



MALAYSIAN STANDARD

MS 1501:2010

PLASTICS - INJECTION MOULDING OF TEST SPECIMENS OF THERMOPLASTIC MATERIALS - PART 4: DETERMINATION OF MOULDING SHRINKAGE (FIRST REVISION) (ISO 294-4:2001, COR. 1:2007, MOD)

ICS: 83.080.20

Descriptors: plastics, Injection moulding, test specimens, thermoplastic materials, moulding shrinkage, test

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Committee representation

The Industry Standards Committee on Plastics and Plastics Products (ISC J) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Kerja Raya Malaysia
Malaysian Association of Standards Users
Malaysian Institute of Chemistry
Malaysian Petrochemical Association
Malaysian Plastics Manufacturers Association
Malaysian Rubber Board
Ministry of Domestic Trade, Co-operatives and Consumerism
Ministry of Health Malaysia
Ministry of International Trade and Industry
Plastics and Rubber Institute of Malaysia
SIRIM Berhad (Advanced Polymer and Composites Programme)
SIRIM QAS International Sdn Bhd
The Institution of Engineers, Malaysia
Universiti Kebangsaan Malaysia
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Plastics Products which supervised the adoption of the ISO Standard as Malaysian Standard was managed by the Malaysian Plastics Manufacturers Association in its capacity as an authorised Standards-Writing Organisation and consists of representatives from the following organisations:

B & Z Plastics Industry Sdn Bhd
Department of Irrigation and Drainage Malaysia
Federation of Malaysian Manufacturers
Great Wall Plastic Industries Berhad
Guppy Plastic Industries Sdn Bhd
Lam Seng Plastics Industries Sdn Bhd
Malaysian Institute of Chemistry
Malaysian Medical Association
Malaysian Petrochemical Association
Malaysian Plastics Manufacturers Association (Secretariat)
Polyethylene Malaysia Sdn Bhd
SIRIM Berhad
SME Ordnance Sdn Bhd
The Institution of Engineers, Malaysia

The Working Group on Injection Moulding which recommended the adoption of the ISO Standard consists of representatives from the following organisations:

Azman Hamzah Plastik Sdn Bhd
Everyday Brush Industries (M) Sdn Bhd
Guppy Plastic Industries Sdn Bhd
Lam Seng Plastics Industries Sdn Bhd
Mah Sing Plastics Industries Sdn Bhd
Malaysian Plastics Manufacturers Association (Secretariat)
Plastictecnic (M) Sdn Bhd
Polyethylene Malaysia Sdn Bhd
SME Ordnance Sdn Bhd
Usra Tampi (M) Sdn Bhd
Viscount Plastics Sdn Bhd

NATIONAL FOREWORD

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Working Group on Injection Moulding under the authority of the Industry Standards Committee on Plastics and Plastics Products. Development of this standard was carried out by the Malaysian Plastics Manufacturers Association which is the Standards-Writing Organisation appointed by SIRIM Berhad to develop standards for plastics products.

This Malaysian Standard is the first revision of MS 1501, *Method of test for measuring shrinkage from mould dimensions of moulded plastics*.

This standard is a modified adoption of ISO 294-4:2001, *Plastics - Injection moulding of test specimens of thermoplastic materials - Part 4: Determination of moulding shrinkage*, including its Technical Corrigendum 1:2007, published by the International Organization for Standardization (ISO) with the following modifications:

a) Clause/Subclause	Modifications
5.5 Treatment of test specimens after demoulding	Replace "(23 ± 2)" °C with "(27 ± 2)" °C
5.6 Measurement of moulding shrinkage	Replace "(23 ± 2)" °C with "(27 ± 2)" °C
5.8 Measurement of post-moulding shrinkage	Replace "(23 ± 2)" °C with "(27 ± 2)" °C

Explanation: This standard modifies the requirements for testing conditioning to reflect better weather conditions of high temperatures.

- b) in the source text, "this International Standard" should read "this Malaysian Standard";
- c) the comma which is used as a decimal sign (if any), to read as a point; and
- c) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

Referenced International Standards

ISO 294-1, *Plastics - Injection moulding of test specimens of thermoplastic materials - Part 1: General principles, and moulding of multipurpose and bar test specimens*

ISO 294-3, *Plastics - Injection moulding of test specimens of the thermoplastic materials - Part 3: Small plates*

Corresponding Malaysian Standards

MS ISO 294-1, *Plastics - Injection moulding of test specimens of thermoplastic materials - Part 1: General principles, and moulding of multipurpose and bar test specimens*

MS ISO 294-3, *Plastics - Injection moulding of test specimens of the thermoplastic materials - Part 3: Small plates*