

 GOVERNMENT OF DUBAI	Organization/Unit: إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية: 	 بلدية دبي DUBAI MUNICIPALITY
	Document Title: Specific Rules for Certification of Portland Cement Products for Use in Concrete (As per ASTM C150/C150M-21) Through Factory Assessment	عنوان الوثيقة: 	
	Doc Ref. DM-DCLD-RD-DP21-2208 (IC)	رقم الوثيقة : 	

Issue Date	Rev. No.	Summary of Amendments
14/03/2018	0	First draft for comment
01/05/2018	0	Second draft for comment
09/05/2018	0	Third draft for comments
23-10-2018	0	Include DCL – Technical committee feedback and comments
11-11-2018	1	Issue for use
26-03-2019	2	Updated format as per new DM logo
04-08-2020	3	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
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 2.4.1.5), 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.
07/11/2021	5	Reviewed and updated as per as per current version of ASTM C150/C150M -21 standard.

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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 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 Scheme Through Factory Assessment“, DM-DCLD-RD-DP21-2001 (IC).

1.2 SCOPE

This specific rule applies to ten types of Portland cement as listed in clause (1) of the standard specifications.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product name: Portland Cement

1.3.2 Applicable Standard/Normative Reference: ASTM C150/C150M-21 Standard Specification for Portland Cement

1.3.3 Additional References:

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

1.4 DEFINITION OF TERMS

In addition to the definitions given in the Applicable Standard specification (clause 3) , Normative Reference, and DM-DCLD-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 DCLD-PCAS.

1.4.2 Independent Test – test performed or conducted by an Independent Testing Laboratory

1.4.3 Standard Specification - ASTM C150/150M-21 Standard Specification for Portland Cement

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- 1.4.4 Product Quality Assurance Plan – a document being agreed upon both by the client and DCLD-PCAS 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
- 1.4.6 Client – Manufacturer Portland Cement Products for Use in Concrete
- 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 shall 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.
- 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 EVALUATION

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 cement products comply with the requirements of the standard specification.

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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 factory shall have the following minimum test equipment to check product compliance with the requirements of standard specification.

1. Compression machine
2. Digital & weighing balances
3. Water bath and hot plate
4. Drying oven & Muffle furnace
5. Mortar mixer
6. Humidity cabinet & Thermo hygrometer
7. Chemical analyzer (Online or portable XRF) and/or Wet chemistry instruments.
8. Soundness and setting time.
9. Blaine fineness apparatus

2.2.3 Ordering Information :

Orders of materials shall include the required information according to clause (4) of the Standard specification.

2.2.4 Ingredients :

The cement Ingredients covered shall be as per clause (5) of the standard specification.

2.2.5 Chemical Composition :

Portland cement of each of the ten types (clause 1) shall conform to the respective standard chemical requirements described in clause (6) and Table (1) , in addition to optional chemical requirements shown in Table (2) of the standard specification.

2.2.6 Physical Properties :

Portland cement of each of the ten types (clause 1) shall conform to the respective standard physical requirements described in clause (7) and Table (3), in addition to optional physical requirements shown in Table (4) of the standard specification.

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

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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 considered as having satisfied this requirement; however, DCLD-PCAS may still opt to carry out verification audit to confirm that the factory is in compliance with requirements of DCLD certification schemes and rules, mainly the areas of production and monitoring stages of product realization, quality control and final product testing and evaluation.

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 Sampling

2.4.1.1 Sampling for initial testing shall be taken randomly by the authorized auditor from the products to be certified (sizes and quantity to be determined) either from production lines or the factory warehouse.

2.4.1.2 Three sets of sample per product per type 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 DCLD-PCAS approved Independent Testing Laboratory. The third set will be kept by the manufacturer as reference for future use.

2.4.1.3 Sample(s) for independent test shall be packed/sealed and signed in the presence of the authorized auditor and shall be submitted to DCLD-PCAS approved lab.

2.4.1.4 The minimum sample size shall be as given in the related standard specifications and shall be drawn at random to be representative of the batch or consignment.

2.4.1.5 Where applicable, Independent test shall only be conducted if the result of the applicable in-plant test shows satisfactory results. DCLD-PCAS shall 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.

2.4.2 Product Evaluation and Testing

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2.4.2.1 The testing methods shall be according to clause (9) of this standard specification as follows:

- Chemical Analysis—C114.
- Air Content of Mortar—C185.
- Fineness by Air Permeability—C204.
- Autoclave Expansion—C151.
- Strength—C109/C109M.
- Time of Setting by Vicat Needles—C191.
- False Set—C451.
- Heat of Hydration—C186 or C1702.
- Sulfate Resistance—C452 (sulfate expansion).
- Time of Setting by Gillmore Needles—C266.
- Fineness by Turbidimeter —C115.
- Calcium Sulfate (Expansion of) Mortar—C1038

Note : other equivalent test methods might be accepted.

2.4.2.2 Packaging and Packaging marking

The packaging and packaging marking shall be according to clause (13) the standard specification and shall comply also with clause (3.4) below.

2.4.2.3 Storage

The cement shall be stored in such a manner as to permit easy access for proper inspection and identification of each shipment, and in suitable weather- tight building that will protect the cement from dampness and minimize warehouse set.

2.4.2.4 Manufacture's Certification

Upon request of the purchaser in the contract or order , a manufacturers' report shall be furnished at the time of shipment stating the results of test made on samples of the material taken during production or transfer and certifying that the cement conforms to applicable requirements of clause (15) and Appendix X1 in the standard specification.

2.4.2.5 Conformity Criteria

Ingredients of each of the ten types of cements shall meet the requirements of clause (5) of the standard specification.

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2.4.2.6 Chemical composition of each of the ten types shall conform to respective standard chemical requirements prescribed in Table (1), in addition optional chemical requirements in table (2) of the standard specification.

2.4.2.7 Physical properties of each of the ten types of cements shall conform to respective standard physical requirements prescribed in Table (3), in addition optional physical requirements are shown in table (4) of the standard specification.

2.4.2.8 The cement shall be rejected if it fails to meet any of the requirements of the standard specification.

3. GRANTING OF THE DCL CERTIFICATION

3.1 CONDITIONS FOR GRANTING THE PRODUCT CONFORMITY 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 Certificate of Conformity and authorization to use the DCL Conformity Mark shall be issued to the client for the type(s)/model(s)/brand(s) of the product covered by the assessment.

3.1.2 The client shall agree with DCLD-PCAS for the preparation and implementation of 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) 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.

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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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.

3.2 ISSUANCE OF DCL CONFORMITY MARK

If the conditions mentioned in clause 3.1 above have been complied, the client 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 and will be authorized to use the DCL Conformity Mark on the certified products.

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 the requirements of the General Rule and Specific Rules, and regulations and legislation, whenever applicable, and shall maintain to the satisfaction of DCLD-PCAS, a system of quality control including inspection and testing.
- 3.3.2 The client shall give the duly authorized auditor(s) by DCLD-PCAS, 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 change of management, transfer of plant site, modification in the product, manufacturing process or factory's 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 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/product container, where applicable
- 3.4.3 The Certificate of Conformity 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 authorization to use the DCL Conformity Mark based on the DCLD-PCAS Official Fee Structure, DM-DCLD-DM-DCLD-RD-DP21-2074 (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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