



**Specific Rules for Certification of Exterior Solar Radiation Control Coatings on Buildings
(As Per ASTM C 1483-04) Through Factory Assessment
Dubai Central Laboratory- Inspection And Certification Section**

Doc. Ref :RD-DP21-2118 (IC)
Issue Date :14/06/2010

Rev. No.: 2
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Issue Date	Rev. No.	Summary Of Amendments
07/12/2005	0	Final draft for comments
01/04/2006	1	Issue for use
14/06/2010	2	Reviewed with the requirements of the current version of the standard and found to be still suitable. Document reference number and format is changed according to the new IMS.

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1. INTRODUCTION

- 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.
- 1.2 The applicant shall comply with these specific rules, **and** to those already mentioned in the "General Rule for DM Third Party Product Certification Through Factory Assessment " { **RD-DP21-2001 (IC)** }.

2. SCOPE

This specific rule provides general requirements for products used to reduce the thermal loads on buildings by reflecting solar radiation from roofs and walls. This covers the physical and mechanical properties of liquid-applied radiation control coatings designed for exterior application on buildings and other structures where ambient temperature ranges from -34°C to 54°C.

3. PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product name: Exterior Solar Radiation Control Coating
- 3.2 Applicable standard/Normative reference: ASTM C 1483-04 Standard Specification for Exterior Solar Radiation Control Coatings on Buildings
- 3.3 Additional reference:
- 3.3.1 ISO 9001:2008 Quality Management System – Requirements
- 3.3.2 ISO 19011:2002 Guidelines for Quality and Environmental Management System Auditing

4. DEFINITION OF TERMS

The definitions given in ASTM C 168, ASTM C 1483, ASTM E 349, RD-DP21-2001 (IC) and in addition, the following shall apply:

- 4.1 Independent Testing Laboratory - Dubai Central Laboratory (DCL) or any testing laboratory recognized by the DM Certification Body.
- 4.2 Independent Test – test performed or conducted by an Independent Testing Laboratory
- 4.3 Standard Specification – ASTM C 1483-04 Standard Specification for Exterior Solar Radiation Control Coating
- 4.4 Product Quality Assurance Plan – a document being agreed upon both by the Licensee and the certification body being used to ensure continuous compliance of the certified product.
- 4.5 QMS – Quality Management System aligned with the requirements of ISO 9001:2008 Standard

5. APPLICATION

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- 5.1 Manufacturer of exterior solar radiation control coating shall apply to Dubai Central Laboratory Department through Inspection and Certification Unit for the License to use the DCL Conformity Mark.
- 5.2 Application forms shall be filled-up by the applicant-company together with the following documents
- 5.2.1 Trade License
 - 5.2.2 Complete Product Description and Specifications
 - 5.2.3 Brief Description of Manufacturing Process
 - 5.2.4 Copy of the Quality Manual (Controlled Copy)
 - 5.2.5 Vicinity Map and Factory Layout
 - 5.2.6 Valid Certification to ISO 9001 (if available)
 - 5.2.7 List of key personnel and their designation
- 5.3 Separate application shall be submitted for each product type or group of products that refers to a different specific rules.

6. REQUIREMENTS FOR INITIAL FACTORY ASSESSMENT

- 6.1 DCL duly authorized representative shall visit the applicant's factory/plant with the aim of ascertaining that the factory's quality management system is in accordance with the requirements of ISO 9001: 2008
- 6.2 An independent certification to ISO 9001 issued by a QMS certification body recognized by DM shall be considered as having satisfied this requirement; however, the DM Certification Body will still carry out verification audit to confirm that the factory is in compliance with the QMS requirements.
- 6.3 Verification audit shall be conducted by designated audit team based on ISO 19011:2002 – Guidelines for Quality and Environment Management System Auditing

