



Hilti CP636 Firestop Mortar

Submission Folder

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Firestop mortar CP 636



APPLICATIONS

- Permanent firestopping of cables, cable trays, and non-combustible pipes in medium to large wall and floor openings
- Single, multiple and mixed penetrations
- Medium to large multiple penetrations in concrete and masonry in combination with other products
- Lift door frame

ADVANTAGES

- Excellent application characteristics



Acoustic



Siesmic



Low VOC



Mould & Mildew

Technical data

Base materials	Concrete, Masonry
Approx. mix ratio	2.5 : 1 (mortar to water by weight)
Working time (approx.)	45 min
Cured density - min.	700 kg/m ³
Max. compressive strength after 28 days	2.9 N/mm ²
Application temperature range	5 - 80 °C
Temperature resistance range	-10 - 80 °C
Storage and transportation temperature range	5 - 30 °C
Shelf life¹⁾	12 Months
Colour	Grey

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

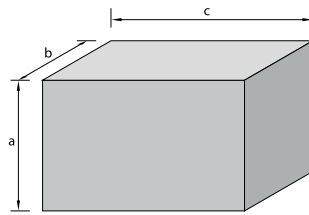
Consumption Guide

20 kg bags yield 22.2 litres

a = opening depth in cm

b = opening length in cm

c = opening width in cm



Blank Opening

Number of bags required = $\frac{a \times b \times c}{22,000}$

e.g. 100 mm thick floor with 1 metre x 1 metre opening:

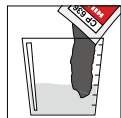
Therefore number of bags required = $\frac{10 \times 100 \times 100}{22,000} = 5$ bags



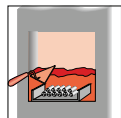
Application Procedure



1. Clean opening, moisten surfaces



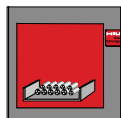
2. Mix CP 636 mortar with 3:1 ratio (by adding mortar to water)



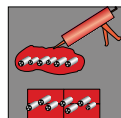
3. Put mortar into place



4. Optional: add CP 651 for future cable changes



5. Fasten installation plate in place (if required)



6. Re-installation: lay cables and close remaining opening

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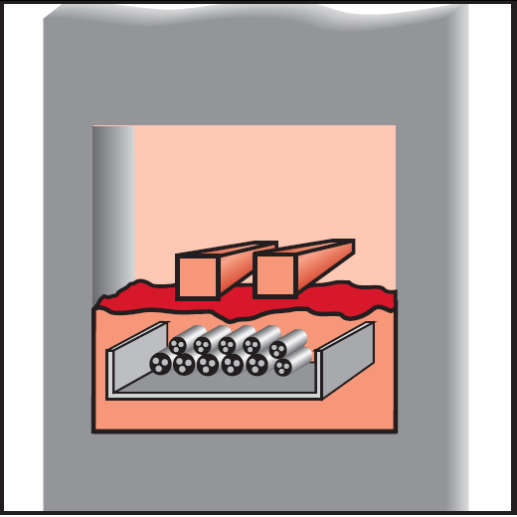
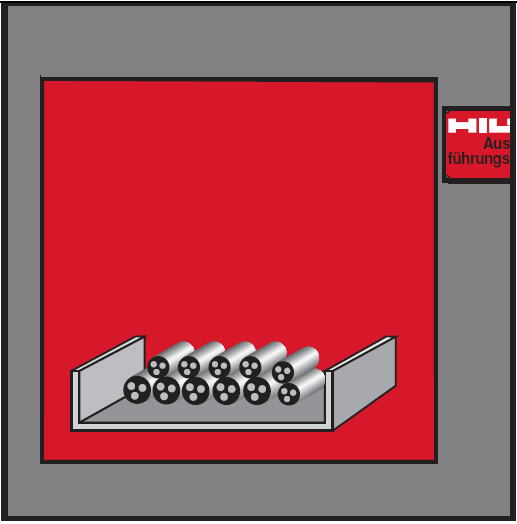


Ordering designation	Weight	Sales pack quantity	Item number
CP 636 20KG	20 kg	1 pc	334897

Please visit Hilti website for the latest item numbers and related products

Subject: Method Statement of CP 636
Material: CP 636 Firestop mortar
Accessory: Nil

Setting Operation		
1	<p>Clean and premoisten the surfaces. Cables and cable supporting structures must be installed in compliance with local building and electrical standards.</p>	
2	<p>Add mortar to water in a ratio of about 3:1 by volume (mortar to water). Stir the mixture thoroughly with, for example, a Hilti TE-MP/ TE-18M paddle. The mix ratio of water to CP 636 determines the desired consistency.</p> <p>Do not use any other binders or additives/ aggregates</p>	
3	<p><u>Method 1</u>: Apply mixed mortar in the opening using a trowel or a pump and compact it. Make sure all gaps and spaces are completely filled and closed.</p> <p><u>Method 2</u>: The penetration sealing system shall be constructed on 50 mm thick of mineral wool with 35mm thick Hilti CP 636 Fire Prevention Mortar on both sides.</p>	

4	<p>CP 611A can be used in conjunction with mortar. In such case, apply CP 611A to the cables over a width of approx. 30mm and 5mm thick. Fill the gap between cables with CP 611A. Application of the mortar can be continued immediately after CP 611A has been applied.</p>	
5	<p>For maintenance reasons, a penetration seal could be permanently marked with an identification plate. In such a case, mark the identification plate and fasten it in a visible position next to the seal.</p>	

Safety precautions:

- Keep it out of the reach of children



檢測報告

No. 2018-A58

試件名稱： CP 636 Firestop Mortar

報告發送致送檢單位：

送檢單位： Hilti (Hong Kong) Ltd.

