

 GOVERNMENT OF DUBAI	<b>Organization/Unit:</b>	إدارة مختبر دبي المركزي <b>Dubai Central Laboratory Department</b>	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
	<b>Document Title:</b>	<b>Specific Rules for the FA Certification of Insulation Materials for Compliance to the requirements of UAE Fire and Life Safety Code of Practice 2018</b>	عنوان الوثيقة:	
	<b>Doc Ref.</b>	<b>DM-DCLD-RD-DP21-2210 (IC)</b>	رقم الوثيقة :	

Issue Date	Rev. No.	Summary Of Amendments
14/03/2019	0	First draft for comments
25/03/2019	0	Final draft circulated for comments
27/03/2019	1	Issue for use
09/08/2020	2	Add the options for initial audit by the approved CAB and remotely by PCAS. Adding definition for authorized auditor. Update for the new numbering system and followed terminologies. Add provision for accepting valid test reports. Correction of numbering.

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## 1. GENERAL

### 1.1 INTRODUCTION

1.1.1 This document prescribes the Specific Rules for the implementation of the DM Third Party Product Certification Scheme through factory assessment as applied to the products identified herein, taking into consideration the applicable normative references and standard specifications.

1.1.2 The applicant shall comply with these specific rules, and with those already mentioned in the “General Rules for DM Third Party Product Certification Scheme Through Factory Assessment”, DM-DCLD-RD-DP21-2001 (IC).

### 1.2 SCOPE

1.2.1 This specific rule applies to the DCL Certification of the building thermal insulation materials, including pipe and duct insulation’s compliance to the applicable requirements and specifications of the UAE Fire and Life Safety Code of Practice 2018.

1.2.2 This specific rule applies to the DCL Certification for building thermal insulation as a material and component only under UAE Fire and Life Safety Code of Practice 2018 for Test 1. When used as part of the system or assembly, they shall comply with UAE Fire and Life Safety Code of Practice 2018 for Test 2.

1.2.3 This specific rule also covers the automatic issuance of DCD-COC on the requirements of UAE Fire and Life Safety Code of Practice 2018 after obtaining the DCL Fire Safety Certificate.

1.2.4 Exemptions - Products and materials that are not required to be tested for Fire Safety as per the UAE Fire and Life Safety Code of Practice 2018 are not covered in this specific rule. This includes (1) spray applied roof insulation systems that are covered by concrete; (2) block insert; (3) floor insulation covered by concrete; (4) insulation as component of roof assembly; (5) others.

### 1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product name: Building thermal insulation materials, including pipe and duct insulation

1.3.2 Applicable Standard/Normative Reference: UAE Fire and Life Safety Code of Practice 2018

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### 1.3.3 Additional References:

- ISO 9001 - Quality Management System – Requirements
- ISO 19011 - Guidelines for Auditing Management Systems

## 1.4 DEFINITION OF TERMS

The definitions given in UAE Fire and Life Safety Code of Practice 2018, DM-DCLD-RD-DP21-2001 (IC), and in addition, the following shall also apply:

- 1.4.1 Independent Testing Laboratory - any testing laboratory approved by UAE Civil Defense and recognized by DCLD-PCAS
- 1.4.2 Independent Test – test performed or conducted by the recognized Independent Testing Laboratory
- 1.4.3 Standard Specification (SS) – UAE Fire and Life Safety Code of Practice 2018
- 1.4.4 QMS - Quality Management System aligned with the requirements of ISO 9001 Standard
- 1.4.6 Client – Manufacturer of insulation materials, including pipe and duct insulation for compliance to the UAE Fire and Life Safety Code of Practice 2018
- 1.4.7 DM Certification Body: Dubai Central Laboratory Department-Products Conformity Assessment Section (DCLD-PCAS)
- 1.4.8 Authorized auditor : is any approved auditor by DCLD-PCAS either internal within DCLD or external (Approved CAB's auditor or approved auditor based on a signed contract)

