



Hilti CFS-F FX Flexible Firestop Foam

Submission Folder

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Firestop foam CFS-F FX **NEW**

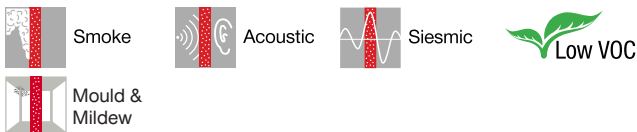


APPLICATIONS

- Mechanical: Non-combustible (metal) pipes with mineral wool/ non-flammable insulation, small combustible (plastic) pipes
- No smoke/gastight additional sealing and no backing material required
- Electrical: Single cables, cable bundles, cable tray and trunking

ADVANTAGES

- 3-phase technology with optimum application characteristics (easily-shapeable foam)
- Easily applied using a Hilti cordless electric dispenser
- Neat and tidy application
- Very quick and easy to install and provides a reliable firestop seal with only one product
- Maintenance and retrofitting of cables is very easy
- Reliable sound insulation properties, due to the flexible foam structure



Consumption Guide

Wall thickness: 150

Surface area of seal (m ²)	Opening diameter of seal (mm)	Opening size of seal (mm x mm)	Volume (litre), no cable load
0.01	ø 120	100 x 100	1.50
0.02	ø 160	100 x 200	3.00
0.03	ø 200	100 x 300	4.50
0.04	ø 220	200 x 200	6.00
0.05	ø 250	200 x 250	7.50
0.06	ø 280	200 x 300	9.00
0.07	ø 300	200 x 350	10.50
0.08	ø 320	200 x 400	12.00
0.09	ø 340	300 x 300	13.50
0.1	ø 350	300 x 330	14.85
0.16	--	400 x 400	24.00

No. of CFS-F FX foil packs

Wall thickness: 150

Surface area of seal (m ²)	Cable loading (as % of opening size)			
	0%	10%	30%	60%
0.01	<1	<1	<1	0.5
0.02	<2	<2	1.5	<1
0.03	<3	<2.5	<2	<1.5
0.04	3.5	<3.5	2.5	1.5
0.05	<4.5	<4	3.0	<2
0.06	5.5	<5	<4	<2.5
0.07	6.0	<5.5	<4.5	<2.5
0.08	<7	<6.5	<5	<3
0.09	<8	<7	<5.5	<3.5
0.1	8.5	7.5	6.0	3.5
0.16	<13,5	<12,5	<9,5	<5,5

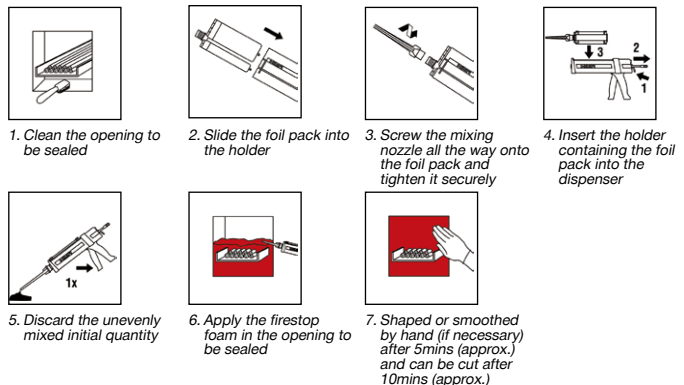
Ordering designation	Volume per unit	Package contents	Sales pack quantity	Item number
CFS-F FX	325 ml	1x Firestop foam CFS-F FX	1 pc	429802

Technical data	
Chemical basis	Two-component polyurethane foam
Colour	Red
Base materials	Concrete, Masonry, Drywall
Volume per unit	325 ml
Foam yield (up to)	2.1 l
Approx. cut time (at 23°C / 50% rel. humidity)	10 min
Application temperature range	10 - 35 °C
Temperature resistance range	-30 - 60 °C
Storage and transportation temperature range	5 - 25 °C
Shelf life ¹⁾	9 Months

¹⁾ at 77°F/25°C and 50% relative humidity; from date of manufacture



Application Procedure

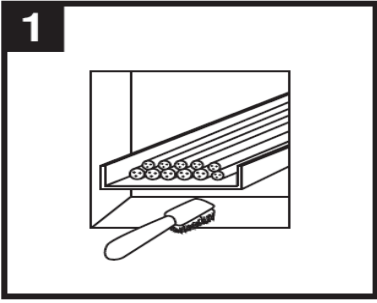
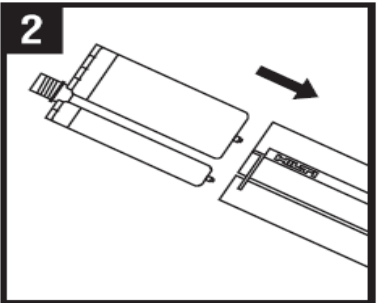
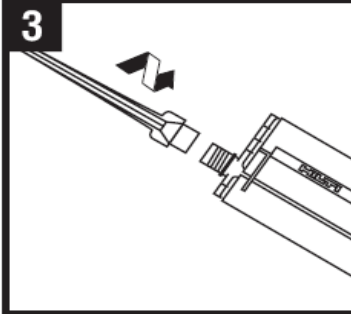
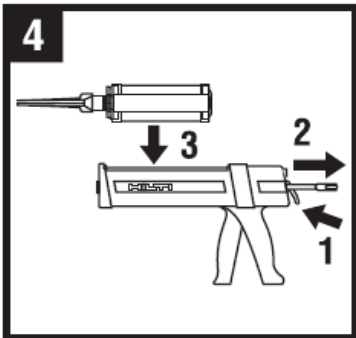


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Please visit Hilti website for the latest item numbers and related products
Customer Hotline: Hong Kong 8228 8118, Macau 00800 8228 8118 Email: hksales@hilti.com

Subject: Method Statement of CP 660
Material: CP 660 Firestop foam
Accessory: Hilti Dispenser HDM 330 CB (BOX), mixer HIT-RE-M and extension pipe CP 660-Ext or equivalent

Setting Operation		
1	Clean the opening to be sealed free from dust or grease.	
2	Slide the foil pack into the holder.	
3	Remove the cap. Screw the mixing nozzle all the way onto the foil pack and tighten it securely.	
4	Insert the holder containing the foil pack into the dispenser	

