

 حكومة دبي GOVERNMENT OF DUBAI	Organization/Unit: إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي Dubai Municipality
	Document Title: Certification of Aluminum Composite Panel (ACP) as per TG 03 - 2024	عنوان الوثيقة:	
	Doc Ref. DM-DCLD-RD-CQP-2214	رقم الوثيقة:	

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Issue Date	Rev. No.	Summary Of Amendments
18/11/2019	0	First draft for comment
15/12/2019	0	Include DCL – Technical committee feedback and comments
29/12/2019	1	Issue for use
06/09/2020	2	Add the options for initial audit by the approved CAB and remotely by PCAS. Adding definition for authorized auditor. Update for the terminologies. Add provision for accepting valid test reports. Add additional provisions related to sampling and testing, in addition to minor additional highlighted changes
24/05/2021	3	Tensile test requirements changed; fee structure number updated. Merging and addition of some classes under sampling and testing. Removing fire safety requirements from the table as it is already required for all façade systems. Accepting test reports for long term test (adding note under the table). Adding clause 2.3.1 in addition to some other highlighted changes to align with same structure of other specific rules
29/07/2021	4	Table 1 & 2 of the DMS 036 standard have been added, the standard revision date has been updated. DMS 036 has been added to the SR's title
26/09/2021	5	Revised to reflect the Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.2.3), 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	6	Changing section name as per the new organizational structure and replace HOU by CQPSM (Section's Manager). Adding surveillance in 2.4.2.3
27/03/2023	7	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
19/08/2024	8	Changing the logo of the Government of Dubai with the latest design and added clause 6.2.
11/09/2024	9	Revised due to changing the name of the standard specification from Dubai Municipality Standard (DMS) 036 to Technical Guide (TG) 03 and reviewed as per the new version.
18/09/2026	10	Restructured to align with the new internal formatting and numbering of all documents, among other minor revisions.

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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-CQP-2001.**
- 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 Aluminum Composite Panel when used for constructing curtain walls facade (external and internal) for buildings. This specific rule does not apply on roofs and roof cladding and thermal insulation panels.
- 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: Aluminum Composite Panel (ACP)
- 3.2 Applicable standard/Normative reference: TG 03 - 2024 Technical Guide for Aluminum Composite Panel (ACP)
- 3.3 Additional reference:
 ISO 9001 - Quality Management System – Requirements
 ISO 19011 - Guidelines for Auditing Management System.

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4 DEFINITION OF TERMS

4.1 In addition to the definitions given in Standard specification TG 03 (clause 2) and DM-DCLD RD-CQP-2001, the following shall also apply:

4.1.1 Standard Specification – TG 03 - 2024 Technical Guide for Aluminum Composite Panel (ACP)

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:
- Calibrated Caliper
 - Peel off tester
 - Coating thickness instrument
 - Pencil hardness tools and instruments
 - Impact resistance apparatus
 - T-Bend tester for Coated Aluminum Coil
 - Gloss tester instrument
 - Tension machine

5.3 Product Evaluation and testing

5.3.1 The testing methods shall be according to tables (1 & 2 & 3) of the standard specification (TG 03) as follows:

Table 1: Tolerances for length, width, straightness and squareness of edges

Item	Tolerances
Length/mm	±3
Width/mm	±2
Thickness/mm	±0.2
Diagonal Line Differential/mm	≤5
Side Straightness/(mm/m)	≤1
Warp Degree/(mm/m)	≤5

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Table 2: Aluminum skin properties

Physical Properties	Test Method	Requirements
Thickness - Aluminum skin (top and bottom)	Caliper	≥ 0.50 mm
Tensile strength	ASTM E 08	≥ 150 MPA
Elongation %	ASTM E 08	≥ 8

NOTE: ASTM B209- Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

Table 3: Performance Requirements

S/ No.	Property	Test method	Requirement
1	Thickness of panels	Calibrated Caliper	±0.2 mm
2	Weight of panels	Calibrated weighing device	± 5% from Declared value
3	Coating thickness	ASTM D 7091	≥ 25 µm
4	Abrasion resistance	ASTM D 968 (Method A)	≥ 50 L/mil
5	Pencil hardness	ASTM D 3363	≥ H
6	Coating Film adhesion	AAMA 2605 (Clause 7.4) Or ASTM D3359	No loss of adhesion (0% failure)
7	Impact resistance	AAMA 2605 (Clause 7.5) Or ASTM D 2794	No removal of film from substrate
8	Shear strength	ASTM C 273	≥ 3.2 MPa
9	Gloss at 60°	ASTM D 523	± 5% from Declared value
10	T-Bend test	ASTM D 522	2T (No Cracks)
11	Peel off test	Peel off test (ASTM D903)	> 08 kg /25 mm for B > 11 kg /25 mm for A2
12	Panel tensile strength	ASTM E 08	> 35 Mpa 4mm > 25 Mpa 6 mm

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13	Punch shear test	ASTM D 732	≥20 MPa
14	* Corrosion resistance: 1. Humidity resistance for 4000 hrs at 38°C and 100%RH in accordance with ASTM D 2247 or ASTM D 4585. 2. Salt spray resistance ASTM B 117 See Note below	AAMA 2605	1. Humidity resistance: No formation of blisters to extent greater than “Few” blisters size #* as shown in Fig. 4 of ASTM D 714. 2. Salt spray resistance: Minimum rating of 7 on scribe or cut edges, and a minimum blister rating of 8 within the test specimen field in accordance with Table 1 & 2 of AAMA 2605 an
15	* Weathering resistance See Note below	ASTM C 481 (Cycle A)	- shear strength no effects when test as per ASTM C 273 - film adhesion no effects when test as per AAMA 2605 (Clause 7.4) Or ASTM D3359 - Impact resistance no effects when test as per AAMA 2605 (Clause 7.5) Or ASTM D 2794
16	Temperature for thermal deformation	ASTM D 648	≥100 ° C
17	Thermal conductivity	ASTM C 518	Declare value
18	Linear thermal expansion coefficient	ASTM D696	≥ 2.4 mm/m/°C

**NOTE: Long term tests may be waived during initial evaluation, if testing is carried out within the last (5) years from the date of evaluation in an approved laboratory and subject to no change or modifications in the manufacturing process and the recipe of production with no major changes in raw material.*

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

- 5.3.2.1 The client shall prepare and submit to DCLD-CQPS for approval of an internal product quality assurance plan.
- 5.3.2.2 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 whole manufacturing process, i.e. (raw materials – production lines- finished product testing and evaluation as per standard specifications – final packing).
- 5.3.2.3 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; it shall consist of and comply with the minimum requirement as per below:

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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 Use of the DCL Conformity Mark shall be as per DM-DCLD-RD-CQP-2069.
- 6.3 Fees shall be as per DM-DCLD-RD-CQP-2074 and other relevant provisions in the general rule.
- 6.4 DCLD-CQPS shall carry out surveillance of certified clients based on the approved periodic plans and related provisions in the general rule.
- 6.5 Appeals, disputes, and complaints shall be in line with the relevant provisions in the General Rule.

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