



 GOVERNMENT OF DUBAI	<b>Organization/Unit:</b> إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
	<b>Document Title:</b> Specific Rules for Factory Made Phenolic Foam Thermal Insulation as per BS EN 13166: 2012 + A1:2015	عنوان الوثيقة:	
	<b>Doc Ref.</b> DM-DCLD-RD-DP21-2186 (IC)	رقم الوثيقة :	

Issue Date	Rev. No.	Summary Of Amendments
28-06-2015	0	First draft for comments
05-07-2015	0	Final draft
26-07-2015	1	Issue for use
17-07-2017	2	Amendment to align the fire test requirement with the UAE Fire and Life Safety Code of Practice 2016; Provision for once every 3 years fire test in the Factory Production Control System (Internal Product Quality Assurance Plan); Revised Format according to the latest template.
08-11-2018	3	Amendment to align the fire test requirement with the UAE Fire and Life Safety Code of Practice 2018 edition.
21-03-2019	4	Revision of Scope to reflect that the DCL Certification of phenolic thermal insulation material does not cover compliance to the requirements of UAE Fire & Life Safety Code of Practice 2018.

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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 System through factory assessment as applied to the specific product(s) 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 Through Factory Assessment“, RD-DP21-2001 (IC).

### 1.2 SCOPE

1.2.1 This specific rule applies only to factory made phenolic foam (PF) thermal insulation products used as wall and roof insulation with a minimum thickness required to achieve a U value in accordance with DM Regulation.

1.2.2 For certification of pipe and duct insulation for HVAC systems, the Specific Rule DM-DCLD-RD-DP21-2185 (IC) “Specific Rules for Certification of Pipe and Duct Insulation as per Al Sa’fat Green Building Regulations” shall apply.

1.2.3 This specific rule does not cover compliance to the requirements of UAE Fire & Life Safety Code of Practice 2018.

1.2.3 For certification of Phenolic foam thermal insulation compliance to the requirements of UAE Fire & Life Safety Code of Practice 2018, the Specific Rules DM-DCLD-RD-DP21-2210 (IC) shall apply.

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

1.3.1 Product name: Thermal Insulation Products for Buildings – Factory made phenolic foam (PF) products

1.3.2 Applicable Standard/Normative Reference: BS EN 13166:2012+A1:2015 Thermal Insulation Products for Buildings – Factory made phenolic foam (PF) products - Specification

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### 1.3.3 Additional References:

- 1.3.3.1 ASTM C 518, Thermal transmission properties by heat flow meter
- 1.3.3.2 ASTM E 96, Water vapor transmission of materials
- 1.3.3.3 ISO 9001 - Quality Management System – Requirements
- 1.3.3.4 ISO 19011- Guidelines for Quality and Environmental Management System Auditing

### 1.4 DEFINITION OF TERMS

In addition to the definitions given in EN ISO 9229, BS EN 13166:2012+A1:2015 and RD-DP21-2001(IC) the following shall also apply:

- 1.4.1 Independent Testing Laboratory - Dubai Central Laboratory (DCL) or any testing laboratory recognized by the DM Certification Body.
- 1.4.2 Independent Test – test performed or conducted by an Independent Testing Laboratory
- 1.4.3 Standard Specification (SS) – BS EN 13166:2012+A1:2015 Thermal Insulation Products for Buildings – Factory made phenolic foam (PF) products - Specification
- 1.4.4 Product Quality Assurance Plan – a document being agreed upon both by the client and the certification body being used to ensure continuous compliance of the certified product.
- 1.4.5 QMS - Quality Management System aligned with the requirements of ISO 9001 Standard



## 2. REQUIREMENTS FOR CERTIFICATION

### 2.1 APPLICATION

- 2.1.1 Manufacturer/producer of thermal insulation for buildings – Factory made phenolic foam (PF) products shall apply to Dubai Central Laboratory Department for the Certification and authorization to use the DCL Conformity Mark.
- 2.1.2 Application form shall be filled-up by the applicant-company and submitted to DCLD together with the following documents

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- a. Industrial/Trade License
- b. Complete product description and specifications
- c. Brief Description of Manufacturing Process
- d. Copy of the Quality Manual (Controlled Copy)
- e. Vicinity Map and Factory Layout
- f. Valid Certification to ISO 9001 (If available)
- g. List of 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

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

## 2.2 FACTORY OPERATION

### 2.2.1 Quality Management System

Manufacturer of factory made phenolic foam (PF) thermal insulation products shall have a Quality Management System that is aligned to the requirements of ISO 9001 standard. NOTE: Certification to ISO 9001 is not a mandatory requirement.

