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SANS 10087-10:2022

Edition 1.3

SOUTH AFRICAN NATIONAL STANDARD

The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial and industrial installations

Amdt 1

Part 10: Mobile filling stations for refillable liquefied petroleum gas (LPG) containers of capacity not exceeding 9 kg

WARNING
This document references other documents normatively.

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Table of changes

Change No.	Date	Scope
Amdt 1	2006	Amended to change the designation of SABS standards to SANS standards, to change the title and to update the list of parts in the foreword.
Amdt 2	2012	Amended to change location and functional requirements.
Amdt 3	2022	Amended to update the foreword, definitions, and referenced standards, to move reference to legislation and a government notice from the text to the foreword, and to update the subclause on water supply on site.

Foreword

This South African standard was prepared by National Committee SABS/TC 1019, *Gas supply, handling and control (fuel, industrial and medical gases)*, in accordance with procedures of the South African Bureau of Standards, in compliance with annex 3 of the WTO/TBT agreement.

This document was approved for publication in March 2022.

This document supersedes SANS 10087-10:2012 (edition 1.2).

A vertical line in the margin shows where the text has been technically modified by amendment No. 3.

Compliance with this document cannot confer immunity from legal obligations.

This document is referenced in the incorporating of health and safety standards into the pressure equipment regulations of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

Reference is made in 3.2(a) to the "relevant national legislation". In South Africa this means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993). **Amdt 3**

Reference is made in 3.7, 4.1.2 to the "relevant national legislation". In South Africa this means the National Road Traffic Act, 1996 (Act No. 93 of 1996). **Amdt 3**

Reference is made in 4.1.1 to the "relevant national legislation". In South Africa this means the *Compulsory specification for vehicles of category O_1 and O_2 (caravans and light trailers)*, as published by Government Notice No. 97 of 5 February 2010 and the *Compulsory specification for vehicles of category O_3 and O_4 vehicles*, as published by Government Notice No. 96 of 5 February 2010. **Amdt 3**

Reference is made in 4.1.5.1 to the "relevant national legislation". In South Africa this means chapter 8 of the National Road Traffic Act, 1996 (Act No. 93 of 1996). **Amdt 3**

Reference is made in 4.2.8 to the "relevant national legislation". In South Africa this means the Legal Metrology Act, 2014 (Act No. 9 of 2014, as amended). **Amdt 3**

SANS 10087 consists of the following parts, under the general title *The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial and industrial installations*: **Amdt 1**

Part 1: Liquefied petroleum gas installations involving gas storage containers of individual water capacity not exceeding 500 L and a combined water capacity not exceeding 3 000 L per installation.

Foreword (*concluded*)

Part 2: Installation of LPG systems in mobile units, including but not limited to caravans, motor homes, park homes and mobile kitchens. **Amdt 1**

Part 3: Liquefied petroleum gas installations involving storage vessels of individual water capacity exceeding 500 L.

Part 4: The transportation of LP gas including the design, construction, inspection, fittings, filling, maintenance and repairs of LP gas bulk vehicles and rail tank cars.

Part 6: The application of liquefied petroleum and compressed natural gases as engine fuels for internal combustion engines.

Part 7: Storage and filling premises for refillable liquefied petroleum gas (LPG) containers of capacity not exceeding 9 kg and the storage of individual gas containers not exceeding 48 kg.

Part 8: Filling containers for LP gas operated fork lift vehicles in-situ.

Part 10: Mobile filling stations for refillable liquefied petroleum gas (LPG) containers of capacity not exceeding 9 kg.

~~This standard was written in order to support a specific item of South African Regulation and, of necessity, includes references to South African Legislation. It therefore might not be suitable for direct application in other jurisdictions where conflicting legislation exists.~~ **Amdt 3**

Contents

The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial and industrial installations

Amdt 1

Part 10:
Mobile filling stations for refillable liquefied petroleum gas (LPG) containers of capacity not exceeding 9 kg

1 Scope

1.1 This part of SANS 10087 gives recommendations in respect of the location and operation of mobile filling stations suitable for the filling of refillable liquefied petroleum gas containers.

