



DUBAI CENTRAL LABORATORY DEPARTMENT INSPECTION AND CERTIFICATION SECTION		CODE	:	RD-IC-02-56
DOCUMENT TITLE:		REVISION	:	1
SPECIFIC RULES FOR CERTIFICATION OF POLYVINYL CHLORIDE) (PVC) PIPES (AS PER ASTM D 1785:2006) THROUGH FACTORY ASSESSMENT		PAGE	:	Page 1 of 7

SIGNATORIES

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1. INTRODUCTION

- 1.1 This document prescribes the specific rules for the implementation of the DM Third Party Product Certification System through factory assessment as applied to the specific product(s) identified herein, taking into consideration the applicable normative references and standard specifications.
- 1.2 The applicant shall comply with these specific rules, **and** to those already mentioned in the "General Rule for DM Third Party Product Certification Through Factory Assessment " (**RD-IC-02-01**).

2. SCOPE

- 2.1 This specific guidelines covers poly(vinyl chloride) PVC pipe made in schedule 40, 80 and 120 sizes and pressure rated for water. It includes criteria for classification of PVC materials and PVC plastic pipe, a system of nomenclature for PVC plastic pipe, and requirements for test methods for materials, workmanship, dimensions, sustained pressure, burst pressure, flattening, extrusion quality and marking of PVC pipes.

3. PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product Name: Poly(vinyl chloride) PVC pipe
- 3.2 Applicable standard/Normative reference: ASTM D 1785:2006 – Standard Specification for Polyvinyl Chloride Plastic Pipe, Schedules 40, 80, and 120 and the reference documents referred to in this standard
- 3.3 Additional references:
- 3.3.1 ASTM D 618 – Practice for Conditioning Plastics and Electrical Insulating Materials for Testing
 - 3.3.2 ASTM D 1598 – Test Method for Time to Failure of Plastic Pipe Under Constant Internal Pressure
 - 3.3.3 ASTM D 1599 – Test Method for Short Time Hydraulic Failure of Plastic Pipe, Tubing and Fittings
 - 3.3.4 ASTM D 1600 – Terminology for Abbreviated Terms relating to Plastics
 - 3.3.5 ASTM D 1784 – Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds
 - 3.3.6 ASTM D 2122 – Test Method for Determining Dimensions of Thermoplastic Pipes and Fittings Short Time Hydraulic Failure of Plastic Pipe, Tubing and Fittings
 - 3.3.7 ASTM D 2152 – Test Method for degree of Fusion of Extruded Polyvinyl Chloride and Moulded Fittings by Acetone Immersion
 - 3.3.8 ASTM D 2672 – Specification for Joints for IPS PVC Pipe using Solvent Cement
 - 3.3.9 ASTM D 2837 – Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
 - 3.3.10 ASTM D 3139 – Specification for Joints for Plastic Pressure Pipes Using Flexible Elastometric Seals
 - 3.3.11 ASTM D 3212 – Specification for Joints for Drain and Sewer Plastic pipes Using Flexible Elastometric Seals
 - 3.3.12 ASTM F 412 - Terminology Relating to Plastic Piping System
 - 3.3.13 ASTM F441 – Specification for Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe, Schedules 40 and 80
 - 3.3.14 Fed Std No. 123 – Marking for Shipment (Civil Agencies)

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- 3.3.15 MIL STD 129 – Marking for Shipment and Storage
- 3.3.16 NSF Std No. 14 – for Plastic Piping Components and Related Materials
- 3.3.17 NSF Std No. 61 – for Drinking Water Components – Health Effects
- 3.3.17 ISO 9001:2000 - Quality Management System –Requirements
- 3.3.18 ISO 19011:2002 - Guidelines for Quality and Environmental Management System Auditing

4. DEFINITION OF TERMS

In addition to the definitions given in RD-IC-02-01 and other reference standards, the following shall also apply:

- 4.1 Independent Testing Laboratory - Dubai Central Laboratory Department (DCLD) or any testing laboratory recognized by the DCLD Inspection and Certification Section (ICS).
- 4.2 Independent Test – test performed by or conducted by an Independent Testing Laboratory.
- 4.3 Standard Specification – ASTM D 1785:2006 Standard Specification for Polyvinyl Chloride Plastic Pipe Schedules 40, 80, and 120
- 4.4 Product Quality Assurance Plan – a document being agreed upon both by the Licensee and the DCLS-ICS being used to ensure continuous compliance of the certified product.
- 4.5 QMS – Quality Management System aligned with the requirements of ISO 9001:2000 Standard

