

 حكومة دبي GOVERNMENT OF DUBAI	Organization/Unit: إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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1. GENERAL

This document is a Specific Rule for a Type 1b certification of the insulation materials, including pipe and duct insulation as covered in the Standard Specification / Regulation defined herewith. The Type 1b certification system is in accordance with ISO/IEC 17067 and as described in DM-DCLD-RD-DP32-5001 (IC) General rules for Type 1 product certification

2. CERTIFICATION REQUIREMENTS

2.1 Standard Specification (SS)

Standard Specification No.	2018 UAE Fire Life and Safety Code of Practice
Title of Standard Specification	2018 UAE Fire Life and Safety Code of Practice

2.2 Tests to be carried out on each sample (The test shall be carried out at an independent UAE-CD approved laboratory). Refer also to clause 2.4 where applicable.

2.2.1 The Type 1 Certification shall be based on the satisfactory compliance of the test results on the requirements of the UAE Fire and Life Safety Code of Practice 2018 for building thermal insulation materials (PUR/PIR, Polystyrene, Mineral Wool, Phenolic, Cellular Glass, etc.) and pipe and duct insulation materials (Phenolic, PUR/PIR, Mineral Wool, Cellular Glass, EPDM, XLPE, NBR, PET, etc.) to be carried out on each sample.

2.2.1.1 Building Thermal Insulation materials shall comply with the applicable clauses as per the requirements of the standard specification.

2.2.1.1.1 PUR/PIR - Results of the fire safety tests SHALL comply with the requirements of Tables 1.15a, 1.15b, 1.17a, 1.17b and 1.17c (whichever is applicable) for test 1 only of UAE FIRE & LIFE SAFETY CODE OF PRACTICE 2018 as given in Annex A.

2.2.1.1.2 Polystyrene - Results of the fire safety tests SHALL comply with the requirements of Tables 1.15a, and 1.15b (whichever is applicable) for test 1 only of UAE FIRE & LIFE SAFETY CODE OF PRACTICE 2018 as given in Annex A.

2.2.1.1.3 Mineral Wool - Results of the fire safety tests SHALL comply with the requirements of Tables 1.14a, 1.14b, 1.15a, 1.15b, 1.17a, 1.17b, and 1.17c (whichever is applicable) for test 1 only of UAE FIRE & LIFE SAFETY CODE OF PRACTICE 2018 as given in Annex A.

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2.2.1.1.4 Phenolic - Results of the fire safety tests SHALL comply with the requirements of Tables 1.15a, 1.15b, 1.17a, 1.17b and 1.17c (whichever is applicable) for test 1 only of UAE FIRE & LIFE SAFETY CODE OF PRACTICE 2018 as given in Annex A.

2.2.1.1.5 Cellular Glass - Results of the fire safety tests SHALL comply with the requirements of Tables 1.14a, 1.14b, 1.15a, 1.15b, 1.17a, 1.17b, and 1.17c (whichever is applicable) for test 1 only of UAE FIRE & LIFE SAFETY CODE OF PRACTICE 2018 as given in Annex A.

2.2.1.2 Pipe and duct insulation materials - Fire Performance shall have, in the form in which they are used, a maximum flame spread index of 25 without evidence of continued progressive combustion and a maximum smoke developed index of 50 when tested in accordance with ASTM E 84 or UL723. Please refer to Annex A.8 – Extracted from UAE Fire and Life Safety Code of Practice.

2.3 Sampling

- 2.3.1 The population of the product (batch/lot shall be defined prior to sampling. The members of the batch shall be of uniform physical description (i.e. same size shape, dimensions, etc.) and shall be distinctly identified by any appropriate means (For example: by batch/lot number, quantity, location, markings, dimensions, etc. or a combination of them).
- 2.3.2 Based on the defined batch/lot and the tests to be carried out as per clause [2.2], DCLD-PCAS or its authorized representative shall prepare a “Sampling and testing plan” that will give details of the number of samples and the tests to be carried out on each selected sample. The applicant for certification shall agree to the sampling and testing plan.
- 2.3.3 The sampling and testing plan shall take guidance from DM-DCLD-RD-DP32-5003 (IC) “Guidance for preparing sampling and testing plan”; and shall be prepared in such manner that will provide highest confidence that the sample represents the entire population of product being certified.
- 2.3.4 In case the sample fails to meet the requirements, the applicant may request for re-sampling and re-testing from the same batch/lot of product/s, in accordance with the agreed sampling plan. If the new sample again fails to meet the requirements, the product shall be considered non-conforming and no certificate shall be issued.
- 2.3.5 Where the client has valid test reports for the defined lot/batch OR from the same product category under Type 1 certification with a written proof that the formulation of final products and the raw materials has never been altered/modified during the three years validity of the submitted test reports (check clause 2.4 below), then sampling might be waived.