## 2. REQUIREMENTS FOR CERTIFICATION

### 2.1 APPLICATION

- 2.1.1 The client may apply to DCLD-PCAS for the Certification and authorization to use the DCL Conformity Mark.
- 2.1.2 Application forms shall be submitted to DCLD-PCAS together with the following documents
  - a. Industrial /Trade License
  - b. Complete Product Description and Specifications
  - c. Brief Description of Manufacturing Process

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- d. Copy of the Quality Manual (Controlled Copy), (If available)
- e. Vicinity Map and Factory Layout
- f. Valid Certification to ISO 9001 (if available)
- g. List of key personnel and their designation
- h. Total number of effective personnel involved in manufacture of the product (technical, managerial and support personnel)
- i. List of available testing equipment and tests conducted internally
- j. Others

2.1.3 Separate application shall be submitted for each product type or group of products that refers to a different specifications /specific rules.

## 2.2 FACTORY OPERATION

### 2.2.1 Quality Management System

The client shall have a Quality Management System that is aligned to the requirements of ISO 9001 standard.

NOTE : Having a certificate of ISO 9001 is not a mandatory requirement; however the structure of the manufacturer's QMS shall be in line with its requirements

### 2.2.2 Laboratory

The client shall have a quality assurance laboratory to carry out factory production control testing to ensure that the product comply with the requirements of the standard specification.

The laboratory can be part of the factory facilities, or, can be through a documented agreement with an external laboratory. As a minimum requirement, the laboratory shall have the testing equipment as per the related specific rules.

## 2.3 INITIAL FACTORY AUDIT

2.3.1 Initial factory audit will be carried out by duly authorized auditor(s) which will cover auditing of the quality management system to verify its compliance with the requirements of ISO 9001, in addition to verify the implementation of DCLD-PCAS certification's requirements. Where possible; the audit can be carried out remotely as per (DM-DCLD-RD-DP21-2098 (IC) Guidelines for Remote Audit) or as per the related approved guidelines which are followed by the approved outsourced CAB.

NOTE: An independent certification to ISO 9001 issued by a QMS certification body recognized by DCLD-PCAS may be

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considered as having satisfied this requirement; however, DCLD-PCAS reserves the right to carry out verification audit to confirm that the factory is in compliance with the QMS requirements, in addition to the requirements of DCLD certification schemes and rules

2.3.2 Factory audit shall be conducted by designated audit team in accordance with ISO 19011 – Guidelines for Auditing Management Systems.

## 2.4 PRODUCT EVALUATION

2.4.1 The product conformity 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.

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

2.4.1.1.1 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.

2.4.1.1.2 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.

2.4.1.1.3 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.

2.4.1.1.4 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.

2.4.1.1.5 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.

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2.4.1.2 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.

2.4.2 Testing shall be carried out by UAE – Civil Defense approved laboratory only. Validity of the test reports shall be three (3) years from the date of issue.

2.4.3 Test reports submitted by the client may be accepted provided there is evidence that the sampling is carried out by independent Conformity Assessment Bodies (CAB) and the report is not more than 1 year old from the date of issue.

#### 2.4.4 Sampling and Testing

2.4.4.1 Three sets of sample per product per type shall be selected from the production line or from the warehouse and shall be subjected to testing; the first set, where possible, will be tested in the plant witnessed by a duly authorized auditor, the second set will be sent to UAE-Civil Defense and DCLD-PCAS approved independent testing laboratory. The third set will be kept by the client as reference.

2.4.4.2 Test sample(s) for independent test shall be identified, packed/sealed and signed in the presence of DCLD-PCAS authorized auditor and shall be submitted to UAE-Civil Defense and DCLD-PCAS approved lab.

2.4.4.3 If the result of the test conducted by the UAE-Civil Defense and DCLD-PCAS approved independent testing laboratory shows non-conformance to the specified requirements, retest shall be carried out on the reference sample kept by the client or on new samples collected by the authorized auditor, on which full testing shall be carried out, if necessary.

2.4.4.4 If the retest passed, the initial product assessment is considered conforming to product specification. If not, the client will be advised to take corrective action.

