

	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	
	Document Title:	Certification of Coatings as per Related Sections in Al Sa'fat and Dubai Building Code	عنوان الوثيقة:	
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Issue Date	Rev. No.	Summary Of Amendments
06-07-2011	0	First draft for comments
20-07-2011	0	Final draft
21-07-2011	1	Issue for use
08-08-2011	2	Additional provisions for re-sampling in case of failure
06-04-2014	3	Amendment of the test VOC method from BS 3900-A23 to BS EN ISO 11890-1 and updating DMS 020 to 2012 version
03-08-2015	4	Updated to align with ISO/IEC 17067 for Type 1b and clarifying the applicable tests according to the type of paint/coating. Updated DMS 020 to 2015 version.
08-09-2015	5	Incorporating the pass-fail criteria as Annex A
04-05-2016	6	Extending the Scope to include Type 1a
25-04-2018	7	Adding coating other than paint under LRV and SRI testing and amending the validity of the certificate
01-07-2018	8	Updated regulation to 2017 Al Sa'fat Dubai Green Building Evaluation System; added SRI test for coating for hardscapes
11-04-2019	9	Updated format as per new DM logo
12-05-2022	10	Revised to reflect the 2020 version of Al Sa'fat – Dubai Green Building System. Updated the certification validity. Format updated with Dubai font. Other updates as highlighted. Alignment with the latest numbering and terminology system in DCLD.
07-10-2022	11	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager).
18-04-2023	12	Full re-structuring and transfer of common provisions to the general rule. Align with the updated SA'FAT and Dubai Building Code requirements. Removing of Annex A & B. Removing LRV. Adding the required tests as per different types of product (Clause 4.2.4 and sub-clauses) and delete the table showing the test methods. Clauses are re-numbered and re-arrange. Document title has been revised accordingly. Additional minor changes (highlighted). Use of New DM Logo.
08-03-2024	13	Revised to provide additional information on the table under clause 4.2.4, brought back the Table 1 extracted from DMS 020 under clause 4.2.4.1, added the value for formaldehyde in clause 4.2.4.2, added table for heavy metals in clause 4.2.4.3 and added SRI requirements in clause 4.2.4.4, among other minor changes in terminology.
27-03-2024	14	Revised to remove paints and other requirements related to paints like heavy metals.
04-07-2024	15	Changing the logo of the Government of Dubai with the latest design.

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## 1. INTRODUCTION AND SCOPE

- 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 Type 1, 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 shall comply with these specific rules, and with those already mentioned in the “**General Rules for Type1 Product Certification Scheme**” (DM-DCLD-RD-DP32-5001(IC)).
- 1.3 Type 1a and Type 1b certification shall be issued based on the relevant provisions in the general rules DM-DCLD-RD-DP32-5001(IC).

## 2. PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 2.1 Product name: Coatings
- 2.2 Applicable standard/Normative reference: Al Sa'fat Dubai Green Building System-2nd edition January 2023-Clauses [404.01], [304.01], [304.04] [304.06], [304.07] and Dubai Building Code – Parts H and K (as applicable).  
DMS 20: 2016 Specifications for Paints and Varnishes for Exterior and Interiors of Buildings and Vehicle Refinishing Products

## 3. DEFINITION OF TERMS

The definitions given in DM-DCLD-RD-DP32-5001 shall apply.

## 4. GENERAL REQUIREMENTS FOR CERTIFICATION

- 4.1 The process of application of applicant/client, product sampling, fees, and condition for issuance of the Type 1 certificate of conformity shall be in line with the related provisions in the general rule and the standard specifications.
- 4.2 Sampling and Testing
- 4.2.1 For detailed sampling procedure - Refer to related provisions in the general rules of the scheme.

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4.2.2 Based on the defined batch and the tests to be carried out as per clause [4.2.4], a “Sampling and testing plan” shall be prepared that will give details of the number of samples and the tests to be carried out on each selected sample. The applicant for certification shall agree to the sampling and testing plan.

4.2.3 The sampling and testing plan shall take guidance from DM-DCLD-RD-DP32-5003 (IC) “Guidance for preparing sampling and testing plan”; and shall be prepared in such manner that will provide highest confidence that the sample represents the entire population of product being certified.

4.2.4 The required test to be carried out against specific application of the products is as per table below:

S/N	LOW EMITTING MATERIAL	REQUIRED TESTS	PRODUCT TYPES AND APPLICATION/S
1	Coatings (other than paint) for exterior/exposed wall application	Solar Reflective Index (SRI). Volatile Organic Compound (VOC) Formaldehyde (Water Based only)	All types of coating products applied externally for protection against solar radiation or weather attack or any other purposes: i.e., curing compound, and dust proofers.
2	Roof Coating/Coating Applied to Hardscapes	Solar Reflective Index (SRI) Volatile Organic Compound (VOC) Formaldehyde (Water Based only)	All types of coating products used on hardscapes like: Protective coatings, exposed water proofing coatings, car park or landscape protective coatings Water proofing coating (bitumen, cementitious, acrylic, polyurea, etc.)
3	Coatings (other types not covered by above)	Solar Reflective Index (SRI) (if used in exterior application). Volatile Organic Compound (VOC) Formaldehyde (Water Based only)	All types of coating used in the buildings (inside and outside): Protective coatings, metal coatings, industrial floor coatings and water proofing coatings (bitumen, cementitious, acrylic, polyurea, etc.), curing compound, fireproof coating
4	Primer / Binding Primer	Volatile Organic Compound (VOC) Solar Reflective Index (SRI) (if used in exterior application as final coat)	All types of primers used in the buildings: Primer for paints, primer for coatings, bonding agents.