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2.4 Acceptance of Test Reports

2.4.1 Test reports may be accepted provided that the test are done in a laboratory which is approved by UAE – Civil Defense.

2.4.2 During initial evaluation, test reports submitted by the client/applicant may be accepted provided that the report is not more than (3) years old from the date issue at the time of evaluation and it was carried out on the same category of the products to be certified under Type 1b and that the client has submitted a written confirmation that the formulation of final products and the raw materials has never been altered/modified during the three years validity of the submitted test reports.

3. ISSUANCE OF TYPE 1B CERTIFICATE

3.1 The Type 1b certificate shall be issued only when all results are meeting all the requirements as mentioned in clause [2.2].

3.2 The certificate is applicable only to the lot or batch of product defined and identified as per clause 2.3. It does not apply to the entire production of the factory.

3.3 The Type 1b certificate is valid for (1) one year.

3.4 The Type 1b certificate shall be issued upon payment of fees in accordance with DM-DCLD-RD-DP32-5002 (IC).

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ANNEX A

Annex A.1 Table 1.14a

Table 1.14.a.: MCM and ACP On Non-Fire Resistance rated and Non-Load bearing Exterior wall coverings-Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 MCM/ ACP CORE AND PANEL AS PRODUCT	TEST 2 MCM/ ACP PANELS WITH WALL ASSEMBLY
1. SUPER HIGHRISE BUILDING 2. HIGHRISE BUILDING 3. MALLS 4. THEME PARKS 5. SCHOOLS 6. HOSPITALS 7. ASSEMBLY	i. Core shall be tested to the criteria iii and iv. ii. Panel shall be tested with the thickness intended to the criteria iii and iv. iii. EN 13501-1 With pass criteria A1 OR A2-s1-d0 AND iv. ASTM D1929 MCM/ACP shall have self ignition temperature of not less than 343°C.	v. BS 8414 –1 Or 2 With pass criteria as per BRE 135 OR vi. NFPA 285 With pass criteria "Pass" OR vii. FM 4881 With pass criteria "Pass" OR viii. ISO 13785-2 With pass criteria "Pass"
8. LOWRISE BUILDING 9. MIDRISE BUILDING 10. WAREHOUSE 11. INDUSTRIAL	i. Core shall be tested to the criteria iii and iv. ii. Panel shall be tested with the thickness intended to the criteria iii and iv. iii. EN 13501-1 With pass criteria B-s1-d0 AND iv. ASTM D1929 MCM/ACP shall have self ignition temperature of not less than 343°C.	v. BS 8414 –1 Or 2 With pass criteria as per BRE 135 OR vi. NFPA 285 With pass criteria "Pass" OR vii. FM 4881 With pass criteria "Pass" OR viii. ISO 13785-2 With pass criteria "Pass"

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Annex A.2 Table 1.14b

Table 1.14.b.: MCM and ACP on Fire Resistance rated Exterior wall coverings-Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 MCM/ ACP CORE AND PANEL AS PRODUCT	TEST 2 MCM/ ACP PANELS IN WALL ASSEMBLY
1. ANY BUILDING WITH ANY HEIGHT AND ANY OCCUPANCY HAVING REQUIREMENT OF FIRE RESISTANCE RATED EXTERIOR WALL CONSTRUCTION, WHERE REQUIRED BY OTHER SECTIONS OF THIS CHAPTER.	i. Core shall be tested to the criteria iii and iv. ii. Panel shall be tested with the thickness intended to the criteria iii and iv. iii. EN 13501-1 With pass criteria A1 OR A2-s1-d0 AND iv. ASTM D1929 MCM/ACP shall have self ignition temperature of not less than 343°C.	v. ASTM E 119 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR vi. UL 263 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR vii. EN 1362-3 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR viii. EN 1362-4 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall.