5. APPLICATION

- 5.1 Manufacturers of Polyvinyl Chloride Plastic Pipes shall apply to Dubai Central Laboratory through Inspection and Certification Section for the license to use the DCL Conformity Mark.
- 5.2 Application forms shall be filled-up and submitted by the applicant-company together with the following Documents
 - 5.2.1 Business Trade License
 - 5.2.2 Complete product description and specifications
 - 5.2.3 Brief Description of Manufacturing Process
 - 5.2.4 Copy of the Quality Manual (Controlled Copy – in English language)
 - 5.2.5 Vicinity Map and Factory Layout
 - 5.2.6 Valid Certification to ISO 9001 (if available)
 - 5.2.7 List of key personnel and their designation

6. REQUIREMENTS FOR INITIAL FACTORY ASSESSMENT

- 6.1 DCLD duly authorized representative shall visit the applicant company's factory/plant with the aim of ascertaining that the factory's quality management system is in accordance with the requirements of ISO 9001: 2000
- 6.2 An independent certification to ISO 9001 issued by a QMS certification body recognized by DCLD-ICS shall be considered as having satisfied this requirement; however, the DCLD – ICS will still carry out verification audit to confirm that the factory is in compliance with the QMS requirements.
- 6.3 Verification audit shall be conducted by designated audit team based on ISO 19011:2002 – Guidelines for Quality and Environment Management System Auditing

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7. REQUIREMENTS FOR INITIAL TESTING OF THE PRODUCT

7.1 Sampling

- 7.1.1 Three sets of at least fifteen (15) pieces by one meter length per type per model per brand, as samples shall be subjected to testing; the first set shall be tested in the plant supervised by a duly authorized DCL representative, the second set will be sent to an independent testing laboratory. The third set will be kept by the manufacturer as reference for future use.
- 7.1.2 Test sample(s) for independent test shall be packed/sealed and signed in the presence of DCLD Representatives and shall be submitted to an independent testing laboratory by the DCLD representative.

7.2 Minimum Required Test Equipment

- 7.2.1 The manufacturer of Polyvinyl Chloride Pipes shall have the following minimum test equipment to check product compliance with the requirements of ASTM D 1785:2006
- 7.2.1 Calipers and other linear measuring test equipments
 - 7.2.2 Hydrostatic Test Equipment
 - 7.2.3 Flattening Test Equipment

7.3 Product Evaluation

- 7.3.1 The product shall conform to the requirements as specified in clauses 6 and 7 of the standard specification, ASTM D1785:2006.
- 7.3.2 The tests to be carried out in accordance with ASTM D1785:2006 requirements and values shall be as follows;
- 7.3.2.1 Products intended for contact with potable water shall be evaluated, tested and certified for conformance with ANSI/NSF Standard No. 61 or the health effect portions of NSF Standard No. 14 by an acceptable certifying organization when required by the regulatory authority having jurisdiction
 - 7.3.2.2 Dimensions as per clause 6.1
 - 7.3.2.3 Sustained Pressure as per clause 6.2
 - 7.3.2.4 Burst Pressure as per clause 6.3
 - 7.3.5 Accelerated Regression Test as per clause 6.2.1, test certificates issued by an accredited laboratory whose scope of testing covers accelerated regression test can be accepted by the DCLD-ICS, in place of burst and sustained tests, if available
 - 7.3.5.6 Flattening as per clause 6.4
 - 7.3.5.7 Extrusion Quality as per clause 6.5
 - 7.3.5.8 Workmanship, Finish and Appearance as per clause 7
 - 7.3.5.9 Marking as per clause 10
- 7.3.6 Independent test shall only be conducted if the result of the applicable in-plant test shows satisfactory results.
- 7.3.7 If the result of any test conducted by the independent testing laboratory shows non-conformance to the specified requirements, the reference sample kept by the manufacturer shall be subjected for re-test to those that failed.
- 7.3.8 If the retest passed, the initial product assessment is considered conforming to product specification. If not, the manufacturer will be advised to take corrective action.

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7.3.9 All test results shall be held strictly confidential by the independent testing laboratory concerned. Copies of the results will be provided only to the DCLD-ICS and the manufacturer.

8. COMPLIANCE AND RESPONSIBILITIES OF THE LICENSEE

8.1 Compliance

8.1.1 When the results of the factory and product assessments show conformity to the requirements specified in the general rule and specific rule, the license to use the DCLD Conformity Mark shall be issued to the manufacturer for the type(s)/model(s)/brand(s) of the product tested.

