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| | Document Title: | Specific Rules for FA Certification of Low Emitting Materials as per Al Sa'fat – Dubai Green Building System | عنوان الوثيقة: | |
| | Doc Ref. | DM-DCLD-RD-DP21-2180 (IC) | رقم الوثيقة: | |

| Issue Date | Rev. No. | Summary Of Amendments |
|------------|----------|--|
| 06/11/2012 | 0 | First draft for comments |
| 19/11/2012 | 0 | Final draft |
| 04/12/2012 | 1 | Issue for use |
| 18/06/2014 | 2 | Amended for typographical error clause [2.2.2] |
| 08/09/2015 | 3 | Updated the reference to DMS 020: 2015 and incorporating the pass-fail criteria as Annex A. Use of the term “license” and “licensee” is avoided. |
| 29/03/2016 | 4 | Scope is changed to Low Emitting Materials (paints, coatings, adhesives, sealants). Added Table 1 for Required Tests; Added formaldehyde [2.4.1.2] as a required test for paints and coatings; |
| 17/07/2016 | 5 | Provision for the selecting samples and sample size [2.4] |
| 21/08/2016 | 6 | Table 1 is revised to differentiate external & internal coatings and to add test requirements for external coating. Some Test Methods were updated in [2.4.1]. |
| 16/05/2017 | 7 | Updated Table 1; Annex B added; removed Table A.2 from Annex A |
| 30/05/2018 | 8 | Updated to align with Al Sa'fat – Dubai Green Building Evaluation System; added category of coating applied on hardscapes in Table 1; Format updated in accordance with DM unified template |
| 27/06/2018 | 9 | Minor amendment of terminology related to Al Sa'fat; Adding coating for hardscapes in Annex B. |
| 01/07/2018 | 10 | Additional amendments addressing the requirements for coatings used for hardscapes. |
| 05/09/2018 | 11 | Clarification for the tests to be done. Amend the percentage for sampling. |
| 06/09/2020 | 12 | 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. Correction of numbering. Add provision for accepting valid test reports |
| 06/09/2021 | 13 | Revised to reflect the 2020 version of Al Sa'fat – Dubai Green Building System; to reflect the Formaldehyde requirements for coatings in Table 1; to reflect the correct reference clause for the test requirement as per Table 1. Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.1.4), in line with DM 30% reduction of requirements (both service and specialized). |
| 26/09/2021 | 14 | 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. |
| 18/07/2022 | 15 | Note is added under the Table A.1 for product type declared as Solvent Free |
| 11/08/2022 | 16 | Added the provisions for the application for extension of brand name owned by a private brand owner to DCL certified manufacturer(s). |

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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 applicant 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 Emitting Materials (paints, coatings, adhesives, sealants) in accordance with the related requirements and specifications in the 2020 Al Sa'fat Dubai Green Building System.

1.3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

1.3.1 Product name: Low Emitting Materials (any or all of the following: (a) Paints, (b) Coatings, (c) Adhesives, (d) Sealants)

1.3.2 Applicable Standard/Normative Reference: 2020 Al Sa'fat Dubai Green Building System clauses [404.01] and/or [404.02], [304.01], [304.03] and [701.04]

1.3.3 Additional References:

1.3.3.1 ISO 9001- Quality Management System – Requirements

1.3.3.2 ISO 19011- Guidelines for Auditing Management Systems

1.3.3.3 DMS 20: 2015 Specifications for paints and varnishes

1.4 DEFINITION OF TERMS

In addition to the definitions given in 2020 Al Sa'fat Dubai Green Building System, DM-DCLD-RD-DP21-2001 (IC) the following shall also apply:

