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|  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 Ground Granulated Blast Furnace Slag for use in Concrete, Mortar and Grout as per BS EN 15167 -1 : 2006 Through Factory Assessment | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2211 (IC) | رقم الوثيقة: | |

| Issue Date | Rev. No. | Summary Of Amendments |
|------------|----------|---|
| 08-05-2019 | 0 | First draft for comments |
| 11-06-2019 | 1 | Issue for use |
| 21-07-2020 | 2 | 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. |
| 26/09/2021 | 3 | Revised to reflect the 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. |

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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 in addition to the requirements for conformity evaluation as per BS EN 15167-1:2006 .
- 1.1.2 The client 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 chemical and physical properties as well as quality control procedures for ground granulated blast furnace slag for use as a type II addition in the production of concrete, including in particular cast- in-situ or prefabricated structural concrete conforming to EN 206-1. Ground granulated blast furnace slag conforming to this European Standard may also be used in mortars and grouts

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 1.3.1 Product name: Ground Granulated Blast Furnace Slag (GGBFS)
- 1.3.2 Applicable Standard/Normative Reference: BS EN 15167-1:2006 for Composition , Specification and conformity criteria
- 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 and clause 4), 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 the recognized Independent Testing Laboratory

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- 1.4.3 Standard Specification – BS EN 15167-1:2006 for Composition , Specification and conformity criteria
- 1.4.4 Product Quality Assurance Plan – a document being agreed upon both by the client and the 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 -The factory or the manufacturer of ground granulated blast furnace slag (GGBFS)
- 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 through for the Certification and authorization to use the DCL Conformity Mark.
- 2.1.2 Application form 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 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 the ground granulated blast furnace slag (GGBFS) products comply 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 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

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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 Constituents:

The requirements for the constituents shall comply with clause (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 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 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, in accordance with clause 7 prescribed in the standard specification.

- 2.4.1.2 Three sets of sample per product per type should be selected – as applicable from the production line or from the warehouse and 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 the DCLD-PCAS approved independent testing laboratory. The third set will be kept by the client as reference for future use.

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2.4.1.3 Sample(s) for independent test shall be identified 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.

2.4.2 Product Evaluation and testing

2.4.2.1 General Requirements:

The chemical and physical requirements in 5.2 and 5.3 are specified as characteristic values.

Conformity to a characteristic value is assessed by means of a statistical quality control procedure as described in Clause 8. The test methods prescribed in this European Standard are reference methods.

In factory production control (see EN 15167-2), other methods may be used provided they give results equivalent to those obtained with the reference method. In case of a dispute, only the reference method shall be used.

2.4.2.2 The compliance of the common comments with the requirements of this standard and the stated values (including classes) shall be demonstrated by :

2.4.2.2.1 Initial type testing

2.4.2.2.2 Factory production control by the client, including product assessment:

2.4.2.2.2.1 The physical requirements of ground granulated blast furnace slag shall conform to the requirements of clause 5.3 of the standard specification.

2.4.2.2.2.2 The chemical properties of the ground granulated blast furnace slag shall conform to the requirements in table 1 of specification standard.

2.4.2.2.2.3 For the durability requirements shall conform to clause 5.4.1 of the standard specification.

2.4.2.2.2.4 For the release of dangerous substances and emission of radioactivity shall conform to clause 5.4.2 of the standard specification.

2.4.2.2.2.5 For single results conformity criteria shall satisfies the values specified in Table 5 of the standard specification (clause 8.3)

2.4.2.2.2.6 Factory production control for product testing and evaluation (frequency and volume) shall be made by applicant and submitted for DCL review and approval as per be Table 2 of the standard specification.

2.4.2.2.2.7 Packaging and labeling shall be according to clause 6 of the standard specification. For CE marking and labelling ZA.3 ZA applies

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.

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2.4.2.4 Where applicable, independent test should only be conducted if the result of the in-plant test shows satisfactory result. 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.

3. GRANTING OF THE DCL CERTIFICATION

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)/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.

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.

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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 the Certificate of Conformity 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.
- 3.3.2 The client shall give the duly authorized auditor(s), 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 Upon transfer of plant site, the certification 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, DM-DCLD-IMS-RD-13
- 3.4.2 The client shall submit samples of label/tag showing the DCL Conformity Mark, for approval by the 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.

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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 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-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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