8.1.2 The factory shall agree with the DCLD-ICS 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. The plan shall consist of (1) an internal product quality assurance, and (2) an independent testing plan

8.1.2.1 Internal product quality assurance plan

The factory shall prepare and submit to DCLD-ICS for approval an internal product quality assurance plan giving details of the tests to be carried out at the factory. 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 take into consideration the production process, the volume of production, the criticality of the test to be specified, and other relevant factors

8.1.2.2 Independent testing plan

The factory shall agree to an independent testing plan to be prepared and implemented by the DM Certification Body. The independent testing plan shall consist of testing of the finished product at the independent testing laboratory at the expense of the licensee. The plan shall include, as a minimum, the following:

SN	REQUIREMENTS	FREQUENCY OF TEST
1	Dimension	Every 3 months
2	Sustained Pressure Test	Every 6 months
3	Burst Test	Every 3 months
4	Flattening Test	Every 3 months
5	Marking	Every 3 months
6	Workmanship, Finish and Appearance	Every 3 months
7	Extrusion Quality	Every 3 months
8	Potability Test	Once a year

8.2 Responsibilities of the Licensee

8.2.1 Every licensee shall ensure that his product, for which a license has been issued, conforms at all times to the requirements of the General Rule and Specific Rule and shall maintain to the satisfaction of DCLD, a system of quality control including inspection and testing.

8.2.2 The licensee shall give the duly authorized representative(s) of DCLD, access during working hours, without prior notification, to the premises of the factory where certified product is manufactured, for

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the purpose of evaluating the materials, production processes, finished products, quality assurance facilities, records and others in accordance with the requirements of the scheme.

- 8.2.3 The licensee shall inform the DCLD-ICS in writing of any change of management, transfer of plant site, modification in the product, manufacturing process or factory's quality management system.
- 8.2.4 Upon transfer of plant site, the license shall be deemed valid only after factory and product audit at the new site has been satisfactorily completed.
- 8.2.5 Any infraction stated in terms and conditions for the use of DCL Conformity Mark shall constitute sufficient grounds for suspension, withdrawal and cancellation of the license against a licensee.
- 8.2.6 Use of DCL Conformity Mark.

9. SURVEILLANCE

9.1 DCLD-ICS shall carry out periodic surveillance to ensure consistent compliance with the requirements of this certification scheme.

9.2 Factory surveillance visit

The DCLD-ICS shall carry out a surveillance visit to the factory once a year to ensure continuing compliance with the certification requirements. During this visit, the The DCLD-ICS shall confirm that the factory QMS continues to be implemented effectively. The DCLD-ICS shall examine the results of the internal product quality assurance plan to verify continuing compliance of the product with the Standard Specifications.

9.3 Market surveillance visit

The DCLD-ICS shall carry out market surveillance, thrice a year to ensure continuing compliance with the certification requirements. Market Surveillance shall mean drawing up of samples in the market.

Note: The DCLD-ICS shall have the option to increase the frequency of the surveillance visits, depending upon the performance history and results of the previous audits.

9.4 Product Sampling and Testing

As part of the surveillance audit and whenever possible, samples of the certified products shall be drawn from the factory and/or market in coordination with the company representative for the following tests by an independent testing laboratory;

- 9.4.1 Products intended for contact with potable water shall be evaluated, tested and certified for conformance with ANSI/NSF Standard No. 61 or the health effect portions of NSF Standard No. 14 by an acceptable certifying organization when required by the regulatory authority having jurisdiction
- 9.4.2 Workmanship, Finish and Appearance as per clause 7
- 9.4.3 Dimensions as per clause 6.1
- 9.4.4 Sustained Pressure as per clause 6.2
- 9.4.5 Burst Pressure as per clause 6.3
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- 9.4.7 Extrusion Quality as per clause 6.5
- 9.4.8 Marking as per clause 10

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9.5 The results of independent testing shall be evaluated to confirm that the product continues to comply with the Standard Specifications.

10. USE OF THE DCL CONFORMITY MARK

10.1 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, RD-IC-02-98

10.2 The licensee shall submit a product-marking proposal for approval by the DCLD-ICS. The proposal shall include drawings and/or diagrams showing the location and size of the marking for each size of the product container.

10.3 The license to use the DCL Conformity Mark is non-transferable.

11. FEE SCHEDULE

11.1 The licensee shall pay the applicable fees and charges related to the granting of the license to use the DCL Conformity Mark based on the DCLD Official Fee Structure, RD-IC-02-97.

11.2 The fees for this certification scheme shall include but not limited to the following;

- 11.2.1 Application Fee
- 11.2.2 Initial Assessment Fee
- 11.2.3 Certification Fee
- 11.2.4 Surveillance Fee
- 11.2.5 Annual Renewal Fee
- 11.2.6 Testing Fee
- 11.2.7 Marking Fee

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