MALAYSIAN STANDARD

MS 2508-2:2012

Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 2: Pipes (ISO 22391-2:2009, MOD)

ICS: 23.040.20; 91.140.60; 93.025

Descriptors: plastics piping systems, hot and cold water, polyethylene of raised temperature resistance (PE-RT)

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NOTE: Technical corrigenda are not to correct errors which can be assumed to have no consequences in the application of the MS, for example minor printing errors.

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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
SIRIM Berhad (Advanced Polymer and Composites Programme)
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd (Product Certification and Inspection Department)
The Institution of Engineers, Malaysia
The Plastics and Rubber Institute of Malaysia
Universiti Kebangsaan Malaysia
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Plastics Pipes and Fittings which supervised the adoption of the ISO Standard as Malaysian Standard consists of representatives from the following organisations:

George Fischer (M) Sdn Bhd

Malaysian Plastics Manufacturers Association

Paling Industries Sdn Bhd

Perbadanan Bekalan Air Pulau Pinang Sdn Bhd

Petronas Chemicals Group Berhad

SAJ Holdings Sdn Bhd

SIRIM Berhad (Advanced Polymer and Composites Programme)

SIRIM Berhad (Secretariat)

SIRIM QAS International Sdn Bhd (Product Certification and Inspection Department)

SIRIM QAS International Sdn Bhd (Testing Services Department)

Suruhanjaya Perkhidmatan Air Negara

Syarikat Bekalan Air Selangor Sdn Bhd

The Institution of Engineers, Malaysia

Universiti Kebangsaan Malaysia

Universiti Teknologi MARA

Committee representation *(continued)*

The Working Group on PE Pipes and Fittings which recommended the adoption of the ISO Standard as Malaysian Standard consists of representatives from the following organisations:

AWT Fusion Sdn Bhd

Azeeta Pipe System Sdn Bhd

George Fischer (M) Sdn Bhd

Jabatan Bekalan Air Pahang

Kindratech Pipes Sdn Bhd

Lembaga Air Perak

Malaysian Plastics Manufacturers Association

Perbadanan Bekalan Air Pulau Pinang Sdn Bhd

Petronas Chemicals Group Berhad

Polyolefins Pipe Berhad

Sansico Industries Sdn Bhd

SIRIM Berhad (Advanced Polymer and Composites Programme)

SIRIM Berhad (Secretariat)

SIRIM QAS International Sdn Bhd (Product Certification and Inspection Department)

SIRIM QAS International Sdn Bhd (Testing Services Department)

SPIND (M) Sdn Bhd

Suruhanjaya Perkhidmatan Air Negara

Syarikat Air Terengganu Sdn Bhd

Syarikat Bekalan Air Selangor Sdn Bhd

NATIONAL FOREWORD

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Working Group on PE Pipes and Fittings under the authority of the Industry Standards Committee on Plastics and Plastics Products.

This Malaysian Standard is modified adoption of ISO 22391-2:2009, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 2: Pipes*, published by the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) 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) in the source text, “ISO 22391” should read “MS 2508”

d) the following deviations have been incorporated in the source text and marked by dotted underlining;

Clause/Subclause	Modifications
1 Scope	Delete the statement “It is applicable to pipes with or without a barrier layer or layers.”

Explanation: This standard only applicable for single layer pipe.

5.3 Identification stripes	Add new clause on identification stripes.

Explanation: This standard includes a new clause to specify the requirement for identification stripes.

6.2 Table 3 Pipe dimensions for dimension class A	Add footnote "[b]" for "Pipe series" to refer the new Annex B included on the PN equivalent.

Explanation: The reference made to the new annex which intended to assist user who are not familiar with the given pipe series

10.2 Table 11 Minimum required marking	Replace the statement “Identification of conformity” with “Number of this standard”.

Explanation: Statement was rephrased to standardise the marking requirement with current practice.

10.2 Table 11 Minimum required marking	Add statement “Pipe series (for pipe dimension class A only)” under “Aspect” column and an example.

Explanation: This standard specifies the requirement of pipe series for pipe dimension class A.

NATIONAL FOREWORD *(continued)*

Clause/Subclause	Modifications
10.2 Table 11 Minimum required marking	Add statement "Product certification number issued by a recognised certification body" under "Aspect" column; including further explanation in footnote [c].

Explanation: This standard specifies the requirement for product certification number.

Annex B	Inclusion of Annex B for PN equivalent of S series for PE-RT pipe dimension class A

Explanation: The annex is added to assist user who are not familiar with the given pipe series in Table 3.

e) references in normative reference should be replaced by corresponding Malaysian Standards as follows:

Referenced International Standards	Corresponding Malaysian Standards
ISO 22391-1, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 1: General*	MS 2508-1, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 1: General*
ISO 22391-3, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 3: Fittings*	MS 2508-3, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 3: Fittings*
ISO 22391-5, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 5: Fitness for purpose of the system*	MS 2508-5, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 5: Fitness for purpose of the system*
ISO 9080, *Plastics piping and ducting systems - Determination of long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation*	MS ISO 9080, *Plastics piping and ducting systems - Determination of long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation*
ISO 13760, *Plastics pipes for the conveyance of fluids under pressure - Miner's rule - Calculation method for cumulative damage*	MS ISO 13760, *Plastics pipes for the conveyance of fluids under pressure - Miner's rule - Calculation method for cumulative damage*

NATIONAL FOREWORD *(concluded)*

f) references in bibliography should be replaced by corresponding Malaysian Standards as follows:

Referenced International/Foreign Standards	Corresponding Malaysian Standards
ISO 11922-1, *Thermoplastics pipes for the conveyance of fluids - Dimensions and tolerances - Part 1: Metric series*	MS ISO 11922-1, *Thermoplastics pipes for the conveyance of fluids - Dimensions and tolerances - Part 1: Metric series*
ENV 12108, *Plastics piping systems - Guidance for the installation inside buildings of pressure piping systems for hot and cold water intended for human consumption*	MS 1737, *Plastics piping systems - Guidance for the installation inside buildings of pressure piping systems for hot and cold water intended for human consumption*

MS 2508 consists of the following parts, under the general title *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT)*:

Part 1: General

Part 2: Pipes

Part 3: Fittings

Part 5: Fitness for purpose of the system

Part 7: Guidance for the assessment of conformity

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22391-2 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*.

This second edition cancels and replaces the first edition (ISO 22391-2:2007), which is extended from only dealing with PE-RT material (referred to as Type I) to cover PE-RT materials Type I and Type II.

ISO 22391 consists of the following parts[1)], under the general title *Plastics piping systems for hot and cold water installations — Polyethylene of raised temperature resistance (PE-RT)*:

— *Part 1: General*

— *Part 2: Pipes*

— *Part 3: Fittings*

— *Part 5: Fitness for purpose of the system*

1) This System Standard does not incorporate a Part 4: Ancillary equipment or a Part 6: Guidance for installation. For ancillary equipment, separate standards can apply. Guidance for installation of plastics piping systems made from different materials, intended to be used for hot and cold water installations, is covered by ENV 12108.