

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي Dubai Municipality
	Document Title:	Certification of In-situ Spray-applied Thermal Insulation as per BS EN 14315-1 - 2013	عنوان الوثيقة:	
	Doc Ref.	DM-DCLD-RD-DP21-2187 (IC)	رقم الوثيقة:	

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Issue Date	Rev. No.	Summary Of Amendments
16/08/2015	0	First draft for comments
27/08/2015	0	Final draft
05/09/2015	1	Issue for use
18/07/2017	2	Modified the Scope in clause [1.2]. Deleted clauses related to fire performance requirements to align with UAE Fire & Life Safety Code of Practice 2016. Added Annex A
02/04/2018	3	Modified the conduct of factory audit to project site audit to exclude non-applicable clauses of the ISO 9001
23/04/2018	4	Addition of provision to conduct testing the fire safety of the spray applied polyurethane thermal insulation foam was when used for non-combo system or when the core insulation foam is exposed.
02/09/2018	5	Amended clauses related to factory surveillance
08/11/2018	6	Updating the reference document for fire safety requirement, UAE Fire and Life Safety Code of Practice to 2018 version
24/03/2019	7	Revision of Scope to reflect that the DCL Certification of above subject product does not cover compliance to the requirements of UAE Fire & Life Safety Code of Practice 2018.
06/09/2020	8	Add the options for initial audit by the approved CAB and remotely by DCLD-CQPS. Adding definition for authorized auditor. Update for the new numbering system and followed terminologies. Correction of numbering. Add provision for accepting valid test reports.
26/09/2021	9	Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.2.4), 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	10	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager). Adding surveillance in 2.4.2.4
27-03-2023	11	Full re-structuring and transfer of common provisions to the general rule. Clauses are re-numbered and document title has been revised accordingly. Adding reference to SA'AFAT relevant section under additional references. 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).
- 1.3 This specific rule **is an integral part of the general rule** and both shall always be read together.

2. SCOPE

- 2.1 This specific rule specifies the requirements for In-situ formed sprayed rigid polyurethane (PUR), Polyisocyanurate (PIR) thermal insulation materials used for roofing systems.
- 2.2 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.

3. PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product name: In situ formed sprayed polyurethane (PUR) and Polyisocyanurate (PIR) foam products
- 3.2 Applicable standard/Normative reference: BS EN 14315-1: 2013 Thermal insulating products for buildings – In situ formed sprayed polyurethane (PUR) and Polyisocyanurate (PIR) foam products – Part 1
- 3.3 Additional reference:
- ISO 9001 - Quality Management System – Requirements
- ISO 19011 - Guidelines for Auditing Management System
- Al Sa'fat – Dubai Green Building System-2nd edition, January 2023 – Section 701.01 (Thermal and Acoustical Insulation Materials).

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4. DEFINITION OF TERMS

- 4.1 In addition to the definitions given in BS EN 14315-1:2013 and DM-DCLD RD-DP21-2001 (IC), the following shall also apply:
- 4.1.1 Standard Specification – BS EN 14315-1: 2013 Thermal insulating products for buildings – In situ formed sprayed polyurethane (PUR) and Polyisocyanurate (PIR) foam products – Part 1: Specification for the rigid foam spray system before installation

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 rule and the standard specifications.
- 5.2 The factory shall have a laboratory with the following testing equipment as a minimum:
- Calipers and other linear measuring test equipment (to measure thickness and dimensions)
 - Weighing Scale or other equivalent apparatus (to measure density of PUR)

Other Testing equipment needed by the Applicator to ensure good quality PUR/PIR shall be provided and as recommended by the chemical suppliers, are as follows:

- Hygrometer – to measure moisture and humidity
 - Thermometer or pyrometer (to measure the ambient temperature and substrate temperature)
 - Anemometer (to measure wind velocity)
- 5.3 Product Evaluation and testing
- 5.3.1 Production/Spray Application
- 5.3.1.1 Production or Spray Application shall be conducted as per machine and chemical supplier's suggestions. These information and guidance maybe derived from Machine Manual or Chemical MSDS, TDS, etc. These reference document may form part of the Externally-sourced controlled document and should be available at project site. The company may provide Spray Application Procedure that describes the processes and this must be part of the Controlled Documents.
- 5.3.1.2 Spray Application Control Parameters

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To ensure the quality and consistency of the spray-applied PUR, the recommendations of the machine and chemical suppliers are to be considered, such as the temperature of chemicals (MDI and Polyol) before spraying, the pressure of both the chemicals considering the mix ratio (ex: 1:1), machine settings and weather conditions. These temperature and pressure settings shall be recorded from the machine display panels or gauges and to be recorded in appropriate form to serve as production control records. Accuracy of these display panels and gauges should be verified or calibrated by recognized Calibration company.

5.3.1.3 Competency of Spray Applicators

The company should utilize experienced and qualified personnel to conduct the spray applications. The Technical Representative should witness the spray application where to draw the samples noting the details of the raw materials (Ex. grade and expiry dates).

A Supervising Technical person should be utilized by the company to supervise, monitor and record the spray-application control parameters and the quality of the sprayed PUR as per internal quality control plan. Proof of Records of trainings and qualifications of these personnel should be available at the audit site.

5.3.2 Sampling

Sampling and preparation of test specimen may be carried out in accordance with the section 4 and section 5 of standard specification, BS EN 14315. However, for DCLD-CQPS approved lab testing purposes, two sets of ten (10) samples of size 1000 x 500 x 50 mm specimens will be cut from the sprayed PUR witnessed by DCL Technical Representative.

5.3.3 Testing

The following tests shall be carried out in accordance with the Test Method mentioned in Section 4 & 5 of the Standard Specification, or, as mentioned below when applicable;

5.3.3.1 Thickness Measurement as per EN 823

5.3.3.2 Thermal Conductivity and Thermal Resistance as per EN 12667

Note1 Since 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, DCLD-CQPS may opt to use any of these test methods.

Note2 Temperature condition 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

5.3.3.3 Compressive Strength or Compressive Stress as per EN 826

5.3.3.4 Water Vapor Transmission as per EN 1208

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Note3 Since EN 12086 test method for water vapor transmission, is equivalent to that of the ASTM E 96, DCLD-CQPS may opt to use this test method.

5.3.3.5 Short Term Water Absorption by Partial Immersion as per EN 1609

5.3.3.6 Dimensional Stability under specified temperature and humidity condition (EN 1604)

5.3.3.7 Density as per EN 1602

5.4 Factory Production Control System (Internal Product Quality Assurance Plan)

5.4.1 The client shall prepare and submit to DCLD-CQPS for approval of an internal product quality assurance plan. 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. The plan shall cover all inspections carried out thru out the whole manufacturing process; i.e. (raw materials – production lines- finished product testing and evaluation as per standard specifications – final packing).

5.4.2 The Plan shall take into consideration the control of raw materials, spray application control parameters, the settings of machine, weather conditions, testing and acceptance criteria, location/stage, frequency of monitoring, test methods, records, responsible persons, etc.

6. GRANTING OF THE DCLD CERTIFICATION

6.1 The DCLD product conformity certificate and the authorization to use the DCLD conformity mark shall be granted upon conformance with all related provisions in the general rule.

6.2 Fees shall be as per DM-DCLD-RD-DP21-2097 (IC) and other relevant provisions in the general rule.

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

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

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