2.4.4.5 Independent test shall only be conducted if the results of the in-plant tests show satisfactory result. DCLD-PCAS may opt to accept available valid test reports conducted by an approved DCLD-PCAS independent laboratory within one year from the date of the initial assessment, in line with the internal quality control testing plan of the factory. In such case, the testing of that particular parameter(s) shall be waived accordingly

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2.4.4.6 Only after reassessment and subsequent product compliance shall the client be allowed to use DCL Conformity Mark on his product(s) that have been tested and found complying with the certification requirements

### 3. GRANTING OF THE DCL CERTIFICATION

#### 3.1 CONDITIONS FOR GRANTING THE DCL FIRE SAFETY CERTIFICATE

3.1.1 When the results of the factory audit (clause 2.3) and product evaluation (clause 2.4) show conformity to the requirements specified in the General Rule and Specific Rule, the DCL Fire Safety Certificate and authorization to use the DCL Conformity Mark shall be issued to the client for the type(s) and size(s) of the product(s) covered by the assessment.

3.1.2 The client shall have a product quality assurance plan / mechanism to ensure continuing compliance with the Standard Specifications and the requirements of this certification scheme. It shall consist of (1) an internal product quality assurance plan, and (2) an independent testing plan.

#### 3.1.3 Factory Production Control System (Internal Product Quality Assurance Plan)

The client shall have an internal product quality assurance plan giving details of the tests to be carried out at the factory. This will include as a minimum, the following details: (1) location of sampling; (2) frequency of sampling; (3) quantity of samples; (4) tests to be carried out; (5) results acceptance criteria; and (6) responsible person to carry out the activity. The plan shall cover all the inspections carried throughout the whole manufacturing process; i.e. (raw materials – production lines- finished product testing and evaluation as per standard specifications – final packing).

The plan shall take into consideration the production process, the volume of production, the criticality of the test to be specified, and other relevant factors.

#### 3.1.4 Independent Testing Plan

The client shall agree to an independent testing plan to be carried out on samples which are collected in accordance with DM-DCLD-RD-DP21-2096 (IC) – Surveillance of Certified Clients under the Factory Assessment Scheme, and implemented by DCLD-PCAS. The cost of testing under the independent testing plan shall be shouldered by the factory.

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### 3.2 ISSUANCE OF DCL FIRE SAFETY CERTIFICATE AND UAE CIVIL DEFENSE-CERTIFICATE OF COMPLIANCE (COC)

If the conditions mentioned in clause 3.1 above have been complied, the client shall be granted a DCL Fire Safety Certificate and a Scope of Certification that covers the type(s) and size(s) of the products that are certified and will be authorized to use the DCL Conformity Mark on the certified products.

Likewise, DCL shall issue a UAE Civil Defense – COC for the products that have been granted a DCL Fire Safety Certificate and a Scope of Certification, that covers the type(s), and size(s) of the products that are certified.

### 3.3 RESPONSIBILITIES OF THE CERTIFIED CLIENT

3.3.1 The client shall ensure that his product, for which a certificate of conformity has been issued, conforms at all times to Terms and Conditions mentioned in the Application Form (DM-DCLD-F-IC-2001), the requirements of the General Rule and Specific Rules, and regulations and legislation, whenever applicable, and shall maintain to the satisfaction of DCL, a system of quality control including inspection and testing.

3.3.2 The client shall give the duly authorized auditor(s), access during working hours, without prior notification, to the premises of the factory where certified product is manufactured, for the purpose of evaluating the materials, production processes, finished products, quality assurance facilities, records and others in accordance with the requirements of the scheme.

3.3.3 The client shall inform DCLD-PCAS in writing of any changes of management, transfer of plant site, modification in the product, manufacturing process or factory quality management system.

3.3.4 Upon transfer of plant site, the certificate of conformity shall be deemed valid only after factory and product audit at the new site has been satisfactorily completed.

3.3.5 Any infraction stated in the terms and conditions of the certification scheme and the use of DCL Conformity Mark shall constitute sufficient grounds for suspension, withdrawal and termination of certification in accordance with DM-DCLD-IMS-RD-07.

3.3.6 Any dispute that may arise in connection with the Terms and Conditions of the certification scheme shall be settled in accordance with DM-DCLD-IMS-RD-08 Appeals, Disputes, and Complaints Procedure.

