FTC11-116	2011/10/26	B/B1/2 H only
*Romatherm/EMSulation	135	Polyester fibre	Datlink Insulation	FTC15-148	2016/01/05	B/B2/2 H only
*Spunbond	135	Fibre glass	IC & D	FTC 15-140	2015/11/09	A/A1/1
*Starfibre	135	Polyester fibre	D&D Roof Insulations	FTC 15-142	2016/01/05	B/B2/2 H only
*Starlite (Acrylic)	135	Acrylic fibre	D&D Roof Insulations	FTC14-007	2014/05/16	A/A1/1
SAFETY ALERT – CEILING INSULATION **Heat-producing fixtures should be isolated from the thermal insulation to prevent fire hazards. These include recessed lighting fixtures. Install non-combustible downlight protection covers, to protect the insulation.**						
BULK INSULATION (Rigid un-faced) Database [Installed as suspended ceiling]						
*ThermocousTex Plain Board	35	Polyester/Kenaf	Datlink Insulation	FTC15-004(a)	2015/07/07	B/B1/2 H only
BULK INSULATION (Rigid un-faced) Database [Generally installed under roof & over purlins and/or side cladding in buildings]						
*Isoboard	80	XPS	Isofoam SA (Pty) Ltd	FTC15-029	2015/08/24	B/B1/2/H&V (SP & USP)
*Neopor® BASF NE 2200	120	EPS	Technopol (SA) (Pty) Ltd	FTC13-072	2013/09/05	B/B1/2/H&V (USP)
*StyFRene (BASF material)	100	EPS	Saint Gobain Isover	FTC13-084	2013/08/19	B/B1/2/H&V (USP)
*StyFRene (BASF material)	100	EPS	Technopol	FTC13-084	2013/08/19	B/B1/2/H&V (USP)
COMPOSITE BULK INSULATION – Flexible (Faced) Database [Generally installed under roof & over purlins and/or side cladding in buildings]						
*Alutherm Fibre Glass AFW(MF)	50	LDPE/Glass	Africa Thermal Insulation	FTC10-001	2010/07/19	B/B1/2/H only (USP)
*Factorylite WMF	135	WMF/Fiberglass	Saint-Gobain Isover	FTC10-129	2010/11/15	A/A1/1/H only (SP & USP)
*Factorylite Foil Faced	135	FF/Fiberglass	Saint-Gobain Isover	FTC13-099 (c)	2013/09/06	A/A1/1 H&V (SP & USP)
*MBI Foil Faced	135	Foil/Fiberglass	Brits Non-woven/Granric	FTC 13-115 (a)	2013/09/05	A/A1/1 H&V (SP & USP)
*MBI White Faced	135	White/Fiberglass	Brits Non-woven/Granric	FTC 13-115 (b)	2013/09/05	A/A1/1 H&V (SP & USP)
*MBI White WMF Coated	75	Coated/Fiberglass	Brits Non-woven/Granric	FTC 15-053 R1	2015/08/04	A/A1/1 H&V (SP & USP)
*MasterLiner White Faced	135	Foil/Fiberglass	IC & D	FTC16-031	2016/04/21	A/A1/1/H (SP & USP)
*MasterLiner Foil Faced	135	Foil/Fiberglass	IC & D	FTC16-159	2016/09/20	A/A1/1/H (SP & USP)
*Starlite AC (Acrylic) Foil Faced	50	Foil/Fiberglass	D & D Roof Insulations	FTC09-046 a	2012/12/11	A/A1/1/H&V (SP & USP)
*Starlite (Glass Fibre) White Faced	100	Foil/Fiberglass	D & D Roof Insulations	FTC10-133 a	2012/12/11	A/A1/1/H&V (SP & USP)
*Starlite (Glass Fibre) Foil Faced	100	Foil/Fiberglass	D & D Roof Insulations	FTC10-133 a	2012/12/11	A/A1/1/H&V (SP & USP)
*Starlite PH (Phenolic) White Faced	100	Foil/Fiberglass	D & D Roof Insulations	FTC12-057a	2012/08/29	A /A1/1/H only (SP& USP)
*Starlite PH (Phenolic) Foil Faced	50	Foil/Fiberglass	D & D Roof Insulations	FTC12-057b	2012/08/29	A /A1/1/H only (SP& USP)
*Starlite Foil (AFT Faced)	100	Foil/Fiberglass	D & D Roof Insulations	FTC12-130	2012/12/03	A /A1/1/H only (SP& USP)
*ThermocousTex Foil Faced	50	Foil/Polyester	Datlink Insulation	FTC15-004(b)	2015/07/08	B/B1/2/H (USP)
COMPOSITE BULK INSULATION – Rigid (Faced) Database [Generally installed under roof & over purlins and/or side cladding in buildings]						
*Factoryboard WMF	50	WMF/Fiberglass	Saint-Gobain Isover	FTC10-169	2011/03/02	B/B1/2/H&V (SP & USP)
*Factoryboard Foil Faced	50	Foil/Fiberglass	Saint-Gobain Isover	FTC10-132	2010/12/01	B/B1/2/H&V (SP & USP)
*Supacool White Faced	50	Faced/EPS	Technopol	FTC16-209(R1)	2016/11/16	B/B1/2/H only (USP)
REFLECTIVE FOIL LAMINATES used as RADIANT BARRIER/UNDERTILE MEMBRANE Database [Generally installed under roof & over rafters in residential applications]						
*Alulite	LDPE	Africa Thermal Insulation		FTC16-083	2016/07/20	B/B1/2 H only
*Sisalation 405	Foil	Afripack Coatings		FTC11-106	2011/10/01	B/B1/2 H only
*Spunsulation 3 Radiant Barrier	Foil	Spunchem International		FTC11-032a	2012/12/19	B/B3/3 H only
*Spunsulation 4 Contractors Choice	Foil	Spunchem International		FTC11-032a	2012/12/19	B/B1/2 H only
*Spunsulation 5 Light Radiant Barrier	Foil	Spunchem International		FTC11-032a	2012/12/19	B/B1/2 H only
REFLECTIVE FOIL LAMINATES Database [Generally installed over purlins and/or side cladding in Industrial Buildings]						
*Alububble D10 Code 2906 Single	LDPE	Africa Thermal Insulation		FTC09-003	2010/07/19	B/B1/2/H only (SP & USP)
*Alububble D10 Code 1983 Double	LDPE	Africa Thermal Insulation		FTC16-066	2016/07/20	B/B1/2/H only (SP & USP)
*Alucushion D10 Code 2906 FR	LDPE	Alucushion (Pty) Ltd		FTC16-170	2016/10/24	B/B1/2/H only (SP)
*Spunsulation Illumina	Foil	Spunchem International		FTC12-001	2012/03/22	B/B1/2/H only (SP)
*Sisalation FR 405	Foil	Afripack Coatings		FTC15/095	2015/08/31	B/B1/2/H only (USP)
*Sisalation FR 430	Foil	Afripack Coatings		FTC13-161	2014/03/31	B/B1/2/H only (USP)
*Spunsulation 5 Industrial	Foil	Spunchem International		FTC11-098b	2011/10/01	B/B1/2/H&V (SP & USP)