1.4.1 DM Certification Body: Dubai Central Laboratory Department-Products Conformity Assessment Section – DCLD-PCAS.

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- 1.4.2 Independent Testing Laboratory - Dubai Central Laboratory (DCL) or any testing laboratory recognized by DCLD-PCAS.
- 1.4.3 Independent Test – test performed or conducted by the recognized Independent Testing Laboratory or any testing laboratory recognized by DCLD-PCAS.
- 1.4.4 QMS - Quality Management System aligned with the requirements of ISO 9001 Standard
- 1.4.5 Standard Specification (SS) – 2020 Al Sa'fat Dubai Green Building System
- 1.4.6 Factory Production Control Plan – a document being agreed upon both by the Client and DCLD-PCAS being used to ensure continuous compliance of the certified product.
- 1.4.7 Coating - Liquid, liquefiable, or mastic composition that is converted to a solid adherent film after application to a substrate as a thin layer and is used for decorating, protecting, identifying or to serve some functional purpose such as the filling or concealing of surface irregularities or the modification of light and heat radiation characteristics and is intended for on-site application to interior (not exposed) or exterior (exposed) surfaces of residential, commercial, institutional or industrial buildings. For the purposes of this standard, the definition of paint or coating does not include stains, clear finishes, recycled latex paint, specialty (industrial, marine or automotive) coatings or paint sold in aerosol cans.
- 1.4.8 Paint: A pigmented coating. See definition for Coating.
- 1.4.9 Client: Manufacturer/producer of Low Emitting Materials (any or all of the following: (a) Paints, (b) Coatings, (c) Adhesives, (d) Sealants)
- 1.4.10 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 the authorization to use the DCL Conformity Mark.

2.1.2 Application form shall be submitted by client to DCLD-PCAS.

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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 client'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 product 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 external laboratory.

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.

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2.4 PRODUCT EVALUATION

2.4.1 Sampling and Testing

2.4.1.1 Sampling for initial testing shall be taken randomly by the authorized auditor from the products to be certified (Types & Categories) either from production lines or the factory warehouse as per following;

- Paints & Coatings– as per Table A.1 of Annex A, at least one sample or 10% of the number of products (whichever is higher) per subcategory (Table A.1), per type (WB or SB) per intended use (whether exposed or not exposed);
- Adhesive and Sealant – as per Table 404.02 (1) of Section 5 Annex A, at least one sample or 10% of the products (whichever is higher) per specific type of application;

2.4.1.2 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 independent testing laboratory. The third set will be kept by the client as reference.

2.4.1.3 Test sample(s) for independent test shall be identified and signed in the presence of the authorized auditor and shall be submitted to an independent testing laboratory by the DCLD-PCAS approved lab.

2.4.1.4 Where applicable, Independent test should 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.

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

2.4.1.6 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.

2.4.1.7 Only after re-assessment and subsequent product compliance shall the client be allowed to use the DCL Conformity Mark on his product.

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2.4.1.8 In some special cases, where the applicant wishes to include the brand name(s) of the other manufacturers in their Scope of Certification, DCLD-PCAS may allow it provided it is clearly specified in their application or officially requested for the extension of scope, and that the brand name being applied for extension by a certified manufacturer is only authorized by the owner of the brand name to maximum of two (2) certified manufacturer, including the applicant. In the event of more than two (2) certified manufacturer found to be producing the same brand, the owner of the brand name shall officially inform DCLD-PCAS of their decision of which two (2) from among the certified manufacturers will continue using the concerned brand name. If found acceptable, DCLD-PCAS may opt to collect new samples for testing to verify that the products are meeting the requirements of standard specification. In such case, the label or product packaging shall contain the statement “Manufactured for (name of the owner of the brand name) by DCLD certified client or any similar statement, and the Manufactured by (client code or project number, CF-XX of the main certified client)”, for identification and traceability.”

2.4.1.9 For the provision mentioned under sub-clause 2.4.1.8, a contract copy of manufacturing authorization (or any authorization letter) shall be mutually signed by the owner of the brand name and the certified manufacturer, and shall be submitted to DCLD-PCAS during the request for scope extension.

2.4.1.10 For the product which are similar to certified one or already within the scope, product verification shall be carried out either by product testing or recipe evaluation by verifying the production report from the factory, or both.

