

## 測定結果:

ISO 717-1に従い、100 ~ 3150 Hz・周波数範囲での遮音性が計測された。結果として、

$$D_{n,w} = 30 \text{ dB}$$

発信室/受信室の室温: 23°C  
湿度: 69%

測定日: 8月29日, 2002年

添付資料 2 (A 51325)に同封したフォームに基づく試験対象の概略報告

小型化した窓枠試験台に設置した試験体 CP670ヒルティファイヤーストップ  
セーフティボードの遮音性指標の評価は下記の通り。

$$D_{n,w} = 30 \text{ dB}$$

2002年10月30日

**Institut für Akustik und Bauphysik**  
(Institute for Acoustics and Building Physics)  
Amtlich anerkannte Eignungs- und Güteprüfstelle  
(Officially accredited Suitability and Quality Testing Laboratory)

Prof. Dr. Ernst-Jo. Völker  
Institute Director

Dipl.-Ing. Wolfgang Teuber  
Measurement & Technical Manager

Enclosure 1 (Cross-sectional view A 51324)  
Enclosure 2 (Measurement and evaluation sheet A 51325)



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October 30<sup>th</sup>, 2002

## Test Certificate

**Subject:** **Fire Proof System CP 670**  
**Fire Safety Board System**

Is herewith granted a Test Certificate corresponding to DIN EN 20140 - 10  
(*Measurement of sound insulation in buildings and of building elements - Laboratory measurement of airborne sound insulation of small building elements*)

**Applicant:** Hilti  
Entwicklungsgesellschaft mbH  
Hiltistrasse 6  
86916 Kaufering

**Valid until:** October 30<sup>th</sup>, 2007

**Test Certificate No.:** A 51325/3093

This test report consists of 9 pages including 2 annexes.

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*This is a translation of the German original version that has not been reviewed by the granting laboratory.*



## GENERAL CONDITIONS

This test certificate provides evidence in determining the standard sound levels of a fire-proof system. The product Hilti CP 670 Fire Safety Board System was tested within a single-layered 50 mm thick framework. The test was carried out in compliance with standard DIN EN ISO 140-10: September 1992.

The test certificate does not replace the permission, agreements and certifications required by law for carrying out construction projects. The test certificate is granted without prejudicing the rights of third parties, especially private protection rights.

The manufacturer and distributor of the subject of a test certificate must submit copies of the test certificate to the user of the construction product, notwithstanding any rulings to the contrary.

The test certificate may only be copied completely. The publication of extracts is subject to approval by the granting test laboratory. Texts and drawings of advertising material may not contradict the test certificate. Translations of the test certificate must contain the note "Translation of the German original version that has not been reviewed by the granting test laboratory".

The test certificate is granted, but is revocable. The regulations in the test certificate can be subsequently supplemented or changed, especially if the latest technical findings give reason for this.

The construction products mentioned in the test certificate require verification (evidence) of agreement and marking with the agreement mark (U-mark) in keeping with the agreement mark ordinances of the federal states.

## Cancellation of test certificate

The test certificate can be cancelled by the IAB if the conditions of this agreement are not fulfilled. This applies especially when material and building construction methods are changed and no longer follow the tested and approved criteria.



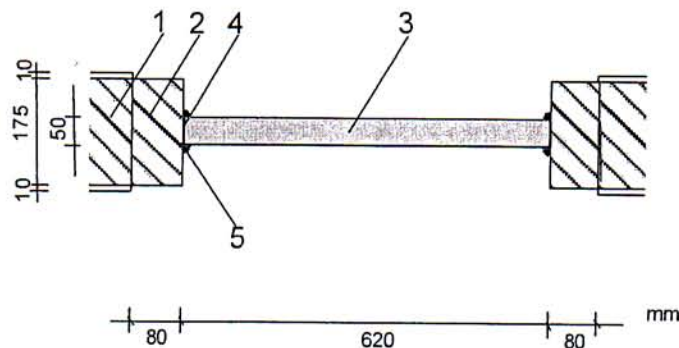
### Description of Test Object

The tested fire proof system is designated to seal wall/floor openings. A 50 mm thick fire resistant mineral fibre boards coated with 1 mm layer of special coating was prepared.

Tests were performed with a laboratory test construction with the size 620 mm x 520 mm. The prepared material had the following measured characteristics:

- |   |  |                               |
|---|--|-------------------------------|
| * | The surface-related coating on both sides of the mineral fibre board   | $m' = 11,2 \text{ kg/m}^2$    |
| * | Specific airflow resistance according to DIN EN 29053, coated sample material, average out of a series of 9 measurements | $R_S > 10.000 \text{ Ns/m}^3$ |
| * | Specific airflow of the mineral wool without coating (removed on both sides), average out of a series of 9 measurements  | $R_S = 3813 \text{ Ns/m}^3$   |

Figure 1 shows the cross-sectional view of the test object. The mineral fibre board is coated on both sides, bonded to a concrete frame and the perimeter joint sealed with a sealant. The perimeter was sealed and bonded with Hilti CP 606 sealant. The arrangement, set up and fastening of the frame construction is pictured in the schematic diagram of figure 2.

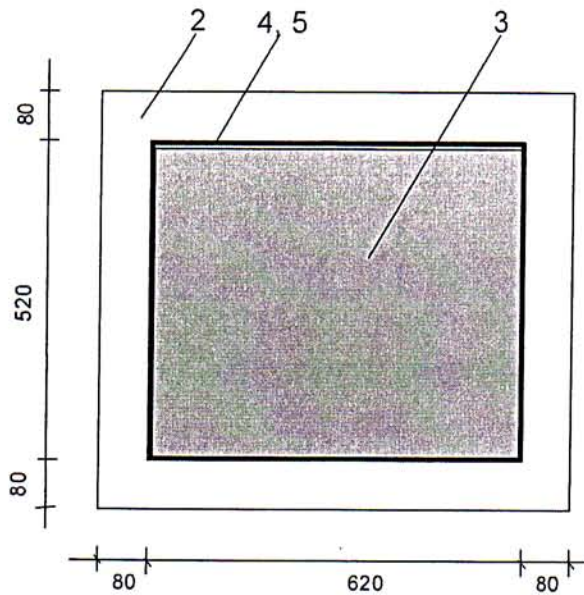


- 1 = Verkleinerung des Prüfstandes, KSV-Steine, verputzt  
 2 = umlaufender Betonrahmen  
 3 = CP 670 Fire Safety Board System, Platte aus Mineralfaser mit ca. 1mm Beschichtung  
 4 = umlaufende Verklebung mit CP 606  
 5 = Fugenabdichtung umlaufend mit CP 606

Figure 1: Horizontal cross-sectional view of test sample.

**Translation:**

1. Miniaturised test arrangement, solid sand lime bricks, plastered
2. Concrete frame
3. CP 670 Fire Safety Board System, mineral fibre board with approx. 1 mm coating
4. Perimeter frame bonded with CP 606
5. perimeter frame sealed with CP 606



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Fig. 2: Top view of sample material in concrete frame

**Translation:**

1. Miniature test arrangement, solid sand lime bricks, plastered
2. Concrete frame
3. CP 670 Fire Safety Board System, mineral fibre board with approx. 1 mm coating
4. Perimeter bonding with CP 606
5. Perimeter joint sealing with CP 606

**Measurements of the fire proof system in the window test bench**

The fire proof system CP 670 Fire Safety Board System was installed with a frame construction into an IAB window test bench.

This penetration opening was constructed with 17.05 cm brick wall (raw density rating 2.0) that was plastered on both sides and sized to 620mm x 520 mm (w x h) to be fit into a concrete framework.