Vehicle Certification Agency

EXTENSION OF THE PERIODIC INSPECTION INTERVAL FOR CERTAIN ALUMINIUM ALLOY AND STEEL SEAMLESS CYLINDERS

Method for gaining approval in the United Kingdom

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Background

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (as amended) require compliance with the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) and the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR).

The 2015 editions of RID and ADR introduce provisions to extend the interval between periodic inspections of certain seamless cylinders from a 10 to 15 years maximum, subject to certain conditions and with approval of the competent authority.

This document sets out the conditions and the procedure for obtaining approval for those owners of cylinders operating in the United Kingdom.

Note: This document does not apply to LPG cylinders for which there is a separate document available on the VCA website.

Scope

Only seamless steel or aluminium cylinders used, or intended to be used, for the carriage of compressed gas which are: asphyxiant (A), oxidising (O) or flammable (F) or, for the carriage of the following liquefied gases, UN 1013 CARBON DIOXIDE, UN 1070 NITROUS OXIDE and UN 1080 SULPHUR HEXAFLUORIDE are acceptable for consideration for extension to a periodic inspection interval of 15 years.

Seamless aluminium alloy cylinders produced from AA 6351 are not included and the inspection interval of any such cylinders shall remain at a maximum of 10 years.

Bundles of cylinders that are of the same type of cylinders listed above are also acceptable for extension to a periodic inspection interval of 15 years.

Cylinders and bundles of cylinders marked with the United Nations packaging symbol specified in RID / ADR 6.2.2.7.2 (a) shall not be considered for extension to 15 years.

Note: For clarity, the following are not included in any extension to the periodic inspection interval, composite cylinders, welded cylinders, acetylene cylinders and cylinders for toxic or corrosive gases.

Cylinder requirements

The cylinder meets the definition of a cylinder as given in RID/ADR 1.2.1: and

- is of seamless construction of steel or aluminium alloy; and
- complies in all respects with Directive 2010/35/EU

Bundles of cylinders

Bundles of cylinder produced from the cylinder types above shall be constructed such that contact between cylinders along the longitudinal axis of the cylinders does not result in external corrosion. (RID/ADR 4.1.4.1 P200 (13)1.4)

Valve Requirements (RID/ADR 4.1.4.1 P200 (10) va)

Steel cylinders must be fitted with a residual pressure valve (RPV) together with a non-return valve either as a discrete device or incorporated within the RPV. The RPV shall have been manufactured and comply with EN ISO 15996. Bundles of cylinders may utilise an RPV as the main valve as an alternative to individual RPVs for each cylinder within the bundle.

Operational Requirements

These shall comply with the provisions of RID/ADR chapter 4.1.4.1 P200 paragraph 13 (2, 3 and 4). ADR P200 paragraph 13 (2, 3 and 4) reproduced at Annex 1 for ease of reference.

Additional Requirements

For cylinders equipped with an RPV or valve with an integrated pressure regulator (VIPR) valve this residual pressure check is via a functional test.
Personnel carrying out the pre-fill checks shall be trained and competent.

Operational provisions

Cylinders or bundles of cylinders shall only be filled in filling centres applying a documented and certified quality system to ensure that all the provisions of paragraph (7) of RID /ADR

P 200 and the requirements and responsibilities of EN 1919: 2000, EN 1920: 2000 or EN 13365: 2002 as applicable are fulfilled and correctly applied.

The Quality System, according to the ISO 9000 (series) or equivalent, shall be certified by an accredited independent body recognized by the competent authority. This includes procedures for pre and post-fill inspections and the filling process for cylinders, bundles of cylinders and valves.

Application procedure

Owners of cylinders may apply for competent authority approval and should do so using the application form, which may be downloaded from the VCA website.

Note: *The application form is intended to be completed and transmitted electronically. Applications received in hard copy will be accepted but may take longer to process.*

The completed application form should be submitted to VCA by email, accompanied by the following:

- The type approval certificate for each design and capacity of cylinder for consideration or comparable documentary evidence such as conformity re-assessment documentation
- evidence of the current quality management system (QMS) implemented at each filling centre at time of application.
- for a registered ISO 9001 QMS this shall include a valid ISO 9001 registration certificate
- extracts from the quality system documentation which detail the policy and procedures in accordance with BS EN 1919, EN 1920 or EN13365 for inspecting cylinders, bundles of such cylinders and their accessories immediately prior to filling
- extracts from the quality system documentation which detail gas purchasing specification and policy

Applicants operating a quality management system not certified by an accredited Certification Body must provide extracts from their quality manual and relevant associated procedures highlighting sections dealing with policy and procedures for:

- purchasing gas to the approved specifications
- the pre-filling inspection of cylinders and checking the residual pressure
- periodic audit of the above

Applicants who have not previously been customers of VCA will also be required to complete a new customer application form for billing purposes.