5	Discard the unevenly mixed initial quantity (the first three pumps).	
6	Apply the firestop foam in the opening to be sealed. The mixed components of the foam react and begin to expand approx. 30 seconds after application (at 23°C). Fill the opening completely with firestop foam, including gaps between individual cables, etc.	
7	The foam can be shaped or smoothed by hand (if necessary) after approx. 5 minutes (at 23°C). Wear protective gloves! After approx. 10 minutes (at 23°C) the foam becomes hard and it can then be cut.	
8	Mount the installation identification plate beside the correctly sealed opening.	
9	Additional cables or pipes can be installed in the opening without difficulty. Do not exceed the approved maximum number and size of cables or pipes. The cable or pipe may be pushed directly through the foam. Where necessary, use a suitable tool (screwdriver or drill bit, etc.) to make a hole in the foam before pushing the cable or pipe through. Seal any remaining caps carefully with CP 660	

Safety precautions:

- Store in a cool, dry, dark place at a temperature of 5°C to 25°C.
- Observe expiry date on package



檢測報告

No. 2018-A65

試件名稱： Hilti CFS-F FX Firestop Foam

報告發送致送檢單位：

送檢單位： Hilti (Hong Kong) Ltd.

(已取代原報告：No. 2014-A11)

複檢日期(第二次)： 2019年05月03日

再次複檢日期： 2022年05月03日

澳門大學



檢測報告

No: 2018-A65

試件名稱	Hilti CFS-F FX Firestop Foam (原試件名稱為 CP660 Firestop Foam，詳見附錄 E)
送檢單位名稱	Hilti (Hong Kong) Ltd.
試件製造商	Hilti
試件產地	德國
試件型號規格	防火材料尺寸：400mm (H) × 400mm (W) 防火材料厚度：150mm 泡沫量(達)：2.1L
送樣日期	2008 年 12 月 22 日
送檢時附上報告	Warrington Fire Research Centre Ltd. 報告號碼：WF No. 163992 及 WF No. 163994
檢測項目	防火填充材料耐火性能
檢測依據	BS476- 20: 1987
檢測日期	2008 年 12 月 26 日
檢測結論	經檢驗，此膨脹性防火發泡劑的耐火隔熱性達到 180 分鐘，耐火完整性達到 180 分鐘。但本試件只適用於填充的用途，而不可作為一整幅間隔牆體使用。

檢測人員，

審核，

黃傑勇
實驗員

譚立武

澳門大學機電工程系教授
澳門發展及質量研究所理事會理事長



1 檢測目的

- 1.1 根據英國標準 BS476 第 20 部分：1987，測試 Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑之耐火性能。

2 引言

- 2.1 根據送檢單位的要求，Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑之耐火測試需滿足英國標準 BS476 第 20 部份：1987 之要求。
- 2.2 試件由送檢單位於 2008 年 12 月 22 日安裝，並於 2008 年 12 月 26 日進行測試。
- 2.3 試件之向火面及背火面由送檢單位指定。

3 試件構造

- 3.1 試件主要由防火礦物棉(附有防火塗料)及 Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑所組成。試件之外觀及試件組成部分可參考送檢單位所提供之圖 1 至圖 2。詳細圖則及試件構造可參照附錄 A。
- 3.2 本報告所繪製之圖則及試件組成部份是根據送檢單位所提供的資料而作。試件之厚度、外觀及組成部份已由本實驗室檢測員檢查。

3.3 試件由送檢單位送樣並安裝於檢測框上進行測試，該檢測框由本實驗室提供。

3.4 試件在檢測前幾天內安裝完畢。

4 測試設備及程序

4.1 測試設備按照英國標準 BS476 第 20 部份：1987 的要求設置。

4.2 爐體內部之平均溫度值由平均分佈於爐內的熱電偶取得，根據英國標準 BS476：第 20 部分：1987 所指定之溫度時間關係而操控升溫。溫度時間記錄圖見附錄 B 之圖 4。

4.3 爐體內設有壓力計以監察爐體壓力。

4.4 試件背火面設有 5 個熱電偶以作監察溫度之用，熱電偶分佈位置附錄 A 之圖 3。試件背火面所有熱電偶均用作判斷試件的耐火隔熱性。

4.5 測試過程中，棉墊及縫隙測量探棒用作評估試件的耐火完整性。

4.6 測試過程中，應記錄試件的變形情況和試件出現全部或部分毀壞時的時間。試件背火面如有火焰並持續 10 秒或以上，以及有煙散發出的情況也應記錄。

4.7 試件背火面及試件向火面於測試前後需拍照記錄。測試過程中，需拍照及用攝錄機記錄試件背火面情況以作日後評估之用。

5 測試數據及資料

- 5.1 測試過程所記錄之數據可參考附錄 B，記錄內容如下：
- 5.1.1 實際爐溫按照英國標準 BS476：第 20 部分：1987 所指定溫度時間關係圖。
- 5.1.2 由熱電偶所記錄試件背火面的溫度。
- 5.2 在測試過程中，試件的實驗狀況已詳細記錄於附錄 C 中以供參考。
- 5.3 有關試件圖片，見附錄 D。
- 5.4 測試開始時周圍環境溫度為 18°C。
- 5.5 在送檢單位的同意下在 180 分鐘終止本試件整個測試。

6 耐火極限之評定條件

- 6.1 按英國標準 BS476 第 20 部份：1987 之標準，試件之耐火表現將會根據以下之條件作評定：
- 6.1.1 耐火完整性 – 當測試過程中，i) 在試件之背火面進行棉墊點燃測試；ii) 如試件背火面出現較大的裂縫，用 6mm 及 25mm 直徑之量測棒來量測裂縫之寬和深度。如棉墊沒有被試件背火面之高溫點燃及試件背火面未出現能讓量測棒插入貫通之裂縫，試件之耐火完整性才被判斷為合格。
- 6.1.2 耐火隔熱性 – 試件背火面最高平均溫度升幅不得超過 140°C 及單點溫度升幅不得超過 180°C。

