

| | | | | |
|--|--------------------|--|-------------------|--|
|  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 Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

| Issue Date | Rev. No. | Summary Of Amendments |
|------------|----------|---|
| 05-07-2006 | 0 | First draft for comments |
| 18-07-2006 | 0 | Final draft |
| 30-07-2006 | 1 | Issue for use |
| 19-03-2008 | 2 | Re issue to include no. of samples and minimum required equipment |
| 17-4-2008 | 3 | Re issue to modify clause 8.1.2.2 independent testing plan; change the frequency of testing for chemical analysis from once a year to every three months |
| 12-05-2008 | 4 | Re issue to be consistent with the other specific rules for steel bars |
| 20-05-2008 | 5 | Re issue to modify clause 7.3.2.2; changes in table in clause 8.1.2.2 |
| 16-08-2009 | 6 | 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 the appropriate procedure, RD-DP21-2096 (IC). |
| 05-05-2010 | 7 | Re issue to modify clause 7.1.3; change the number of samples for testing from 15 to 10 pieces |
| 14-07-2016 | 8 | Reviewed with the requirements of the current version of the standard (BS 4449:2005 + A3:2016) and found to be still suitable. Also revised based on the new format of documentation and renaming of the section. |
| 10-03-2019 | 9 | Updated the format as per new DM template and new DM logo |
| 04-08-2020 | 10 | 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. Change font Type. Correction of numbering |

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 1 of 8 |

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: |  DUBAI MUNICIPALITY |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (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 to 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

- 1.2.1 This specific rule specifies requirements for ribbed weldable reinforcing steel used for the reinforcement of concrete structures. Steel delivered in the form of bars, coils and decoiled products are covered by this document. It covers three steel grades, all of 500 MPa characteristic yield strength, but with different ductility requirements. The three grades are B500A, B500B, and B500C.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 1.3.1 Product Name: Steel for the reinforcement of concrete-Weldable reinforcing steel – Bar, coil and decoiled product
- Applicable standard/Normative reference: BS 4449:2005 + A3:2016 - Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product - Specification
- 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 BS 4449:2005 + A3:2016, DM-DCLD-RD-DP21-2001 (IC), the following shall apply:

- 1.4.1 Independent Testing Laboratory - Dubai Central Laboratory (DCL) or any testing laboratory recognized by the DCLD-PCAS.
- 1.4.2 Independent Test – test performed or conducted by the recognized Independent Testing Laboratory
- 1.4.3 Standard Specification – BS 4449:2005 + A3:2016 Steel for the reinforcement of concrete – Weldable

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 2 of 8 |

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: |  DUBAI MUNICIPALITY |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

reinforcing steel – Bar, coil and decoiled product - Specification

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

1.4.5 Factory Production Control and 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.

1.4.6 Client – Manufacturer of reinforcing steel bars

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 form shall be submitted to DCLD-PCAS together with the following documents

- a. Industrial Trade License
- b. Complete Product Description and Specifications
- c. Brief Description of Manufacturing Process
- d. Copy of the Quality Manual (Controlled Copy– In English)
- e. Vicinity Map and Factory Layout
- f. Valid Certification to ISO 9001 (if available)
- g. List of key personnel and their designation
- h. Total number of effective personnel involved in the manufacture of the product (technical, managerial, and support personnel)
- i. List of available testing equipment and tests conducted internally
- j. Others

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

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 3 of 8 |

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: |  DUBAI MUNICIPALITY |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

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 reinforcing steel 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 laboratory. As a minimum requirement, the laboratory shall have the following testing facility to check the following properties:

- Calipers and other linear measuring test equipments
- Weighing Scale (with an accuracy of 100 grams)
- Chemical Analyzer
- Tensile Test Equipment
- Bend Test Equipment

2.2.3 Bar Marking Requirements

The manufacturer of reinforcing steel bars and coils shall submit to DCLD-PCAS a unique bar marking requirements of their products for approval. The DCLD-PCAS approved mark shall be applied to the products covered by the certification.

Product Marking shall be as per the General Rules on the Markings and Tags of Steel Bars, DM-DCLD-RD-DP21- 2091 (IC).