Applications which do not meet minimum requirements, and those which three months or more after receipt cannot be completed for lack of information will be rejected and the application fee forfeit.

Approval

Once an application has been assessed as satisfactory, approval to extend the interval between periodic inspections to 15 years will be granted in respect of each approved filling site and cylinder type (as defined by the type approval certificate or comparable documentary evidence such as conformity re-assessment documentation) that meets the criteria. Details of companies, locations and the cylinder types for which they hold authorisation will be published on the VCA website.

The authorisation shall remain in force for a period of three years providing:

- there is no change in RID / ADR or UK law which would affect the authorisation
- The holder makes an annual return concerning cylinders that they have caused to be marked P15Y under the terms of the approval

Withdrawal of approval

If the holder fails to maintain the terms of the approval, or fails to provide information as required or provide reasonable access to DfT its agencies or appointed bodies for the purpose of establishing continuing compliance the approval may be withdrawn and the holder required to remove the P15Y mark from all cylinders.

Annual return

The holder of the authorisation shall make an annual return to VCA for each calendar year, or part thereof if approval is not in force for a full year, by 5 April. The annual return shall include the following for the year in question:

- Reference to the type approval or comparable documentary evidence such as conformity re-assessment
- quantity of each cylinder type that has been extended under the approval
- quantity of cylinders tested
- quantity of cylinders rejected at time of fill

Annual returns should be submitted by email using the form, which can be downloaded from the VCA website.

Variation of authorisation

Additional cylinder types (defined by a type approval certificate or comparable documentary evidence such as conformity re-assessment documentation) may,on application, be added to an existing authorisation at any time during its period of validity (3 years from issue). Application should be submitted by email using the Variation form which can be downloaded

from the VCA website and, providing no other changes to the authorisation are necessary, need only be accompanied by the type approval certificate(s) for the cylinders to be added. Additional filling centres may be included in existing authorisations. The procedure described above under Application should be followed, except that type approval certificates will not be required for cylinder types that are covered by the existing authorisation

Renewal of authorisation

Authorisations must be renewed every three years if cylinders are to continue to be marked P15Y. Prior to expiry, an authorisation holder should apply for renewal, certifying that:

- the type approval(s) remains valid*
- there have been no changes or additions to the list of filling centres*
- the quality system documents submitted for the initial application are still current and correct.*

* Note**:** *approval holder certification should be a formality as it is a condition of authorisation that any significant changes must be notified as they occur If the holder of an authorisation is unable to certify all of the above, the approval will cease to be valid and a new application must be made.*

Application for renewal of an authorisation should be made using the appropriate form which can be downloaded from the VCA website. Renewal applications must be submitted at least 90 days before the authorisation is due to expire, to ensure continuity.

VCA may issue a renewal reminder approximately 3 months before expiry of each authorisation. However, this is done as a courtesy, and responsibility for timely renewal application rests entirely with the holder. VCA accepts no liability for the delay or non-receipt of reminders.

Fees

The fee structure assumes each application is correct and accompanied by the appropriate supporting documentation. If this is not the case, additional time necessary to complete the application will be charged at the hourly rate. The appropriate fee should accompany each application.

Initial application fee

For applicants with a single registered ISO 9001 QMS which covers all filling centre(s) named in the application

- an application fee of £350 and
- a registration fee of £75 for each cylinder type approval, to a maximum of £525 per application

For applicants operating a different registered ISO 9001 QMS at each filling centre and those operating a non-registered QMS:

- an application fee of £350 and:
- a registration fee of £75 for each cylinder type approval, to a maximum of £525 per application;
- an additional fee of £75 per hour for time in excess of 3 hours which is necessarily spent in the verification of the QMS. An estimate will be provided before any such work is undertaken.

