

 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 Post Tension Anchorage for Prestressed Concrete as per ACI 318-11 and EAD 160004-00-0301	عنوان الوثيقة:	
	Doc Ref.	DM-DCLD-RD-DP21-2202 (IC)	رقم الوثيقة :	

Issue Date	Rev. No.	Summary Of Amendments
02-03-2017	0	First draft for comments
09-07-2017	0	Second draft for comments
24-08-2017	0	Final draft
11/10/2017	1	Issue for use
06/02/2019	2	Amendment to include the Requirements for the Certification of Post Tensioning Kit as per the New European Assessment Document (EAD 160004-00-0301).
09/08/2020	3	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. Correction of numbering.
26/09/2021	4	Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports ( clause 2.4.3.3.6 ), 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.

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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.

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 post tension anchorage materials for Prestressed Concrete.

### 1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product name: Post tension kits / anchorage (anchor blocks, anchor head and wedges) for Prestressed Concrete

1.3.2 Applicable Standard/Normative Reference: As per As per Building Code Requirements for Structural Concrete (ACI 318-11), and European Assessment Document (EAD 160004-00-0301)

1.3.3 Additional References:

ISO 9001, Quality Management System – Requirements  
ISO 19011, Guidelines for Auditing Management Systems.  
EAD 160004-00-0301, European Assessment Document.

### 1.4 DEFINITION OF TERMS

In addition to the definitions given in the Applicable Standard, Normative Reference, and DM-DCLD-RD-DP21-2001 (IC), the following shall also apply:

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- 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) – As per As per Building Code Requirements for Structural Concrete (ACI 318-11), and European Assessment Document (EAD 160004-00-0301).
- 1.4.4 Product 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.
- 1.4.5 QMS - Quality Management System aligned with the requirements of ISO 9001 Standard.
- 1.4.6 Client – Manufacturer of post tension anchorage for pre-stressed concrete
- 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)
- 1.4.9 Anchorage – A Mechanical device, usually comprising several components, designed to retain the force stressed tendon, and to transmit the force to the structure.

## 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

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#### 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 PT anchorages 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 required minimum test equipment to check product compliance with the requirements of 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 (for products not certified in accordance with European Assessment Document (EAD 160004-00-0301).

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2.4.1.1 Sampling and number of tests shall comply with requirements specified respectively of the standard specification and technical approval.

2.4.1.1 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 DCLD-PCAS approved independent testing laboratory. The third set will be kept by the manufacturer as reference.

2.4.1.2 Test 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.

2.4.1.3 For periodic test requirements: The client shall have a periodic test program that ensures that the anchorage and components comply with the audit test requirements of EAD 160004 -00-0301 clause 3.3.4. At least once a year the client shall undertake one series of single element tensile tests in accordance with EAD 160004-00-0301 clause 3.3.4.

2.4.1.4 Number of samples required which will be tested according to European Assessment Document (EAD 160004-00-0301) will be as below detailed:

2.4.2 Sampling and Testing (for certified products) according to European Assessment Document (EAD 160004-00-0301)

- Tests and sampling will not be required if the client have a valid certificate of conformity or technical approval if complies with the European Assessment Document (EAD 160004-00-0301)

2.4.3 Materials

2.4.3.1 The client shall have a documented procedure for the receipt of incoming material that includes inspection of material and, where appropriate, correlation of advice notes and test certificates. The procedure shall incorporate the receipt of any customer property.

2.4.3.2 The client shall incorporate an inspection regime that considers the key material characteristics, as defined in the original testing and detailed on appropriately controlled component drawings and purchase specifications.

2.4.3.3 Product requirements :

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2.4.3.3.1 Prestressing anchorages shall comply with the requirements of requirements of EAD 160004-00-0301 section 2.2.1 (Resistance to static load), 2.2.2 (resistance to fatigue) and 2.2.3 (Load transfer to the structure) which also refer to ETAG013.

2.4.3.3.2 For Prestressing strand shall be DCLD approved, complying with either BS 5896 or ASTM A416

2.4.3.3.3 Mechanical Properties

2.4.3.3.3.1 Resistance to static load: shall be based on EAD 160004-00-0301 Annex C.2.1 and Clause 2.2.1 Consecutive tests will be carried out with the largest size tested twice. Out of the small and intermediate size, the one with the highest stresses shall be tested twice ,the other once

2.4.3.3.3.2 Resistance to fatigue: Assessment of resistance to fatigue shall be based EAD 160004-00-0301 Annex C.3.1 and clause 2.2.2. One of the smallest sizes, one intermediate size and two of the largest size shall be subject to consecutive tests of the resistance to fatigue.

2.4.3.3.3.3 Load transfer to structure: Assessment of load transfer to structure shall be based on EAD 160004-00-0301 Annex C.4.1 and clause 2.2.3. Consecutive tests will be carried out with the largest size tested twice. Out of the small and intermediate size, the one with the highest stresses shall be tested twice, the other once.

Note:\* The above tests originate from ETAG013 and therefore those elements that have previously been tested according to the relevant clauses in ETAG013 will be deemed acceptable

2.4.3.3.4 Dimensions and permissible variations shall comply with the requirements of manufacture declaration

2.4.3.3.5 Workmanship Finish and appearance shall comply with the manufacture declaration

2.4.3.3.6 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

2.4.3.3.7 If the result of the test conducted by the DCLD-PCAS approved independent testing laboratory shows non-conformance to the specified requirements, the provision for rejection shall apply. The retest shall be carried out on the reference sample kept by the client or on new samples collected by the authorized auditor, on which full testing shall be carried out, if necessary.

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2.4.3.3.8 If the retest passed, the initial product assessment is considered conforming to product specification. If not, the client will be advised to take corrective action.

2.4.3.3.9 Only after re-assessment and subsequent product compliance shall the client be allowed to use the DCL Conformity Mark on his product(s) that have been tested and found complying with the certification requirements.

### 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 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 prepare and submit to DM Certification Body for approval of an internal product quality assurance plan of the following properties:

3.1.3.1 Workmanship, finish and appearance

3.1.3.2 Dimensions

3.1.3.3 Mechanical properties

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.

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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 Licensed Clients under the Factory Assessment Scheme, and implemented by the DCLD-PCAS. The cost of testing under the independent testing plan shall be borne by the factory.

### 3.2 ISSUANCE OF DCL CERTIFICATE OF CONFORMITY

If the conditions mentioned in clause 3.1 above have been complied, the client post tension anchorage for Prestressed Concrete shall be issued the 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-PCAS, a system of quality control including inspection and testing.
- 3.3.2 The client shall give the duly authorized auditor(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 client shall inform 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.

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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.

3.3.8 The client shall maintain quality and production related records at least for 12 Years.

#### 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 Conformity Mark, 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 container, where applicable

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(s) 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 certificate of conformity and the authorization to use the DCL Conformity Mark based on 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

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- 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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