2.4.2 Product Evaluation and testing

The products conformity evaluation will be based on the satisfactory compliance of the tests results of the required tests to be carried out on each sample (The test shall be carried out at an independent approved laboratory. Please refer to Table 1 for the required tests to different types of low-emitting materials:

2.4.2.1 Volatile Organic Compounds (VOC) as per Clause 404.01 (*the acceptance limit shall be in accordance with Dubai Municipality Standard (DMS) 20: 2016 as given in Annex A*), tested as follows

- DMS 0033:2016 for VOC content adhesive/sealant/Various Materials (water and solvent based)
- BS EN ISO 11890-1:2007 for VOC of Water and Solvent Based paints and coating by DIFF. Method (content more than 150 g/L)
- BS EN ISO 11890 P2:2006 for VOC of Water and Solvent Based paints and coating by DIFF. Method (content less than 150 g/L)

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Note: When exempt compounds (as per US EPA definition) are present in the product being tested, the quantity may be deducted from the reported VOC content subject to the following conditions:

- a. *The reported value (in the test report) did not take into consideration the presence of exempt compounds;*
- b. *The client submits a declaration of the amount of exempt compounds, supported by documented evidences (formulations, test reports, etc) that have been reviewed and verified by DCL authorized auditors;*

2.4.2.2 Formaldehyde as per ASTM D 6191-97 (2008) or ASTM D5910-12 for Formaldehyde content of water reducible coatings and emulsion paints.

2.4.2.3 Light Reflectance Value as per clause 304.04; and tested as per BS 8493_2008 Cl.A1 2010 or any equivalent test method. Acceptance limit shall be as per Annex A.

2.4.2.4 Solar Reflective Index as per Clause 304.01 and 304.06; and tested as per ASTM E1980-01 or any equivalent test method. Acceptance limit shall be as per Annex B.

2.4.2.5 Heavy Metals (Lead, Cadmium, Arsenic, Mercury) as per Clause 701.04; and tested as per ASTM E 1613-12 addendum 14:2016. Acceptance limit shall be as per Annex A.

2.4.2.6 Heavy Metal Chromium (VI) as per Clause 701.04; and tested as per BS 3900-B10:1986 / ISO 3856-5:1984. Acceptance limit shall be as per Annex A.

Table 1 Required Tests to be carried out on different types of low emitting materials

| S/N | LOW EMITTING MATERIAL | REQUIRED TESTS |
|-----|-------------------------------|---|
| 1 | Roof Paint | Solar Reflective Index* (SRI) as per [2.4.2.4] Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] Heavy Metals including Chromium as per [2.4.2.5] and [2.4.2.6] |
| 2 | Paint (Wall Exterior/Exposed) | Light Reflectance Value* (LRV) as per [2.4.2.3] Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] Heavy Metals including Chromium as per [2.4.2.5] and |

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| | | [2.4.2.6] |
| 3 | Paint (Interior /Not Exposed) | Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] Heavy Metals including Chromium as per [2.4.2.5] and [2.4.2.6] |
| 4 | Coatings (other than paint) for exterior/exposed wall application | Light Reflectance Value* (LRV) as per [2.4.2.3] Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] |
| 5 | Roof Coating/Coating Applied to Hardscapes | Solar Reflective Index* (SRI) as per [2.4.2.4] Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] |
| 6 | Coatings (other types not covered by above) | Volatile Organic Compound (VOC) as per [2.4.2.1] Formaldehyde as per [2.4.2.2] |
| 7 | Adhesives | Volatile Organic Compound (VOC) as per [2.4.2.1] |
| 8 | Sealants | Volatile Organic Compound (VOC) as per [2.4.2.1] |

* SRI and LRV Testing, please refer to Annex B

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) and size 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)

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The client shall prepare and submit to DCLD-PCAS for approval of an internal product quality assurance plan. 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).

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 Certified Clients under the Factory Assessment Scheme, and implemented by the 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.

3.3 RESPONSIBILITIES OF THE CERTIFIED CLIENT

3.3.1 The client shall ensure that his product, for which a Certificate of Conformity has been issued, conforms at all times to the requirements of the General Rule and Specific Rules, and regulations and legislation, whenever applicable, and shall maintain to the satisfaction of DCLD-PCAS, a system of quality control including inspection and testing.

