

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
	Document Title:	Specific Rules for FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2012	عنوان الوثيقة:	
	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

Issue Date	Rev. No.	Summary Of Amendments
01-03-2006	0	First draft for comments
12-03-2006	0	Final draft
18-03-2006	1	Issue for use
15-07-2009	2	Document reference number and format is changed according to the new IMS, statement for the independent testing plan was changed, and the statement for surveillance was shortened by referring to RD-DP21-2096 (IC).
25-03-2019	3	Updated format as per new DM template and new DM logo
11-05-2020	4	New amendment as per BS EN 450-1:2012 standard, changing font type and some editorial changes. Reformatting to align with the common and latest and structure of specific rules
27-08-2020	5	Add the options for initial audit by the approved CAB and remotely by PCAS. Adding definition for authorized auditor. Update for followed terminologies. Add provision for accepting valid test reports.
26/09/2021	6	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.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 1 of 9

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OPEN DATA / بيانات مفتوحة

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

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 Rule for DM Third Party Product Certification Scheme Through Factory Assessment “DM-DCLD-RD-DP21-2001 (IC)”.

1.2 SCOPE

1.2.1 This specific rule specifies requirements for the chemical and physical properties of siliceous fly ash for the production of concrete, including in particular cast-in-situ or prefabricated structural concrete, mortars and grouts.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product Name: Fly Ash for concrete

1.3.2 Applicable standard/Normative reference: BS EN 450-1:2012
Part 1. Definition, Specifications and conformity criteria of fly ash for concrete

1.3.3 Additional references:

1.3.3.1 ISO 9001: - Quality Management System – Requirements

1.3.3.2 ISO 19011: - Guidelines for Auditing Management Systems

1.4. DEFINITION OF TERMS

The definitions given in BS EN 450-1:2012, DM-DCLD-RD-DP21-2001 (IC) and in addition, the following shall apply:

1.4.1 Independent Testing Laboratory - Dubai Central Laboratory Department or any testing laboratory recognized by (DCLD-PCAS).

1.4.2 Independent Test – test performed or conducted by the recognized Independent Testing Laboratory

1.4.3 Standard Specification – BS EN 450-1:2012 – Specification for fly ash for concrete

1.4.4 QMS – Quality Management System aligned with the requirements of ISO 9001 Standard.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 2 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

بيانات مفتوحة / OPEN DATA

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

- 1.4.5 Factory Production Control and 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.
- 1.4.6 Client : Manufacturer of Fly Ash for 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 by client 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 OPERATION

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 client'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 product complies 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:

- Chemical Properties Analyzer
- Ventilated Electric Oven (capable of being controlled to 105 +/- 5 °C)

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 3 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

بيانات مفتوحة / OPEN DATA

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

- c. Shallow Container (about 20 g capacity and can withstand 150 °C without loss in mass)
- d. Desiccators
- e. Sieve Frame (cylindrical with nominal dimensions of 50mm diameter and 75mm depth)
- f. Sieve Cloth (45 µm stainless steel mesh)
- g. Spray Nozzle
- h. Pressure Gauge (at least 160 kPa capacity with 5 kPa intervals)
- i. Weighing Scale 9capable of weighing 100 g to the nearest 0.001 g)
- j. Compressive Strength Tester as required by BS EN 196-1:1995

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 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 and Testing

- 2.4.1.1 Sampling for initial testing shall be shall be taken randomly by the authorized auditor from the products to be certified (sizes to and quantities 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 client as reference for future use.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 4 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

2.4.1.3 Sample(s) for independent test shall be packed/sealed and signed in accordance with section 8 and 9 of BS EN 196-7;2007 and in the presence of the authorized auditor and shall be submitted to DCLD-PCAS approved lab.

