

REACTION TO FIRE CLASSIFICATION REPORT **No. RA17-0093** **ACCORDING TO THE EUROPEAN STANDARD** **NF EN 13501-1+A1:2013**

Provided the Ordinance from the Ministry of the interior, November 21, 2002 modified
Pilot laboratory approved by the Ministry of the Interior (Ordinance of February 5, 1959, modified)
Seule la version française fait foi
Only the French version is legally acceptable

Valid 5 years from December 13th, 2016

| | |
|-----------------------------|--|
| Sponsor: | SIG Air Handling International BV Eerste Tochtweg 11 NL-2913 LN NIEUWERKERK AAN DE IJSSEL THE NETHERLANDS |
| Commercial brand(s): | SONOFLEX 25 TRD |
| Manufacturer: | DUTCH ENVIRONMENT CORPORATION® BV Ir. Hanlostraat 18-22 NL-7500AA ENSCHEDE THE NETHERLANDS |
| Brief description: | Flexible air duct with insulating material (see detailed description in paragraph 2) |
| Date of issue: | May 12th, 2017 |

This classification report certifies only the characteristics of the object submitted for testing but does not prejudge the characteristics of similar products. So it does not constitute a product certification in the sense of Articles L 115-27 to L 115-33 and R 115-1 to R 115-3 of the Consumer Code.

If this report is being issued by e-mail and/or on an electronic medium, only the hard copy of the report signed by CSTB shall prevail in the event of a dispute.

The reproduction of this classification report is only authorised in its integral form.
It comprises 7 pages.

1. Introduction

This classification report defines the classification assigned to the above-mentioned product(s) in accordance with the procedures given in the NF EN 13501-1+A1:2013 standard.

2. Product description

Flexible air duct tested mechanically fixed on A2-s1,d0 class calcium silicate substrate.

Air duct with insulating material constituted as follows (from the inside to the outside):

- An inner duct referenced "ALUFLEX L", supported by a steel wire spiral, consisting of 12 µm thick polyester films glued (fire-retarded glue) between 7 µm thick aluminium thin foils. This inner duct is micro perforated.
- An interior barrier made of polyethylene with a nominal thickness of 40 µm.
- An A1 class yellow glass wool insulating material referenced "FLEX N016" with a nominal installed thickness of 25 mm and a nominal density of 16 kg/m³:
- An outer jacket referenced "JACKET J" made of 12 µm thick polyester films and a 7 µm thick visible aluminum foil glued.

Tested nominal diameters of the inner duct: 102 and 160 mm.

Nominal weight per unit area of the inner duct (without spiral): 100.5 g/m².

Range of nominal weights per unit area of the outer jacket: from 76.7 to 79.8 g/m².

3. Tests reports and tests results in support of this classification

3.1 Tests reports

| Name of laboratory | Name of sponsor | Test identification | Extension test report No. | Test method |
|--------------------|--|---------------------|---------------------------|---|
| CSTB | SIG Air Handling International BV Eerste Tochtweg 11 NL-2913 LN NIEUWERKERK AAN DE IJSSEL THE NETHERLANDS | ES541160625 | RA17-0093 | NF EN ISO 11925 2:2013 NF EN 13823+A1:2015 |

3.2 Test results

| Test method | Product | Number of tests | Parameters | Results |
|---|---|-----------------|-----------------------------|----------------------------|
| | | | | Compliance parameters |
| NF EN ISO 11925-2 30s surface exposure | SONOFLEX 25 TRD Internal diameter 102 mm (Micro perforated internal duct) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s surface exposure | SONOFLEX 25 TRD Internal diameter 160 mm (Micro perforated internal duct) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s surface exposure | SONOFLEX 25 TRD Internal diameter 102 mm (Outer jacket) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s surface exposure | SONOFLEX 25 TRD Internal diameter 160 mm (Outer jacket) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |

