



# TECHNICAL BULLETIN

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## Lifetime of pre 1930 Steel Cylinders

**This Technical Bulletin replaces EIGA Position Paper 7 and introduces no change.**

### Outline of the issue

In June 2002, Taylor Wharton issued “An open letter to the Compressed Gas Industry” recommending discontinuing the use of carbon steel cylinders manufactured before 1930, the so-called “first generation” cylinders. The reason invoked is a potential fragmentation on failure. The newer cylinders, the third and fourth generation made from chrome molybdenum alloy steels are to be preferred since they are of the “leak before break” type.

### The question

Should the gas industry withdraw “first generation” cylinders from the market?

### EIGA’s view

EIGA has carefully reviewed the Taylor Wharton document within the expert cylinder-working group, and strongly objects to its conclusions. To the best of EIGA’s knowledge, the so-called “first and second generation” cylinders have been in satisfactory service for more than 60 years without incidents of the sort referred to in the open letter from Taylor Wharton.

Evidently, technological developments and innovations in the manufacturing process have greatly contributed to the production of high performance, lightweight “third and fourth” generation cylinders without compromising safety. It should be noted however that safety was not the driving force behind the development of “third and fourth” generation cylinders.

The equivalence of safety between the generations of cylinders has been maintained. This is due to these older cylinders being manufactured from low strength steels (higher ductility), are used under less demanding wall stresses and are more resistant to corrosion, (e.g. thicker wall).

Provided the cylinders are re-tested at the appropriate, specified intervals and maintained in a satisfactory condition between the re-test intervals, the cylinders can continue to be used without any lifetime restrictions.

Similar restrictions were proposed by the authorities of a European Country to the use of old cylinders. An industrial gases company, a member of EIGA, conducted a series of experiments, which successfully addressed these concerns. A summary of the results is available upon request. This study clearly demonstrates that “first and second generation” cylinders may safely continue in service.

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