



BRITISH COMPRESSED GASES ASSOCIATION

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Company Number: 71798, England

Technical Information Sheet

TIS 28

THE USE OF NON-REFILLABLE CYLINDERS

1. Introduction

The use of Non-Refillable Cylinders (NRC's) in the UK and Europe has grown dramatically over recent years. These cylinders have become increasingly popular because they are lightweight, portable and easy to use.

The NRC's are used to supply a range of gases and are common, for example, in the gas detection and safety markets.

The NRC's are manufactured in the UK and Europe as well as in other parts of the world. Once filled with a gas they are classified as dangerous goods. They are freely traded across international boundaries and in order to be put on the market within Europe, as dangerous goods, they are required to follow the regulations relating to the carriage of dangerous goods, ADR (2) and the European Transportable Pressure Equipment Directive (TPED) (3).

It has come to the notice of the BCGA that a number of the traders of these products may be supplying cylinders and valves which do not conform to the ADR (2) regulations and the TPED (3) Directive. **Conformity is shown by a π mark on the cylinder.**

The BCGA wish to draw attention to the shippers and users of these NRC products that it is their legal responsibility to ensure that all NRC's are compliant with European EC / EU directives and as such both the cylinders and valves have to be fully approved in accordance with the directives.

2. Technical Information

All products identified as Dangerous Goods for movement by road throughout the European Union and most other European Countries are governed by rules identified in the ADR (2) regulations. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (1) implement ADR (2) within the UK.

2.1 ADR (2) Regulations for UN Cylinders

ADR (2) Section 6.2.2.1 covers the design, construction and initial inspection and test of UN cylinders. As such the standard listed for NRC's is covered under ISO 11118 (4), *Gas Cylinders – Non-refillable metallic gas cylinders – Specification and test methods*.

2.2 ISO 11118 (4) Gas Cylinders – Non-refillable metallic gas cylinders – Specification and test methods

ISO 11118 (4) is an international standard for NRC's approved for use in ADR (2).

The 1999 edition of ISO 11118 (4) does not require the use of a non-refillable valve in accordance with ISO 13340 (6) *Transportable gas cylinders - Cylinder valves for non-refillable cylinders – Specification and prototype testing*.

- Section 6 – requires that all cylinders must be approved by a recognised and “authorised inspection authority”.

2.3 ISO 13340 (6) – Transportable gas cylinders- Cylinder valves for non-refillable cylinders – Specification and prototype testing

Note: ADR (2) 2011 does not mandate the fitting of such a valve to UN non-refillable cylinders, but as from 2015 such a valve will be mandated.

- Section 7 – states the need for a full report showing design, testing and results to be certified by a signatory of the testing organisation.
- All suppliers must be able to produce a certificate to demonstrate their compliance upon request.

2.3 ADR (2) Regulations for Non-UN Cylinders

In ADR (2) Section 6.2.3 there are requirements for non-UN pressure receptacles. These receptacles are acceptable for Europe-wide transport, and a European standard is listed for non-refillable cylinders, EN 12205 (5) *Transportable gas cylinders – Non-refillable metallic gas cylinders*. Technically this standard is similar to the ISO standard, with the same requirements for approval and certification as for the ISO standard cylinders. However, EN 12205 (5) mandates that cylinders shall be fitted with non-refillable valves which conform to EN ISO 13340 (6).

2.4 Transportable Pressure Equipment Directive (3)

The Transportable Pressure Equipment Directive (3) or TPED, Directive 2010/35/EU, is a Europe-wide Directive enabling the transport of pressure equipment across national boundaries. This is achieved by the marking of equipment which complies with the TPED (3) with a π mark. For the free

movement of NRC's they shall be marked accordingly. **It is illegal to put NRC's which do not carry a π mark on the market.** Within the TPED there is a requirement for the NRC manufacturer to supply the purchaser with a declaration of conformity.

3. Summary of transport legislation

ADR (2) regulations are **MANDATORY**, failure to comply renders individuals or companies liable for **prosecution**. This means that if a cylinder(s) is delivered to your premises and then re-shipped by you, then you are totally liable for ensuring that the package meets all of the ADR (2) regulations.

4. Use and disposal

NRC's are used in the same way as refillable receptacles with the same handling, connection and operational procedures which apply to any gas cylinder. BCGA publishes many Codes of Practice and other guidance to assist the user with the safe use of cylinders. The supplier must ensure that the end-user is supplied with a Safety Data Sheet, and users should pay heed to all the information contained on the gas cylinder contents label and within the Safety Data Sheet.

Disposal of a used NRC is an area needing special attention. Unless the supplier has agreed to accept the NRC back for disposal the user will have the responsibility for safely and legally disposing of it. Before the NRC can be disposed of it must be completely emptied of its gas content. Venting of the residual contents must be carried out safely, with care that injury to personnel or damage to the environment cannot occur. BCGA leaflet L2 (7) *The safe handling of gas containers at waste facilities*, available for free download from the BCGA website, provides information on how to make cylinders safe to enter the waste stream. It also identifies organisations who will carry this process out commercially.

Under no circumstances should:

- Any attempt be made to refill the NRC.
- The NRC simply be dumped in normal refuse.

References:

1. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (S.I. 2009 No. 1348), and subsequent amendments.
2. ADR Regulations - European Agreement, concerning the International Carriage of Dangerous Goods by Road.
3. Directive 2010/35/EU, the Transportable Pressure Equipment Directive (TPED).
4. ISO 11118: 1999, Gas Cylinders – Non-refillable metallic gas cylinders – Specification and test methods.
5. EN 12205, Transportable gas cylinders – Non-refillable metallic gas cylinders.
6. ISO 13340, Transportable gas cylinders - Cylinder valves for non-refillable cylinders – Specification and prototype testing.
7. BCGA Leaflet 2 - The safe handling of gas containers at waste facilities.

For more information:

Please refer to our website: www.bcgaco.uk

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