7 結論

- 7.1 根據 BS476 英國標準第 20 部分對防火填充材料所制定的準則 - 耐火完整性及耐火隔熱性，評估試件的耐火性能測試結果如下：

耐火隔熱性	180 分鐘
耐火完整性	180 分鐘

8 限制說明

- 8.1 本測試結果僅反映特定測試條件下，建築構件之試驗情況。此測試結果並非判斷試件在實際應用時防火特性的唯一標準，同時亦不反映試樣在實際火場上所能表現的防火性能。
- 8.2 本試驗結果只反映與報告相同之物料、結構、厚度及安裝方法之系統，如將此試驗結果應用於試件組合型式不同的情況時，應按照實際設計而作出相應之評估。
- 8.3 檢測報告僅對送檢試件負責。

附錄 A
試件構造說明及附圖

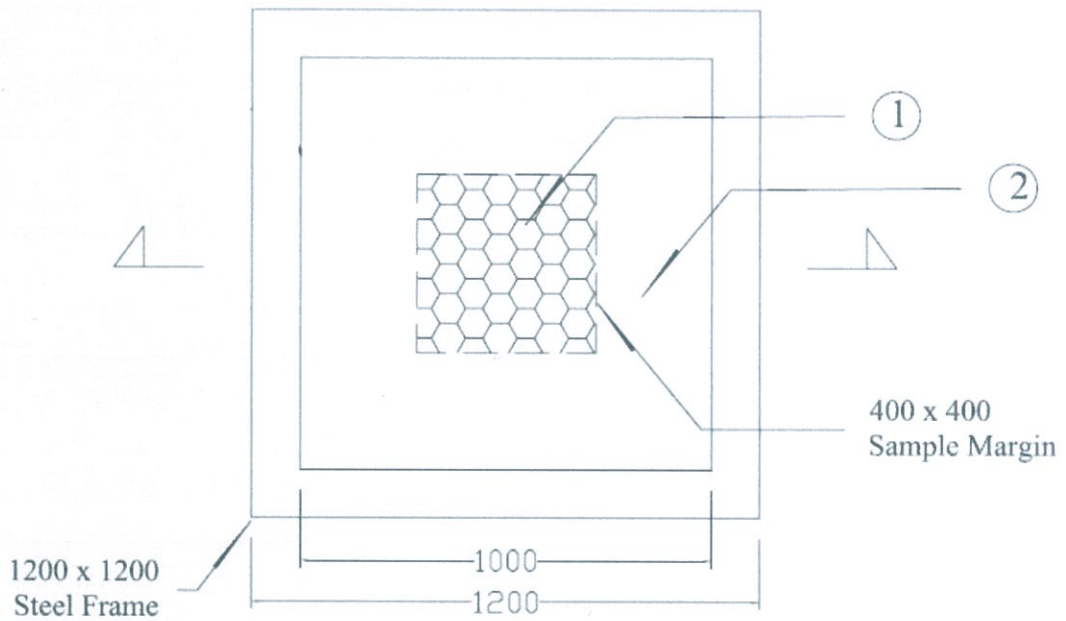


圖 1 測試試件之正視圖

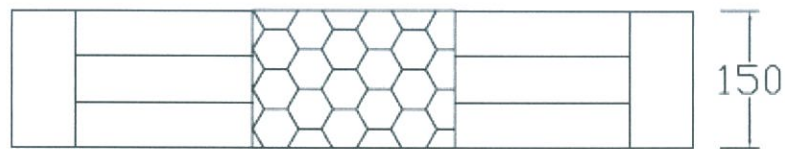
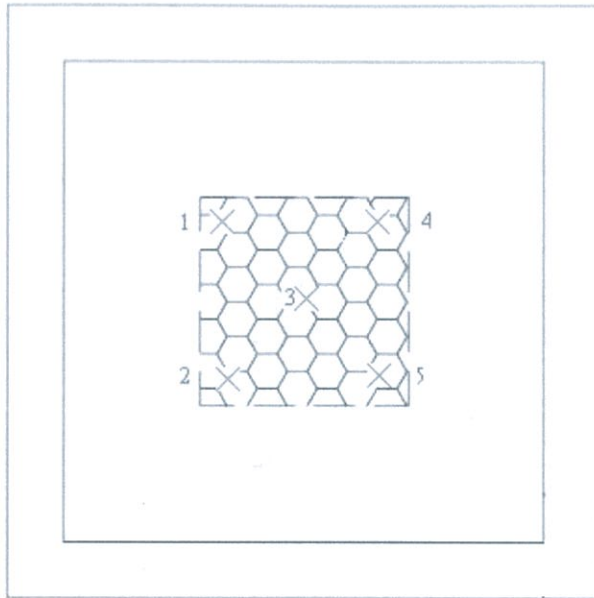


圖 2 測試試件之截面圖



X: 熱電偶

圖 3 測試試件之熱電偶位置圖

試件組件資料

(參照附錄 A 之圖 1 至圖 2)

(除非有特別指定，否則全部數值都為理論值)

(全部資料和數值由送檢單位 Hilti (Hong Kong) Ltd.提供，本實驗室並沒有求證有關數值)

表 1 試件組件資料列表

項目	組件	描述
1.	Firestop Foam	品牌：Hilti 型號：CFS-F FX 尺寸：400mm (H) × 400mm (W) 厚度：150mm 應用所需溫度-範圍：10 – 35°C 顏色：紅色 泡沫量(達)：2.1L 由 Acrylic based Polyol and Isozynad 組成。
2.	Mineral wool	品牌：ROCKWOOL 厚度：50mm 密度：160kg/m ³ 材質：Mineral wool

