

 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 Cold reduced steel wire for reinforcement of concrete as per BS 4482: 1985 Amd 2: 2001	عنوان الوثيقة:	
	Doc Ref. DM-DCLD-RD-DP21-2175 (IC)	رقم الوثيقة :	

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04-11-2010	0	First draft
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13-12-2010	1	Issue for use
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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 System 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 System Through Factory Assessment" DM-DCLD-RD-DP21- 2001 (IC).

1.2 SCOPE

1.2.1 This specific rule covers requirements for cold reduced plain and deformed steel wire used for the reinforcement of concrete and for the manufacture of steel fabric in accordance with BS 4482.

1.2.2 It covers two steel types (Type 1 and 2) and the specified characteristic strength shall be 460 MPa.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product Name: Cold reduced steel wire for the reinforcement of concrete

1.3.2 Applicable standard/Normative reference: BS 4482:1985 with Amd 1:1997, Amd 2:2001 – Specification Cold reduced steel wire for the reinforcement of concrete

1.3.3 Additional References:

ISO 9001 - Quality Management System – Requirements

ISO 19011 - Guidelines for Quality and Environmental Management System Auditing.

1.4 DEFINITION OF TERMS

In addition to the definitions given in BS 4482:1985 with Amd 1:1997, Amd 2:2001, 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 the DM Certification Body.

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

1.4.3 Standard Specification – BS 4482:1985 with Amd 1:1997, Amd 2:2001 – Specification Cold reduced steel wire for the reinforcement of concrete.

1.4.4 Factory Production Control System (Product Quality Assurance Plan) - a document used by the factory to ensure continuous compliance of the certified product.

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

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2. REQUIREMENTS FOR CERTIFICATION

2.1 APPLICATION

2.1.1 Manufacturers of cold reduced steel wire for the reinforcement of concrete shall apply to Dubai Central Laboratory through Inspection and Certification Section for the license to use the DCL Conformity Mark.

2.1.2 Application forms shall be filled-up by the applicant-company and submitted to DCLD together with the following documents

- Trade License
- Complete product description and specifications
- Brief Description of Manufacturing Process
- Copy of the Quality Manual (Controlled Copy)
- Vicinity Map and Factory Layout
- Valid Certification to ISO 9001 (If available)
- List of personnel and their designation

2.2 FACTORY OPERATION

2.2.1 Quality Management System

Manufacturer of cold reduced steel wire for the reinforcement of concrete shall have a Quality Management System that is aligned to the requirements of ISO 9001 standard. NOTE: Certification to ISO 9001 is not a mandatory requirement.

2.2.2 Laboratory

Manufacturer of cold reduced steel wire for the reinforcement of concrete shall have a quality assurance laboratory to carry out factory production control testing to ensure that the cold reduced steel wire comply with the requirements of the standard specification.

As a minimum requirement, the laboratory shall have the following testing equipment:

- 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 steel wire for the reinforcement of concrete shall submit to DCLD a unique bar marking requirements as per BS 4482:1985 with Amd 1:1997, Amd 2:2001, of their products for approval. The DCLD approved mark shall be applied to the products covered by the certification.

2.3 INITIAL FACTORY AUDIT

2.3.1 DCL duly authorized representatives shall conduct an audit of the factory quality management system to verify its compliance with the requirements of ISO 9001.

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NOTE: An independent certification to ISO 9001 issued by a QMS certification body recognized by DM may be considered as having satisfied this requirement; however, the DM Certification Body reserves the right to carry out verification audit to confirm that the factory is in compliance with the QMS requirements.

2.3.2 Verification audit shall be conducted by designated audit team based on ISO 19011 – Guidelines for Quality and Environment Management System Auditing.

2.4 PRODUCT EVALUATION

2.4.1 Sampling Testing

2.4.1.1 Three sets of samples per size within the size range shall be taken randomly. The first set shall be tested in the plant supervised by a duly authorized DCLD-ICS representative, the second set will be sent to independent testing laboratory. The third set will be kept by the manufacturer as reference for future use.

