

 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 FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005	عنوان الوثيقة:	
	<b>Doc Ref.</b> 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

## 1. INTRODUCTION

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 1 of 7

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

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

## 2. SCOPE

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.

## 3. PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product Name: Fly Ash for concrete
- 3.2 Applicable standard/Normative reference: BS EN 450-1:2005  
Part 1. Definition, Specifications and conformity criteria of fly ash for concrete
- 3.3 Additional references:
- 3.3.1 ISO 9001:2015 - Quality Management System – Requirements
- 3.3.2 ISO 19011:2018 - Guidelines for Quality and Environmental Management System Auditing

## 4. DEFINITION OF TERMS

The definitions given in BS EN 450-1:2005, DM-DCLD-RD-DP21-2001 (IC) and in addition, the following shall apply:

- 4.1 Independent Testing Laboratory - Dubai Central Laboratory Department 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 – BS EN 450-1:2005 – Specification for fly ash for concrete
- 4.4 Product Quality Assurance Plan – a document being agreed upon both by the Certified client 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 Standard.

## 5. APPLICATION

- 5.1 Manufacturer of fly ash for concrete shall apply to Dubai Central Laboratory through Products Conformity Assessment Section for the license to use the DCL Conformity Mark.
- 5.2 Application forms shall be filled-up and submitted by the applicant-company together with the following

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 2 of 7

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

 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 FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005	عنوان الوثيقة:	
	<b>Doc Ref.</b> DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

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.
- 6.4 Minimum Required Test Equipments

The manufacturer of fly ash produced as per standard specification shall have the following minimum test equipment to check product compliance with the requirements of standard specification.

- 6.4.1 Chemical Properties Analyzer
- 6.4.2 Ventilated Electric Oven (capable of being controlled to 105 +/- 5 °C)
- 6.4.3 Shallow Container (about 20 g capacity and can withstand 150 °C without loss in mass)
- 6.4.4 Desiccators
- 6.4.5 Sieve Frame (cylindrical with nominal dimensions of 50mm diameter and 75mm depth)
- 6.4.6 Sieve Cloth (45 µm stainless steel mesh)
- 6.4.7 Spray Nozzle
- 6.4.8 Pressure Gauge (at least 160 kPa capacity with 5 kPa intervals)
- 6.4.9 Weighing Scale (capable of weighing 100 g to the nearest 0.001 g)
- 6.4.10 Compressive Strength Tester as required by BS EN 196-1:1995

## 7. REQUIREMENTS FOR INITIAL TESTING OF THE PRODUCT

### 7.1 Sampling

7.1.1 Three sets of samples shall be taken either from the production line or warehouse; the first set, if applicable, shall be tested in the plant to be witnessed by a duly authorized DCL representative, the second set shall be sent to an independent testing laboratory while the third set will be kept by the manufacturer as reference for future use.

7.1.2 Test sample(s) for independent test shall be prepared and packed in accordance with section 8

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 3 of 7

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

 GOVERNMENT OF DUBAI	<b>Organization/Unit:</b> إدارة مختبر دبي المركزي <b>Dubai Central Laboratory Department</b>	الوحدة التنظيمية: <b>الوحدة التنظيمية:</b>	 بلدية دبي DUBAI MUNICIPALITY
	<b>Document Title:</b> <b>Specific Rules for FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005</b>	عنوان الوثيقة: <b>عنوان الوثيقة:</b>	
	<b>Doc Ref.</b> <b>DM-DCLD-RD-DP21-2125 (IC)</b>	رقم الوثيقة : <b>رقم الوثيقة :</b>	

and 9 of BS EN 196-7;1992 in the presence of DCL representative.

7.1.3 DCL Representative shall affix his signature on the sample and shall be submitted to an independent testing laboratory.