1.2 It also gives certain design features in respect of the compliance of the trailer with the requirements of the road ordinance and general safety.

1.3 It excludes the use of light delivery vehicles including light and heavy trucks.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of SANS 10087. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this part of SANS 10087 are encouraged to take steps to ensure the use of the most recent editions of the standards indicated below. Information on currently valid national and international standards can be obtained from the South African Bureau of Standards.

SANS 1475-1, *The production of reconditioned fire-fighting equipment – Part 1: Portable and wheeled (mobile) rechargeable fire extinguishers.* **Amdt 3**

SANS 1910, *Portable refillable fire extinguishers.* **Amdt 3**

SANS 10019, *Transportable pressure receptacles for compressed, dissolved and liquefied gases – Basic design, manufacture, use and maintenance*.

SANS 10087-4, *The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial and industrial installations – Part 4: The transportation of LP gas including the design, construction, inspection, fittings, filling, maintenance and repair of LP gas bulk vehicles and rail tank cars.*

SANS 10087-7, *The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial and industrial installations – Part 7: Storage and filling premises for refillable liquefied petroleum gas (LPG) containers of gas capacity not exceeding 19 kg and the storage of individual gas containers not exceeding 48 kg.*

SANS 10105-1, *The use and control of fire-fighting equipment – Part 1: Portable and wheeled (mobile) fire extinguishers.* **Amdt 3**

SANS 10108, *The classification of hazardous locations and the selection of equipment for use in such locations.*

SANS 10228, *The identification and classification of dangerous goods for transport*.

3 Definitions

For the purposes of this part of SANS 10087, the following definitions apply.

3.1
approved
approved by the appropriate approving authority

3.2
approving authority

a) in terms with the relevant national legislation (see foreword), the Chief Inspector; and **Amdt 3**

b) the local authority concerned

3.3
category of trailers

3.3.1
category O_1
single axle trailers, other than semi-trailers, with a maximum weight not exceeding 0,75 t

3.3.2
category O_2
trailers with a maximum weight not exceeding 3,5 t, other than category O_1

3.3.3
category O_3
trailers with a maximum weight exceeding 3,5 t, but not exceeding 10 t

3.3.4
category O_4
trailers with a maximum weight exceeding 10 t

3.4
competent person
any person that has the knowledge, training and experience specific to the work or task being performed **Amdt 3**

3.5 **Amdt 3**
durable fence
fence that is made from material that is resistant to inclement weather, and that will withstand temperatures of up to 60 °C

3.6 **Amdt 3**
mobile unit
unit that is not self-propelled, but drawn by a mechanical means (for example a trailer)

3.7
vehicle test station
organization whose function is to examine, measure or otherwise determine the roadworthiness of a vehicle with respect to the requirements of the relevant national legislation (see foreword) **Amdt 3**

4 Requirements

4.1 Constructional requirements

4.1.1 General

Trailers intended for use on public roads shall comply with the relevant requirements of the relevant national legislation (see foreword). **Amdt 3**

4.1.2 Trailer chassis

The design and general marking, numbering and registration of trailers shall comply with the requirements of the relevant national legislation (see foreword). **Amdt 3**

4.1.3 Inspection and registration

The complete and fully equipped trailer shall be presented for inspection to an approved vehicle test station and registered for roadworthiness. Before use a vehicle shall be approved by the approving authority and shall be issued a certificate of compliance.

4.1.4 Ventilation

The vehicle shall be so designed that cross ventilation at floor level is maintained at all times.

4.1.5 Safety requirements

4.1.5.1 As LPG is classified as a dangerous substance in accordance with SANS 10228, the transportation of LPG shall comply with the requirements of the relevant national legislation (see foreword). **Amdt 3**

4.1.5.2 The mobile unit shall be designed to carry a maximum load of 500 kg of LPG. This may be achieved by splitting the load into 48 kg containers (with a maximum of 4 × 48 kg containers), the balance of the load to be carried in smaller containers or by using a single container of capacity not exceeding 500 kg.

