



MALAYSIAN STANDARD

MS ISO 22991:2005

GAS CYLINDERS – TRANSPORTABLE REFILLABLE WELDED STEEL CYLINDERS FOR LIQUEFIED PETROLEUM GAS (LPG) – DESIGN AND CONSTRUCTION (ISO 22991:2004, IDT)

ICS: 23.020.30

descriptors: gas cylinders, refillable welded steel cylinders, transportable cylinders, LPG cylinders,
design, construction

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The Mechanical Engineering Industry Standards Committee (ISC F) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Occupational Safety and Health
Department of Standards Malaysia
Jabatan Kerja Raya
Jabatan Keselamatan dan Perbekalan Gas, Suruhanjaya Tenaga
Lembaga Kemajuan Perindustrian Malaysia
Malaysian Iron and Steel Industry Federation
Ministry of Defence
Ministry of International Trade and Industry
National Institute of Occupational Safety and Health
Petroleum Nasional Berhad
SIRIM QAS International Sdn Bhd (Mechanical Product Testing Section)
The Institution of Engineers, Malaysia
Universiti Kebangsaan Malaysia
Universiti Malaya
Universiti Teknologi Malaysia

The Technical Committee on Gas Cylinders, Accessories and Appliances which developed this Malaysian Standard consists of representatives from the following organisations:

CCM Chemicals Sdn Bhd
Department of Occupational Safety and Health
Gas Pantai Timur Sdn Bhd
Jabatan Bomba dan Penyelamat Malaysia
Malaysian Industrial Products Sdn Bhd
Malaysian Oxygen Berhad
Petronas Dagangan Berhad
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SGS Malaysia Sdn Bhd
SIRIM QAS International Sdn Bhd (Mechanical Product Testing Section)
Sitt Tatt Industrial Gasses Sdn Bhd

NATIONAL FOREWORD

This Malaysian Standard was developed by the Technical Committee on Gas Cylinders, Accessories and Appliances under the authority of the Mechanical Engineering Industry Standards Committee.

This Malaysian Standard is identical with ISO 22991:2004, *Gas cylinders - Transportable refillable welded steel cylinders for liquefied petroleum gas (LPG) - Design and construction*, published by the International Organisation for Standardization (ISO). However, for the purposes of this Malaysian Standard, the following apply:

- a) In sub clause 6.6.4, the statement 'ISO 10920 for the 25E thread or ISO 11116-1 for the 17E thread' is to be replaced with 'MS 831';
- 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
- d) reference to International Standards should be replaced by equivalent Malaysian Standards as follows:

Referenced International Standards

ISO 1106-1:1984, *Recommended practice for radiographic examination of fusion welded joints - Part 3: Fusion welded butt joints in steel plates up to 50 mm thick*

ISO 6892, *Metallic materials - Tensile testing at ambient temperature*

ISO 7438, *Metallic materials - Bend test*

ISO 9606-1, *Approval testing of welders - Fusion welding - Part 1: Steels*

Corresponding Malaysian Standards

MS 1317: Part 1:2003, *Recommended practice for radiographic examination of fusion welded joints : Part 1: Fusion welded joints in steel plates and pipes of up to and including 50 mm wall thickness (First revision)*

MS 1317: Part 2:1993, *Recommended practice for radiographic examination of fusion welded joints : Part 2: Fusion welded butt joints in steel plates thicker than 50 mm and up to and including 200 mm in thickness*

MS ISO 6892, *Metallic materials - Tensile testing at ambient temperature*

MS ISO 7438, *Metallic materials - Bend test*

MS 1206: Part 1, *Specification for qualification for welders - Fusion welding : Part 1 : Steels*

This Malaysian Standard cancels and replaces MS 641:1982, *Specification for LPG cylinders up to 1 000 pounds water capacity without electric-arc welded longitudinal seam* and MS 642:1982, *Specification for LPG cylinders up to 1 000 pounds water capacity with electric-arc welded longitudinal seam*.

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

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, wording and presentation of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21.

**Gas cylinders — Transportable refillable
welded steel cylinders for liquefied
petroleum gas (LPG) — Design and
construction**

*Bouteilles à gaz — Bouteilles en acier soudé transportables et
rechargeables pour gaz de pétrole liquéfié (GPL) — Conception et
fabrication*



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Foreword

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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.

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ISO 22991 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 3, *Cylinder design*.