## 7.2 Product Characteristic and Test Requirements

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

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

### 7.2.2.1 Chemical requirements

- 7.2.2.1.1 Loss on Ignition as per EN 196-2.
- 7.2.2.1.2 Chloride as per EN 196-21.
- 7.2.2.1.3 Sulfuric Anhydride as per EN 196-2.
- 7.2.2.1.4 Free calcium Oxide as per EN 451-1.
- 7.2.2.1.5 Reactive calcium oxide as per 3.1 of EN 197-1:2000.
- 7.2.2.1.6 Reactive silicon dioxide as per 3.2 of EN 197-1:2000.
- 7.2.2.1.7 Silicon dioxide (SiO<sub>2</sub>), Aluminum oxide (Al<sub>2</sub>O<sub>2</sub>) and Iron Oxide (Fe<sub>2</sub>O<sub>2</sub>) as per EN 196-2
- 7.2.2.1.8 Total content of Alkali as per EN 196-21.
- 7.2.2.1.9 Magnesium oxide as per EN 196-2.
- 7.2.2.1.10 Soluble phosphate as per Annex C of the standard specification

### 7.2.2.2 Physical Properties

- 7.2.2.2.1 Fineness as per EN 451-2.
- 7.2.2.2.2 Activity Index as per EN 196-1.
- 7.2.2.2.3 Soundness as per EN 196-3.
- 7.2.2.2.4 Particle Density as per BS EN 196-6.
- 7.2.2.2.5 Initial Setting Time as per EN 196-3.
- 7.2.2.2.6 Water Requirement as per Annex B of the standard specification

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

7.4 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.

7.5 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.

7.6 Only after reassessment and subsequent product compliance shall the manufacturer be allowed to Use the DCL Conformity Mark.

## 8. COMPLIANCE AND RESPONSIBILITIES OF THE CERTIFIED CLIENT

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 4 of 7

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

 GOVERNMENT OF DUBAI	<b>Organization/Unit:</b> إدارة مختبر دبي المركزي <b>Dubai Central Laboratory Department</b>	الوحدة التنظيمية: <b>الوحدة التنظيمية:</b>	 بلدية دبي DUBAI MUNICIPALITY
	<b>Document Title:</b> <b>Specific Rules for FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005</b>	عنوان الوثيقة: <b>عنوان الوثيقة:</b>	
	<b>Doc Ref.</b> <b>DM-DCLD-RD-DP21-2125 (IC)</b>	رقم الوثيقة : <b>رقم الوثيقة :</b>	

## 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 plan, The Plan shall be as per table 2 of EN 450-1:2005.
  - (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 an internal product quality assurance plan giving details of the following properties (which shall be in accordance with clause 5 of the standard specification):

- a. Loss on Ignition (LOI)
- b. Chloride
- c. Sulfuric Anhydride
- d. Free Calcium Oxide
- e. Reactive Calcium Oxide
- f. Reactive Silicon Dioxide
- g.  $SiO_2 + Al_2O_3 + Fe_2O_3$
- h. Total Content of Alkalis
- i. Magnesium Oxide
- j. Soluble Phosphate
- k. Fineness
- l. Activity Index
- m. Soundness
- n. Particle Density
- o. Initial Setting Time
- p. Water Requirement
- q. Durability Requirements
- r. Release of Dangerous Substances and Emission of Radioactivity

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 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 DM-DCLD-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 Certified client

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : <b>Level of Confidentiality / درجة السرية</b>	Page 5 of 7

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

 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 FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005	عنوان الوثيقة:	
	<b>Doc Ref.</b> DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

- 8.2.1 Every certified client shall ensure that his product, for which a certification 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 certified 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.
- 8.2.3 The certified 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'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 licensing agreement for the use of DCL Conformity Mark shall constitute sufficient grounds for suspension, withdrawal and cancellation of the license against a certified client.
- 8.2.6 Any dispute that may arise in connection with the licensing agreement shall be settled in accordance with the General Rule 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 DM-DCLD-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, DM-DCLD-IMS-RD-13.
- 10.2 The certified client shall submit a product-marking proposal for approval by the DM Certification Body. The 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 certified client shall pay the applicable fees and charges related to the granting of the license to use the DCL Conformity Mark based on the DCL Official Fee Structure, DM-DCLD-RD-DP21-2074 (IC).
- 11.2 The fees for this certification scheme shall include but not limited to the following;

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 6 of 7

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

 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 FA Certification of Fly Ash for Concrete as per BS EN 450-1: 2005	عنوان الوثيقة:	
	<b>Doc Ref.</b> DM-DCLD-RD-DP21-2125 (IC)	رقم الوثيقة :	

- 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

Approved by HOU	Authorized by PCASM
Date of Issue : 25/03/2019	Rev. No. : 03
General / عام : Level of Confidentiality / درجة السرية	Page 7 of 7

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