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, the DCLD-PCAS reserves the right to carry out verification audit to confirm that the factory is in compliance with the QMS requirements, in addition to the requirements of DCLD certification schemes and rules.

2.3.2 Factory audit shall be conducted by designated audit team based on ISO 19011 – Auditing Management Systems.

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 4 of 8 |

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: |  DUBAI MUNICIPALITY |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

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 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.

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 Number of Samples for testing shall be at least 10 pieces by one meter length per size within the size range per grade.

2.4.2 Product Evaluation and Testing

2.4.2.1 Chemical Composition

The chemical composition shall be based on clause 7.1 of the Standard Specification. The values of individual elements and the carbon equivalent shall not exceed the limits given in Table 2 of the Standard Specification. All other intentionally added elements except those included within the carbon equivalent formula, shall be below the limit values specified in Table 1 of BS EN 10020.

2.4.2.2 Mechanical Properties

Note: All bars shall be free from defects such as seams, porosity, segregation and metallic inclusions, which can adversely affect the mechanical properties.

2.4.2.2.1 Tensile properties of the bars shall comply with the characteristic values specified in Table 4 of Standard Specification.

2.4.2.2.2 Fatigue strength shall comply with clause 7.2.4 of the standard specification. However, previously carried out Fatigue Tests by Independent Testing Laboratory may be accepted by DCLD-PCAS, if available. It shall show that reinforcing bars, coils and decoiled products shall endure 5×10 to the 6th power cycles of stress.

2.4.2.2.3 Bend Performance as per 7.2.5 of the Standard Specification shall show no sign of fractures or cracks visible to a person of normal or corrected vision.

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 5 of 8 |

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: |  DUBAI MUNICIPALITY |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

- 2.4.2.3 Dimensions, mass per meter and tolerances shall comply with the requirements as specified in section 7.3 of the Standard Specification.
- 2.4.2.4 Bond Strength/ Surface Geometry of the bars shall comply with the requirements specified in section 7.4 of the Standard Specification.
- 2.4.2.5 Product Marking shall be as per the Marking and Tag Requirements for the Control of Reinforcing Steel Bars, DM-DCLD-RD-DP21-2091 (IC).
- 2.4.2.6 Independent tests shall only be conducted if the result of the in-plant test shows satisfactory results. DCLD-PCAS may opt to 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
- 2.4.2.7 If the result of any test conducted by the independent testing laboratory shows non-conformance to the specified requirements, the retest shall be carried out on the reference sample kept by the manufacturer, or on new samples collected by DCLD-PCAS authorized auditor, in which full testing shall be carried out, if necessary.
- 2.4.2.8 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.
- 2.4.2.9 Only after reassessment and subsequent product compliance shall the manufacturer be allowed to use the DCL Conformity Mark.

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) of the product covered by the assessment.
- 3.1.2 The client shall agree with the 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 an internal product quality assurance plan giving details of the tests to be carried out at the

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 6 of 8 |

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 |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

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 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.

3.2 ISSUANCE OF DCL CERTIFICATE OF CONFORMITY

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 has been issued, conforms at all times to the requirements of the General Rule and Specific Rules and shall maintain to the satisfaction of DCLD-PCAS, a system of factory production 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 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.

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 7 of 8 |

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 |
| | Document Title: | Specific Rules for FA Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016 | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2129 (IC) | رقم الوثيقة : | |

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 Markings and Tag Requirements for the Control of Reinforcing Steel Bars in the Emirate of Dubai, DM-DCLD-RD-DP21-2091 (IC), and 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 tags.

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 surveillance shall be in accordance with the Independent Testing Plan (clause 3.1.4) that has been agreed between the 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 Mark based on the DCL Official Fee Structure for the control of reinforcing steel bars in the Emirate of Dubai, DM-DCLD-RD-DP21-2092 (IC).

5.1 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 Outsourcing activity Fee , where applicable

| | |
|--|---------------------|
| Approved by HOU | Authorized by PCASM |
| Date of Issue : 04/08/2020 | Rev. No. : 10 |
| General / عام : Level of Confidentiality / درجة السرية | Page 8 of 8 |

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