附錄 B
測試數據

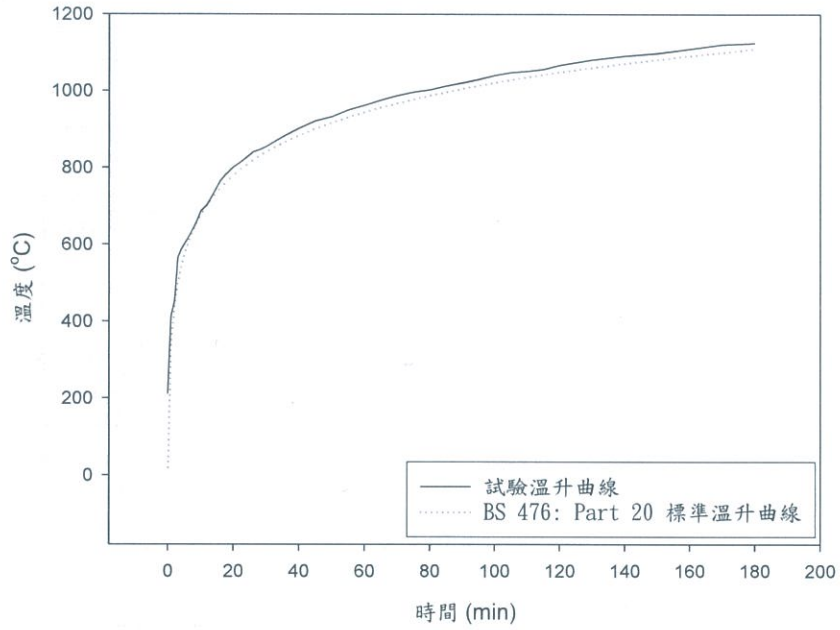


圖 4 平均爐溫與標準(溫度/時間)曲線圖

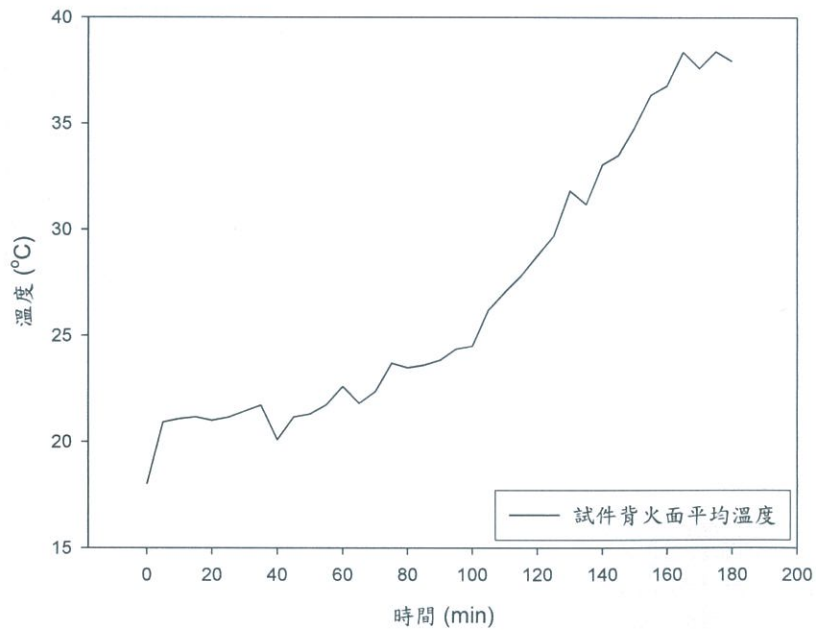


圖 5 試件背火面平均溫度/時間曲線圖

表 2 平均爐溫與標準溫度之比較

時間 (min)	標準爐內溫度 (°C)	爐內平均溫度 (°C)	標準允許公差 (%)	實際允差 (%)
0	20.00	211.30		
1	349.21	413.33		
2	444.50	451.30		
3	502.29	565.27		
4	543.89	584.93		
5	576.41	600.10		
6	603.12	614.67		
7	625.78	630.33		
8	645.46	646.17		
9	662.85	665.10		
10	678.43	685.47	±15	9.10
12	705.44	703.10		
14	728.31	733.20		
16	748.15	765.40		
18	765.67	785.30		
20	781.35	800.73		
22	795.55	812.97		
24	808.52	826.63		
26	820.45	840.40		
28	831.50	846.87		
30	841.80	854.47	±10	2.87
35	864.80	880.13		
40	884.74	902.43		
45	902.34	921.77		
50	918.08	932.63		
55	942.83	950.20		
60	945.34	962.43		
65	957.31	975.87		
70	968.39	987.67		
75	978.71	996.83		
80	988.37	1002.97		
85	997.44	1012.37		
90	1005.99	1020.70		
95	1014.08	1029.70		
100	1021.75	1039.93		
105	1029.06	1047.83		
110	1036.02	1050.93		
115	1042.67	1056.07		
120	1049.04	1066.77		
130	1061.02	1081.07		
140	1072.11	1091.33		
150	1082.44	1098.33		
160	1092.10	1109.07		
170	1101.18	1121.43		
180	1109.74	1124.57	±5	2.51



Handwritten initials or signature.

表3 試件背火面單點及平均溫度

時間 (min)	單點熱電偶溫度 (°C)					平均溫度 (°C)
	1	2	3	4	5	
0	18.00	18.00	18.00	18.00	18.00	18.00
5	21.70	21.50	22.10	19.60	19.70	20.92
10	21.70	21.30	21.20	20.50	20.70	21.08
15	22.10	21.70	18.60	21.70	21.70	21.16
20	20.80	22.10	21.30	19.60	21.20	21.00
25	21.60	20.20	22.20	21.00	20.70	21.14
30	21.20	21.00	21.50	22.40	21.10	21.44
35	22.00	22.60	22.10	21.90	20.00	21.72
40	20.10	22.00	20.40	19.60	18.30	20.08
45	21.50	21.20	20.30	21.20	21.60	21.16
50	22.40	20.40	20.90	20.60	22.20	21.30
55	21.10	21.30	21.50	22.50	22.30	21.74
60	21.70	22.30	22.40	23.00	23.60	22.60
65	21.60	22.60	21.80	21.20	21.80	21.80
70	21.50	22.80	23.40	22.20	21.90	22.36
75	23.90	22.20	24.60	23.80	24.00	23.70
80	23.50	23.80	24.40	22.90	22.80	23.48
85	23.70	24.00	22.40	25.80	22.10	23.60
90	25.00	22.90	22.20	25.80	23.30	23.84
95	25.20	24.40	23.90	25.00	23.30	24.36
100	24.80	26.10	22.40	25.20	24.00	24.50
105	27.50	24.70	24.10	27.90	26.80	26.20
110	31.10	27.60	24.90	27.90	23.70	27.04
115	32.90	27.10	26.60	29.70	22.70	27.80
120	33.70	28.00	24.10	30.90	27.10	28.76
130	35.80	29.20	25.30	31.00	27.10	29.68
140	39.20	33.70	27.10	29.90	29.20	31.82
150	41.00	31.50	25.40	29.20	28.80	31.18
160	43.30	34.10	26.60	30.00	31.30	33.06
170	44.60	31.30	29.60	31.00	31.00	33.50
180	45.80	32.70	28.90	33.90	32.80	34.82