7. REQUIREMENTS FOR INITIAL TESTING OF THE PRODUCT

- 7.1 Sampling
- 7.1.1 Sampling and inspection shall be carried out in accordance with the requirements of section 7 of ASTM C 1483-04 Size shall be determined and a random sample shall be taken either in the factory or warehouse.
 - 7.1.2 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 for future use.
 - 7.1.3 Test sample(s) for independent test shall be packed/sealed and signed in the presence of DCL representative and shall be submitted to an Independent Testing Laboratory by the DCL representative.
- 7.2 Testing
- 7.2.1 The tests to be carried out shall be in accordance with the Test Methods mentioned in section 8 of the Standard Specification as follows, when applicable;

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- 7.2.1.1 Total Solids (by weight) as per ASTM C 461
- 7.2.1.2 Solids Volume as per ASTM D 2697
- 7.2.1.3 Solar Reflectance as per ASTM E 903 or ASTM E 1175
- 7.2.1.4 Total Hemispherical Emittance as per ASTM C 1371
- 7.2.1.5 Elongation as per ASTM D 2370 and ASTM G 155
- 7.2.1.6 Adhesion as per ASTM D 903
- 7.2.1.7 Water Vapor Permeance as per ASTM E 96
- 7.2.1.8 Flammability as per ASTM E 84
- 7.2.1.9 Fungi Resistance as per ASTM D 3274
- 7.2.1.10 Water Absorption as per ASTM D 471
- 7.2.1.11 Cured Samples Thickness as per ASTM G 419
- 7.2.1.12 Outdoor Durability as per ASTM G 26

- 7.2.2 The results of testing must meet the requirements as per the standard specification.
- 7.2.3 Independent test shall only be conducted if the result of the in-plant test shows satisfactory results.
- 7.2.4 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 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.
- 7.2.5 If the re-test passed, the initial product assessment is considered conforming to product specification. If not, the manufacturer will be advised to take corrective action.
- 7.2.6 Only after reassessment and subsequent product compliance shall the manufacturer be allowed to use DCL Conformity Mark on his product.

8. COMPLIANCE AND RESPONSIBILITIES OF THE LICENSEE

8.1 Compliance

- 8.1.1 When the results of the factory and product assessments show conformity to the requirements specified in the general rule and specific rule, the license to use the DCL Conformity Mark shall be issued to the manufacturer for the type(s)/model(s)/brand(s) of the product tested.
- 8.1.2 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. The plan shall consist of (1) an internal product quality assurance, and (2) an independent testing plan

8.1.2.1 Internal product quality assurance plan

The factory shall prepare and submit to DM Certification Body 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

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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

8.1.2.2 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 Licensed Establishments under the Factory Assessment Scheme, and implemented by the DM Certification Body.

8.2 Responsibilities of the Licensee

- 8.2.1 Every licensee shall ensure that his product, for which a license 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.
- 8.2.2 The licensee 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.
- 8.2.3 The licensee 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's quality management system.
- 8.2.4 Upon transfer of plant site, the license shall be deemed valid only after factory and product audit at the new site has been satisfactorily completed.
- 8.2.5 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 cancellation of the license against a licensee.
- 8.2.6 Any dispute that may arise in connection with the terms and conditions of the certification scheme shall be settled in accordance with the General Rules for DM Third Party Product Certification System Through Factory Assessment.

9. SURVEILLANCE

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 Licensed Establishments under the Factory Assessment Scheme.

10. USE OF THE DCL CONFORMITY MARK

- 10.1 The design and use of the DCL Conformity Mark shall be in accordance with the Terms and Conditions for the Use of the DCL Mark of Conformity, RD-DP21-2098 (IC)
- 10.2 The licensee shall submit a product-marking proposal for approval by the DM Certification Body. The

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proposal shall include drawings and/or diagrams showing the location and size of the marking for each size of the product/product container.

10.3 The license to use the DCL Conformity Mark is non-transferable.

11. FEE SCHEDULE

11.1 The licensee shall pay the applicable fees and charges related to the granting of the license to use the DCL Mark based on the DCL Official Fee Structure, RD-DP21-2097 (IC).

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

- 11.2.1 Application Fee
- 11.2.2 Initial Assessment Fee
- 11.2.3 Certification Fee
- 11.2.4 Surveillance Fee
- 11.2.5 Annual Renewal Fee
- 11.2.6 Testing Fee
- 11.2.7 Marking Fee

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