(已取代原報告：No. 2005-FRT43)

複檢日期(第二次)： 2019年04月24日

再次複檢日期： 2022年04月24日

澳門大學



檢測報告

No: 2018-A58

試件名稱	CP 636 Firestop Mortar
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	顏色：灰 混合比率：3：1(防火泥：水) 固化 - 脫模時間：2-4 小時(牆身位置) 密度：0.82g/cm ³ 施工溫度：+ 5°C 至+ 45°C
送樣日期	2005 年 12 月 9 日
送檢時附上報告	Warrington Fire Research Centre Ltd. 報告號碼：WARRES NO.62305B WARRES NO.134523
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	2005 年 12 月 12 日
檢測結論	經檢驗，此防火泥的耐火隔熱性達到 183 分鐘，耐火完整性達到 245 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 CP 636 防火泥之耐火性能。

2 引言

- 2.1 根據送檢單位的要求，防火泥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 2005 年 12 月 9 日安裝，並於 2005 年 12 月 12 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 試件由輕質混凝土及防火泥組成。主要試件尺寸為 600mm(W) × 600mm(H) × 150mm(Thk.)，5 束不同直徑及型號之電纜將平排放置於線架上並穿過該防火泥，而各電纜的總長度約為 750 mm，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 5。

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 12 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 及圖 4。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 245 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	183 分鐘
耐火完整性	245 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

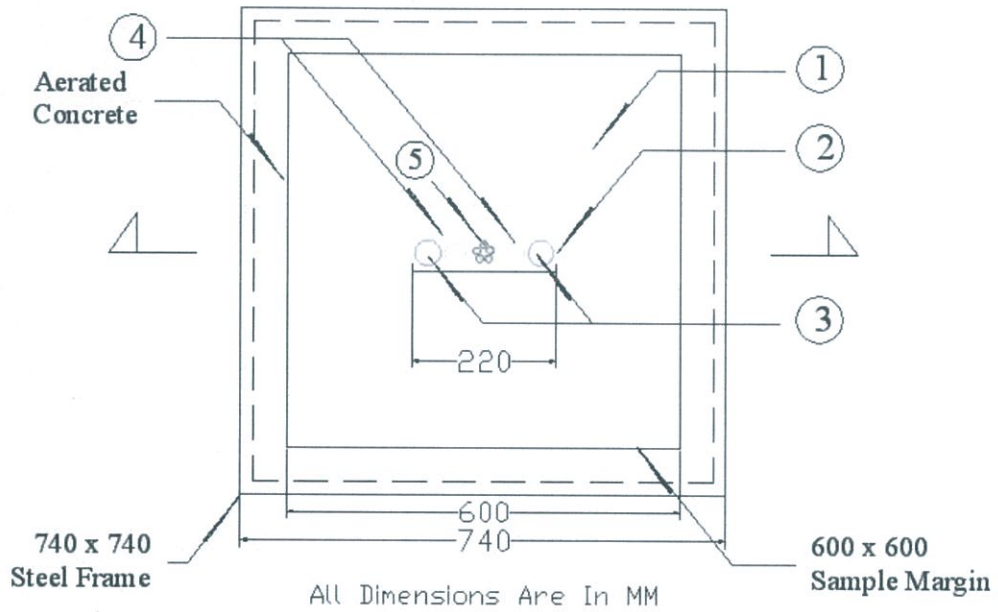


圖 1 測試試件之正視圖

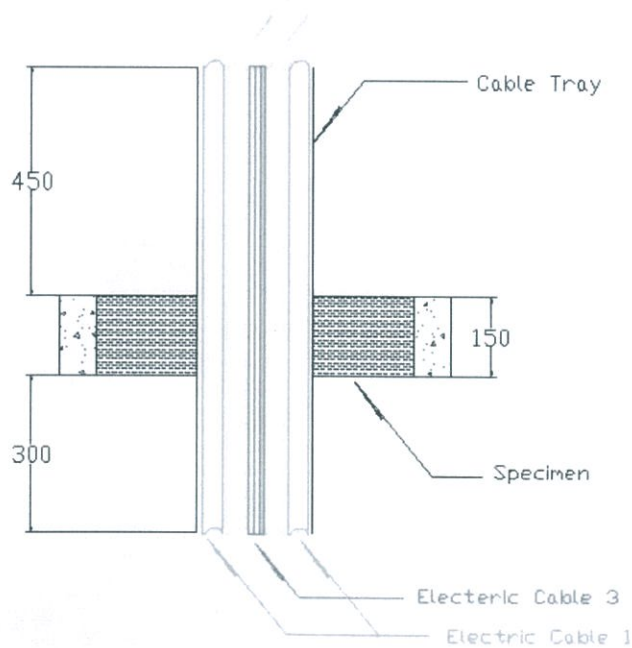
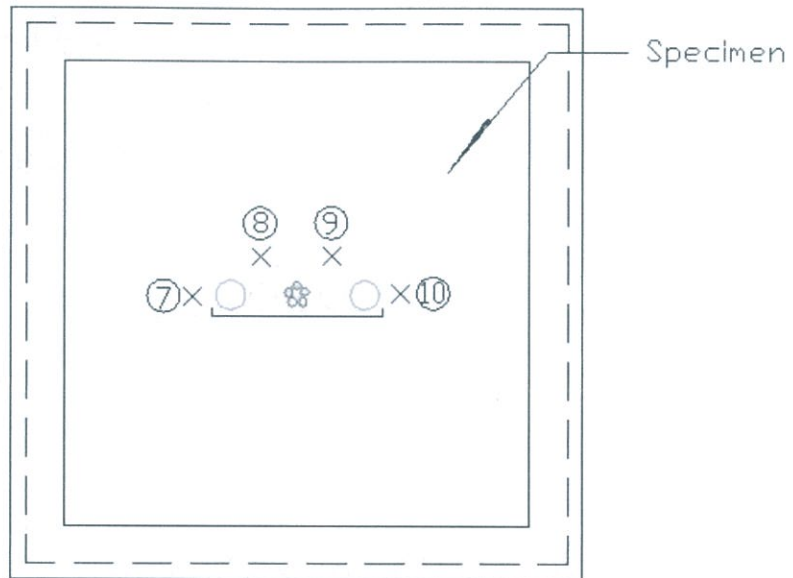
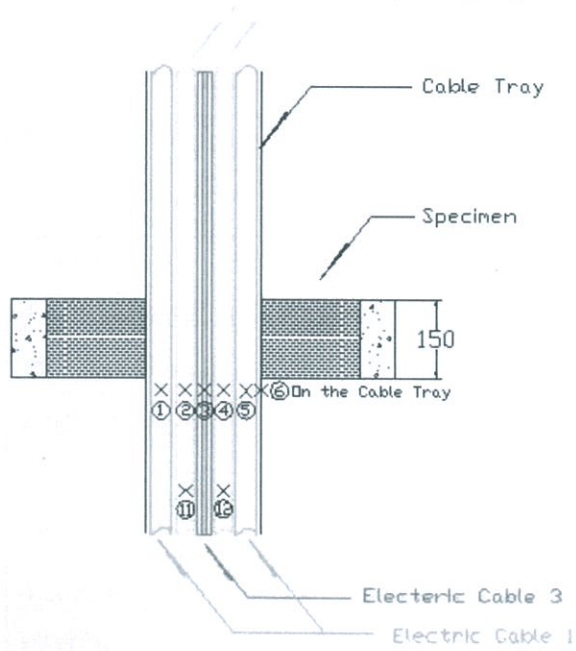


