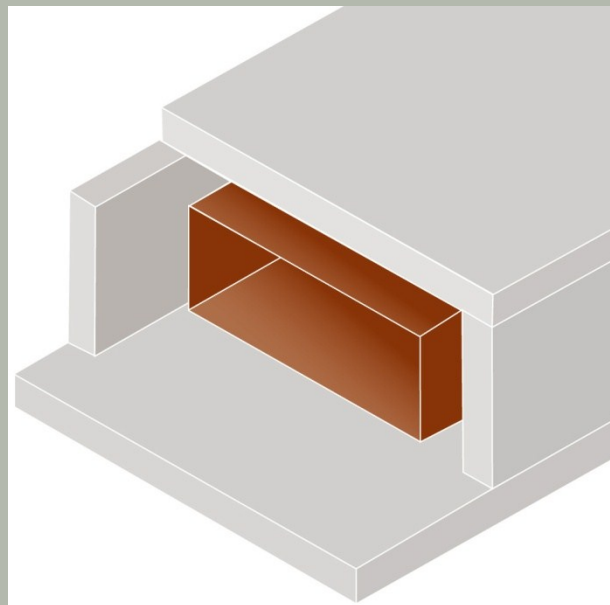


FireFree[®] ScandiBoard

Air Ducts



MPA NRW
Materialprüfungsamt Nordrhein-Westfalen
PRÜFEN · ÜBERWACHEN · ZERTIFIZIEREN

MPA NRW - Adressliste, Prüfamt, Tübingen, L 33043, 33043
 Scandl Supply als
 Emergency 2
 4462 Vissersberg
 Dattmann

Your reference: 21000972
 Date of your mail: 02/04/2010 09:24
 Our reference no.: 0204/10-07-33
 Telephone: 0594-459400@mpa.nrw.de
 E-mail: 0594-459400@mpa.nrw.de
 Date: 28.11.2010

Fire tests on air ducts according to DIN EN 1366-1

Dear Sir or Madam:

In the time period from July 2010 to September 2010 five fire tests were carried out at MPA NRW on air ducts made of calcium silicate boards of the type "Firefree ScanSilboard" with internal insulation.

As the test results show, the temperature requirements at the test joint of the horizontal air duct B in the case of fire do not exceed the values specified in the test plan. The temperature rise at the test joint is in all cases below 140 K. The test results also show that the fire resistance of the air duct is not affected by the fire. The fire resistance of the air duct is not affected by the fire. The fire resistance of the air duct is not affected by the fire.

| No. | Test type | Fire test period | Construction | Results after 90 minutes fire period | Approved classification according to DIN EN 1366-1 |
|-----|--------------------------|------------------|---|---|--|
| 1 | Air duct (see test plan) | 07.07.2010 | Constructional difference to fire test no. 1: internal insulation | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |
| 2 | Air duct (see test plan) | 07.07.2010 | Constructional difference to fire test no. 1: internal insulation | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |
| 3 | Air duct (see test plan) | 07.07.2010 | Constructional difference to fire test no. 1: internal insulation | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |
| 4 | Air duct (see test plan) | 07.07.2010 | Constructional difference to fire test no. 1: internal insulation | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |

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Materialprüfungsamt Nordrhein-Westfalen
PRÜFEN · ÜBERWACHEN · ZERTIFIZIEREN

Letter of 28 November 2010

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| No. | Test type | Fire test period | Construction | Results after 90 minutes fire period | Approved classification according to DIN EN 1366-1 |
|-----|--------------------------|------------------|---|---|--|
| 2 | Air duct (see test plan) | 07.07.2010 | Constructional difference to fire test no. 1: internal insulation | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |
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In summary, there are no concerns that the horizontal air duct B in the modified variant will meet the requirements EI 30 - 40 - S according to DIN EN 1366-1.

The air duct has to be built according to the following annexes 1 to 7.

This letter replaces no classification report and no verification of the building authorities.

Yours faithfully
 On behalf
 Heidi Busch-Steinert
 Deputy head of the testing body

MPA NRW

MPA NRW
Materialprüfungsamt Nordrhein-Westfalen
PRÜFEN · ÜBERWACHEN · ZERTIFIZIEREN

MPA NRW - Adressliste, Prüfamt, Tübingen, L 33043, 33043
 Scandl Supply als
 Emergency 2
 4462 Vissersberg
 Dattmann

Mr. Zechen
 Ihre Nachricht vom: 21.10.2010
 Telefon: (02943) 897-24
 Telefax: (02943) 897-33
 E-Mail: 0594-459400@mpa.nrw.de
 Datum: 28.11.2010

Brandversuche an Lüftungsrohren nach DIN EN 1366-1

Sehr geehrte Damen und Herren,

Im MPA NRW wurden in der Zeit vom Juli 2010 bis September 2010 insgesamt 4 Brandversuche an Lüftungsrohren aus Kalzium-Silikat-Platten des Typs "Firefree ScanSilboard" mit Innendämmung durchgeführt.