### 2.2.2 Laboratory



Manufacturer of factory made phenolic foam (PF) thermal insulation products shall have a quality assurance laboratory to carry out factory production control testing to ensure that the thermal insulation materials 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 following testing facility to check the following properties:

- a. Length, width, thickness
- b. Squareness and flatness
- c. Density

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## 2.3 INITIAL FACTORY AUDIT

2.3.1 DCL duly authorized representative shall conduct an audit of the factory quality management system to verify its compliance with the requirements of ISO 9001.

*NOTE: An independent certification to ISO 9001 issued by a QMS certification body recognized by DM may be considered as having satisfied this requirement; however, the DM Certification Body reserves the right to carry out verification audit to confirm that the factory is in compliance with the QMS requirements.*

2.3.2 Verification audit shall be conducted by designated audit team based on ISO 19011 – Guidelines for Quality and Environment Management System Auditing.

## 2.4 PRODUCT EVALUATION

### 2.4.1 Sampling Testing

2.4.1.1 Sample for the initial testing shall be taken randomly by DCL representative from products identified as conforming to the product standard (finished products ready for delivery).

2.4.1.2 Three sets of sample per product per type shall be subjected to testing; the first set, if applicable, will be tested in the plant witnessed by a duly authorized DCL representative, the second set will be sent to independent testing laboratory. The third set will be kept by the manufacturer as reference.

2.4.1.3 Test sample(s) for independent test shall be identified and signed in the presence of DCL representative and shall be submitted to an independent testing laboratory by the DCL representative.

### 2.4.2 Company Declaration

2.4.2.1 The manufacturer/applicant shall submit to Dubai Central Laboratory declaration of product specification subject for certification. This shall include but not limited to:


2.4.2.1.1 Thermal Resistance and Thermal Conductivity (*initial and the aged value*)

2.4.2.1.2 Dimension (Length, Width)

2.4.2.1.3 Thickness

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2.4.2.1.4 Flatness

2.4.2.1.6 Dimensional Stability

2.4.2.1.7 Compressive Strength

*Note: For structural applications, declared compressive strength shall be not less than 100 kPa*

2.4.2.1.8 Water Vapor Transmission

2.4.2.1.9 Density

2.4.2.2 Samples drawn for independent test shall meet the requirements of the Standard Specification (SS) as follows:

2.4.2.2.1 Thermal Resistance and Thermal Conductivity as per SS clause 4.2.1

*Note 1 Since BS EN 12667, test method for thermal resistance and thermal conductivity, is equivalent to the ASTM C 518, ASTM C 177, ISO 8301 and ISO 8302, the DM Certification Body may opt to use any of these test methods.*

*Note 2 Conditioning and temperature to be used in carrying out this test will be as per Dubai requirement, that is @ 35°C and 60% Relative Humidity and the reference mean temperature is 35 °C*

2.4.2.2.2 Length and Width as per (SS) clause 4.2.2

2.4.2.2.3 Thickness as per (SS) clause 4.2.3

2.4.2.2.4 Squareness as per (SS) clause 4.2.4

2.4.2.2.5 Flatness as per (SS) clause 4.2.6

2.4.2.2.6 Compressive Strength as per (SS) clause 4.3.3

2.4.2.2.7 Water Vapor Transmission as per (SS) clause 4.3.8

*Note: Since BS EN 12086 test method for water vapor transmission, is equivalent to that of the ASTM E 96, the DM Certification Body may opt to use this test method.*

2.4.2.2.8 Dimensional Stability under specified temperature and RH per (SS) clause 4.3.2

2.4.2.2.9 Apparent Density as per (SS) clause 4.3.9



2.4.2.3 Where appropriate, a comparison shall be made between the manufacturer's routine test results, results of witness testing and the results of testing by the independent testing laboratory.