Variation fee

Addition of new cylinder types to an existing authorisation

- a registration fee of £75 for each cylinder type added

Addition of additional filling centres to an existing authorisation

- an extension fee of £350 per filling centre

Renewal fee

Renewal of an authorisation at 3 yearly intervals which does not involve the addition of cylinder design types

- a renewal fee of £350

Addition of a new cylinder type at the time of renewal

- a registration fee of £75 for each cylinder type

Note: Fees correct at January 2015 but are subject to periodic review.

Annex 1

The following is the text P200 from the 2015 edition of ADR

(13) An interval of 15 years for the periodic inspection of seamless steel and aluminium alloy cylinders and bundles of such cylinders may be granted in accordance with special packing provisions ua or va of paragraph (10), if the following provisions are applied:

1. General provisions

1.1 For the application of this paragraph, the competent authority shall not delegate its tasks and duties to Xb bodies (inspection bodies of type B) or IS bodies (in-house inspection services).
1.2 The owner of the cylinders or bundles of cylinders shall apply to the competent authority for granting the 15 year interval, and shall demonstrate that the requirements of sub-paragraphs 2, 3 and 4 are met.
1.3 Cylinders manufactured since 1 January 1999 shall have been manufactured in conformity with one of the following standards:
- EN 1964-1 or EN 1964-2; or
- EN 1975; or
- EN ISO 9809-1 or EN ISO 9809-2; or
- EN ISO 7866; or
- Annex I, parts 1 to 3 to Council Directive 84/525/EEC[b] and 84/526/EEC[c], as applicable at the time of manufacture (see also the table in 6.2.4.1).

Other cylinders manufactured before 1 January 2009 in conformity with ADR in accordance with a technical code accepted by the national competent authority may be accepted for a 15 year interval for periodic inspection, if they are of equivalent safety to the provisions of ADR as applicable at the time of application.

NOTE: *This provision is considered to be fulfilled if the cylinder has been reassessed according to the procedure for the reassessment of conformity described in Annex III of Directive 2010/35/EU of 16 June 2010 or Annex IV, Part II, of Directive 1999/36/EC of 29 April 1999.*

Cylinders and bundles of cylinders marked with the United Nations packaging symbol specified in 6.2.2.7.2 (a) shall not be granted a 15 year interval for periodic inspection.

1.4 Bundles of cylinders shall be constructed such that contact between cylinders along the longitudinal axis of the cylinders does not result in external corrosion. The supports and restraining straps shall be such as to minimise the risk of corrosion to the cylinders. Shock absorbent materials used in supports shall only be allowed if they have been treated to eliminate water absorption. Examples of suitable materials are water resistant belting and rubber.

1.5 The owner shall submit documentary evidence to the competent authority demonstrating that the cylinders comply with the provisions of sub-paragraph 1.3. The competent authority shall verify that these conditions are met.

1.6 The competent authority shall check whether the provisions of sub-paragraphs 2 and 3 are fulfilled and correctly applied. If all provisions are fulfilled, it shall authorise the 15 year interval for

periodic inspection for the cylinders or bundles of cylinders. In this authorisation a group of cylinders (see NOTE below) covered shall be clearly identified.
The authorisation shall be delivered to the owner; the competent authority shall keep a copy. The owner shall keep the documents for as long as the cylinders are authorised for a 15 year interval.

NOTE: *A group of cylinders is defined by the production dates of identical cylinders for a period, during which the applicable provisions of ADR and of the technical code accepted by the competent authority have not changed in their technical content. Example: Cylinders of identical design and volume having been manufactured according to the provisions of ADR applicable between 1 January 1985 and 31 December 1988 in combination with a technical code accepted by the competent authority applicable for the same period form one group in terms of the provisions of this paragraph.*

1.7 The owner shall ensure compliance with the provisions of ADR and the authorisation given as appropriate and shall demonstrate this to the competent authority on request but at least every three years or when significant changes to the procedures are introduced.

2. Operational provisions

2.1 Cylinders or bundles of cylinders having been granted a 15 year interval for periodic inspection shall only be filled in filling centres applying a documented and certified quality system to ensure that all the provisions of paragraph (7) of this packing instruction and the requirements and responsibilities of EN 1919:2000, EN 1920:2000 or EN 13365:2002 as applicable are fulfilled and correctly applied. The quality system, according to the ISO 9000 (series) or equivalent, shall be certified by an accredited independent body recognized by the competent authority. This includes procedures for pre- and postfill inspections and the filling process for cylinders, bundles of cylinders and valves.
2.2 Aluminium alloy cylinders and bundles of such cylinders without RPVs having been granted a 15 year interval for periodic inspection shall be checked prior to every fill in accordance with a documented procedure which shall at least include the following:

- Open the cylinder valve or the main valve of the bundle of cylinders to check for residual pressure
- If gas is emitted, the cylinder or bundle of cylinders may be filled
- If no gas is emitted, the internal condition of the cylinder or bundle of cylinders shall be checked for contamination
- If no contamination is detected, the cylinder or bundle of cylinders may be filled.
- If contamination is detected corrective action is to be carried out.

