SLOVENSKI STANDARD
oSIST prEN 12806:2020

01-november-2020

Oprema in pribor za utekočinjeni naftni plin (UNP) - Elementi za pogon motornih vozil na UNP - Elementi, razen posod za gorivo

LPG equipment and accessories - Automotive liquefied petroleum gas components - Other than containers

Flüssiggas-Geräte und Ausrüstungsteile - Bauteile für Autogasanlagen/Treibgasanlagen - Bauteile, ausgenommen Autogastanks

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Équipements pour GPL et leurs accessoires - Composants pour véhicules au gaz de pétrole liquéfiés - Composants autres que le réservoir

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Ta slovenski standard je istoveten z: prEN 12806

ICS:

43.060.40 Sistemi za gorivo Fuel systems

oSIST prEN 12806:2020 en,fr,de

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12806

November 2020

ICS 43.060.40

Will supersede EN 12806:2003

English Version

LPG equipment and accessories - Automotive liquefied petroleum gas components - Other than containers

Équipements pour GPL et leurs accessoires - Composants pour véhicules au gaz de pétrole liquéfiés - Composants autres que le réservoir

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European foreword

This document (prEN 12806:2020) has been prepared by Technical Committee CEN/TC 286 "LPG equipment and accessories", the secretariat of which is held by NSAI.

This document is currently submitted to the CEN Enquiry.

Annex A is informative.

Annexes B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T and U are normative.

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1 Scope

This document specifies the general design and testing requirements for all components, in automotive Liquefied Petroleum Gas (LPG) propulsion systems, which have a working pressure equal to or greater than 20 kPa.

This document also specifies the requirements for the Electric Control Unit (ECU), which is not subjected to pressure, and the gas-tight housing which has a working pressure below 20 kPa.

This document excludes containers.

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 549:2019, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 589, *Automotive fuels — LPG — Requirements and test methods*

EN 60068-2-52, *Environmental testing — Part 2: Tests — Test Kb: Salt mist, cyclic (sodium chloride solution)*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1)*

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EN ISO 1307:2008, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses (ISO 1307:2006)*

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EN ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing (ISO 1402)*

EN ISO 4080, *Rubber and plastics hoses and hose assemblies — Determination of permeability to gas (ISO 4080)*

EN ISO 8031, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity (ISO 8031)*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)*

EN ISO 10619-2, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat-resistance tests*

ISO 1431-1, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 1436, *Rubber hoses and hose assemblies — Wire-braid-reinforced hydraulic types — Specification*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

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3 Terms, definitions and abbreviations

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
pressure
gauge pressure, unless otherwise stated

3.1.2
test pressure
pressure to which the component, or an assembly of components, is subjected during the test

3.1.3
design pressure
pressure on which the calculations are based

3.1.4
working pressure
pressure under normal operating conditions

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3.1.5
automotive LPG system
assembly of components enabling a vehicle to use automotive LPG in its propulsion system

Note 1 to entry: Components are defined in their specific annexes (see Table 1 and Table 2).

3.1.6
container
pressure vessel used for the storage of automotive LPG

3.1.7
80 % stop valve
device that limits the filling of the container to 80 % of its water capacity and acts as a non-return valve

3.1.8
level indicator
device that indicates the liquid level in the container

3.1.9
float
device, which may be used in the 80 % stop valve and/or the level indicator, floating on the surface of the liquid to detect the liquid level in the container

3.1.10
pressure relief valve
PRV
device that limits the pressure build-up in the container

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3.1.11
remote-controlled service valve with excess flow valve
device that controls the LPG supply to the pressure regulator/vaporiser which is operated remotely and is combined with an excess flow valve

3.1.12
excess flow valve
device that cuts off the flow of LPG in case of a pipe fracture or hose rupture

3.1.13
pressure relief device
PRD
device protecting the container from bursting, when exposed to fire, by venting LPG at a pre-set temperature and/or pressure

3.1.14
fuel pump
device that pumps liquid LPG to the engine fuel system

3.1.15
gas-tight housing
device that protects the components fitted on the container from minor physical damage

Note 1 to entry: It also collects and ducts any leaks to the outside of the vehicle, where necessary through a connecting hose and a lead-through.

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3.1.16
power supply bushing
gas-tight, insulated, electrical power conductor for components installed inside the container

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3.1.17
Non-return valve
device that allows the flow in one direction and prevents the flow in the opposite direction

3.1.18
multi-valve
device, which combines the functions of two or more components defined in Annex C

3.1.19
vaporiser
pressure regulator
device that vaporises LPG, reduces and/or regulates the outlet pressure to a pre-set value independent of variations of the inlet pressure and/or the flow rate

Note 1 to entry: The shut-off valve can be integrated in the vaporizer/regulator.

3.1.20
remote-controlled shut-off valve
device mounted in the engine compartment that controls the LPG supply to the pressure regulator/vaporiser which is operated remotely

3.1.21
LPG injectors
device that supplies a controlled quantity of LPG to the engine

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3.1.22
mixing unit
device that controls the quantity of vaporised LPG to the engine

3.1.23
LPG dosage unit
device that meters and/or distributes the LPG vapour to the engine

3.1.24
flexible hoses
flexible ducts that convey LPG liquid or vapour at various pressures from one point to another

3.1.25
hydrostatic relief valve
device that prevents the build-up of hydrostatic pressure above a pre-set value

3.1.26
filter unit
device that removes particulates from the LPG

Note 1 to entry: The filter can be integrated in other components.

3.1.27
pressure sensor
device that measures and transmits the pressure

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3.1.28
temperature sensor
device that measures and transmits the temperature

3.1.29
service coupling
connector in the fuel line between the container and the engine for emergency fuelling

Note 1 to entry: If a mono-fuel vehicle is out of fuel, the engine can be operated by means of a service container coupled to the service coupling.

3.1.30
electronic Control Unit
ECU
device that controls the LPG supply to the engine

3.1.31
fuel rail
pipe or flexible hose that supplies the fuel to the injection devices

3.1.32
filling unit
device to be connected with the filling nozzle and enable the filling of the LPG container

3.1.33
gas tube(s)
tubing made of metallic material which has been designed not to flex in normal operation and through which LPG flows

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3.1.34
LPG system
set of LPG specific equipment intended to be fitted in a vehicle to constitute an integrated and functional whole aimed at enabling the propulsion with LPG

3.1.35
interconnected LPG system
LPG-system having hydraulic interconnections with the petrol or diesel fuelling system

3.1.36
multi-component
component which incorporates two or more service functions and which meets the combined requirements of the individual functions

3.2 Symbols and abbreviations

For the purposes of this document, the following symbols and abbreviations apply.

CAN	Controller Area Network
EMC	Electromagnetic Compatibility
STP	Standard Temperature and Pressure [15,6 °C (288,7 K), 1,013 bar absolute (0,101 3 MPa absolute)]

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4 Technical requirements

4.1 General

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Components shall be designed for use with automotive LPG as specified in EN 589.

The specific requirements for design and testing are detailed in the annexes (see Table 1 and Table 2).

If a device combines two or more functions of separate components, the relevant requirements for each component shall apply.