2.4.1.2 Test sample(s) for independent test shall be identified and signed in the presence of DCL representative and shall be submitted to an independent testing laboratory.

2.4.1.3 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

2.4.2.1 The product shall conform to the requirements as specified in clauses 5, 7, 8, 9, 10, and 12 of the standard specification, BS 4482:1985 with Amd 1:1997, Amd 2:2001.

2.4.2.2 Tests to be carried out in accordance with BS 4482:1985 with Amd 1:1997, Amd 2:2001 requirements and shall have values as follows;

2.4.2.2.1 Cross sectional area and mass shall be as per Table 1

2.4.2.2.2 Effective cross sectional shall be as per clause 9

2.4.2.2.3 Chemical composition shall be as per Table 2

2.4.2.2.4 Carbon Equivalent shall be as per clause 7.2

Note: ASTM E:415:2005 maybe used in determining the chemical analysis

2.4.2.2.5 Mechanical Tests to include yield, tensile, and elongation shall be in accordance with clause 12.1

2.4.2.2.6 Rebend shall withstand the test without fracture when tested in accordance with Annex C. The test shall be carried out on temperature between 5°C and 30°C.

2.4.2.2.7 Bond classification of deformed wires shall be as per clause 10.1 and Annex B of the

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relevant standard.

2.4.2.2.8 Surface geometry classification of ribbed steel and indented steel wires shall be in accordance with clauses 10.3 of the relevant standard.

2.4.2.3 Independent test shall only be conducted if the result of the in-plant tests shows satisfactory result.

2.4.2.4 If the result of the test conducted by the independent testing laboratory shows non-conformance, 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.

2.4.2.5 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.

3. GRANTING OF THE DCL LICENSE

3.1 CONDITIONS FOR GRANTING THE DCL LICENSE

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 license to use the DCL Conformity Mark shall be issued to the manufacturer for the type(s) and size range of the product tested.

3.1.2 The factory shall submit to DM Certification Body a product quality assurance plan to ensure continuing compliance with the Standard Specifications and the requirements of this certification scheme. It shall consist of an internal product quality assurance plan.

3.1.3 Factory Production Control System (Internal Product Quality Assurance Plan)

The factory shall prepare and submit to DM Certification Body for approval 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, frequency of sampling and testing, and other relevant factors.

Frequency of sampling and testing shall be in accordance with table 5 of the standard specification.

3.2 ISSUANCE OF DCL LICENSE

If the conditions mentioned in clause 3.1 above have been complied, the manufacturer of cold reduced steel wire for the reinforcement of concrete shall be issued a DCL Certification License and a Scope of Certification that covers the type(s) and size of the products that are certified.

3.3 RESPONSIBILITIES OF THE LICENSEE

3.3.1 Every licensee shall ensure that his product, for which a license has been issued, conforms at all times to the requirements of the General Rule and Specific Rules and shall maintain to the satisfaction of

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DCL, a system of quality control including inspection and testing.

- 3.3.2 The licensee 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.
- 3.3.3 The licensee 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 quality management system.
- 3.3.4 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.
- 3.3.5 Any infraction stated in the Terms and Conditions for the use of DCL Conformity Mark shall constitute sufficient grounds for suspension, withdrawal and cancellation of the license against a licensee.
- 3.3.6 Any dispute that may arise in connection with the Terms and Conditions of the DCL Mark shall be settled in accordance with RD-IC-0005 Appeals, Disputes, and Complaints Procedure.
- 3.3.7 The licensee shall pay all applicable fees related to the certification process.

4. SURVEILLANCE

- 4.1 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.

5. FEE SCHEDULE

- 5.1 The licensee shall pay the applicable fees and charges related to the granting of the license to use the DCL Conformity Mark based on the DM Third Party Certification System Through Factory Assessment Fee Structure, DM-DCLD-RD-DP21-2097 (IC).

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