4.1.5.3 All cylinders (whether full or empty) being transported within the trailer shall be transported in the upright position only.

4.1.5.4 Cylinders shall not be stacked one on top of another during transportation unless independently supported and access to the valve is available.

4.1.5.5 Cylinders, when transported, shall be secured in such a way that they shall not be able to move around or fall onto their sides. Cylinders shall not be secured at or by the footring only.

4.1.5.6 Cylinder valves shall be in the closed position at all times unless a filling operation is in progress. During such operations the remaining cylinders and valves (whether full or empty) shall be in the closed position.

4.1.5.7 The towing vehicle shall be disconnected from the towed vehicle while the filling operation of gas into cylinders is being carried out.

4.1.5.8 The gas storage cylinder(s) shall not form any part of the vehicle's chassis or be included as a structural member of the mobile unit.

4.1.5.9 All electrical equipment shall be intrinsically safe (see SANS 10108) while filling and transporting gas.

4.2 Location and functional requirements

4.2.1 The siting and safety aspects pertaining to any particular installation, filling procedure, training, etc. shall comply in all respects with those given in SANS 10087-7. Particular attention shall be paid to the details of safety distances given in SANS 10087-7.

4.2.2 No container shall be filled from the filling unit without the permission of the owner (see SANS 10019). **Amdt 2**

NOTE This requirement is solely for safety reasons, since cylinder containment history is in certain instances an essential reference to correct filling. It is not intended as a commercial restraint.

4.2.3 A site enclosed by the temporary perimeter fence on which the mobile unit is located shall be free, or made free, of any combustible material (see 4.6).

4.2.4 All temporary filling sites shall be accessible to the emergency services vehicles.

4.2.5 All temporary filling sites shall be so situated that water for emergency use is available to the emergency services within a radius of 2 km.

4.2.6 Mobile units shall be removed from each site after completion of the filling operations for the day and be returned to the depot. No mobile unit shall be allowed to remain on any site during the night.

4.2.7 While filling operations are taking place the mobile unit shall be so stabilized as to prevent movement of more than 10 mm in any direction. The suspension of the mobile unit shall not be in operation during filling.

4.2.8 The safety distances given shall be used when the filling operation is done by mass. **Amdt 2**

All weighing equipment shall be controlled through the standards applicable to the relevant national legislation (see foreword). **Amdt 3**

4.2.9 All parking sites within a depot shall comply with the requirements of SANS 10087-4.

4.3 Water supply on site

Where possible the chosen site shall contain a constant water supply, regardless of the requirement in 4.4, where no such constant water supply exists, a minimum of two (2) water fire extinguishers of at least 9 L capacity, that complies with the requirements of SANS 1910, shall be installed, maintained, and serviced by competent persons in accordance with SANS 1475-1 and SANS 10105-1. (See also 4.2.5.) **Amdt 3**

4.4 On-board fire protection

The mobile unit shall be furnished with two 9 kg dry powder fire extinguishers, one placed on the inside of the unit and the other on the outside during filling operations.

4.5 Access doors

If the mobile unit is of the 'totally closed type', it shall be furnished with two access doors, one on either side of the mobile unit and both opening to the outside. Should the mobile unit be of the 'totally closed type', the entire interior shall be considered zone 1. Zone 2 shall extend 5 m in all directions beyond the openings.

4.6 Fencing

Public access to the mobile unit shall be restricted with the use of a barricade. This can be achieved by the erection of a durable transportable fence situated at an appropriate safe distance (see 4.2.8) around the unit. Supporting stays shall be placed at regular intervals to support the fence in an erect position.

4.7 Approval of location

Approval of a particular location for a mobile unit shall be obtained from the local fire authority in writing. The approval certificate shall indicate the specific details of the location and any specific needs and requirements identified by the approving authority.

The fire authority shall always have the right to revisit the location for inspection and, when relevant, adjust the safety requirements, with the criteria to be based on SANS 10087-7.