

1979 No. 334

**PETROLEUM****The Gas Cylinders (Conveyance) (Amendment) Regulations  
(Northern Ireland) 1979***Made* . . . . . 21st September 1979*Coming into operation* . . . . . 22nd October 1979

The Department of the Environment in exercise of the powers conferred by Section 6 of the Petroleum (Consolidation) Act 1929(a) as applied by the Petroleum (Compressed Gases) Order (Northern Ireland) 1936(b) and now vested in the Head of the Department(c) and paragraph 2(1) of Schedule 1 to the Northern Ireland Act 1974(d) and of every other power enabling it in that behalf hereby makes the following Regulations:

*Citation and commencement*

1. These Regulations may be cited as the Gas Cylinders (Conveyance) (Amendment) Regulations (Northern Ireland) 1979.

*Amendment of Regulations*

2. The Gas Cylinders (Conveyance) Regulations (Northern Ireland) 1936(e) shall be amended in the manner specified in the schedule.

Sealed with the Official Seal of the Department of the Environment for Northern Ireland on 21st September 1979.

(L.S.)

*E. A. Simpson*

Assistant Secretary

(a) 1929 c. 13 (N.I.)

(b) S.R. &amp; O. (N.I.) 1936 No. 78 (p. 278)

(c) Formerly the Minister of Home Affairs: see 1973 c. 36 Sch. 5 para. 7; S.R. &amp; O. (N.I.) 1973 No. 504 Art. 5 (II, p. 2992)

(d) 1974 c. 28

(e) S.R. &amp; O. (N.I.) 1936 No. 113 (p. 279) as amended by S.R. &amp; O. (N.I.) 1942 No. 138 (p. 160)

## SCHEDULE

1. In regulation 3 after the words "cylinders shall" there shall be inserted the words "either be securely attached to a cradle or".

2. For regulation 5 there shall be substituted the following regulation—

"5. The working and internal pressure in any cylinder shall not exceed 13651.62 kilonewtons to the square metre (1,980 pounds to the square inch) or in the case of a cylinder made to specification D contained in the Second Schedule 20,684.28 kilonewtons to the square metre (3,000 pounds to the square inch)."

3. At the end of regulation 6 there shall be added the following proviso, that is to say:—

"Provided that this regulation shall not apply in the case of cylinders securely attached to a cradle if the valves are protected by a stout metal guard and, in any case where several cylinders so attached are connected to a common manifold, that manifold is also protected."

4. At the end of regulation 8 there shall be added the words "except a cylinder containing hydrogen".

5. In regulation 9 for the words "two years" there shall be substituted the words "five years".

6. At the end of regulation 10 there shall be added the following proviso, that is to say:—

"Provided that in the case of a cylinder securely attached to a cradle which is not required to be painted with a distinguishing colour band, this regulation shall be deemed to have been sufficiently complied with if the identification colour is painted only as a band round the neck of the cylinder close to the valve fitting."

7. In paragraph 1 of the Second Schedule after the words "specifications A or B" there shall be inserted the words "or, in the use only of cylinders containing hydrogen, specification D".

8. After paragraph 4 of the Second Schedule there shall be inserted the following paragraph:—

"4A Specification D

(a) The steel shall be such that analysis gives the following results:—

Carbon	..	..	..	..	..	0.27 to 0.35 per cent.
Silicon	..	..	..	..	..	0.10 to 0.35 per cent.
Manganese	..	..	..	..	..	0.50 to 0.70 per cent.
Nickel	..	..	..	..	..	2.30 to 2.80 per cent.
Chromium	..	..	..	..	..	0.50 to 0.80 per cent.
Molybdenum	..	..	..	..	..	0.40 to 0.70 per cent.
Sulphur	..	..	..	..	..	Not to exceed 0.050 per cent.
Phosphorus	..	..	..	..	..	Not to exceed 0.050 per cent.

(b) The steel shall be such that after the following treatment, that is to say, hardening in oil from a temperature of 820°C to 850°C, and tempering at a suitable temperature not exceeding 660°C, it shall have the following mechanical properties, that is to say:—a minimum tensile strength of 849.42 meganewtons per square metre (55 tons per square inch), a maximum tensile strength of 1003.86 meganewtons per square metre (65 tons per square inch), a minimum yield stress of 679.536 meganewtons per square metre (44 tons per square inch), and a minimum percentage elongation of not less than 7 on a gauge piece 203.2 millimetres (8 inches) long and 19.05

millimetres ( $\frac{3}{8}$  inch) wide, and the minimum energy for fracture on the Izod impact test shall be not less than 6.1012 joules ( $4\frac{1}{2}$  foot pounds) in the transverse direction, and 13.5582 joules (10 foot pounds) in the longitudinal direction.

- (c) The steel shall be such that a specimen taken therefrom would remain uncracked when bent round a former having a diameter of not more than six times the thickness of the specimen."

9. In paragraph 5 of the Second Schedule:—

- (a) for the words "specifications A and B" there shall be substituted the words "specifications A, B and D";

- (b) for the words "where p = maximum working pressure (1,800 pounds per square inch)" there shall be substituted the words—

"where p = maximum working pressure (that is to say 12,410.46 kilonewtons per square metre (1800 pounds per square inch) in the case of cylinders made to specifications A and B and 20,684.1 kilonewtons per square metre (3000 pounds per square inch) in the case of cylinders made to specification D)";

- (c) for the words "17,920 pounds per square inch" there shall be substituted the words "123.552 meganewtons per square metre (17,920 pounds per square inch)"; and

- (d) after the words "for cylinders made to specification B" there shall be added the words—"and 308.88 meganewtons per square metre (44,800 pounds per square inch) for cylinders made to specification D".

10. In paragraph 6 of the Second Schedule—

- (a) for the words "the proof pressure applied in the test shall be 3,000 pounds per square inch" there shall be substituted the words—

"The proof pressure applied in this test shall, except in the case of cylinders made to specification D; be 20,684.1 kilonewtons per square metre (3,000 pounds per square inch) and, in the case of cylinders made to specification D be 34,473.8 kilonewtons per square metre (5,000 pounds per square inch)"; and

- (d) at the end there shall be added the words "and, in the case of cylinders made to specification D, that given in paragraph (b) of specification D".

#### EXPLANATORY NOTE

*(This Note is not part of the Regulations, but is intended to indicate their general purport.)*

These Regulations make various amendments to the Gas Cylinders (Conveyance) Regulations (Northern Ireland) 1936. In particular, they make provision for conveyance of hydrogen in cylinders of a specification not authorised by those Regulations which is described in paragraph 8 of the Schedule to these Regulations. In cylinders of this specification a higher maximum working pressure is authorised (paragraph 2) and other modifications are made in this case as respects thickness of the walls (paragraph 9) and hydraulic stretch tests (paragraph 10). In addition, modifications as respects cylinders generally when securely attached to a cradle are made as regards the manner of carrying the cylinders on a vehicle (paragraph 1), the protection of the valves (paragraph 3) and the painting of cylinders with distinguishing colours (paragraph 6). A relaxation is made by paragraph 5 as regards the period within which a cylinder must have been submitted to a hydraulic test.