附錄 C

觀察情況

表 4 測試過程中，觀察試件情況如下

時間 (小時:分鐘)	事件
-0:01	攝錄機、監察和操控儀器啓動。
0:00	開啓石油氣閥，測試開始。周圍環境溫度為 18°C。
0:20	試件背火面沒有顯著變化。
0:40	試件背火面四周位置輕微變黑。
1:00	試件背火面沒有顯著變化。 試件之耐火完整性及耐火隔熱性仍能符合標準。
1:30	試件背火面四周位置輕微冒煙。
2:00	試件背火面沒有顯著變化。 試件之耐火完整性及耐火隔熱性仍能符合標準。
3:00	試件背火面情況沒有明顯變化，在送檢單位同意情況下，測試結束。 試件之耐火完整性及耐火隔熱性仍能符合標準。
備註	試件背火面結構仍完整(見圖 13)

附錄 D

圖片



圖 6 測試前試件向火面

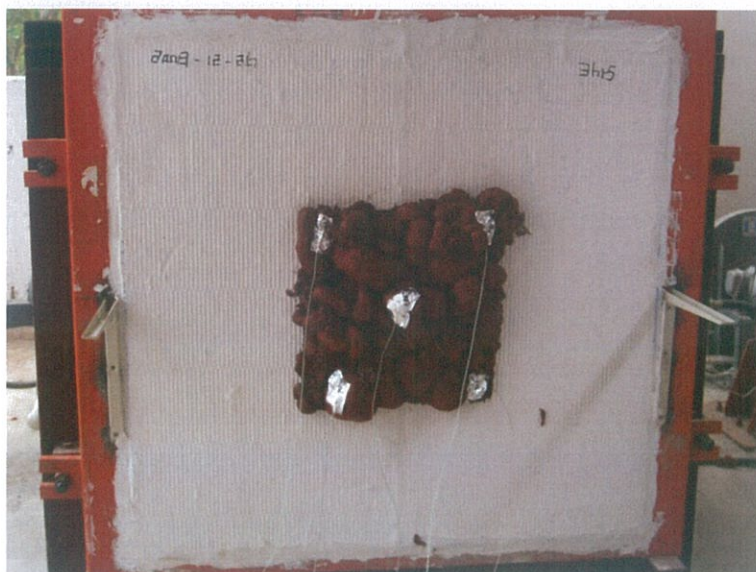


圖 7 測試前試件背火面

h
v



圖 8 測試 30min 試件背火面



圖 9 測試 60min 試件背火面

h
K



圖 10 測試 90min 試件背火面



圖 11 測試 120min 試件背火面

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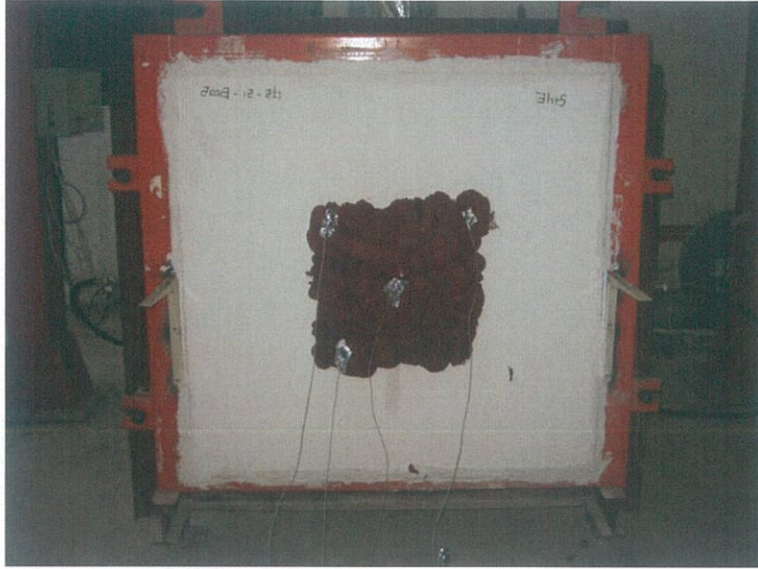


圖 12 測試 150min 試件背火面

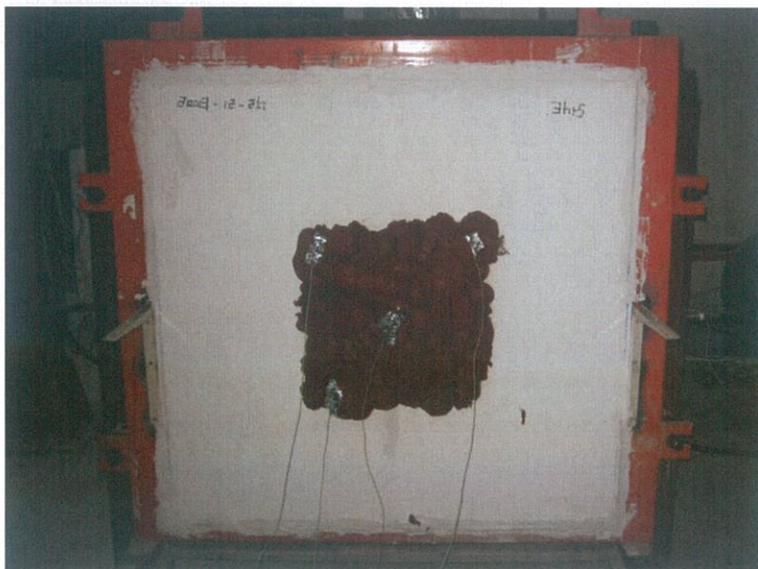


圖 13 測試 180min 試件背火面

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圖 14 測試後試件向火面

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附錄 E

Hilti CFS-F FX Firestop Foam 名稱更改資料

1. Hilti CFS-F FX Firestop Foam 資料

根據檢測報告編號：2014-A11、CP660 Firestop Foam 目錄、Hilti Firestop Foam CFS-F FX 目錄、廠方發出的澄清文件中顯示，Hilti (Hong Kong) Ltd. 生產的 CP660 Firestop Foam 膨脹性防火發泡劑的耐火隔熱性達到 180 分鐘，耐火完整性達到 180 分鐘的防火效能，其中的主要的參數如下：