3.3.7 The certified client shall pay all applicable fees related to the certification process.

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### 3.4 USE OF THE DCL CONFORMITY MARK

3.4.1 The design and use of the DCL Conformity Mark shall be in accordance with the Terms and Conditions for the Use of the DCL Conformity Mark, DM-DCLD-IMS-RD-13.

3.4.2 The client shall submit a product-marking proposal for approval by DCLD-PCAS. The proposal shall include drawings and/or diagrams showing the location and size of the marking for each size of the product/packaging, where applicable

3.4.3 The DCL Fire Safety Certificate and the authorization to use the DCL Conformity Mark is non-transferable.

### 4. SURVEILLANCE

4.1 DCLD-PCAS or their approved CAB shall carry out periodic surveillance to ensure consistent compliance with the requirements of this certification scheme as per DM-DCLD-RD-DP21-2096 (IC) – Surveillance of Certified Clients under the Factory Assessment Scheme.

4.2 Testing as part of the surveillance shall be in accordance with the Independent Testing Plan (clause 3.1.4) that has been agreed between DCLD-PCAS - and the client.

### 5. FEE SCHEDULE

5.1 The client shall pay the applicable fees and charges related to the granting of the certificate of conformity and the authorization to use the DCL Conformity Mark based on DCL Official Fee Structure, DM-DCLD-RD-DP21-2097 (IC).

5.2 The fees for this certification scheme shall include but not limited to the following

- 5.2.1 Application Fee
- 5.2.2 Initial Assessment Fee
- 5.2.3 Certification Fee
- 5.2.4 Marking Fee
- 5.2.5 Surveillance Fee
- 5.2.6 Annual Renewal Fee
- 5.2.7 Testing Fee
- 5.2.8 Outsource Activity Fee , where applicable

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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	TEST 2
	MCM/ ACP CORE AND PANEL AS PRODUCT	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	TEST 2
	MCM/ ACP CORE AND PANEL AS PRODUCT	MCM/ ACP PANELS IN WALL ASSEMBLY
<b>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.</b>	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

<b>Table 1.15.a.: EIFS and ETICS on Non-Fire Resistance rated and Non-Load bearing Exterior wall coverings-Test Requirements</b>		
<b>OCCUPANCY AND TYPE OF BUILDING</b>	<b>TEST 1 EIFS/ETICS COMPONENTS AND PANEL AS PRODUCT</b>	<b>TEST 2 EIFS/ETICS AS WALL ASSEMBLY</b>
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 <sup>2</sup> 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 <sup>2</sup> 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	TEST 2
	SANDWICH PANEL AS PRODUCT	SANDWICH PANEL IN WALL ASSEMBLY
<b>1. ANY BUILDING WITH ANY HEIGHT AND ANY OCCUPANCY</b>  (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
<b>1. INTERNAL NON FIRE RESISTANCE RATED WALLS AND PARTITIONS</b>  (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
<b>2. INTERNAL FIRE RESISTANCE RATED WALLS AND PARTITIONS</b>  (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
<b>3. COLD STORAGE WALLS</b>  (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
<b>4. ROOFING-SPRINKLERED BUILDINGS</b>  (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
<b>5. ROOFING-NON SPRINKLERED BUILDINGS</b>  (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**

<b>3. DUCTS</b>	<p><b>1. HVAC DUCTS</b></p> <ol style="list-style-type: none"> <li>i. Air ducts for HVAC systems shall be constructed of iron, steel, aluminum, copper, concrete, masonry. See <b>Figure 10.1.</b> for illustrations.</li> <li>ii. 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.</li> <li>iii. 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 <b>Section 6</b> for Duct test requirements.</li> <li>iv. Flammable, non-listed and non-approved insulation coverings and tapes shall not be installed.</li> <li>v. 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 <b>Figure 10.2.</b> for illustrations.</li> <li>vi. 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.</li> <li>vii. 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.</li> <li>viii. Ventilation ducts should not pass through smokeproof enclosures or the firefighting lobby.</li> <li>ix. 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 <b>Figure 10.3.</b> 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 <b>Figure 10.4.</b></li> </ol>
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