*All information, recommendation or advice contained in this publication is given in good faith to the best of TIPSASA's knowledge and based on current standards and regulations in effect. TIPSASA cannot be held responsible for any loss incurred through incorrect or faulty use of its Publications. No responsibility will be accepted by TIPSASA for any errors and/or omissions, which may have inadvertently occurred. © For more information please phone (012) 663 1480 / 0861 000 334 or Mobile: 082 305 8559 Website: www.tipsasa.co.za

FIRE SAFETY CLASSIFICATION GUIDE
APPLICABLE TO THERMAL INSULATION MATERIALS

Fire performance classification of thermal insulated building envelope systems in accordance with SANS 428:2012

The fire performance classification of products is required in terms of SANS 10400 Part T Fire Protection. Refer section 4.5 subsection 4.5.3, section 4.12 subsection 4.12.1.5, and section 4.13 subsection 4.13.1; which states, quote "When any insulation, roof lining or waterproof membrane not used as a ceiling and used under a roof covering as part of a roof assembly, is tested in accordance with SANS 10177-5 and found to be combustible, such material shall be acceptable should it be classified, marked and installed in accordance with the requirements of SANS 428" unquote. The classified products shall bear the manufacturer's name; date manufactured, batch number, trade name and SANS 428 Classification. This classification shall be fixed permanently to the original product and container/packaging and include the end-use conditions of approval, i.e. Fire Performance Classification.

In accordance with the TIPSASA Fire Testing Protocol the fire classification remains valid for a period of seven calendar years from date of issue, unless cancelled or revoked. These classifications apply only to the specimens tested. Should the relevant South African National Standards be amended during the validity of this classification period, the product is to be re-tested in accordance with the amended SANS Standards.

1. Classification Type Combustibility	Class	Description of materials behaviour and occupancies
	A	Non-combustible
	B	Combustible
Surface Fire Properties		
2. Classification Type Surface Fire Properties	A1 or B1	No flame spread
	A2 or B2	Low flame spread (no flaming droplets or burning brand)
	A3 or B3	Low flame spread (with flaming droplets or burning brand)
	A4 or B4	Average flame spread (no flaming droplets or burning brand)
	A5 or B5	Average flame spread (with flaming droplets or burning brand)
	A6 or B6	Rapid fire spread

3. Use of products in accordance with Occupancy Classifications see Regulation A20

The symbols below shall be used to indicate the designated use of materials in buildings.