Wie die Versuchsergebnisse zeigen, wurden bei der waagrecht durchgeführten Brandversuche an der Stoßstelle nicht erfüllt. Es wurden Temperaturerhöhungen von 240 K gemessen. Daraus wird geschlossen, dass die Lüftungsleitung nicht genügt, die Anforderungen an die Stoßstelle zu erfüllen. In dem darauf folgenden Brandversuch (siehe HJ. Nr. 2 bis 4) zeigte sich, dass diese Anforderung nur mit einem Temperaturerhöhung von 30 K gemessen.

| EM. Nr. | Art. / Bezeichnung | Ergebnis nach 90 Minuten Versuchszeit | erzielte Klassifizierung (DIN EN 1366-1) |
|---------|-------------------------------|---|--|
| 1 | Lüftungsrohr (siehe Testplan) | max. T: 240 K max. T _{int} : 200 K max. T _{ext} : 200 K max. T _{int} - T _{ext} : 200 K max. T _{int} - T _{ext} : 200 K max. T _{int} - T _{ext} : 200 K | EI 30 |
| 2 | Lüftungsrohr (siehe Testplan) | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |
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| 4 | Lüftungsrohr (siehe Testplan) | max. T: 140 K max. T _{int} : 120 K max. T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K max. T _{int} - T _{ext} : 120 K | EI 30 |

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Materialprüfungsamt Nordrhein-Westfalen
PRÜFEN · ÜBERWACHEN · ZERTIFIZIEREN

Schreiben vom 28.11.2010

Seite 2 von 2

| No. | Test type | Fire test period | Construction | Results after 90 minutes fire period | Approved classification according to DIN EN 1366-1 |
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Es besteht über entsprechende keine Bedenken, dass die horizontale Lüftungsleitung B in der modifizierten Ausführung die Anforderungen EI 30 - 40 - S nach DIN EN 1366-1 erfüllen wird.

Die Lüftungsleitung muss entsprechend den nachfolgenden Angaben gebaut werden.

Schreiben ersetzt keine Klassifizierungsberichte und keine bauaufsichtlichen Nachweise.

Ihre Danko
 Heidi Busch-Steinert
 Deputy head of the testing body

MPA NRW

FireFree[®] ScandiBoard

Light weight Passive Fire Protection of Air Ducts

Tested and classified according to EN 1366-1:1999 and DIN 4102-6

Allgemeines bauaufsichtliches Prüfzeugnis, AbP P-MPA-E-12-004

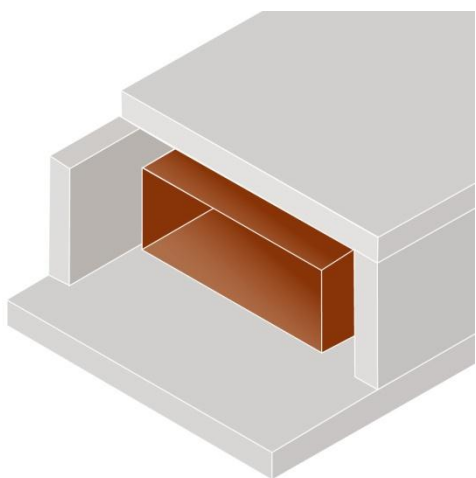
Material Class A1

New possibilities in easy fire resistance

FireFree[®] ScandiBoard is the fastest product to install in the market. The product is approved according to the new European standards. The board material is FireFree[®] ScandiBoard and is made of Calcium Silicate.

Fast working procedure

The solution requires only one board, which ensures a fast working procedure and smooth installation. Furthermore is FireFree[®] ScandiBoard easy to install.



Facts

- * Easy and quick assembly
- * Lightweight solution
- * High insulating factor
- * High product stability
- * Environmentally correct material – quartz free
- * No growing conditions for mold and fungus

Benefits

- * Strong and durable material
- * Easy to handle – and to install
- * Excellent screw holding capacity
- * Very low temperature rise during a fire
- * Much lower weight of the final construction

Types, dimensions and weight

| EU Standard | Type | Weight | Thick-ness | Width mm | Length mm | Length mm |
|----------------------|-----------------------------------|------------------------|------------|----------|-----------|-----------|
| 120 min (A) | FireFree [®] ScandiBoard | 13,5 kg/m ² | 55 mm | 1.220 | 1.000 | 2.040 |
| 90 min (A+B) | FireFree [®] ScandiBoard | 13,5 kg/m ² | 55 mm | 1.220 | 1.000 | 2.040 |
| 60 min ¹⁾ | FireFree [®] ScandiBoard | xx kg/m ² | yy mm | 1.220 | 1.000 | 2.040 |
| 30 min ¹⁾ | FireFree [®] ScandiBoard | xx kg/m ² | yy mm | 1.220 | 1.000 | 2.040 |

Rev. 2012-04-19

To be tested later ¹⁾



Scandi Supply a/s • Energivej 2 • DK-5492 Vissenbjerg • Tlf. +45 7624 4800 • Fax +45 7624 4801 • mail@scandisupply.dk

In case of fire, buildings need protection, valuables need shielding and human lives must be saved. The cornerstone in this respect is passive fire protection of building constructions, and Scandi Supply is a leading supplier of complete solutions to this end.

Safety has top priority for Scandi Supply, and we take pride in choosing the right solution for every task. We never take a task lightly, and we are committed to making it easy for our customers and business partners to create valuable and secure results. Close cooperation is what leads to long lasting relations ...

With over 20 years experience our advice and guidance are thoroughly tested - just like our products. We constantly work to develop innovative solutions and obtain new approvals.

Please contact Scandi Supply to discuss your projects within the field of passive fire protection.