# MALAYSIAN STANDARD

MS 133: PART J3:2008

# PAINTS AND VARNISHES - COATING POWDERS - PART J3: DETERMINATION OF DENSITY BY LIQUID DISPLACEMENT PYKNOMETER (ISO 8130-3:1992 (2007), MOD)



**ICS: 87.040**

Descriptors: coatings, powdery materials, paints, tests, determination, density (mass/volume), density measurement, pycnometric analysis



**DEPARTMENT OF STANDARDS MALAYSIA**

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## Committee representation

The Chemical and Materials Industry Standards Committee (ISC B) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Mineral and Geoscience Malaysia

Department of Standards Malaysia

Malaysian Association of Standards Users

Malaysian Ceramic Industry Group

Malaysian Institute of Chemistry

Malaysian Paint Manufacturers Association

Malaysian Pulp and Paper Manufacturers Association

Ministry of Agricultural and Agro-based Industry (Department of Agriculture)

Ministry of Defence (Science and Technology Research Institute for Defence)

Ministry of International Trade and Industry

Ministry of Science, Technology and Innovation (Department of Chemistry, Malaysia)

SIRIM Berhad (Secretariat)

Universiti Malaya

Universiti Sains Malaysia

The Technical Committee on Paints and Varnishes which developed this Malaysian Standard consists of representatives from the following organisations:

ICI Paints (Malaysia) Sdn Bhd

IKRAM QA Services Sdn Bhd

Malaysian Paint Manufacturers Association

Revertex (M) Sdn Bhd

Science and Technology Research Institute for Defence

Seamaster Paint (Manufacturing) Berhad

SIRIM Berhad (Secretariat)

SIRIM QAS International Sdn Bhd (Chemical Testing Section)

SIRIM QAS International Sdn Bhd (Product Certification Section)

Universiti Kebangsaan Malaysia

Universiti Teknologi Malaysia

Universiti Teknologi MARA

**Co-opted members:**

Jotun Paint (M) Sdn Bhd

Jotun Powder Coatings (M) Sdn Bhd

## NATIONAL FOREWORD

This Malaysian Standard was developed by the Technical Committee on Paints and Varnishes under the authority of the Chemical and Materials Industry Standards Committee.

This Malaysian Standard is a modified adoption of ISO 8130-3:1992, *Paints and varnishes - Coating powders - Part 3: Determination of density by liquid displacement pyknometer*, published by the International Organization for Standardization (ISO) with the following modifications:

a) in the source text, "this International Standard" should read "this Malaysian Standard";

b) the comma which is used as a decimal sign (if any), to read as a point;

c)

| **Clause/Subclause** | **Modifications** |
|---|---|
| 7. Procedure | Replace "(23 ± 0.5) °C" with "(27 ± 2) °C" |
| 7.1 Determination of the density of the displacement liquid<br>Para 2 Density $\ell_1$ and $\ell_0$ | Replace "23 °C" with "27 °C" |
| 8.1 Calculation and $\ell_1$ | Replace "23 °C" with "27 °C" |

**Explanation**: This standard modifies the requirements for temperature to reflect better the local weather conditions of high temperatures and humidity.

d) reference to International Standard should be replaced by equivalent Malaysian Standard as follows:

| Referenced International Standard | Corresponding Malaysian Standard |
|---|---|
| ISO 8130-2:1992, *Coating powders - Part 2: Determination of density by gas comparison pyknometer (referee method)* | MS 133: Part J2, *Paints and varnishes - Coating powders - Part J2: Determination of density by gas comparison pyknometer (referee method)* |

e) reference to International Standard which has been withdrawn should be replaced with the latest publication as follows:

| Referenced International Standard | Referenced International Standard |
|---|---|
| ISO 842:1984, *Raw materials for paints and varnishes - Sampling* (withdrawn) | ISO 15528, *Paints, varnishes and raw materials for paints and varnishes - Sampling* |

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

NOTE. MOD on the front cover indicates a modified standard i.e. a standard adapted from an International Standard with permitted technical deviations, which are clearly identified and explained. The changes in structure are permitted provided that the altered structure permits easy comparison of the content of the two standards. Modified standards also include the changes permitted under identical correspondence.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8130-3 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Sub-Committee SC 9, *General test methods for paints and varnishes.*

ISO 8130 consists of the following parts, under the general title *Coating powders*:

- *Part 1: Determination of particle size distribution by sieving*
- *Part 2: Determination of density by gas comparison pyknometer (referee method)*
- *Part 3: Determination of density by liquid displacement pyknometer*
- *Part 4: Calculation of lower explosion limit*
- *Part 5: Determination of flow properties of a powder/air mixture*
- *Part 6: Determination of gel time of thermosetting coating powders at a given temperature*
- *Part 7: Determination of loss of mass on stoving*
- *Part 8: Assessment of the storage stability of thermosetting powders*
- *Part 9: Sampling*