Class of Occupancy	Type of Occupancy	Use	Class of Occupancy	Type of Occupancy	Use
A1	Entertainment & Public Assembly	1	E3	Other institutional (residential)	1
A2	Theatrical & indoor sport	2	E4	Health care	2
A3	Places of instruction	2	F1	Large shop	3
A4	Worship	2	F2	Small shop	3
A5	Outdoor sport	4	F3	Wholesalers' store	3
B1	High risk commercial	2	G1	Offices	3
B2	Moderate risk commercial	2	H1	Hotel	1
B3	Low risk commercial	3	H2	Dormitory	1
C1	Exhibition hall	2	H3	Domestic residence	3
C2	Museum	2	H4	Dwelling house	3
D1	High risk industrial	2	H5	Hospitality	3
D2	Moderate risk industrial	2	J1	High risk storage	2
D3	Low risk industrial	3	J2	Moderate risk storage	2
D4	Plant room	1	J3	Low risk storage	3
E1	Place of detention	1	J4	Parking garage	4
E2	Hospital	1			

Notes: 1) The number 1 under "use" indicates that only non-combustible products are to be used in that particular building occupancy classification.
2) The classification as listed above (numbers 2, 3 & 4) implies that products with equal or better classification are also suitable for usage. Classification listed is for both sprinklered and un-sprinklered buildings, with the proviso that the product has been successfully evaluated as suitable for use with sprinklers.

4. Permissible Application		5. Tested with sprinklers (SP) or without sprinklers (USP)	
Horizontal (under-roof) only	H	Not protected by a sprinkler system.	USP
Vertical (side cladding) only	V	Protected by a sprinkler system.	SP
Horizontal and vertical application	H & V		

Example of Fire Performance Classification

1. Combustibility	2. Surface Fire Properties	3. Use per Occupancy	4. Application	5. Sprinkler (SP) or un-sprinklered (USP)
A = Non-combustible	A1 = No flame spread	1 = No limitations	H & V = Horizontal & Vertical	
B = Combustible	B1 = No flame spread	2/3/4 = Use list for Building Occupancy Classes	H / V / or H & V = Horizontal & Vertical	Tested SP or USP State SP or USP

TIPSASA CERTIFICATES

TIPSASA
THERMAL INSULATION PRODUCTS & SYSTEMS ASSOCIATION SA

Certificate of Compliance

SANS 428

The Thermal Insulation Products & Systems Association SA
Certifies that
AFRIPACK COATINGS
Obtained the following classification
B/B1/2/H&V
For
SISALATION FR430
Under-roof and side cladding application
Classified in accordance with SANS 428:2012
Fire Performance Classification of Thermal
Insulated Building Envelope Systems

Tested at: **Firelab**
Report Number: **FTC 10/174a**
Date: **2011/03/04**
Subject to Terms & Conditions overleaf

FIRE CERTIFICATE SANS 428

D Schnetler
TIPSASA Chairman

G Richardson
TIPSASA Vice-Chairman

TIPSASA
THERMAL INSULATION PRODUCTS & SYSTEMS ASSOCIATION SA
A division of the SOUTHERN AFRICAN ASSOCIATION FOR ENERGY EFFICIENCY (SAEE)

PRODUCT COMPLIANCE CERTIFICATE

Product Trade Name	**: Insopack**
Application	**: Generally over rafters in Residential/Commercial Buildings**
Manufacturer/Importer Sole Distributor	**: XYZ (Pty) Ltd**
Address	**: P.O. Box**
Membership #	**: DES001**

This Certificate is issued in terms of the National Building Regulations and Building Standards Act 1977 and granted on the basis of full compliance with the testing protocol requirements of the Thermal Insulation Products & Systems Association SA (TIPSASA) Technical Code.

In terms of the application of the National Building Regulations Part A: General principles and requirements, the product has been tested and complies with the following standard:

SANS 1381-4:2009 Materials for thermal insulation of buildings Part 4 Reflective Foil laminates.

Testing Authority: SABS Commercial SOC LTD

Test Report No #: …….. **Date Issued:**

Additional Certification available:

SABS Certification Mark: Yes ■ No ☐ Permit No: …… **Expiry Date:**

ISO 9001:2008 : Yes ☐ No ☐ Reg. No: …… **Expiry Date:**

Agrément SA Certificate No #: N/A Date Issued:

In terms of the application of the National Building Regulations Part T: Fire Protection, the product has been tested and complies with the following standard: SANS 428 Fire performance classification of thermal insulated building envelope systems.

Testing Authority: Firelab **Test Report No.** **Date Issued:**

SANS 428 Fire Classification: ……

Des Schnetler
CHAIRPERSON

Grant Richardson
VICE-CHAIRMAN

Date Issued:
Terms & Conditions apply

TECHNICAL CODE COMPLIANCE TIPSASA

TIPSASA™

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THANK YOU