項目	物料	描述
1.	Chemical Basis	Two-component polyurethane foam
2.	Colour	Red
3.	Base materials	Concrete, Masonry, Drywall
4.	Volume per unit	325 ml
5.	Foam yield (up to)	2.1 l
6.	Approx. cut time (at 23°C /50% rel. humidity)	10 min
7.	Application temperature range	10 – 35°C
8.	Temperature resistance range	-30 – 60°C
9.	Storage and transportation temperature range	5 – 25°C
10.	Shelf life	9 Months

根據送檢單位所提交的 Hilti CFS-F FX Firestop Foam 目錄、廠方發出澄清文件中顯示，所需評估的 Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑的主要參數如下：

項目	物料	描述
1.	Chemical Basis	Two-component polyurethane foam
2.	Colour	Red
3.	Base materials	Concrete, Masonry, Drywall
4.	Volume per unit	325 ml
5.	Foam yield (up to)	2.1 l
6.	Approx. cut time (at 23°C /50% rel. humidity)	10 min
7.	Application temperature range	10 – 35°C
8.	Temperature resistance range	-30 – 60°C
9.	Storage and transportation temperature range	5 – 25°C
10.	Shelf life	9 Months

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k

2. 參數之評估

2.1 Chemical Basis:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 Two-component polyurethane foam，為相同的組成。

2.2 Colour:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑的顏色均為紅色。

2.3 Base materials:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均適用於 Concrete, Masonry, Drywall。

2.4 Volume per unit:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均 325 ml，容積相同。

2.5 Foam yield (up to):

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 2.1 l。

2.6 Approx. cut time (at 23°C/50% rel. humidity):

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 10 min，時間相同。

2.7 Application temperature range:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 10 – 35°C，溫度範圍相同。

2.8 Temperature resistance range:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為-30 – 60°C，溫度範圍相同。

2.9 Storage and transportation temperature range:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 5 – 25°C，溫度範圍相同。

2.10 Shelf life:

Hilti CFS-F FX Firestop Foam 膨脹性防火發泡劑與 CP660 Firestop Foam 膨脹性防火發泡劑均為 9 Months，保存時間相同。

3. 結論

按照送檢單位提交之 CP660 Firestop Foam 目錄、Hilti CFS-F FX Firestop Foam 目錄、廠方發出的澄清文件中顯示，經本實驗室審閱送檢文件後，認為此膨脹性防火發泡劑按原檢測報告的結構下，此膨脹性防火發泡劑的耐火隔熱性達到 180 分鐘，耐火完整性達到 180 分鐘。

-----報告結束-----



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澳門特別行政區政府
 Governo da Região Administrativa Especial de Macau

消防局
 Corpo de Bombeiros

頁編號 1/1
 Pág. n.º
 文件編號 109/DT/SEL/2009
 Inf. n.º
 日期: 06 /07 2009
 Data

核閱
 Visto

於 14, 7, 2009
 Em
 技術廳廳長
 O Chefe do D.T.

意見書

事由： 要求審批喜利得防火延燒產品 -CP660 Firestop Foam、CP617 Intumescent Acoustic Putty Pad、CP670 Firestop Acoustic Board

參件編號： 喜利得(香港)有限公司來函：ML09024，ML09025，ML09026
 進入編號：7257(19/06/2009)
 意見書編號：561/DT/SEL/2009，560/DT/SEL/2009

於 19/06/2009 收到喜利得(香港)有限公司交來上述文書及其附錄文件，本局之意見如下：

Ø1. 根據交來之資料分析，本局對 CP660 Firestop Foam、CP617 Intumescent Acoustic Putty Pad 及 CP670 Firestop Acoustic Board 使用於符合《防火安全規章》規範的標準時沒有異議。然而，當上述物料在落實個案使用時，應徵詢權限部門(土地工務運輸局)之最終意見。

二零零九年六月三十日於澳門消防局，於技術廳研究暨試驗科

梁兆富
 消防員



88 Empire Drive • St. Paul, Minnesota • 55103
(651) 642-1150 • fax (651) 642-1239

VOC Content Test Certificate

August 25, 2020

Supplier: Hilti Entwicklungsgesellschaft mbH
BU Chemicals
Hiltistrasse 6
86916 Kaufering
GERMANY

Sample Description: Hilti CFS-F FX

Date Tested: August 20, 2020

Test Method: SCAQMD method 304-91 "Determination of Volatile Organic Compounds (VOC) in Various Materials" as referenced by South Coast Air Quality Management District (SCAQMD) Rule 1168. The values also comply with the requirements of EPA test method #24.

Test Data:

Specification	Product
LEED 4.1 Low-Emitting Materials – Adhesives and Sealants	CFS-F FX
Green Building Council of Australia Green Star Office Design 3.0, IEQ-13 Green Star Office Design 2.0, IEQ-13 Green Star Office Interiors 1.1, IEQ-11	
Foam Sealant VOC Limit: 250 g/L	Product contains: 26 g/L of VOC

Tom Barrett
Vice President/Strategic Analytical Services

Attn. : To whom it may concern

Date : 26 September 2023
Ref. : 100/FP/DY/23

Subject : Country of Origin- Hilti CFS-F FX Flexible Firestop Foam

Dear Sir / Madam,

Enclosed please find the information of Hilti CFS-F FX Flexible Firestop Foam.

