

AEGPL Position Paper on the Revision of CEN EN 549

AEGPL, the European LPG Association, actively supports all LPG related CEN standardisation activities.

Background

A revision of EN 549 (Specification for rubber materials for seals and diaphragms for gas appliances and gas equipment) is being currently prepared. The proposed draft brings severe consequences to the LPG industry with significant impact on CEN/TC 286, CEN/TC 181 and CEN/TC236 current standards.

The revised standard is being prepared by TC208 WG4. The change in scope, with the lack of an adequate test for NBR seals and other components subjected to liquid phase LPG is a major concern, while at the same time the justification is not clear.

Current Situation of EN549

There is a draft WG4 document in circulation for comments. The WG decided unanimously to remove the limitation of pressure and add the following sentence:

- "This standard is not applicable for rubber materials used in liquid phase of gases" as there are no requirements in the actual EN 549 for gas in a liquid phase. EN 549 deals only with gaseous gases, but EN 682 covers the liquid phase of gases.

Additionally, the following note is to be inserted:

- "Note: If liquid phase occurs other relevant standards are applicable (e.g. EN 682)."

The consultant noted that this solution does not contradict the CEN regulations and is a possible solution

The LPG industry, AEGPL, would like to provide the following comments:

- The EN 682 Scope is for supply pipes, fittings, ancillaries and valves. The operating temperature does not correspond with our LPG equipment standards, as it's for static seals on pipework in buildings, not dynamic and static seals, valve pads and diaphragms as used in LPG appliances and LPG equipment such as regulators, cylinder and tank valves. Therefore, AEGPL believes that reference to EN682 is not feasible as it is not appropriate for the LPG equipment.
- Current rubber materials meeting EN549: 1994 are used with 3rd family gases successfully in a range of LPG equipment including valves and regulators. Having to refer to EN 682 as well as EN549 would cause confusion in the market for both suppliers and users and create a lack of suitable rubber materials for such LPG equipment.
- There is more than 25 years positive experience on LPG seals and diaphragms based on the existing EN 549 and its predecessors EN 278, EN 279 and EN 291. Rubber materials over this period will have been exposed to both vapour and liquid. For example, there are 200 millions of cylinders in the market, equivalent related quantities of regulators, valves etc. and LPG Equipment standards refer to EN 549

- Condensation is a function of temperature and will occur at any pressure, so cannot be avoided as recognized in the scope of actual EN 549. It happens naturally if the temperature drops below the dew point temperature so the Standard should address the possibility of liquid contact. Such a test would be carried out using liquid propene. This could be added in addition to resistance to pentane or used as the test medium.

AEGPL experts consider the fact that there is no other suitable standard and more over this standard has been used for ages for LPG, there is no any rationale to change the scope.

- At pressures above 2 bar and corresponding low temperatures, LPG will be in liquid phase, so any rubber at these pressures greater than 0.5 bar should be tested for resistance to this liquid.
- For diaphragm where condensation may occur, and for all seals, to be used with third family gases replace n-pentane by liquid propene (the concentration of which to be determined).
- There are three valve standards, which should have rubber tested for resistance to liquid as the valve are either in liquid service or at tank pressure so will see liquid as a condensate. But even regulators and vapour valves are liable to be in contact with liquid if the components are at vapour pressure.

All the above have been also addressed at the last CEN/TC 181 WG8 meeting as it is currently dealing with the revision of EN 16129, which refers to EN 549 for seals and diaphragms. During that meeting, held on the 11th and 12th of October in Paris, a common position was agreed by the members related to these issues. It is understood that CEN TC181 WG8 for Regulators has already written to CEN TC 208 WG4 submitting a similar request and expressing concerns of the change in scope.

AEGPL taking into consideration the above, proposes:

- ➔ **To amend EN549 to include in the scope of the revision also liquid phase of gases (and LPG liquid phase of course) rather than introduce a 2nd standard. It could be agreed to have a test for liquid phase of gases in a separate Annex. EN549 is the preferred rubber component test standard and is referenced in more than 7 other product standards**

About AEGPL (The European LPG Association)

AEGPL is the sole representative of the LPG industry at European level, representing national LPG Associations as well as distributors and equipment manufacturers from across Europe. Our mission is to engage with EU decision-makers and the wider policy community in order to optimise the contribution that LPG - as a clean and immediately available energy source - can make to meeting Europe's energy and environmental challenges.