圖 2 測試試件之截面圖



X: 熱電偶

圖 3 測試試件之熱電偶位置圖一



X: 熱電偶

圖 4 測試試件之熱電偶位置圖二

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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 Mortar	品牌：Hilti 型號：CP 636 尺寸：600mm(W) × 600mm(H) × 150mm(D) 顏色：灰 混合比率：3：1(防火泥：水) 固化 - 脫模時間：2-4 小時(牆身位置) 密度：0.82g/cm ³ 施工溫度：+ 5°C 至+ 45°C
2.	Cable Tray	材質：Perforated galvanized mild steel 0.7mm 尺寸：220mm(W) × 12mm(D) × 750mm(L)
3.	Electric Cable	型式 1： 4 core screened and copper armored plastic sheathed 總直徑：40mm 材質：Copper 型式 2： 4 core screened plastic sheathed 4G35 HAR cable 總直徑：30mm 材質：Copper

		型式 3 : 16 core screened plastic sheathed computer cable bundle 總直徑 : 11mm 材質 : Copper
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附錄 B
測試數據

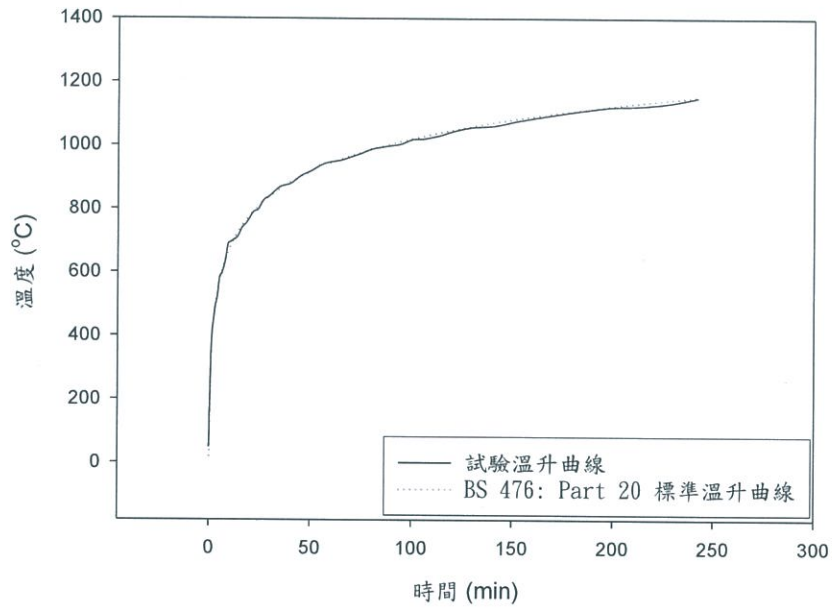


圖 5 平均爐溫與標準(溫度/時間)曲線圖

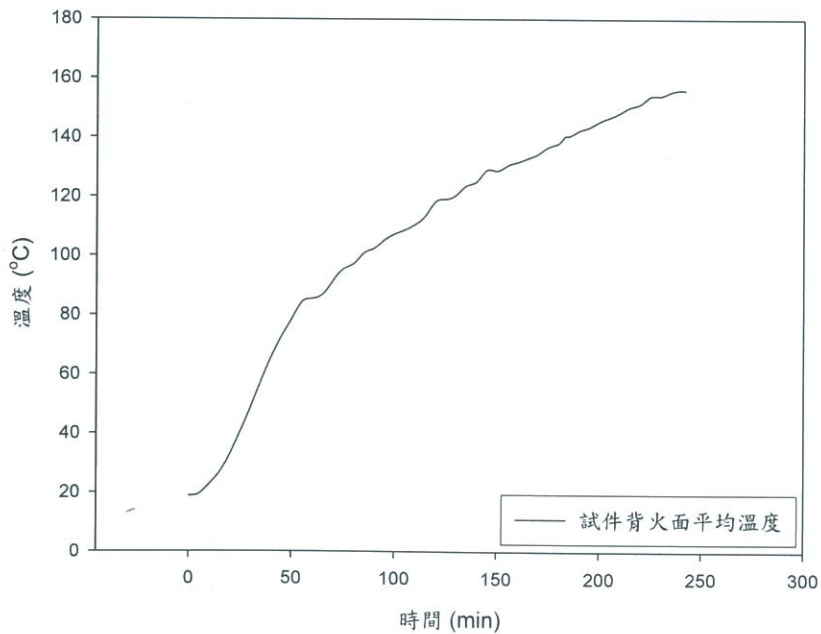


圖 6 試件背火面平均溫度/時間曲線圖

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	47.75		
1	349.21	349.58		
2	444.50	440.12		
3	502.29	492.34		
4	543.89	524.06		
5	576.41	580.11		
6	603.12	592.84		
7	625.78	612.57		
8	645.46	639.69		
9	662.85	683.45		
10	678.43	692.80	±15	+4.46
12	705.44	701.37		
14	728.31	712.10		
16	748.15	738.55		
18	765.67	752.50		
20	781.35	772.41		
22	795.55	790.81		
24	808.52	796.59		
26	820.45	819.20		
28	831.50	833.03		
30	841.80	840.66	±10	+0.14
35	864.80	868.46		
40	884.74	878.19		
45	902.34	902.44		
50	918.08	917.72		
55	942.83	936.79		
60	945.34	947.24		
65	957.31	952.69		
70	968.39	963.24		
75	978.71	974.46		
80	988.37	987.71		
85	997.44	993.78		
90	1005.99	999.19		
95	1014.08	1004.73		
100	1021.75	1018.12		
105	1029.06	1019.85		
110	1036.02	1025.51		
115	1042.67	1032.95		
120	1049.04	1043.42		
130	1061.02	1056.63		

140	1072.11	1060.74		
150	1082.44	1073.58		
160	1092.10	1085.33		
170	1101.18	1095.76		
180	1109.74	1105.95		
190	1117.84	1114.60		
200	1125.52	1121.74		
210	1132.82	1123.31		
220	1139.79	1127.90		
230	1146.44	1135.73		
240	1152.82	1148.38		
242	1156.52	1151.45	±5	+2.47