Brand Name : Hilti

Model Name : Hilti CFS-F FX Flexible Firestop Foam

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : Germany

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P

Hilti (Hong Kong) Ltd.
701-704 | Tower A | Manulife Financial Centre
223 Wai Yip Street | Kwun Tong
Kowloon | Hong Kong
P +852-8228 8118 | F +852-2954 1751
www.hilti.com.hk

Ref. no : 040/FP/HY/24
Date : 14 Mar 2024

Subject : Hilti CFS-F FX Flexible Firestop Foam – LEED Information

To whom it may concern,

- The Hilti CFS-F FX Flexible Firestop Foam is manufactured in Germany.
- The Package of the Hilti CFS-F FX Flexible Firestop Foam can be completely recycled.
- There is no recycled content in the Hilti CFS-F FX Flexible Firestop Foam and it cannot be recycled.
- The Hilti CFS-F FX Flexible Firestop Foam does not share any rapidly renewable materials.
- The VOC content of the Hilti CFS-F FX Flexible Firestop Foam is 26 g/l.

If you would like to know more about Hilti solutions for LEED buildings or should you have any further questions, please do not hesitate to contact our Customer Service Hotline at 8228-8118 or email us at hksales@hilti.com.

Yours faithfully,



Howard Yip
Assistant Product Portfolio Manager
Hilti (Hong Kong) Ltd.

To whom it may concern

Date: 8th March 2017

Ref: 023/FPDW/17

Attention: To whom it may concern

Dear Sir / Madam,

Subject: Hilti Firestop Products non-CFC and Ozone Confirmation

Referring to your enquiry about the captioned subject, please be advised that:

Hilti firestop product, CFS-F FX Firestop Foam is free of CFC, HCFC nor other ozone depletion elements.

CFC, HCFC and ozone depletion elements were not used during the product process neither.

Should you have further questions, please do not hesitate to contact our Technical Representatives or Customer Service Hotline at 8228-8118.

Yours sincerely,



Dorothy Wai
Product Manger

CFS-F FX / CP 660

Safety information for 2-Component-products

Date of issue: 18/12/2017

Revision date: 18/12/2017

Supersedes: 08/11/2017

Version: 6.0

SECTION 1: Kit identification

1.1 Product identifier

Trade name

CFS-F FX / CP 660



Product code

BU Fire Protection

1.2 Details of the supplier of the Safety information for 2-Component-products

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

SECTION 2: General information

A SDS for each of these components is included. Please do not separate any component SDS from this cover page

SECTION 3:

Classification of the Product

Classification according to the United Nations GHS (Rev. 4, 2011)

Acute Tox. 4 (Inhalation)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Resp. Sens. 1	H334
Skin Sens. 1	H317
Carc. 2	H351
STOT SE 3	H335
STOT RE 2	H373

Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

GHS08

Signal word (GHS-UN)

Danger

Hazardous ingredients

4,4'-diphenylmethanediisocyanate, isomeres and homologues; 2-octyl-2H-isothiazol-3-one; Ethylenediamine, ethoxylated and propoxylated

Hazard statements (GHS-UN)

H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.

CFS-F FX / CP 660

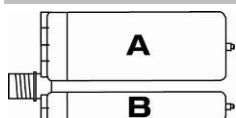
Safety information for 2-Component-products

Precautionary statements (GHS-UN)

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 - May cause respiratory irritation.
 H351 - Suspected of causing cancer.
 H373 - May cause damage to organs through prolonged or repeated exposure.

P260 - Do not breathe vapours.
 P280 - Wear eye protection, protective clothing, protective gloves.
 P284 - [In case of inadequate ventilation] wear respiratory protection.
 P302+P352 - IF ON SKIN: Wash with plenty of water.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P342+P311 - If experiencing respiratory symptoms: Call a doctor, a POISON CENTER.

Additional information



Name	General description	Quantity	Unit	Classification according to the United Nations GHS
CFS-F FX, B / CP 660, B		1	pcs	Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
CFS-F FX, A / CP 660, A		1	pcs	Skin Sens. 1, H317

SECTION 4: General advice

General advice

For professional users only

SECTION 5: Safe handling advice

Environmental precautions

Avoid release to the environment.

Storage conditions

Store in a well-ventilated place.
Keep cool.

Precautions for safe handling

Do not handle until all safety precautions have been read and understood.
Wear personal protective equipment
Do not breathe vapours.
Use only outdoors or in a well-ventilated area.
Avoid contact with skin and eyes
In case of inadequate ventilation wear respiratory protection.

Methods for cleaning up

Take up liquid spill into absorbent material
Notify authorities if product enters sewers or public waters

SECTION 6: First aid measures

First-aid measures after eye contact

Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion

Call a poison center or a doctor if you feel unwell

First-aid measures after inhalation

Remove person to fresh air and keep comfortable for breathing.
Call a poison center or a doctor if you feel unwell

First-aid measures after skin contact

Wash with plenty of water/...
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing.

CFS-F FX / CP 660

Safety information for 2-Component-products

First-aid measures general	If you feel unwell, seek medical advice (show the label where possible)
Symptoms/effects after eye contact	Eye irritation
Symptoms/effects after inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	Irritation May cause an allergic skin reaction.
Other medical advice or treatment	Treat symptomatically

SECTION 7: Fire fighting measures

Protection during firefighting	Self-contained breathing apparatus Complete protective clothing
Hazardous decomposition products in case of fire	Toxic fumes may be released Carbon dioxide Carbon monoxide

SECTION 8: Other information

No data available

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Date of issue: 19/12/2017

Version: 6.0

Revision date: 19/12/2017

Supersedes: 08/11/2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	Mixture
Trade name	CFS-F FX, A / CP 660, A
Product code	BU Fire Protection

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	Firestop foam
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1.3. Details of the supplier of the safety data sheet

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

Supplier

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
9494 Schaan - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev. 4, 2011)

Skin Sens. 1	H317
Full text of hazard classes and H-statements : see section 16	

2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

Signal word (GHS-UN)

Warning

Hazardous ingredients

Ethylenediamine, ethoxylated and propoxylated

Hazard statements (GHS-UN)

H317 - May cause an allergic skin reaction.

Precautionary statements (GHS-UN)

P280 - Wear eye protection, protective clothing, protective gloves.
P302+P352 - IF ON SKIN: Wash with plenty of water.