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Annex A.3 Table 1.15a

Table 1.15.a.: EIFS and ETICS on Non-Fire Resistance rated and Non-Load bearing Exterior wall coverings-Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 EIFS/ETICS COMPONENTS AND PANEL AS PRODUCT	TEST 2 EIFS/ETICS AS WALL ASSEMBLY
1. ANY BUILDING 2. ANY INSTALLATION 3. ANY AESTHETICS	i. All components of the EIFS (All layers including EPS/XPS, coating, insulation, mesh, adhesive and finish.) shall be class A (Flame spread 0-25, Smoke development 0-450) when individually tested to ASTM E 84 or UL 723 AND ii. NFPA 268 With pass criteria "No Ignition at 12.5 kw/m ² at 20 minutes"	iii. BS 8414 –1 Or 2 With pass criteria as per BRE 135 OR iv. NFPA 285 With pass criteria "Pass" OR v. FM 4881 With pass criteria "Pass" OR vi. ISO 13785-2 With pass criteria "Pass"

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Annex A.4 Table 1.15b

Table 1.15.b.: EIFS and ETICS on Fire Resistance rated Exterior wall coverings-Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 EIFS/ETICS COMPONENTS AND PANEL AS PRODUCT	TEST 2 EIFS/ETICS AS WALL ASSEMBLY
1. ANY BUILDING 2. ANY INSTALLATION 3. ANY AESTHETICS	i. All components of the EIFS (All layers including coating, insulation, mesh, adhesive and finish.) shall be class A when individually tested to ASTM E 84 or UL 723 AND ii. NFPA 268 With pass criteria "No Ignition at 12.5 kw/m ² at 20 minutes"	iii. ASTM E 119 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR iv. UL 263 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR v. EN 1362-3 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR vi. EN 1362-4 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall.

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Annex A.5 Table 1.17a

Table 1.17.a.: Sandwich Panels on Non-Fire Resistance rated and Non-Load bearing Exterior wall coverings-Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
1. SUPER HIGHRISE BUILDING 2. HIGHRISE BUILDING 3. MALLS 4. THEME PARKS 5. SCHOOLS 6. HOSPITALS 7. ASSEMBLY	i. Core shall be tested to the criteria iii and iv. ii. Panel shall be tested with the thickness intended to the criteria iii and iv. iii. EN 13501-1 With pass criteria A OR A2-s1-d0 AND iv. ASTM D1929 With pass criteria PEWFS shall have self ignition temperature of not less than 343°C.	v. BS 8414 –1 Or 2 With pass criteria as per BRE 135 OR vi. NFPA 285 With pass criteria "Pass" OR vii. FM 4881 With pass criteria "Class 1" OR viii. ISO 13785-2 With pass criteria "Pass"
8. LOWRISE BUILDING 9. MIDRISE BUILDING 10. WAREHOUSE 11. INDUSTRIAL	i. Core shall be tested to the criteria iii or iv and v. ii. Panel shall be tested with the thickness intended to the criteria iii or iv and v. iii. EN 13501-1 With pass criteria B-s1-d0 OR iv. FM 4880 With pass criteria "Non-combustible core" AND v. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	vi. BS 8414 –1 Or 2 With pass criteria as per BRE 135 OR vii. NFPA 285 With pass criteria "Pass" OR viii. FM 4881 With pass criteria "Class 1" OR ix. ISO 13785-2 With pass criteria "Pass"

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Annex A.6 Table 1.17b

Table 1.17.b.: Sandwich Panel on Fire Resistance rated Exterior wall -Test Requirements		
OCCUPANCY AND TYPE OF BUILDING	TEST 1 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
1. ANY BUILDING WITH ANY HEIGHT AND ANY OCCUPANCY (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. Core shall be tested to the criteria iii or iv and v. ii. Panel shall be tested with the thickness intended to the criteria iii or iv and v. iii. EN 13501-1 With pass criteria A OR A2-s1-d0 OR iv. FM 4880 With pass criteria "Non-combustible core" AND v. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	vi. ASTM E 119 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall." OR vii. UL 263 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall." OR viii. EN 1362-3 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall." OR ix. EN 1362-4 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall."