2.4.2.4 Independent test shall only be conducted if the result of the in-plant test shows satisfactory result.

2.4.2.5 If the result of the test conducted by the independent testing laboratory shows non-conformance to the specified requirements, the provision for rejection specified in the standard shall apply. The retest shall

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be carried out on the reference sample kept by the manufacturer or on new samples collected by DM Certification Body , on which full testing shall be carried out, if necessary.

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

2.4.2.7 Only after re-assessment and subsequent product compliance shall the manufacturer be allowed to use the DCL Conformity Mark on his product.

### 3. GRANTING OF THE DCL CERTIFICATE OF CONFORMITY

#### 3.1 CONDITIONS FOR GRANTING THE DCL CERTIFICATE OF CONFORMITY

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 Certificate of Conformity and authorization to use the DCL Conformity Mark shall be issued to the manufacturer for the type(s) and size of the product tested.

3.1.2 The factory shall agree with the DM Certification Body for the preparation and implementation of a product quality assurance plan 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 factory shall prepare and submit to DM Certification Body for approval a factory production control system (internal product quality assurance plan).

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.

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	INSULATION PROPERTY	MINIMUM TESTING FREQUENCIES
1	Thermal Resistance and Thermal Conductivity	1 per 24 h (initial value) 1 per 2 years (aged value)
2	Length and Width	1 per 4 h
3	Thickness	1 per 4 h
4	Apparent Density	1 per 24 h
5	Squareness	1 per 4 h
6	Flatness	1 per 4 h
7	Compressive Strength	1 per 24 h

*Note: Item No. 1 and 7 may be reduced to once per month provided that the results show continuing compliance to the declared value.*

#### 3.1.4 Independent Testing Plan

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

#### 3.2 ISSUANCE OF DCL CERTIFICATE OF CONFORMITY

If the conditions mentioned in clause 3.1 above have been complied, the manufacturer of factory made phenolic (PF) thermal insulation products shall be issued a DCL Certificate of Conformity and a Scope of Certification that covers the type(s) and size of the products that are certified.


#### 3.2 RESPONSIBILITIES OF THE CLIENT

3.2.1 Every client shall ensure that his product, for which a certificate has been issued, conforms at all times to the requirements of the General Rule and Specific Rules and shall maintain to the satisfaction of DCL, a system of quality control including inspection and testing.

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- 3.3.2 The client shall give the duly authorized representative(s) of DCL, 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 the DM Certification Body in writing of any change of management, transfer of plant site, modification in the product, manufacturing process or factory quality management system.
- 3.3.4 In case of transfer of factory location, the certificate shall be deemed valid only after factory and product audit at the new site has been satisfactorily completed.
- 3.3.5 Any violation of the Terms and Conditions of Certification shall constitute sufficient grounds for suspension, or withdrawal of the certification in accordance with IMS-RD-07.
- 3.3.6 Any dispute that may arise in connection with the Terms and Conditions of the DCL Mark shall be settled in accordance with IMS-RD-08 Appeals, Disputes, and Complaints Procedure.
- 3.3.7 The client shall pay all applicable fees related to the certification process.
- 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, IMS-RD-13
- 3.4.2 The client shall submit samples of tag showing the DCL Conformity Mark, for approval by the DM Certification Body.
- 3.4.3 The Certificate of Conformity and the authorization to use the DCL Certification Mark is non-transferable.

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#### 4. SURVEILLANCE

- 4.1 DM Certification Body shall carry out periodic surveillance to ensure consistent compliance with the requirements of this certification scheme as per RD-DP21-2096 (IC) – Surveillance of Certified Establishments under the Factory Assessment Scheme.
- 4.2 Testing as part of surveillance shall be in accordance with the Independent Testing Plan (clause 3.1.4) that has been agreed between the DCLD and the factory.

#### 5. FEE SCHEDULE

- 5.1 The client shall pay the applicable fees and charges related to the granting of the certificate of conformity to use the DCL Conformity Mark based on the DCL Official Fee Structure, RD-DP21-2097 (IC).
- 5.2 The fees for this certification scheme shall include but not limited to the following;
- 5.1.1 Application Fee
  - 5.1.2 Initial Assessment Fee
  - 5.1.3 Certification Fee
  - 5.1.4 Marking Fee
  - 5.1.5 Surveillance Fee
  - 5.1.6 Annual Renewal Fee
  - 5.1.7 Testing Fee

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