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)					
	1	2	3	4	5	6
0	16.56	43.60	16.69	16.74	16.76	17.26
5	17.62	18.91	22.22	19.75	18.73	24.76
10	22.65	25.23	25.52	27.50	25.19	28.00
15	33.04	33.37	28.69	34.77	34.02	27.73
20	48.31	43.25	34.46	44.44	48.25	32.33
25	65.78	55.63	41.08	57.67	63.92	39.62
30	83.17	68.77	47.23	71.02	82.14	45.70
35	101.56	82.10	54.10	85.07	99.58	54.60
40	120.75	95.83	61.25	97.32	113.02	61.22
45	133.46	108.14	65.87	107.18	124.23	65.61
50	139.10	119.22	70.98	116.73	132.88	68.35
55	143.61	129.17	76.15	125.01	138.50	74.12
60	135.36	116.53	81.11	122.80	136.26	77.94
65	128.95	111.47	83.85	115.76	129.22	83.58
70	136.04	121.46	88.18	113.11	128.41	87.13
75	140.49	122.96	94.32	114.17	129.73	93.85
80	139.55	121.02	96.84	113.73	129.13	96.35
85	144.56	121.13	103.96	115.87	129.64	102.11
90	143.55	116.90	107.59	118.27	130.76	102.97
95	146.22	113.81	111.67	121.55	132.88	108.45
100	147.64	113.97	115.29	123.16	135.14	112.00
105	146.15	113.55	118.10	124.89	136.30	112.53
110	148.04	114.48	119.40	125.99	136.24	118.43
115	152.17	116.75	123.71	127.77	138.12	121.64
120	157.51	121.09	128.24	131.29	139.86	128.70
125	155.70	122.00	129.57	131.29	142.11	127.63
130	156.58	127.95	133.10	131.38	143.66	130.69
135	161.60	130.87	136.91	134.80	147.07	136.84
140	165.14	133.22	139.01	134.92	148.17	138.65
145	176.87	136.89	143.34	140.04	151.56	146.94
150	174.12	135.45	143.32	138.90	153.14	149.84
155	174.03	137.78	151.24	143.97	156.10	151.01
160	178.17	136.95	149.61	145.12	156.67	158.25
165	180.09	137.24	150.85	143.88	158.66	163.35
170	183.84	137.24	152.23	145.03	159.68	167.89
175	189.88	139.19	156.60	147.28	161.20	173.00
180	194.46	138.79	158.21	148.29	162.10	175.19
183	200.36*	142.26	162.81	153.68	164.30	177.94
185	199.90	140.62	162.44	151.87	164.73	178.04
190	208.22	142.74	164.73	150.67	166.09	180.00
195	213.57	143.41	168.39	143.12	168.23	180.82
200	216.92	144.71	171.32	144.65	171.00	181.29

205	221.28	144.08	172.25	145.14	171.25	186.10
210	221.82	145.30	175.33	146.96	172.73	185.83
215	224.15	148.40	178.56	146.71	174.78	190.81
220	223.45	150.00	179.97	147.16	175.71	189.77
225	240.69	152.89	181.45	146.80	175.60	194.80
230	237.75	153.73	181.68	143.77	175.26	198.57*
235	241.18	156.06	183.43	146.22	176.56	198.70
240	242.21	157.57	185.80	145.50	176.99	198.25
242	238.35	157.14	187.74	145.07	177.44	199.13

* 試件背火面熱電偶單點溫度超溫

表 3 試件背火面單點及平均溫度 (續)

時間 (min)	單點熱電偶溫度 (°C)						平均溫度 (°C)
	7	8	9	10	11	12	
0	16.31	16.19	16.24	16.35	16.17	16.92	18.82
5	18.55	18.68	18.39	18.41	19.45	17.06	19.38
10	19.38	19.23	19.09	19.18	23.45	17.26	22.64
15	20.17	20.11	20.20	19.81	25.72	22.41	26.67
20	21.14	21.88	22.02	20.98	29.91	26.63	32.80
25	22.76	24.04	24.44	22.02	35.73	31.81	40.38
30	24.58	27.16	28.02	23.57	42.92	37.91	48.52
35	26.71	31.08	33.26	25.30	50.40	44.16	57.33
40	29.57	35.80	36.95	27.59	57.25	51.08	65.64
45	34.91	40.33	40.95	30.04	64.71	57.06	72.71
50	39.06	45.26	45.30	32.31	72.41	62.94	78.71
55	41.79	51.42	49.40	35.24	80.15	68.59	84.43
60	44.80	56.46	53.64	39.80	88.15	73.63	85.54
65	46.61	61.38	60.81	47.52	96.10	78.61	86.99
70	49.84	66.33	65.26	53.15	104.86	84.93	91.56
75	51.49	69.69	68.88	59.84	111.58	89.73	95.56
80	54.07	70.69	70.37	64.67	117.45	93.75	97.30
85	56.16	72.90	72.27	71.70	123.29	97.63	100.94
90	59.97	73.44	73.90	75.56	127.28	100.29	102.54
95	64.34	75.21	76.00	79.43	131.48	103.65	105.39
100	67.52	75.74	77.72	81.15	133.72	105.96	107.42
105	70.34	76.41	78.93	82.62	136.36	109.52	108.81
110	71.46	79.27	79.32	84.74	138.53	112.37	110.69
115	73.16	88.00	80.78	87.02	139.96	114.81	113.66
120	74.95	110.35	81.94	89.51	141.08	116.71	118.44
125	77.31	111.54	83.06	90.37	141.31	118.09	119.17
130	80.10	107.31	83.67	91.18	142.41	119.35	120.62
135	79.56	113.68	85.33	93.00	143.43	121.94	123.75
140	79.23	116.02	86.25	93.66	144.27	122.56	125.09
145	79.38	116.07	94.56	94.05	145.23	123.74	129.06
150	79.01	112.33	95.74	93.75	145.13	124.19	128.74
155	80.78	113.06	95.28	93.07	145.24	125.59	130.60
160	80.96	113.26	97.41	92.82	145.50	125.85	131.71
165	80.00	117.32	99.40	92.71	146.71	126.28	133.04
170	79.56	120.53	100.48	92.89	147.34	127.68	134.53
175	78.75	122.31	103.12	92.74	148.99	129.52	136.88
180	78.36	123.45	106.40	92.69	150.28	129.65	138.16
185	78.71	126.14	109.55	92.69	151.26	130.56	140.50
190	78.29	129.37	113.70	92.89	151.51	130.56	140.54
195	78.99	133.78	117.92	92.39	152.29	130.23	142.40

200	79.84	138.29	123.54	92.03	151.63	131.01	143.60
205	78.75	141.91	126.57	92.01	152.10	131.52	145.52
210	79.49	146.56	130.85	92.08	152.72	132.18	146.91
215	80.83	148.98	134.07	92.19	153.15	132.12	148.49
220	80.70	153.43	135.99	91.95	156.22	133.39	150.40
225	80.72	156.62	136.64	91.97	158.10	132.72	151.48
230	80.83	155.95	138.45	92.01	159.29	132.93	154.08
235	80.54	157.69	140.38	91.33	160.40	134.45	154.19
240	81.00	161.24	141.82	90.15	159.50	133.77	155.58
242	81.37	162.38	141.79	89.21	158.07	134.02	156.15