2.4.2 Product Characteristic and Test Requirements

2.4.2.1 The product shall conform to the requirements as specified in clause 5 of the standard specification.

2.4.2.2 The test to be carried out in accordance with the standard specification shall be as follows:

2.4.2.2.1 Chemical requirements

- Loss on Ignition as per EN 196-2.
- Chloride as per EN 196-2.
- Sulphate Content as per EN 196-2.
- Free calcium Oxide as per EN 451-1.
- Reactive calcium oxide as per EN 196-2.
- Reactive silicon dioxide as per EN 197-1.
- Sum of Silicon dioxide (SiO₂), Aluminum oxide (Al₂O₃) and Iron Oxide (Fe₂O₃) as per EN 196-2
- Total content of Alkali as per EN 196-2.
- Magnesium oxide as per EN 196-2.
- Soluble phosphate as per Annex C of the standard specification
- Total phosphate as per ISO 29581-2

2.4.2.2.2 Physical Properties

- Fineness as per EN 451-2/EN933-10.
- Activity Index as per EN 196-1.
- Soundness (if required) as per EN 196-3.
- Particle Density as per EN 1097-7.
- Initial Setting Time as per EN 196-3.
- Water Requirement as per Annex B of the standard specification

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 Where applicable, independent test shall only be conducted if the result of the applicable in-plant test shows

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 5 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

OPEN DATA / بيانات مفتوحة

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

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.

- 2.4.2.5 If the result of the test conducted by the DCLD-PCAS approved independent testing laboratory shows non-conformance to the specified requirements, the applicant may request for a retest. The retest shall be carried out on the reference sample kept by the client, or, on new samples collected by the authorized auditor, 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 client will be advised to take corrective action.
- 2.4.2.7 Only after reassessment and subsequent product compliance shall the client be allowed to use DCL Conformity Mark on his product(s) that have been tested and found complying with the certification requirements.

3. GRANTING OF THE DCL CERTIFICATE OF CONFORMITY

3.1 CONDITIONS FOR GRANTING THE DCL 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) and size of the product tested.

3.1.2 The client shall agree with DCLD-PCAS 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 client shall have 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. The plan shall 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

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 6 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

OPEN DATA / بيانات مفتوحة

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

evaluation as per standard specifications – final packing. The plan shall be in accordance with Table2 of this standard specification:-

- a. Loss on Ignition (LOI)
- b. Chloride
- c. Sulphate Content
- d. Free Calcium Oxide
- e. Reactive Calcium Oxide
- f. Reactive Silicon Dioxide
- g. Sum of SiO₂ + Al₂O₃ + Fe₂O₃
- h. Total Content of Alkalis
- i. Magnesium Oxide
- j. Soluble Phosphate
- k. Fineness
- l. Activity Index
- m. Soundness (if Declared)
- n. Particle Density
- o. Initial Setting Time
- p. Water Requirement
- Q. Release of Dangerous Substances and Emission of Radioactivity
- r. Total Phosphate.

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 Clients under the Factory Assessment Scheme, and implemented by the DCLD-PCAS.

3.2 ISSUANCE OF DCL CERTIFICATE OF CONFORMITY

If the conditions mentioned in clause 3.1 above have been complied, the client of fly ash 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 CLIENT

3.3.1 The client shall ensure that his product, for which a certificate of conformity has been issued, conforms at all

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 7 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

OPEN DATA / بيانات مفتوحة

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

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 the DCLD-PCAS 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 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.

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 Mark of Conformity, 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 package/container.
- 3.4.3 The Certificate of Conformity and the authorization to use the DCL Certification Mark is non-transferable.

4. SURVEILLANCE

- 4.1 DCLD-PCAS or their authorized auditor 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 Establishments under the Factory Assessment Scheme.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 8 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي DUBAI MUNICIPALITY
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	Doc Ref.	DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

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 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 certificate of conformity to use the DCL Conformity Mark based on the DCL Official Fee Structure, 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- Surveillance Fee
- 5.2.5- Annual Renewal Fee
- 5.2.6- Testing Fee
- 5.2.7- Marking Fee
- 5.2.8- Outsource Activity Fee , where applicable

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	Rev. No. : 06
General / عام : Level of Confidentiality / درجة السرية	Page 9 of 9

Note: Printed copy of this document shall be treated as 'Uncontrolled'. Always refer the controlled version Online

بيانات مفتوحة / OPEN DATA