



<b>TITLE</b>	:	Report on the fire propagation properties of Fabufill polyester fibre installed in a 100 mm thick layer in an above-ceiling insulation application, as determined by the SANS 10177-10 test protocol
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## 1 Introduction

The purpose of this investigation was to assess the fire propagation properties of Fabufill polyester fibre above-ceiling insulation material. The horizontal flame spread properties of a 100 mm thick layer of material as installed on top of a gypsum ceiling were determined in the inverted channel facility in accordance with the SANS 10177-10 test protocol.

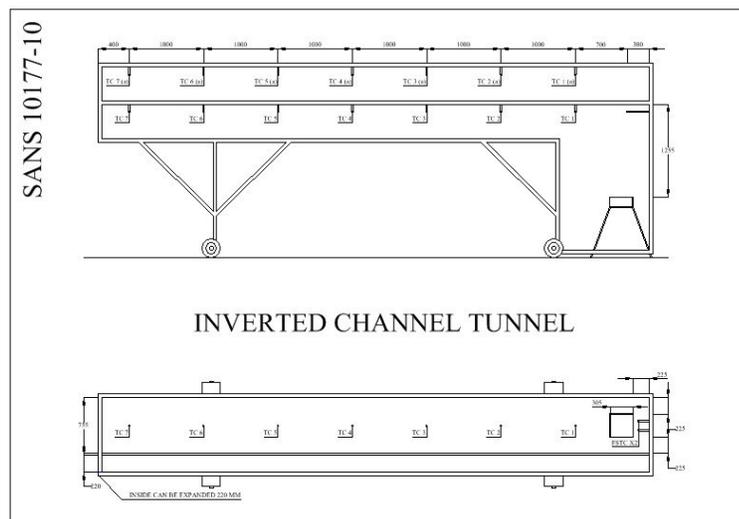
## 2 Description of material

The material evaluated during this investigation was a white polyester fibre product used as an insulation medium on top of existing ceiling systems. The material had a mass per unit area of approximately 70 g/m<sup>2</sup>.

## 3 Test methods

### 3.1 SANS 10177-10

The test specimen for this evaluation was prepared by laying the fibrous material onto a 15 mm thick gypsum board ceiling with 35 mm timber branding spaced at 600 mm being provided. The ceiling with insulation was then installed in the inverted channel tunnel facility (Figure 3.1.1) with a 750 mm gap having been left above the fire source for heat to be channeled above the ceiling.



**Figure 3.1.1: Diagram of SANS 10177-10 inverted channel testing facility**

Temperatures were measured during the investigation with thermocouples located within the insulation layer at various positions along the length of the installation. The test installation was exposed to the thermal output of three litres of n-hexane, which was placed in the fire source tray. Temperatures were continuously recorded and observations were noted of the behaviour of the material. The installation prior to the ignition of the fire source is shown in Figure 3.1.2.



*Figure 3.1.2: Test installation above ceiling prior to ignition of fire source*

## 4 Test results

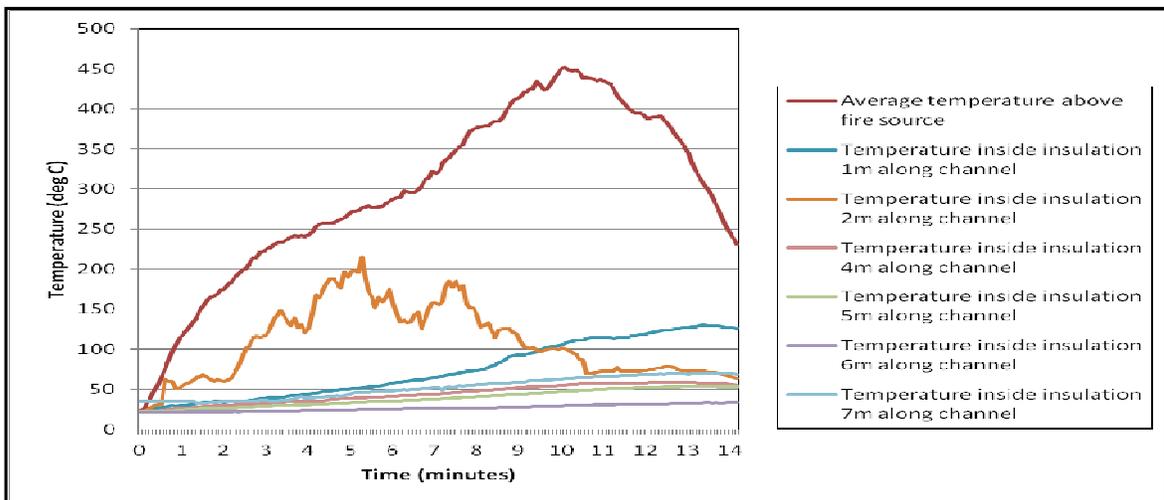
### 4.1 SANS 10177-10

At no stage during this evaluation was any ignition of the fibrous insulation observed. Figure 4.1.1 shows the installation subsequent to the completion of the test and its removal from the test facility.



**Figure 4.1.1: Test specimen subsequent to completion of the test**

The temperatures recorded in the furnace are depicted graphically in Figure 4.1.2.



**Figure 4.1.2: Temperatures recorded during the test on 100 mm thickness Fabufill ceiling insulation material**

## 5 Discussion of results

While the Fabufill polyester fibre above-ceiling insulation material would be classified as combustible in terms of the SANS 10177-5 test, the results from the SANS 10177-10 test confirm that the material does not have a propensity to support flame spread.

## 6 Conclusions

The Fabufill polyester fibre above-ceiling insulation material is suitable for use as a 100 mm thickness overlay insulation system on top of flat gypsum or other inorganic ceiling systems from a fire safety point of view. When installed in thicknesses of less than 100 mm, this report would also be relevant. The overall classification of **B/B1/2** is applicable to this product in terms of the SANS 428 specifications.

It should be noted that where this material is installed in applications where recess lights is present in the ceiling, that separation between the light and the insulation needs to be created.