

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي Dubai Municipality
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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.
01/04/2021	3	Add the option of certification under FA with or without the conformity mark in addition to Type 1 Certification and amend different provisions accordingly in addition to the document title. Inclusion of some minor amendments –Grey highlighted. Validity of the test report has been extended from 3 to 5 years.
26/09/2021	4	Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.4.5), in line with DM 30% reduction of requirements (both service and specialized). Modifications in the auditing part for the factories already certified against ISO 9001 to opt for auditing only the areas of production and monitoring stages of product realization, quality control and final product testing and evaluation.
04/10/2022	5	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager). Adding surveillance in 2.4.4.5
27/03/2023	6	Full re-structuring and transfer of common provisions to the general rule. Clauses are re-numbered and document title has been revised accordingly. Use of New DM Logo

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## 1. INTRODUCTION

- 1.1 This document prescribes the specific rule for certification of the product(s) as identified herein, in accordance with the requirements of DM Third Party Product Certification Scheme Through Factory Assessment, taking into consideration the applicable normative references and standard specification, in addition to the requirements for conformity evaluation, as stated below.
- 1.2 The applicant/client shall comply with this specific rule, and to all provisions under the “**General Rule for DM Third Party Product Certification Scheme Through Factory Assessment**”**DM-DCLD-RD-DP21-2001 (IC). In addition to DM-DCLD-RD-DP32-5001 (IC) General Rules for Type 1 Product Certification System, as applicable and stated within this specific rule.**
- 1.3 This specific rule **is an integral part of the general rules** and both shall always be read together.

## 2. SCOPE

- 2.1 This specific rule specifies the requirements for the certification of 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.
- 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.
- 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 (under Type 5 or Type 1 certification).
- 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.
- 2.5 This specific rule does not -by itself- permit the use of the below product in the construction sites. However, it does provide the necessary general conformity assessment criteria, which are required for the evaluation and issuance of the certification and the authorization of the use of the DCLD Conformity Mark. Other relevant requirements issued by the regulatory bodies if any; shall always be fulfilled.

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

- 3.1 Product name: Building thermal insulation materials, including pipe and duct insulation
- 3.2 Applicable standard/Normative reference: UAE Fire and Life Safety Code of Practice 2018
- 3.3 Additional reference:
- ISO 9001 - Quality Management System – Requirements
- ISO 19011 - Guidelines for Auditing Management System.

### 4 DEFINITION OF TERMS

- 4.1 In addition to the definitions given in UAE Fire and Life Safety Code of Practice 2018, DM-DCLD-RD-DP21-2001 (IC) and DCLD-RD-DP32-5001 (IC), the following shall also apply:
- 4.1.1 Standard Specification – UAE Fire and Life Safety Code of Practice 2018

### 5 REQUIREMENTS FOR INITIAL CERTIFICATION

- 5.1 The process of application, initial assessment and product sampling shall be in line with the related provisions in the general rules and the standard specifications.
- 5.2 The client shall have a quality assurance laboratory to carry out factory production control testing to ensure that the raw materials and finished 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 accredited external laboratory. As a minimum requirement, the laboratory shall have the testing equipment as per the related specific rules.
- 5.3 If the application is received under Type 1, then the certification process as per Type 1 shall be followed.
- 5.4 If the factory was audited within one (1) year from the date of the application, then the initial assessment audit will be only verification audit on production and QC related to fire safety of the product (1 man-day audit ) including sampling and testing ( if applicable – Refer to 5.2.4).
- 5.5 During initial evaluation (Type1) or initial audit (Type 5); test reports submitted by the client/applicant may accepted provided that the report is not more than (3) years old from the date issue at the time of evaluation/audit.

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- 5.6 During renewal of type 5 certificate and new application for type 1 certificate (for the same product), DCLD-CQPS may waive testing and accept test reports which are issued within (5) years from the date of renewal.
- 5.7 Accepted test reports are only those tested in a laboratory that is approved by UAE – Civil Defense.
- 5.8 If the client decides to proceed with Type 5, he may also opt to get the certificate without DCL Conformity Mark, in such case, the fees related to the mark will not be applicable and the client shall not be authorized to use it.
- 5.9 Product Evaluation and testing
- 5.9.1 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. The above is applicable whether the application received is based on Type 1 or Type 5.
- 5.9.1.1 Building Thermal Insulation materials shall comply with the applicable clauses as per the requirements of the applicable standard.
- 5.9.1.1.1 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.
- 5.9.1.1.2 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 in Annex A.
- 5.9.1.1.3 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.
- 5.9.1.1.4 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.
- 5.9.1.1.5 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.
- 5.9.1.1.6 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.

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

5.10.1 The client shall prepare and submit to DCLD-CQPS for approval of 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) quantities of samples; (4) tests to be carried out; (5) results acceptance criteria; and (6) responsible person to carry out the activity

5.10.2 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

## 6 GRANTING OF THE DCLD CERTIFICATION

6.1 The DCLD product conformity certificate and/or the authorization to use the DCLD conformity mark under Type 5 or Type 1 certificate shall be granted upon conformance with all related provisions in the applicable general rule.

6.2 Fees shall be as per DM-DCLD-RD-IC-0025 and other relevant provisions in the general rules.

6.3 DCLD-CQPS shall carry out surveillance of certified clients based on the approved periodic plans and related provisions in the general rule under Type 5.

6.4 Appeals, disputes and complaints shall be in line with the relevant provisions in the General Rule.

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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	TEST 2
	MCM/ ACP CORE AND PANEL AS PRODUCT	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 <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 SANDWICH PANEL AS PRODUCT	TEST 2 SANDWICH PANEL IN WALL ASSEMBLY
<b>1. ANY BUILDING WITH ANY HEIGHT AND ANY OCCUPANCY</b>  <b>(SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)</b>	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
<b>5. ROOFING-NON SPRINKLERED BUILDINGS</b>  <b>(SHALL BE TESTED FOR THE THICKNESS INTENDED TO BE USED)</b>	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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