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#### 4.2.4.1 Volatile Organic Compounds (VOC)

As per Clause 404.01 (The acceptance limit shall be in accordance with Dubai Municipality Standard DMS 20: 2016 Table 1 as shown in the extracted table below), and tested as per test methods mentioned in the same standard.

Notes: - Equivalent test methods can be accepted based on approval of DCLD-CQPS.  
- Whenever the client declared the type of the product(s) as Solvent Free, the evaluation will be based on the value under the Water Based in Table 1 of DMS 20.

**Table 1: Maximum Volatile Organic Compounds (VOC's) Content Limit**

**Values for Paints and Varnishes (from DMS 020)**

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#	Product subcategory	Type	VOC g/l (*)
1	Interior matt walls and ceilings paint (Gloss < 25@60°C)	WB	30
		SB	30
2	Interior glossy walls and ceilings paint (Gloss > 25@60°C)	WB	100
		SB	100
3	Exterior walls of mineral substrate	WB	40
		SB	430
4	Interior /exterior trim and cladding paints for wood and metal	WB	130
		SB	300
5	Interior /exterior trim varnishes and woodstains, including opaque woodstain	WB	130
		SB	400
6	Interior /exterior minimal build woodstains	WB	130
		SB	700
7	Primers	WB	30
		SB	350
8	Binding Primers	WB	30
		SB	750
9	One-pack performance coatings	WB	140
		SB	500
10	Two pack reactive performance coatings for specific end use such as floors	WB	140
		SB	500
11	Multi colored coatings	WB	100
		SB	100
12	Decorative effect coatings	WB	200
		SB	200
Notes:			
1. WB: water-based; SB: solvent-based			
2. The limit values are as per the EC Directive 2004/42/EC concerning VOC reduction for decorative paints and varnishes			
3. * ready to use			

**\*\* The above table requirements are applicable on coating and related products only\*\***

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4.2.4.2 Formaldehyde content of water reducible coatings shall not exceed the limit (10 mg/kg) as per clause 4.4.5 of DMS 20:2016.

4.2.4.3 Solar Reflective Index (SRI) shall comply with the requirements under clause 304.01 & 304.04 & 304.06 and 304.07 of the standard specification (as shown in the below extracted requirements from Al Sa'fat). The acceptance limit shall be as per the values stated in the aforementioned clauses, as applicable for each application of the product. This requirement is applicable to coatings used in roofing surfaces, shading and hardscapes. The coatings shall be applied on a flat substrate such as wood, metal or plastic sheet or concrete surface with a minimum size of 150 x 150 mm. The thickness of applied coatings shall be such that there is no transparency. SRI value in the scope of certification is just for information. The user (owner, contractor, or consultant) shall be fully responsible for ensuring that the correct SRI value is followed according to the requirements of the standard specification and the application of the product.

#### 304.01 Urban Heat Island Effect

Opaque building envelope surfaces shall have an SRI value not less than that shown in Table (1) 304.01 -Building envelope SRI value requirements and according to Dubai Building Code section E.5.7 and K.7.2.7 Heat island effect reduction, for a minimum of 75% of the roof area and 100% of the external walls.

**Table (1) 304.01 -Building envelope SRI value requirement**

Element	SRI value
Steep sloped roofs (slopes steeper than 1:6)	≥29
Flat and low sloped roofs (slopes lower than or equal to 1:6)	≥78
External walls	≥29

#### 304.04 Colors on the Outside of Buildings

For all new buildings, opaque building envelope surfaces shall follow the solar reflectance index (SRI) requirements stated in part E of Dubai Building Code, E.5.7 Heat Island effect reduction and part K for villas K.7.2.7 Heat island effect reduction

#### 304.06 Hardscape

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For all new buildings, the hardscape of the development must achieve the requirements stated in Part B in Dubai Building Code, B.10.5.3 Heat Island effect reduction -surfaces shading.

For Villas, the requirements in Part K, K.5.12.1 Surfaces shading must be met.

#### 304.07 Shading of Public Access Areas

For all new buildings, all pedestrian linkages within the plot area must be shaded using materials having a Solar Reflectance Index (SRI) equal to or greater than those specified in Table 304.01 (1).

### 5. ISSUANCE OF TYPE 1 CERTIFICATE OF CONFORMITY (COC)

5.1 The COC shall be issued based on the related provisions in the general rules.

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