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。
0:02	試件背火面電線附近位置有煙氣溢出。
0:03	在試件背火面進行棉墊測試 -- 棉墊沒有被點燃。
0:20	試件背火面冒煙情況減弱。
0:30	在試件背火面進行棉墊測試 -- 棉墊沒有被點燃。
0:45	試件背火面電線附近位置仍然有少量煙溢出。
1:00	在試件背火面進行棉墊測試 -- 棉墊沒有被點燃。 試件之耐火隔熱性及耐火完整性均能符合標準。
1:26	試件背火面左右兩邊電線的絕緣材料軟化。
1:45	於 0:45 描述之試件背火面冒煙情況仍然持續。
2:00	在試件背火面進行棉墊測試 -- 棉墊沒有被點燃。 試件之耐火隔熱性及耐火完整性仍能符合標準。
2:32	試件背火面電線與防火填充材料接縫位置逐漸變黑。
3:00	試件之耐火隔熱性及耐火完整性仍能符合標準。
3:03	試件背火面熱電偶 TC1 溫度達到 200.36°C，試件之耐火隔熱性失效。
3:40	於 1:45 描述之試件背火面冒煙情況仍然持續。
3:50	試件背火面熱電偶 TC6 線槽溫度達到 198.57°C。
4:00	試件之耐火完整性仍能符合標準。
4:05	在送檢單位同意情況下，測試結束。
備註	試件背火面結構仍完整(見圖 19)

