

DIN EN ISO 7866:2025-10 (E)

Gas cylinders - Refillable seamless aluminium alloy gas cylinders - Design, construction and testing (ISO 7866:2012 + Cor 1:2014 + Amd 1:2020 + Amd 2:2024)

Contents		Page
Foreword to Amendment 2		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols	2
5	Inspection and testing	4
6	Materials	4
6.1	General requirements	4
6.2	Thermal treatments	5
6.3	Test requirements	6
6.4	Failure to meet test requirements	6
7	Design	7
7.1	General requirements	7
7.2	Calculation of cylindrical shell thickness	7
7.3	Design of ends (heads and bases)	7
7.4	Neck design	8
7.5	Foot rings	11
7.6	Neck rings	11
7.7	Design drawing	11
7.8	High-strength and/or low-elongation gas cylinder designs	11
8	Construction and workmanship	11
8.1	General	11
8.2	End forming	11
8.3	Wall thickness	12
8.4	Surface imperfections and defects	12
8.5	Neck threads	12
8.6	Out-of-roundness	12
8.7	Exposure to heat	13
8.8	Straightness	13
8.9	Mean diameter	13
9	Type approval procedure	13
9.1	General requirements	13
9.2	Prototype tests	14
9.3	Type approval certificate	15
10	Batch tests	15
10.1	General requirements	15
10.2	Tensile test	17
10.3	Bend test and flattening test	18
10.4	Hydraulic burst test	19

10.5	Test requirements for high-strength and/or low-elongation gas cylinder designs	21
11	Gas cylinder tests and examinations	22
11.1	General	22
11.2	Hydraulic test	22
11.3	Hardness test	23
11.4	Leakage testing	23
11.5	Examination for neck folds.....	23
11.6	Marking verification	23
11.7	Aluminium alloy gas cylinder surface features at time of manufacture	23
12	Certification	24
13	Marking	25
Annex A	(normative) Corrosion tests	26
Annex B	(normative) Test method to determine the sustained-load cracking resistance of aluminium alloy gas cylinders	36
Annex C	(informative) Typical type approval certificate	43
Annex D	(informative) Acceptance certificate	44
Annex E	(normative) Specific requirements for gas cylinders made of high-strength and/or low- elongation aluminium alloy	46
Annex F	(informative) Description and evaluation of manufacturing surface imperfections and conditions for rejection of seamless aluminium alloy gas cylinders at time of product acceptance	52
Annex G	(normative) Batch size	59
Annex H	(normative) Specific provisions for acetylene cylinder shells	60
Bibliography	61