



BSI Standards Publication

LPG equipment and accessories — Cylinders transportation racks controls

National foreword

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The UK participation in its preparation was entrusted to Technical Committee PVE/19, LPG containers and their associated fittings.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

LPG equipment and accessories - Cylinders transportation racks controls

Équipements pour GPL et leurs accessoires - Contrôle
des casiers de transport de bouteilles

Flüssiggas-Geräte und Ausrüstungsteile-
Überprüfungen von Flaschentransportgestellen

This Technical Specification (CEN/TS) was approved by CEN on 17 November 2025 for provisional application.

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European foreword

This document (CEN/TS 18209:2025) has been prepared by Technical Committee CEN/TC 286 “LPG Equipment and Accessories”, the secretariat of which is held by NSAI.

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Introduction

No design and manufacturing standards exist within CEN/TC 286 despite documented cases of logistical and road incidents where cylinders have fallen from racks either within an operational site or in transit.

Considering the variety of cylinders, operations and racks (cages) in Europe, this document specifies the operational procedures and best practices when checking transportation racks for LPG cylinders before and during loading and unloading prior to the vehicles going on the road and at any break during the journey. This document does not provide requirements for rack design and manufacturing, nevertheless ISO 13194 has been identified as providing some requirements and test methods for pallets.

Design and manufacturing of such equipment takes into account both the static and dynamic load that racks will experience in service.

Protection of the environment is a key political issue in Europe and elsewhere. For CEN/TC 286 this is covered in CEN/TS 16765 and this Technical Specification should be read in conjunction with this document. The Technical Specification provides guidance on the environmental aspects to be considered regarding equipment and accessories produced for the LPG industry and the following is addressed:

- a) design;
- b) manufacture;
- c) packaging;
- d) use and operation;
- e) disposal.

1 Scope

This document specifies the operational procedures and best practices when checking transportation racks for LPG cylinders before and during loading and unloading prior to the vehicles going on the road and at any break during the journey.

This document applies to racks containing transportable refillable LPG cylinders of water capacity from 0,5 l up to and including 150 l.

This document applies to the following equipment:

- rack frame/structure;
- rack closures;
- rack fixing equipment or accessories on to the vehicle.

This document applies to checks performed:

- at cylinder filling plants and depots;
- or at cylinder manufacturing and/or refurbishment facilities;
- or at any place where racks are used or moved.

This document also provides guidance and examples for rack maintenance and repair procedures, including rejection criteria and for establishing operational procedures. Transportation racks are also called stillages, pallets or racks (see Clause 3).

This document does not cover the design and the manufacturing of racks.

This document does not apply to presentation display racks at points of sale.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12195-1, *Load restraining on road vehicles — Safety — Part 1: Calculation of securing forces*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

transportation rack

rigid structure or assembly designed for the safe storage and transport of LPG cylinders, intended for manual and/or automatic loading and unloading and designed to be stacked

Note 1 to entry: Details on transportation racks structure and accessories are detailed in Annex A.

3.2

stillage

pallet or skid with a cage, sides or some form of support specifically tailored to the material it is intended to carry

Note to entry: Some stillage is designed to be stackable.

3.3

pallet

rigid horizontal platform of minimum height, compatible with handling by pallet trucks and/or forklift trucks and other appropriate handling equipment, used as a base for assembling, loading, storing, handling, stacking or transporting goods and loads

[SOURCE: EN ISO 445:2013, 2.1, modified — Deleted 'or displaying' in the definition and deleted the Note 1 to entry and Figure 1.]

3.4

competent person

person who by combination of appropriate qualification, training, experience, and resources, is able to make objective judgments on the subject

4 Controls for cylinder transportation racks

4.1 General

Guidance (e.g. list of potential/possible defects) and rejection criteria for each type of rack shall be provided. Rack manufacturers, users and any other stakeholders should be consulted in order to establish the list of potential/possible defects. When such defects are identified and assessed against the rejection criteria along the distribution chain, then the racks shall be set aside to be further assessed for fitness for transport.

NOTE 1 See ADR – Janv 2023 – Vol 1 1.4.2, which defines the obligations of the main participants involved in the transportation of dangerous goods.

When defining the maximum number of racks that can be stacked, consideration shall be given to the design static and dynamic load bearing capacity of the rack type (including the tare weight of the cylinders and the weight of the product).

NOTE 2 For information on the possible limitation of the number of racks to be stacked, see local regulations.

NOTE 3 Some types of racks are not designed to be stacked.

When stacking racks, consideration shall be given to their stacking compatibility.

Differentiation should be made between defects which compromise the integrity of the rack and the safety of operations and transport and those which compromise the integrity but do not compromise the safety of operations and transport.

When defects compromise the integrity of the rack and the safety of operations and transport:

- either a temporary repair shall be performed in order to enable continuation of transport until the next plant or depot;
- or the rack shall be set aside for further assessment before being reused.