

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 Dubai Municipality
	Document Title:	Certification of Low-Relaxation Seven-Wire Steel Strand for Pre-Stressed Concrete as per ASTM A416-17a	عنوان الوثيقة:	
	Doc Ref.	DM-DCLD-RD-DP21-2131 (IC)	رقم الوثيقة :	

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Issue Date	Rev. No.	Summary Of Amendments
05-07-2006	0	First draft for comments
31-01-2007	1	Issue for use
19-11-2007	2	<ul style="list-style-type: none"> - Amendment of Section 8.1.2.1 to remove Dimensions and to add Diameter and Difference between center wire diameter and diameter of any outer wires. - Amendment of Section 8.1.2.2 to remove Dimensions and to add Diameter and Difference between center wire diameter and diameter of any outer wires. - Amendment of Section 8.1.2.2 to remove Relaxation Properties. - Amendment of Section 9.1 to modify the validity of the license to one year - Amendment of Section 8.1.2.2 to remove the requirement of Workmanship,
28-02-2008	3	Finish & Appearance from the independent testing plan.
12-07-2009	4	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).
01-08-2010	5	Amended as per new documentation structure and updated as per current version of the standard.
02-03-2014	6	Amended as per new updated as per current version (12a) of the standard
10-04-2016	7	Amended as per new updated as per current version (15) of the standard
25-02-2019	8	Amended as per new updated as per current version (17a) of the standard
04-08-2020	9	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
26-09-2021	10	Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.2.6), 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.
04-10-2022	11	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager), PCAS by CQPS (Certification and Quality Control of Products Section).
27-03-2023	12	Full re-structuring and transfer of common provisions to the general rule. Clauses are re-numbered and document title has been revised accordingly. Use of New DM Logo

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1. INTRODUCTION

- 1.1 This document prescribes the specific rule for certification of the product(s) as identified herein, in accordance with the requirements of DM Third Party Product Certification Scheme Through Factory Assessment, taking into consideration the applicable normative references and standard specification, in addition to the requirements for conformity evaluation, as stated below.
- 1.2 The applicant/client shall comply with this specific rule, and to all provisions under the “**General Rule for DM Third Party Product Certification Scheme Through Factory Assessment**”**DM-DCLD-RD-DP21-2001 (IC)**.
- 1.3 This specific rule **is an integral part of the general rule** and both shall always be read together.

2. SCOPE

- 2.1 This specific rule specifies the requirements for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete.
- 2.2 This specific rule does not -by itself- permit the use of the below product in the construction sites. However, it does provide the necessary general conformity assessment criteria, which are required for the evaluation and issuance of the certification and the authorization of the use of the DCLD Conformity Mark. Other relevant requirements issued by the regulatory bodies if any; shall always be fulfilled.

3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product name: Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete
- 3.2 Applicable standard/Normative reference: ASTM A 416 / A 416M: 17a - Standard Specification for Low Relaxation, Seven-Wire Steel Strand for Prestressed Concrete
- 3.3 Additional reference:
ISO 9001 Quality Management System – Requirements
ISO 19011 Guidelines for Auditing Management Systems

4 DEFINITION OF TERMS

- 4.1 In addition to the definitions given in ASTM A 416 / A 416M and the General Rule of the scheme [DM-DCLD-RD-DP21-2001 (IC)], the following shall apply:-
- 4.1.1 Standard Specification – ASTM A 416 / A 416M: 17a - Standard Specification for Low Relaxation, Seven Wire Steel Strand for Prestressed Concrete.

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5 REQUIREMENTS FOR INITIAL CERTIFICATION

- 5.1 The process of application, initial assessment and product sampling shall be in line with the related provisions in the general rule and the standard specifications.
- 5.2 The factory shall have a laboratory with the following testing equipment as a minimum:
- Weighting Scale.
 - Calipers and other linear measuring test equipment.
 - Tensile Test Equipment.
- 5.3 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. It shall include the following:
- 5.3.1 Workmanship, finish and appearance
 - 5.3.2 Diameter
 - 5.3.3 Difference between center wire diameter and diameter of any outer wire
 - 5.3.4 Breaking Strength
 - 5.3.5 Yield Strength
 - 5.3.6 Elongation
 - 5.3.7 Relaxation Properties
- 5.4 Product Evaluation and testing
- 5.4.1 Materials
 - 5.4.1.1 The base metal shall be carbon steel and shall be thermally treated.
 - 5.4.1.2 The wire from which the strand is to be fabricated shall be round and have a dry-drawn finish.
 - 5.4.2 Mechanical Properties
 - 5.4.2.1 Breaking Strength of the finished strand shall conform to the requirements prescribed in section 6.2 of the standard specification and Table 1.
 - 5.4.2.2 Yield Strength of the finished strand shall conform to the requirements prescribed in section 6.3 of the standard specification and Table 2.
 - 5.4.2.3 Elongation shall comply with the requirements specified in section 6.4 of the standard specification.
 - 5.4.2.4 Relaxation properties shall comply with the requirements specified in section 6.5 of the standard specification.

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5.4.3 Dimensions and permissible variations shall comply with the requirements specified in section 7 of the standard specification and Table 3.

5.4.4 Workmanship Finish and appearance shall comply with the requirements specified in section 8 of the standard specification.

5.4.5 The sampling and number of tests carried out by the manufacturer of the strand shall comply with clauses 9 &10 of the standard specification.

5.4.6 The results of testing must meet the requirements as per the standard specification.

6 GRANTING OF THE DCLD CERTIFICATION

6.1 The DCLD product conformity certificate and the authorization to use the DCLD conformity mark shall be granted upon conformance with all related provisions in the general rule.

6.2 Fees shall be as per DM-DCLD-RD-DP21-2097 (IC) and other relevant provisions in the general rule.

6.3 DCLD-CQPS shall carry out surveillance of certified clients based on the approved periodic plans and related provisions in the general rule.

6.4 Appeals, disputes and complaints shall be in line with the relevant provisions in the General Rule.

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