3.3.2 The client shall give the duly authorized auditor(s) by DCLD-PCAS, 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 Upon transfer of plant site, the Certificate of Conformity shall be deemed valid only after factory and product

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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 Conformity Mark, DM-DCLD-IMS-RD-13.

3.4.2 The client shall submit samples of label/tag showing the DCL Conformity Mark, The proposal shall include drawings and/or diagrams showing the location and size of the marking for each size of the product/product package for approval by the DCLD-PCAS.

3.4.3 The Certificate of Conformity and the authorization to use the DCLD 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 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 The surveillance shall be include testing of certified products in accordance with the Independent Testing Plan (clause 3.1.4) that has been agreed between the DCLD-PCAS and the client.

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5. FEE SCHEDULE

5.1 The client shall pay the applicable fees and charges related to the granting of 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
- 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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Annex A

Requirements for Testing and PASS/FAIL criteria:

1. Clause 404.01 Low Emitting Materials: Paints and Coatings

According to **Al Sa'fat Green Building System Practice Guide** for Clause 404.01:

404.01 Low Emitting Materials: Paints and Coatings

For all buildings, including new applications in existing buildings, all paints and coatings used in the building should not exceed the allowed limits for Volatile Organic Compound (VOC) specified by Dubai Municipality. The paints and coatings must be accredited / certified from Dubai Central Laboratory or any other laboratory, approved by Dubai Municipality.

VOC content shall be as per DMS 020: 2016 (See Table A.1)

Formaldehyde content as per DMS 020: 2016 clause [4.4.5] below:

- 4.4.5 **Formaldehydes:** The content of free formaldehyde present in the product shall not exceed 10 mg/kg. Formaldehyde donators may only be added in such quantities as will ensure that the resulting total content of free formaldehyde not exceed the stated amount.

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**Table A.1: Maximum Volatile Organic Compounds (VOC's) Content Limit
Values for Paints and Coatings (from DMS 020)**

| # | 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 | | | |

Additional Note: 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 type as shown on the above table (Table A.1); however the scope of certification will refer to the product as Solvent Free

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2. Clause 304.04 Light Reflective Value (Exterior Paint/Exposed)

This requirement is applicable only to exterior/exposed paints. The paint 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 paint shall be such that there is no transparency.

304.04 Colours on the Outside of Buildings

For all new buildings, at least 75% of the area for external walls must have a minimum Light Reflectance Value (LRV) of 45%.

3. Clause 304.01 Solar Reflective Index (Exterior /Exposed Paint of Roofing Surface) (Please see Annex B)

This requirement is applicable to paints used in roofing surfaces. The paint 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 paint shall be such that there is no transparency (same specimen can be used for Light Reflective Value).

304.01 Urban Heat Island Effect

For all new buildings, all opaque external roofing surfaces must comply with a minimum Solar Reflectance Index (SRI) value according to Table 304.01 (1), for a minimum of 75% of the roof area:

Table (1) 304.01 - Roof SRI Requirements

| Type of Roof | Minimum Roof SRI |
|--|------------------|
| Steep Sloped Roofs (slopes steeper than 1:6) | 29 |
| Flat and Low Sloped Roofs | 78 |

Clause 304.06 Solar Reflective Index (Coating for Hardscapes) (Please see Annex B)

This requirement is applicable to paints or coatings applied on hardscapes. The paint 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.

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304.06 Hardscape

For all new buildings, 50% of the hardscape of the development must achieve at least one of the following:

1. Demonstrate a Solar Reflectance Index (SRI) of at least 29
2. Use an open grid pavement system
3. Be shaded by vegetation
4. Be shaded by materials with an SRI equal to or greater than those specified in Table 304.01 (1)

4. Clause 701.04 Lead, Heavy Metals

701.04 Lead or Heavy Metals Containing Materials

For all new buildings and for the maintenance, addition or alteration of existing buildings, paints or other materials that may contain percentage of lead or other heavy metals that is more than the prescribed limits set by Dubai Municipality, must not be used, unless the metal is encapsulated in systems such as a photovoltaic cell.

