

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي Dubai Municipality
	Document Title:	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:	

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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.
07/10/2022	5	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager), also addition of surveillance in the clause 2.4.3.3.6
27/03/2023	6	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 post tension anchorage materials 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: Post tension kits / anchorage (anchor blocks, anchor head and wedges) for Prestressed Concrete
- 3.2 Applicable standard/Normative reference: Building Code Requirements for Structural Concrete (ACI 318-11), and European Assessment Document (EAD 160004-00-0301)
- 3.3 Additional reference:
ISO 9001 - Quality Management System – Requirements
ISO 19011 - Guidelines for Auditing Management System.
EAD 160004-00-0301, European Assessment Document.

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4 DEFINITION OF TERMS

- 4.1 In addition to the definitions given in ACI 318-11) & (EAD 160004-00-0301) and DM-DCLD-RD-DP21-2001 (IC), the following shall also apply:
- 4.1.1 Standard Specification – Building Code Requirements for Structural Concrete (ACI 318-11), and European Assessment Document (EAD 160004-00-0301).

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 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.

- 5.3 Product evaluation and testing
- 5.3.1 Sampling and Testing (for products not certified in accordance with European Assessment Document (EAD 160004-00-0301).
- 5.3.2 Sampling and number of tests shall comply with requirements specified respectively of the standard specification and technical approval.
- 5.3.3 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.
- 5.3.4 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).

5.3.5 Materials

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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.

5.3.5.1 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.

5.3.5.2 Product requirements :

5.3.5.2.1 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.

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

5.3.5.2.3 Mechanical Properties

5.3.5.2.3.1 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

5.3.5.2.3.2 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.

5.3.5.2.3.3 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

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

5.3.5.2.5 Workmanship Finish and appearance shall comply with the manufacture declaration

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

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- 5.4.1 The client shall prepare and submit to DM Certification Body for approval of an internal product quality assurance plan of the following properties:
- Workmanship, finish and appearance
 - Dimensions
 - Mechanical properties
- 5.4.2 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 all-manufacturing process; i.e. (raw materials – production lines- finished product testing and evaluation as per standard specifications –final packing.
- 5.4.3 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

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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