3.2 Test results (continuation)

| Test method | Product | Number of tests | Parameters | Results |
|---|---|-----------------|-----------------------------|----------------------------|
| | | | | Compliance parameters |
| NF EN ISO 11925-2 30s edge exposure | SONOFLEX 25 TRD Internal diameter 102 mm (Micro perforated internal duct) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure | SONOFLEX 25 TRD Internal diameter 160 mm (Micro perforated internal duct) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure | SONOFLEX 25 TRD Internal diameter 102 mm (Outer jacket) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure | SONOFLEX 25 TRD Internal diameter 160 mm (Outer jacket) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 102 mm (Internal barrier) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 102 mm (Yellow glass wool insulating material) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 102 mm (Outer jacket) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 102 mm (Micro perforated internal duct) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |

3.2 Test results (continuation)

| Test method | Product | Number of tests | Parameters | Results |
|---|---|-----------------|-----------------------------|----------------------------|
| | | | | Compliance parameters |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 160 mm (Internal barrier) | 6 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 160 mm (Yellow glass wool insulating material) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 160 mm (Outer jacket) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |
| NF EN ISO 11925-2 30s edge exposure specimen turned at 90° | SONOFLEX 25 TRD Internal diameter 160 mm (Micro perforated internal duct) | 2 | Fs > 150 mm Filter paper | Not reached Not ignited |

3.2 Test results (continuation)

| Test method | Product | Number of tests | Parameters | Results | |
|----------------|--|-----------------|---|--------------------------------------|-----------------------|
| | | | | Continuous parameters Mean values | Compliance parameters |
| NF EN 13823+A1 | SONOFLEX 25 TRD Internal diameter 160 mm | 3 | FIGRA _{0.2MJ} (W/s) | 0.0 | - |
| | | | FIGRA _{0.4MJ} (W/s) | 0.0 | - |
| | | | LFS | - | Not reached |
| | | | THR _{600s} (MJ) | 0.6 | - |
| | | | SMOGRA(m ² /s ²) | 0.0 | - |
| | | | TSP _{600s} (m ²) | 35.6 | - |
| | | | Flaming droplets or debris | - | None |

(-) means: not applicable

3.3 Additional test

| Test method | Product | Number of tests | Parameters | Results | |
|----------------|--|-----------------|---|--------------------------------------|-----------------------|
| | | | | Continuous parameters Mean values | Compliance parameters |
| NF EN 13823+A1 | SONOFLEX 25 TRD Internal diameter 102 mm | 1 | FIGRA _{0.2MJ} (W/s) | 0.0 | - |
| | | | FIGRA _{0.4MJ} (W/s) | 0.0 | - |
| | | | LFS | - | Not reached |
| | | | THR _{600s} (MJ) | 0.9 | - |
| | | | SMOGRA(m ² /s ²) | 0.0 | - |
| | | | TSP _{600s} (m ²) | 28.8 | - |
| | | | Flaming droplets or debris | - | None |

(-) means: not applicable

4. Classification and direct field of application

4.1 Reference of the classification

This classification has been carried out in accordance with clauses 11.6, 11.9.2 and 11.10.1 of the NF EN 13501-1+A1:2013 standard.

4.2 Classification

| Fire behaviour | | Smoke production | | Flaming droplets or debris |
|----------------|---|------------------|---|----------------------------|
| B | - | s1 | , | d0 |

Classification: B - s1, d0

4.3 Field of application

Le classement est valable pour les paramètres produits suivants :

- The products described in paragraph 2.
- An inner duct referenced "ALUFLEX L".
- A nominal diameter of the inner duct ≥ 102 mm.
- A nominal weight per unit area of the inner duct (without spiral) of 100.5 g/m².
- A range of nominal weights per unit area of the outer jacket referenced "JACKET J" from 76.7 to 79.8 g/m²

This classification is valid for the following end use conditions:

- Without substrate or with any A1 or A2-s1,d0 class substrate with a density ≥ 652 kg/m³ and with a thickness ≥ 9 mm.
- With or without air gap.

5. Limitation

The present document does not represent type approval or certification of the product.

Champs-sur-Marne, May 12th, 2017

The Head of Reaction to Fire activity

Martial BONHOMME

.....END OF THE CLASSIFICATION REPORT