2.3 Seamless steel cylinders fitted with RPVs and bundles of seamless steel cylinders equipped with main valve(s) with a residual pressure device having been granted a 15 year interval for periodic inspection shall be checked prior to every fill in accordance with a documented procedure which shall at least include the following:

- Open the cylinder valve or bundle of cylinders main valve to check for residual pressure;
- If gas is emitted, the cylinder or bundle of cylinders may be filled;
- If no gas is emitted the functioning of the residual pressure device shall be checked;
- If the check shows that the residual pressure device has retained pressure the cylinder or bundle of cylinders may be filled;
- If the check shows that the residual pressure device has not retained pressure, the internal condition of the cylinder or bundle of cylinders shall be checked for contamination:
- If no contamination is detected, the cylinder or bundle of cylinders may be filled
- following repair or replacement of the residual pressure device;
- If contamination is detected, a corrective action shall be carried out.

2.4 To prevent internal corrosion, only gases of high quality with very low potential contamination shall be filled into cylinders or bundles of cylinders. This is deemed to be fulfilled, if the compatibility of gases/material is acceptable in accordance with EN ISO 11114-1:2012 and EN 11114-2:2013, and the gas quality meets the specifications in EN ISO 14175:2008 or, for gases not covered in the

standard, a minimum purity of 99.5% by volume and a maximum moisture content of 40 ml/m_3(ppm).

For nitrous oxide the values shall be a minimum purity of 98% by volume and a maximum moisture content of 70 ml/m_3 (ppm).
2.5 The owner shall ensure that the requirements of 2.1 to 2.4 are fulfilled and provide documentary evidence of this to the competent authority on request, but at least every three years or when significant changes to the procedures are introduced.
2.6 If a filling centre is situated in a different Contracting Party to ADR, the owner shall provide to the competent authority, on request, additional documentary evidence that the filling centre is monitored accordingly by the competent authority of that Contracting Party to ADR. See also 1.2.

3. Provisions for qualification and periodic inspection

3.1 Cylinders and bundles of cylinders already in use, for which the conditions of sub-paragraph 2 have been met from the date of the last periodic inspection to the satisfaction of the competent authority, may have their inspection period extended to 15 years from the date of the last periodic inspection. Otherwise the change of test period from ten to fifteen years shall be made at the time of periodic inspection. The periodic inspection report shall indicate that this cylinder or bundle of cylinders shall be fitted with a residual pressure device as appropriate. Other documentary evidence may be accepted by the competent authority.
3.2 If a cylinder with a 15 year interval fails the pressure test by bursting or leakage or if a severe defect is detected by a non-destructive test (NDT) during a periodic inspection the owner shall investigate and produce a report on the cause of the failure and if other cylinders (e.g. of the same type or group) are affected. In the latter case, the owner shall inform the competent authority. The competent authority shall then decide on appropriate measures and inform the competent authorities of all other Contracting Parties to ADR accordingly.
3.3 If internal corrosion and other defects as defined in the periodic inspection standards referenced in 6.2.4 have been detected, the cylinder shall be withdrawn from use and shall not be granted any further period for filling and carriage.
3.4 Cylinders or bundles of cylinders having been granted a 15 year interval for periodic inspection shall only be fitted with valves designed and tested according to EN 849 or EN ISO 10297 as applicable at the time of manufacture (see also the table in 6.2.4.1). After a periodic inspection a new valve shall be fitted, except that valves which have been refurbished or inspected according to EN ISO 22434:2011 may be re-fitted.

4. Marking

Cylinders and bundles of cylinders having been granted a 15 year interval for periodic inspection in accordance with this paragraph shall have the date (year) of the next periodic inspection as required in section 5.2.1.6 (c) and at the same time additionally be marked clearly and legibly with "P15Y". This marking shall be removed if the cylinder or bundle of cylinders is no longer authorised for a 15 year interval for periodic inspection.