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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30648.2-2015

**Paints and varnishes -- Determination of resistance to liquids --
Part 2: Water immersion method
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Principle...	6
4 Apparatus...	6
5 Sampling...	6
6 Test panels...	6
7 Procedure...	7
8 Evaluation...	8
9 Precision...	9
10 Test report...	9
Appendix A...	11

Foreword

GB/T 30648 "Paints and varnishes - Determination of resistance to liquids"

consists of the following 5 parts.

- Part 1. Immersion in liquids other than water;
- Part 2. Water immersion method;
- Part 3. Method using an absorption medium;
- Part 4. Part 4. Drip method;
- Part 5. Temperature - gradient oven method.

This Part is the second part of GB/T 30648.

This Part was drafted in accordance with the rules given in GB/T 1.1-2009.

This Part uses redrafting method to modify and adopt ISO 2812-2.2007 "Paints and varnishes - Determination of resistance to liquids - Part 2. Water immersion method".

There are technical differences between ISO 2812-2.2007 and this Part. The terms involved in these differences have been marked by a single vertical line

(I) at the margin of the page. Appendix A gives a list of corresponding technical differences and reasons.

This Part also makes the following editorial changes.

- The serial number of Clause 4 is modified to column-list;
- This Part adds the informative Appendix A.

This Part was proposed by China Petroleum and Chemical Industry Federation.

This Part shall be under the jurisdiction of National Standardization Technical Committees (SAC/TC 5).

The drafting organizations of this Part. CNOOC Changzhou Paint & Coating Industry Research Institute Co., Ltd., Heilongjiang Provincial Quality Supervision and Inspection Institute, Guangzhou Research Institute of Synthetic Materials, Shenzhen Grandland Decoration Group Co., Ltd., Guangzhou Research Institute of Synthetic Materials Co., Ltd. AND Biuged Laboratory Instruments(Guangzhou)Co., Ltd.

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Paints and varnishes - Determination of resistance to liquids - Part 2. Water immersion method

1 Scope

This Part of GB/T 30648 specifies a method for determining the resistance of an individual-layer or multi-layer system of coating materials to the effects of water by partial or full immersion.

This method enables the determination of the effects of water on the coating and the assessment of the damage to the substrate.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any

amendments) applies.

GB/T 3186 Paints varnishes and raw materials for paints and varnishes -

Sampling (GB/T 3186-2006, ISO 15528.2000, IDT)

GB/T 6682 Water for analytical laboratory use - Specification and test methods (GB/T 6682-2008, ISO 3696.1987, MOD)

GB/T 7790 Paints and varnishes - Determination of resistance to cathodic disbonding of coatings exposed to sea water (GB/T 7790-2008, ISO 15711.2003, MOD)

GB/T 9271 Paints and varnishes standard panels for testing (GB/T 9271-2008, ISO 1514.2004, MOD)

GB/T 13452.2 Paints and varnishes - Determination of film thickness (GB/T 13452.2-2008, ISO 2808.2007, IDT)

GB/T 20777 Paints and varnishes - Examination and preparation of samples for testing (GB/T 20777-2006, ISO 1513.1992, IDT)

ISO 4628-2 Paints and varnishes - Evaluation of degradation of coatings -

Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2. Assessment of degree of blistering

Test pieces can either be partially or fully immersed. If partial immersion is required, the test pieces should be immersed for three-quarters of their length. If full immersion is required, the test pieces should be immersed such that the water level is a minimum of 50 mm above the top of the test piece to avoid waterline oxygen concentration difference effects.

Place the test panels in the tank for the specified period, rearranging them at regular intervals of not more than 3 days. If water of grade 3 of GB/T 6682 is used, replace the test water if at any time during the test it becomes turbid or colored or its conductivity exceeds 2 mS/m, or if the oxygen content falls below

8.1 Interim inspections

For interim inspections during the test period, if specified, remove each panel from the tank at the appropriate time(s) and dry the panels by blotting with absorbent paper.

Within 1 min of drying, examine the panels for blistering in accordance with ISO 4628-2, or other signs of deterioration, and immediately return them to the tank.

8.2 Final inspection

At the end of the specified test period, remove each panel from the tank and dry the panels by blotting with absorbent paper. Within 1 min of drying, examine the whole test surface of each panel for blistering as described in ISO 4628-2, or for other signs of deterioration of the coating. Assessment of the change of adhesion may also be carried out at this stage.

Allow the panels to stay at room temperature for 24 h and examine the test surface again for loss of adhesion, rust staining, change of color, embrittlement or other characteristics which may be specified.

If specified, carefully remove a 150 mm x 50 mm strip from the test surface with a non-corrosive paint remover and examine the exposed metal for signs of corrosion. For reference purposes, protect the exposed area by a suitable transparent lacquer.

If the results of the evaluation of the duplicate determinations for blistering or other signs of deterioration differ significantly, repeat the determination, again in duplicate.

Report the results of all determinations, including any repeat determinations.

Appendix A

(Informative)

Technical Differences between This Part and ISO 2812-2:2007

& Reasons

Table A.1 lists out the technical differences between this Part and ISO 2812-