附錄 D

圖片



圖 7 測試前試件背火面



圖 8 測試前試件向火面



圖 9 熱電偶位置分佈圖



圖 10 測試 30min 時試件背火面

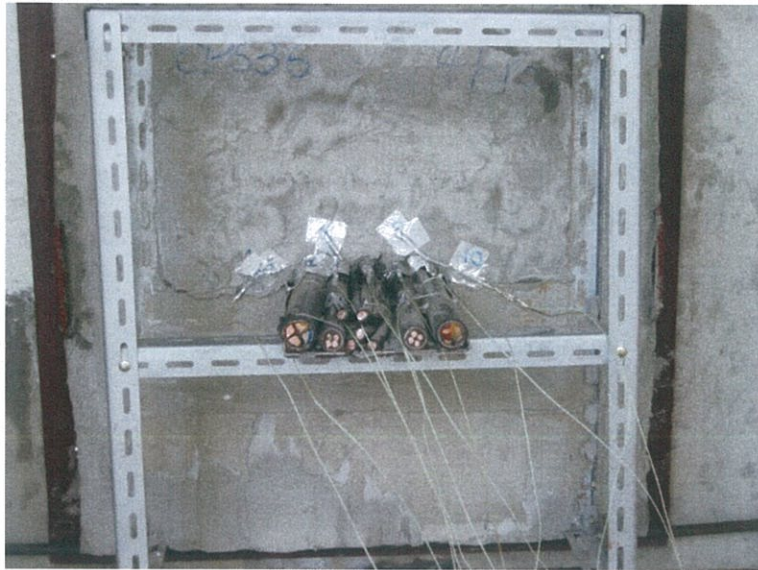


圖 11 測試 60min 時試件背火面



圖 12 測試 90min 時試件背火面



圖 13 測試 120min 時試件背火面

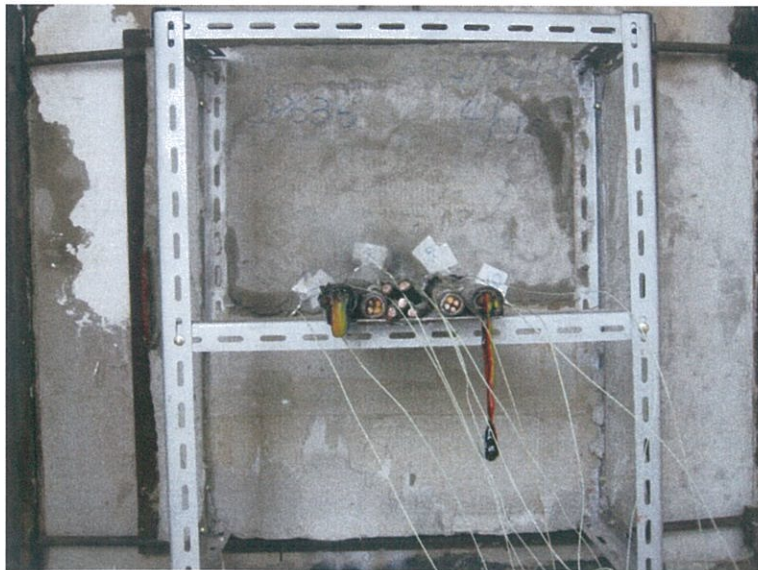


圖 14 測試 150min 時試件背火面

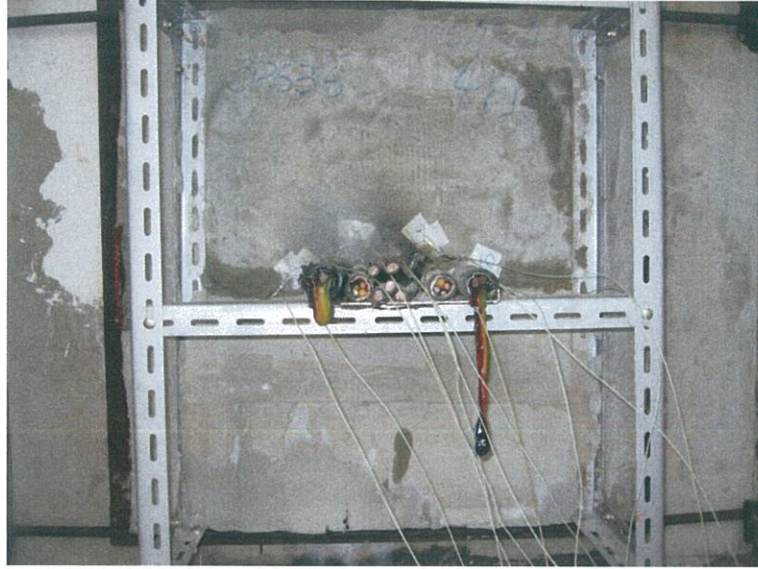


圖 15 測試 180min 時試件背火面

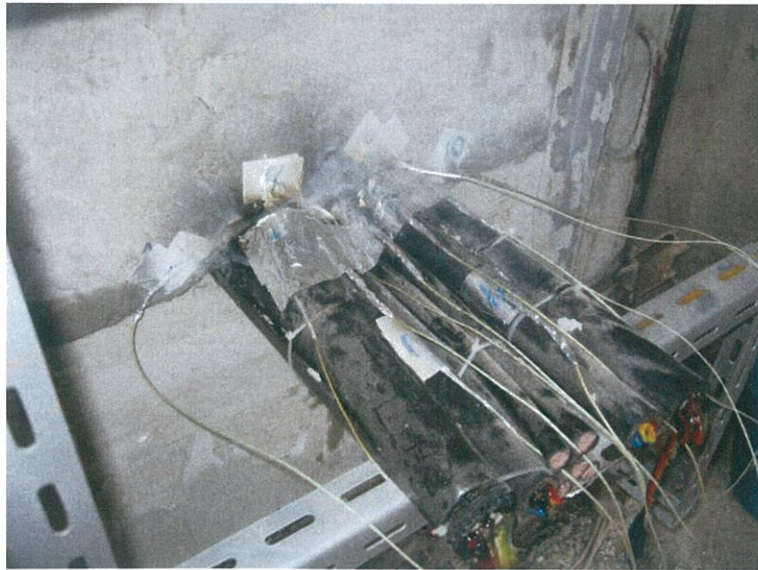


圖 16 測試 183min 時試件背火面

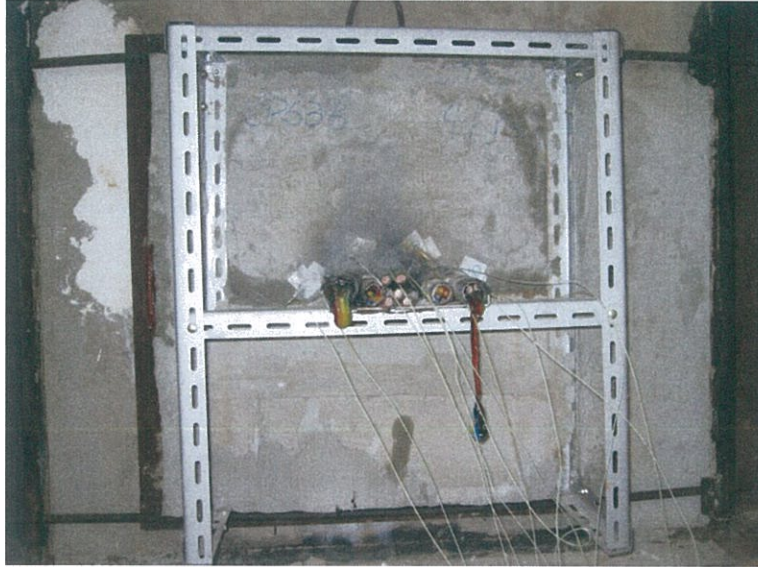


圖 17 測試 210min 時試件背火面



圖 18 測試 240min 時試件背火面

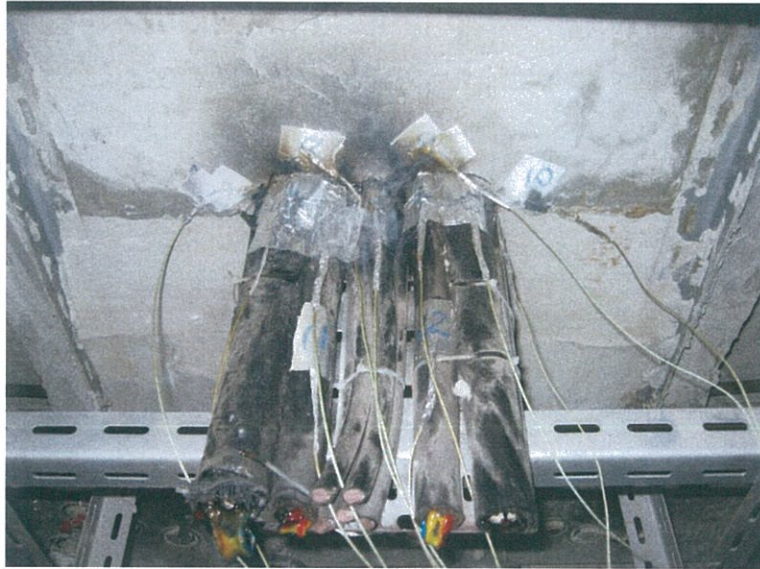


圖 19 測試後試件背火面



圖 20 測試後試件向火面

-----報告結束-----



VOC Content Test Certificate

October 26, 2009

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

Sample Description: Hilti CP 636

Date tested: July 20, 2009

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: Legend Project Number 0903311

Specification	Product
LEED 2009 (LEED 3.0) LEED 2.2 IEQ-4.1: Low-Emitting Materials – Firestop Materials	Hilti CP 636
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	
Multipurpose Construction Materials; VOC Limit: 70 g/L	Product contains: <1 g/L of VOC



William Welbes
 Vice President of Laboratory Operations



Allen Noreen, Ph.D.
 Technical Director



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.
 文件編號 272/DT/2006
 Inf. n.
 日期: 14 / 02 / 2006
 Data

審閱 / Visto
 於 Em 14/02/2006
 技術廳廳長
 O Chefe do D.T.

意見書

事由：要求審批“HILTI”喜利得防火延燒產品 – CP 636 Firestop Mortar

參件： 進入編號 1101 (25/01/2006)
 喜利得(香港)有限公司來函編號：M-AL_LE04_06(18/01/2006)
 意見書編號 243/DT/2006 (09/02/2006)

Ø1. 上述公司交來以下 CP636 Firestop Mortar 的資料：

- a. 澳門大學按照 BS476 Part20 : 1987 檢驗依據測試標準發出的 CP636 Firestop Mortar 檢驗報告複印本 (No2005-FRT43) ;
- b. Underwriters Laboratories (UL Online Certifications Directory) XHHW.R13240 Fill, Void or Cavity Materials – CP636 Firestop Mortar for use in Through – Penetration Firestop System 資料 ;
- c. Warrington 防火研究中心發出的測試報告複印本，編號為 WARRES No.62305/B & ; 134523 ;

Ø2. 根據上述的資料分析後，包括 CP636 Firestop Mortar 的試件組合於試驗結果中顯示具 CRF245 能力。然而，如將此組件應用於不同組合形式使用時，應按照實際用途而作出相應評估；

Ø3. 本局對 CP636 Firestop Mortar 使用於符合《防火安全規章》規範的標準時沒有異議。但最終決定仍須徵詢權限部門(土地工務運輸局)之意見。

二零零六年二月十三日，於技術廳研究暨試驗科

研究暨試驗科科長

黃勁松
 副一等消防區長



APPROVED

Certificate of Compliance

This certificate is issued for the following firestopping products:

- FS-ONE High Performance Intumescent Firestop Sealant
- CP680 Cast-In Firestop Device
- CP680-N Cast-In Firestop Device
- CP680-P Cast-In Firestop Device
- CP682 Cast-In Firestop Device
- CP 648E Wrap Strip
- CP617 Firestop Putty
- CP601 S Elastomeric Firestop Sealant
- CP636 Firestop Mortar
- CP 604 Self Leveling Firestop Sealant
- CP611A High Performance Intumescent Firestop Sealant
- CP 643N Firestop Collar
- CP606 Flexible Firestop Sealant
- CP-672 Firestop Joint Spray
- CP620 Firestop Foam
- CP680-M Cast-In Firestop Device
- CP 675T Firestop Board
- CP618 Firestop Putty
- CP619T Putty Roll
- CP670 Firestop Board
- CP673 Firestop Coating

Prepared for:

Hilti AG
Feldkircherstrasse 100
FL-9494 Schaan
Liechtenstein

FM Approvals Class: 4990

Approval Identification: 3051456

Approval Granted: June 4, 2014

To verify the availability of the Approved product, please refer to www.approvalguide.com.

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

Cynthia E. Frank
AVP - Manager, Materials
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



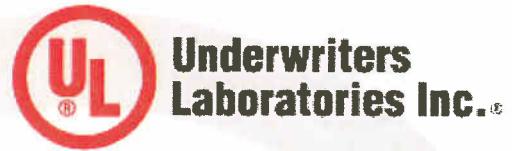
Member of the FM Global Group

Issued: June 30, 2016

Certificate of Compliance

Certificate Number 20060905-R13240
Report Reference 2006 September 5
Issue Date 2006 September 5

Page 1 of 1



Issued to: Hilti Construction Chemicals, Div of Hilti Inc.
5400 S 122ND East Ave
Tulsa, OK 74146


This is to certify that representative samples of Fill, Void or Cavity Materials
CP 636

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1479

Additional Information: CP 636 Mortar for use in Through-Penetration Firestop System Nos. C-AJ-1140, C-AJ-4017 and C-AJ-6006.

Only those products bearing the UL Classification Mark should be considered as being covered by UL's Classification and Follow-Up Service.

The UL Classification Mark includes: UL in a circle symbol:  with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and, the product category name (product identity) as indicated in the appropriate UL Directory.

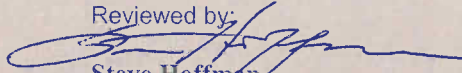
Look for the UL Classification Mark on the product

Issued by:


Mona Couloute

Underwriters Laboratories Inc.

Reviewed by:


Steve Hoffman

Underwriters Laboratories Inc.

Attn. : To whom it may concern

Date : 26 September 2023
Ref. : 106/FP/DY/23

Subject : Country of Origin- Hilti CP636 Firestop Mortar

Dear Sir / Madam,

Enclosed please find the information of Hilti CP636 Firestop Mortar.

Brand Name : Hilti

Model Name : Hilti CP636 Firestop Mortar

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 : India

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

Date: 30 June 2021

Ref.: 076/FP/BL/21

Subject: Hilti CP 636 Firestop Mortar – LEED Information

To Whom It May Concern:

- The Hilti CP 636 Firestop Mortar is manufactured in India.
- The package of Hilti CP 636 Firestop Mortar can be recycled.
- There is no recycled content in Hilti CP 636 Firestop Mortar and it cannot be recycled.
- The Hilti CP 636 Firestop Mortar does not share any rapidly renewable materials.
- The VOC content of the Hilti CP 636 Firestop Mortar is <1 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,



Bill Lee
Product Portfolio Manager
Hilti (Hong Kong) Ltd.

To whom it may concern

Date: 22nd April 2016

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 products, CP636 Firestop Mortar 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,



Andrew Lau
Product Manger

CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

Issue date: 13/10/2020

Revision date: 13/10/2020

Supersedes: 03/04/2020

Version: 2.1

SECTION 1: Identification

1.1. GHS Product identifier

Product form	Mixture
Product name	CP 636
Product code	BU Fire Protection



1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use	Firestop mortar
-----------------	-----------------

1.4. Supplier's details

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

1.5. Emergency phone number

Emergency number	Schweizerisches Toxikologisches Informationszentrum – 24h Service +41 44 251 51 51 (international) +852 27734 700
------------------	---

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Skin corrosion/irritation, Category 2	H315	Calculation method
Serious eye damage/eye irritation, Category 1	H318	Calculation method
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335	Calculation method
Full text of H statements : see section 16		

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Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

Adverse physicochemical, human health and environmental effects

May cause respiratory irritation, Causes skin irritation, May cause an allergic skin reaction, Causes serious eye damage.

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN)



GHS05

GHS07

Signal word (GHS UN)

Danger

Hazardous ingredients

Portland cement; Flue dust, Portland, chemicals

Hazard statements (GHS UN)

H315 - Causes skin irritation
 H318 - Causes serious eye damage
 H335 - May cause respiratory irritation

Precautionary statements (GHS UN)

P261 - Avoid breathing dust.
 P280 - Wear eye protection, protective gloves, protective clothing.
 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.
 P332+P313 - If skin irritation occurs: Get medical advice/attention.
 P310 - Immediately call a POISON CENTER/doctor/....

2.3. Other hazards which do not result in classification

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
Portland cement	(CAS-No.) 65997-15-1	25 – 40	Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 1, H318 Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation, H335
Flue dust, Portland, chemicals	(CAS-No.) 68475-76-3	1 – 2.5	Skin corrosion/irritation, Category 2, H315 Serious eye damage/eye irritation, Category 1, H318 Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation, H335

Full text of H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of necessary 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.

CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation	May cause respiratory irritation.
Symptoms/effects after skin contact	Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	Serious damage to eyes.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective actions for fire-fighters

Protection during firefighting Do not attempt to take action without suitable protective equipment. 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. Avoid breathing dust. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up Mechanically recover the product.
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 Use only outdoors or in a well-ventilated area. Avoid breathing dust. 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 locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Protect from moisture.

Storage temperature 5 – 30 °C

CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

pH	Not available
pH solution	Not available
Viscosity, kinematic (calculated value) (40 °C)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	Not available
Vapour pressure at 50 °C	Not available
Density	Not available
Relative density	Not applicable
Relative vapour density at 20 °C	Not applicable
Solubility	Soluble in water.
Particle size	Not available
Particle size distribution	Not available
Particle shape	Not available
Particle aspect ratio	Not available
Particle specific surface area	Not available

9.2. Data relevant with regard to physical hazard classes (supplemental)

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.