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
Ethylenediamine, propoxylated	(CAS-No.) 25214-63-5	2.5 - 5	Eye Irrit. 2A, H319
Ethylenediamine, ethoxylated and propoxylated	(CAS-No.) 26316-40-5	2.5 - 5	Eye Irrit. 2A, H319 Skin Sens. 1, H317

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	May cause an allergic skin reaction.
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4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray. Dry powder. Foam. Carbon dioxide.
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5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting	Self-contained breathing apparatus. Complete protective clothing.
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CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment: For further information refer to section 8: "Exposure controls/personal protection". Use personal protective equipment as required.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.
Storage temperature: 5 - 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection: Protective gloves. EN 374

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	3 (> 60 minutes)			EN 374

Eye protection: Safety glasses. EN 166. EN 170

Type	Use	Characteristics	Standard
Safety glasses			EN 166, EN 170

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Skin and body protection

Wear suitable protective clothing

Respiratory protection

Not necessary with sufficient ventilation



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	red.
Odour	No data available
Odour threshold	No data available
pH	Not determined
Relative evaporation rate (butylacetate=1)	No data available
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	Not applicable.
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Density	≈ 1.17 g/cm ³
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	pH: Not determined Not classified pH: Not determined
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity	Not classified
Chronic aquatic toxicity	Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

12.5. Other adverse effects

Ozone Not classified
 Other adverse effects No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code



CFS-F FX, A / CP 660, A

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

SECTION 16: Other information

SDS Major/Minor	None
Date of issue	19/12/2017
Revision date	19/12/2017
Supersedes	08/11/2017

Indication of changes:

Section	Changed item	Change	Comments
2.2	Precautionary statements (GHS-UN)	Modified	

Full text of H-statements:

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

SDS_UN_Hilti

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

CFS-F FX, B / CP 660, B

Safety Data Sheet

according to the United Nations GHS (Rev. 4, 2011)

Date of issue: 18/12/2017

Version: 6.0

Revision date: 18/12/2017

Supersedes: 08/11/2017

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	Mixture
Trade name	CFS-F FX, B / CP 660, B
Product code	BU Fire Protection

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	Firestop foam
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1.3. Details of the supplier of the safety data sheet

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

Supplier

Hilti (Hong Kong) Ltd.
701-704, 7/F, Tower A, Manulife Financial Centre
223 Wai Yip Street, Kwun Tong
Kowloon - Hong Kong
T +852 27734 700
hksales@hilti.com

Department issuing data specification sheet

Hilti AG
Feldkircherstraße 100
9494 Schaan - Liechtenstein
T +423 234 2111
chemicals.hse@hilti.com

1.4. Emergency telephone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS (Rev. 4, 2011)

Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Resp. Sens. 1	H334
Skin Sens. 1	H317
Carc. 2	H351
STOT SE 3	H335
STOT RE 2	H373

Full text of hazard classes and H-statements : see section 16

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2.2. Label elements

Labelling according to the United Nations GHS (Rev. 4, 2011)

Hazard pictograms (GHS-UN)



GHS07

GHS08

Signal word (GHS-UN)

Danger

Hazardous ingredients

4,4'-diphenylmethanediisocyanate, isomeres and homologues; 4,4'-methylenediphenyl diisocyanate, diphenylmethane-4,4'-diisocyanate

Hazard statements (GHS-UN)

H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H319 - Causes serious eye irritation.
 H332 - Harmful if inhaled.
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 - May cause respiratory irritation.
 H351 - Suspected of causing cancer.
 H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-UN)

P260 - Do not breathe vapours.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P284 - [In case of inadequate ventilation] wear respiratory protection.
 P302+P352 - IF ON SKIN: Wash with plenty of water.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P342+P311 - If experiencing respiratory symptoms: Call a doctor, a POISON CENTER.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
4,4'-diphenylmethanediisocyanate, isomeres and homologues	(CAS-No.) 9016-87-9	< 100	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
4,4'-methylenediphenyl diisocyanate, diphenylmethane-4,4'-diisocyanate	(CAS-No.) 101-68-8	25 - 45	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

Full text of H-statements: see section 16

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures Ventilate spillage area. Do not breathe vapours. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Take up liquid spill into absorbent material.
Other information	Dispose of materials or solid residues at an authorized site.

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes.
Hygiene measures	Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Store in a well-ventilated place. Keep cool.
Storage temperature	5 - 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	Ensure good ventilation of the work station.
Environmental exposure controls	Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection Protective gloves. EN 374

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Nitrile rubber (NBR)	3 (> 60 minutes)			EN 374

Eye protection Chemical goggles or safety glasses. EN 166. EN 170

Type	Use	Characteristics	Standard
Safety glasses	Droplet		EN 166, EN 170

Skin and body protection Wear suitable protective clothing

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Not necessary with sufficient ventilation

Device	Filter type	Condition	Standard
	Filter AX (brown)		



8.4. Exposure limit values for the other components

No additional information available

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	amber.
Odour	No data available
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point	Not applicable
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapour pressure	No data available
Relative vapour density at 20 °C	No data available
Relative density	No data available
Solubility	No data available
Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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according to the United Nations GHS (Rev. 4, 2011)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Inhalation:dust,mist: Harmful if inhaled.
ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (dust,mist)	1.5 mg/l/4h
4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
LD50 oral rat	> 10000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit; Literature study)
4,4'-methylenediphenyl diisocyanate, diphenylmethane-4,4'-diisocyanate (101-68-8)	
LD50 oral rat	> 2000 mg/kg
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	Not classified
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	Not classified
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity	Not classified
Chronic aquatic toxicity	Not classified

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
LC50 other aquatic organisms 1	> 1000 mg/l (96 h)
Threshold limit other aquatic organisms 1	> 1000 mg/l (96 h)

12.2. Persistence and degradability

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. No (test)data on mobility of the substance available.

12.3. Bioaccumulative potential

4,4'-diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	
BCF fish 1	1 (Pisces)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

No additional information available

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according to the United Nations GHS (Rev. 4, 2011)

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not regulated for transport			
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available

SECTION 16: Other information

SDS Major/Minor	None
Date of issue	18/12/2017
Revision date	18/12/2017
Supersedes	08/11/2017

Indication of changes:

Section	Changed item	Change	Comments
			Layout Change
2.1	Classification (GHS-UN)	Modified	
3	Composition/information on ingredients	Modified	

Full text of H-statements:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
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SDS_UN_Hilti

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