

 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 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:	

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.
26-09-2021	10	Correction of numbering 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.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

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 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 Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 1.3.1 Product name: Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete

- 2 Applicable Standard/Normative Reference: ASTM A 416 / A 416M: 17a - Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete.

- 1.3.3 Additional References:

- I 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 ASTM A 416 / A 416M:17a 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
- 1.4.3 Standard Specification (SS) – ASTM A 416 / A 416M: 17a - Standard Specification for Low- Relaxation Seven-Wire Steel Strand for Prestressed Concrete.
- 1.4.4 QMS – Quality Management System aligned with the requirements of ISO 9001 Standard

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

1.4.5 Factory Production Control and Quality Assurance Plan – a document being agreed upon both by the Client and DCLD-PCAS being used to ensure continuous compliance of the certified product.

1.4.6 Client – Manufacturer of the Seven-Wire Steel Strand

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.

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 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 Seven-wire Steel Strands 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)
- Tensile Test Equipment

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

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 based on ISO 19011 – Auditing Management Systems.

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 Sampling and number of tests shall comply with requirements specified in section 9 and 10 respectively of the standard specification.

2.4.1.3 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.

2.4.1.4 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.

2.4.2 Product Evaluation (Conformity Criteria)

2.4.2.1 Materials

2.4.2.1.1 The base metal shall be carbon steel and shall be thermally treated.

2.4.2.1.2 The wire from which the strand is to be fabricated shall be round and have a dry-drawn finish.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

2.4.2.2 Mechanical Properties

- 2.4.2.2.1 Breaking Strength of the finished strand shall conform to the requirements prescribed in section 6.2 of the standard specification and Table 1.
- 2.4.2.2.2 Yield Strength of the finished strand shall conform to the requirements prescribed in section 6.3 of the standard specification and Table 2.
- 2.4.2.2.3 Elongation shall comply with the requirements specified in section 6.4 of the standard specification.
- 2.4.2.2.4 Relaxation properties shall comply with the requirements specified in section 6.5 of the standard specification.
- 2.4.2.3 Dimensions and permissible variations shall comply with the requirements specified in section 7 of the standard specification and Table 3.
- 2.4.2.4 Workmanship Finish and appearance shall comply with the requirements specified in section 8 of the standard specification.
- 2.4.2.5 The sampling and number of tests carried out by the manufacturer of the strand shall comply with clauses 9 & 10 of the standard specification.
- 2.4.2.6 Where applicable, Independent test shall 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
- 2.4.2.7 If the result of the test conducted by the independent testing laboratory shows non-conformance to the specified requirements, the provision for rejection as per clause 12 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 the authorized auditor on 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 re-assessment and subsequent product compliance shall the manufacturer be allowed to use the DCL Conformity Mark on his product.

3. GRANTING OF THE DCL CONFORMITY MARK

3.1 CONDITIONS FOR GRANTING THE DCL PRODUCT CONFORMITY CERTIFICATE

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

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 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. It shall include the following:

- 3.1.3.1 Workmanship, finish and appearance
- 3.1.3.2 Diameter
- 3.1.3.3 Difference between center wire diameter and diameter of any outer wire
- 3.1.3.4 Breaking Strength
- 3.1.3.5 Yield Strength
- 3.1.3.6 Elongation
- 3.1.3.7 Relaxation Properties

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.

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

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.
- 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 DCLD-PCAS
- 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 authorized auditor shall carry out periodic surveillance to ensure consistent compliance with

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA

 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 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:	

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 authorization to use the DCL Conformity Mark based on the DCL Official Fee Structure, DM-DCLD-RD-DP21-2097 (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 Outsourcing activity Fee , where applicable

Approved by HOU	Authorized by PCASM
Date of Issue : 26/09/2021	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

بيانات مفتوحة / OPEN DATA