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	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified



CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

Reproductive toxicity	Not classified
STOT-single exposure	May cause respiratory irritation.
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.
Hazardous to the aquatic environment, short-term (acute)	Not classified
Hazardous to the aquatic environment, long-term (chronic)	Not classified

Portland cement (65997-15-1)	
LC50 fish 1	> 1000 mg/l (96 h, Pisces)

12.2. Persistence and degradability

CP 636	
Persistence and degradability	No additional information available
Portland cement (65997-15-1)	
Not rapidly degradable	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

CP 636	
Bioaccumulative potential	No additional information available
Portland cement (65997-15-1)	
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

CP 636	
Mobility in soil	No additional information available
Portland cement (65997-15-1)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

Ozone	Not classified
Other adverse effects	No additional information available



CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

SECTION 13: Disposal considerations

13.1. Disposal 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. Avoid release to the environment.

SECTION 14: Transport information

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

ADR	IMDG	IATA	RID
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
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
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

No data available

Transport by sea

No data available

Air transport

No data available

Rail transport

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

No additional information available



CP 636

Safety Data Sheet

according to the United Nations GHS (Rev. 5, 2013)

SECTION 16: Other information

SDS Major/Minor	None
Issue date	13/10/2020
Revision date	13/10/2020
Supersedes	03/04/2020

Indication of changes:
Composition/information on ingredients.

Full text of H-statements:	
H315	Causes skin irritation
H318	Causes serious eye damage
H335	May cause respiratory 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.



Hilti CP 636 Firestop Mortar Job Reference

Year	Project Name	Customer Name	Project type
2020	TAI WAI STATION NW RES	HIP SENG CONTRACTING COMPANY	Residential
2020	SIN FAT RD, KWUN TONG NKIL 6584	HIP HING CONSTRUCTION CO LTD	Residential
2020	A&A - Infrastructure - Near Lok Wah South Estate, Chun Wah R	CHEUK WAI CONSTRUCTION (HK) LIMITED	Infrastructure
2020	NW KLN RECLAM 6 & FAT TSEUNG ST W	YAU LEE CONSTRUCTION CO LTD	Residential
2020	1-25 A KUNG NGAM RD HOUSING	MATTEX ASIA DEVELOPMENT LIMITED	Residential
2020	HKIA SKYCITY COMPLEX BLDG A2&A3	HIP SENG BUILDERS LIMITED	Retail
2020	Refurbishment - Residential - Wu King Estate, Tuen Mun	CHEUK WAI CONSTRUCTION (HK) LIMITED	Residential
2020	VEHICLE EXAM CENTRE	HIP HING JOINT VENTURE (VEC)	Industrial
2020	TKO LOHAS PARK PH9 (SITE J)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2020	Refurbishment - Residential - Tai Hang Tung Estate, Sham Shui Po	CHEUK WAI CONSTRUCTION (HK) LIMITED	Residential
2021	TAIKOO PLACE PH 2B	HIP HING CONSTRUCTION CO LTD	Office
2021	KAI TAK AREA 1F SITE 2, NKIL 6556	HIP HING CONSTRUCTION CO LTD	Office
2021	EAST KOWLOON CULTURAL CENTRE	LEIGHTON CONTRACTORS (ASIA) LTD	Community & Cultural
2021	A&A - Infrastructure - Near Lok Wah South Estate, Chun Wah R	CHEUK WAI CONSTRUCTION (HK) LIMITED	Infrastructure
2021	KAI TAK 1E SITE 2A&B (6557)	HIP HING CONSTRUCTION CO LTD	Office
2021	KAI TAK AREA 1L2 (6563)	GAMMON ENGINEERING & CONSTRUCTION	Residential
2021	CHAI WAN RD HOUSING	SHUI ON BUILDING	Residential
2021	KAI TAK INLAND REVENUE TOWER	HIP HING ENGINEERING CO LTD	Office
2021	TAI WAI STATION NW RES	BESPARK TECHNOLOGIES ENGINEERING	Residential
2021	1-3 SHEK KOK RD, TKO AREA 85		Residential
2022	KAI TAK AREA 1F1 (6568) ELDERLY	SANFIELD (MANAGEMENT) LIMITED	Residential
2022	KAI TAK AREA 1F SITE 2, NKIL 6556	HIP HING CONSTRUCTION CO LTD	Office
2022	A&A - Infrastructure - Near Lok Wah South Estate, Chun Wah R	CHEUK WAI CONSTRUCTION (HK) LIMITED	Infrastructure
2022	HKIA SKYCITY COMPLEX BLDG A2&A3	HIP SENG CONSTRUCTION COMPANY	Retail
2022	New - Health - Ching Hong Road, Tsing Yi	MILTON CONSTRUCTION ENGINEERING	Health
2022	LOT 1068 S.D. 3, ANDERSON RD - MOUNT ANDERSON	PAUL Y. GENERAL CONTRACTORS LIMITED	Residential
2022	ANDERSON ROAD QUARRY, SITE R2-3	PAUL Y. BUILDERS LIMITED	Residential
2022	KAI TAK 1E SITE 2A&B (6557)	SHUN TAI ELECTRICAL ENGINEERING	Office
2022	YIN PING RD, TAI WO PING (6542)	HIP HING CONSTRUCTION CO LTD	Residential
2022	SIN FAT RD, KWUN TONG NKIL 6584	HIP HING CONSTRUCTION CO LTD	Residential
2023	SIN FAT RD, KWUN TONG NKIL 6584	HIP HING CONSTRUCTION CO LTD	Residential
2023	KAI TAK AREA 1F1 (6568) ELDERLY	SANFIELD (MANAGEMENT) LIMITED	Residential
2023	KAI TAK AREA 4A, SITE 2, NKIL 6554	HIP HING CONSTRUCTION CO LTD	Residential
2023	WEST KOWLOON - LYRIC THEATRE	GAMMON CONSTRUCTION LIMITED	Community & Cultural
2023	KAI TAK AREA 4C, SITE 2, NKIL 6552	ERIC TSE CEMENT WORKS	Residential
2023	YIN PING RD, TAI WO PING (6542)	HIP HING CONSTRUCTION CO LTD	Residential
2023	SHING KAI RD, KAI TAK NKIL 6607	HUNS ENGINEERING COMPANY LIMITED	Hospitality
2023	KAI TAK AREA 4B, SITE 3, NKIL 6574	KOON WO ELECTRICAL DEVELOPMENT	Residential
2023	QUEEN MARY HOSPITAL PH1 (SS F501)	CORNWALL ELECTRICAL ENGINEERING	Health
2023	IMMIGRATION HEADQUARTERS, TKO	CORNWALL ELECTRICAL ENGINEERING	Office