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Annex A.7 Table 1.17c

Table 1.17.c.: Sandwich Panel in various applications -Test Requirements		
APPLICATIONS	TEST 1 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
1. INTERNAL NON FIRE RESISTANCE RATED WALLS AND PARTITIONS (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. EN 13501-1 With pass criteria B-d0-S1 OR i. ASTM E 84/ UL 723 With pass criteria "Class A" OR i. BS 476 Part 7 With pass criteria "Class 1" OR i. FM 4880 With pass criteria "Non-combustible core" AND i. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	NOT REQUIRED
2. INTERNAL FIRE RESISTANCE RATED WALLS AND PARTITIONS (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. EN 13501-1 With pass criteria B-d0-S1 OR ii. FM 4880 With pass criteria "Non-combustible core" AND iii. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	iv. FM 4881 With pass criteria "Class 1" OR v. UL 1715 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall. OR vi. UL 1040 With pass criteria "1 Hr or 2 Hr OR 3 Hr as per required fire rating of the wall.

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Annex A.7 Table 1.17c (continuation)

Table 1.17.c.: Sandwich Panel in various applications -Test Requirements		
APPLICATIONS	TEST 1 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
3. COLD STORAGE WALLS (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. EN 13501-1 With pass criteria B-d0-S1 OR ii. FM 4880 With pass criteria "Non-combustible core" AND iii. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	NOT REQUIRED
4. ROOFING-SPRINKLERED BUILDINGS (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	ii. NFPA 256 With pass criteria "Class B" OR iii. ASTM E 108 With pass criteria "Class B" OR iv. EN 13501-5 +A1 With pass criteria "Class Broof t4". OR v. UL 790 With pass criteria "Class B"

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Annex A.7 Table 1.17c (continuation)

Table 1.17.c.: Sandwich Panel in various applications -Test Requirements		
APPLICATIONS	TEST 1 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
5. ROOFING-NON SPRINKLERED BUILDINGS (SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)	i. ASTM D1929 Shall have self ignition temperature of not less than 343°C.	ii. NFPA 276 With pass criteria "Class 1" OR iii. ASTM E 108 With pass criteria "Class A" OR iv. EN 13501-5 +A1 With pass criteria "Class Broof t4". OR v. UL 790 With pass criteria "Class A" OR vi. FM 4470 Or FM 4471 With pass criteria "Pass"

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Annex A.8 – Page Extracted from UAE Fire and Life Safety Code of Practice



Chapter 10 SMOKE CONTROL AND SMOKE MANAGEMENT SYSTEMS

2.2. Components of Smoke Control and HVAC Systems

2.2.1. Components involved in Smoke Control Systems and HVAC Systems shall comply with **Table 10.1.**

Table 10.1.: Components of Smoke Control and HVAC Systems

3. DUCTS

1. HVAC DUCTS

- Air ducts for HVAC systems shall be constructed of iron, steel, aluminum, copper, concrete, masonry. See **Figure 10.1.** for illustrations.
- Class 0 or Class 1 rigid or flexible air ducts tested in accordance with ANSI/UL 181 listing shall be permitted to be used for ducts when air temperature in the ducts does not exceed 250°C or when used as vertical ducts serving not more than two adjacent stories in height.
- Pipe and duct insulation and coverings, duct linings, vapor retarder facings, adhesives, fasteners, tapes and supplementary materials added to air ducts, plenums, panels, and duct silencers used in duct systems, shall have, in the form in which they are used, a maximum flame spread index of 25 without evidence of continued progressive combustion and a maximum smoke developed index of 50 when tested in accordance with ASTM E 84 or UL 723. See **Section 6** for Duct test requirements.
- Flammable, non-listed and non-approved insulation coverings and tapes shall not be installed.
- Pipe and duct insulation and coverings, duct linings and their adhesives, and tapes shall use the specimen preparation and mounting procedures of ASTM E 2231. See **Figure 10.2.** for illustrations.
- Air connectors shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more. Air connectors shall not pass through floors.
- A service opening shall be provided in air ducts adjacent to each fire damper, smoke damper and any duct smoke detectors that need access for installation, cleaning, maintenance, inspection, and testing.
- Ventilation ducts should not pass through smokeproof enclosures or the firefighting lobby.
- Where unavoidable, the part of the ventilation duct within the firefighting lift lobby shall be enclosed in construction with fire resistance rating at least equal to that of the elements of structure. See **Figure 10.3.** for illustrations. Such construction shall be in masonry. If other form of fire resisting construction is used, the fire damper shall be fitted where the duct penetrates the lobby enclosure. No air conditioning or ventilation ducts shall penetrate separating walls. See **Figure 10.4.**

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