

Fireproof testing made by DBI of Coating material used on ventilation shafts.

Case Efficient ventilation in existing multiple storage buildings.

Date 2013-03-12

Subject Notes taken at fireproof testing on ventilation shafts.

Notes Made by CGL, TI

Adaptation An adaptation has been made of the three ventilation shafts (not fire laden shafts).

The adaptation has been made with a KIMO funnel and a TSI heat alloy wire wind gauge 9565P1121023 on the main shaft. The dispersal between the divided shafts is made with a center velocity count in the upper area of the concrete shafts. The measure is made according to the standard volume of air change in an apartment at 126m³/h

Main shaft final regulation

Speed	Flow	Wanted flow	Diversion
[m/s]	[m ³ /h]	[m ³ /h]	[%]
7,4	370	378	-2%

Dispersal between the side shafts (Seen from above on the front)

Enhed	Venstre	Center	Højre
[m/s]	3,5	3,45	3,35
[m ³ /h]	126	124	121

Test The flow has been controlled several times during the test, and also of the temperature of the air in main shaft

Time	Test Time	Measure in the Main Shaft	
		Velocity	Temperature
[h]	[min]	[m/s]	[°C]
09:30		7,4	16,3
09:35		7,4	16,9
09:45		7,4	16,7
10:30		7,4	17,5

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Notes

Time	Test time	Comments
09:47	00:12:30	Faint smoke from the coated shaft (680oC i the shaft). The Coating has slightly changed colour.
09:49	00:14:30	Several very small ashen particles (peeling?) are rising from the shaft. Still only a faint smoke
09:50	00:15:30	Faint fissures (hair straw-thin) in the horizontal joint between the two shafts. The Coating is discoloured but not damaged or degraded.
09:52	00:17:30	300o in the bottom of the ventilated shafts and 100o in the top.150o on the unexposed sides of the shaft. The non coated shaft (Shaft nr. 4) is developing vertical fissures.
09:55	00:20:30	A few sparks is coming from shaft nr. 5, which is the one next to the coated shaft.
10:04	00:29:30	Few sparks is coming from shaft nr. 5.
10:08	00:33:30	Short lasting flakes coming from the coated exposed shaft.
10:19	00:44:30	Short lasting flakes coming from the coated exposed shaft.
10:34	01:00:00	<p>The End –temporary conclusion:</p> <p>No ignition or smoke development rising from the coating material.</p> <p>FlashBand positioned around Ø23 hole is gone but it has not developed smoke.</p> <p>FlashBand Ø10 and Ø17 is not ignited and has not developed any smoke.</p> <p>At the end of the test a small crack appeared on the coated shaft (non coated shaft has cracks appearing earlier on in the test and it developed more during the test.)</p> <p>FlashBand should be compared to regular ventilation shafts wadding</p> <p>TI is going to do a test to show how much FlashBand can be used for every meter shaft.</p>