All paints and materials containing lead or other heavy metals must be accredited / certified from Dubai Central Laboratory or any source approved by Dubai Municipality.

| Heavy Metal | Maximum Level Allowed |
|-------------|-----------------------|
| Lead | 100mg/kg |
| Cadmium | 500 mg/kg |
| Chromium VI | 500 mg/kg |
| Mercury | 100 mg/kg |
| Arsenic | 100 mg/kg |

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5. Clause 404.02 Adhesives and Sealants

6.2 Technical Data and Specifications

All adhesives, adhesive bonding primers, adhesive primers, sealants and sealant primers used in the interior of a building must comply with the maximum Volatile Organic Compound (VOC) limits listed in Table 404.02(1).

Table: 404.02 (1) - Maximum VOC Limits of Adhesives and Sealants

| Maximum VOC Limits - Grams per litre (g/l) less water | | | |
|---|-----|--|-----|
| Architectural Applications | | Specialty Applications | |
| Indoor Carpet Adhesives | 50 | PVC Welding | 510 |
| Carpet Pad Adhesives | 50 | CPVC Welding | 490 |
| Wood Flooring Adhesives | 100 | ABS Welding | 325 |
| Rubber Floor Adhesives | 60 | Plastic Cement Welding | 250 |
| Subfloor Adhesives | 50 | Adhesive Primer for Plastic | 550 |
| Ceramic Tile Adhesives | 65 | Contact Adhesive | 80 |
| VCR & Asphalt Adhesives | 50 | Special Purpose Contact Adhesive | 250 |
| Drywall & Panel Adhesives | 50 | Structural Wood Member Adhesive | 140 |
| Cove Base Adhesives | 50 | Sheet Applied Rubber Lining Operations | 850 |
| Multipurpose Construction Adhesives | 70 | Top & Trim Adhesive | 250 |
| Structural Glazing Adhesives | 100 | | |
| Substrate Specific Applications | | Sealants | |
| Metal to Metal | 30 | Architectural | 250 |
| Plastic Foams | 50 | Non-Membrane Roof | 300 |
| Porous Materials (except wood) | 50 | Roadway | 250 |
| Wood | 30 | Single-Ply Roof Membrane | 450 |
| Fiberglass | 80 | Other | 420 |
| | | Sealant Primers | |
| | | Architectural Non-Porous | 250 |
| | | Architectural Porous | 775 |
| | | Other | 750 |

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Annex B

TESTING OF SRI AND LRV

Since SRI and LRV tests are for classification only, there is no “Pass” or “Fail” result. Testing will be carried out on the products that the client submits to be classified and included in the Scope of Certification.

If the product is not classified as per Scope of Certification, the user (owner, contractor or consultant) shall be responsible for ensuring that the correct SRI Class or LRV Class is used; according to the requirements of the AL SA’FAT and as defined below:

1. SRI: Results of SRI Test for Roof Paint/Roof Coating/ shall be used for classification as:

SRI Class 1 (≥ 78) – “Can be Used in 75 - 100% of surface to be coated – Sloped or Flat Roof”

SRI Class 2 ($29 < 78$) - “Can be Used in 75 - 100% of surface to be coated – Sloped Roof”

SRI Class 3 (< 29) – “Can be Used in 0 – 25% of surface to be coated – Sloped or Flat Roof”

2. LRV: Results of LRV Tests for Exterior/Exposed Wall Paints/Coatings shall be used for classification as:

LRV Class 1 (≥ 45) – “Can be used in 75-100% of surface to be /painted/coated”

LRV Class 2 (< 45) – “Can be used in 0-25% of surface to be painted/coated”.

3. SRI: Results of SRI Test for Coating used for Hardscapes shall be used for classification as:

SRI-HS Class 1 (≥ 29) – “Can be used in 50-100% of the hardscapes of the development”

SRI-HS Class 2 (< 29) – “Can be used in 0-50% of the hardscapes of the development”

If client decides to add SRI Classification in their Scope of Certification, the client shall classify and declare their product according to the above Classes and DCLD-PCAS or their authorized auditor will select representative sample at random and carry out testing to confirm the declaration.

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