

DIN EN ISO 22435:2024-11 (E)

Gas cylinders - Cylinder valves with integrated pressure regulators - Specification and type testing (ISO 22435:2024)

Contents		Page
European foreword.....		4
Foreword.....		5
Introduction.....		7
1	Scope.....	8
2	Normative references.....	8
3	Terms and definitions.....	9
4	Symbols and descriptions.....	12
5	Design requirements and considerations.....	13
5.1	General.....	13
5.2	Description.....	14
5.3	Materials.....	14
5.4	Pressure and flow indicating devices.....	14
5.4.1	General.....	14
5.4.2	Flowmeters.....	14
5.4.3	Pressure indicators and flow gauges.....	15
5.5	Outlet connection.....	15
5.6	Outlet pressure for acetylene.....	15
5.7	Flow control valve (flow controller).....	15
5.8	Pressure adjusting device.....	15
5.9	Filtration.....	15
5.10	Endurance of the VIPR pressure regulating system.....	16
5.11	Flow and pressure performance for a VIPR with a pressure outlet.....	16
5.11.1	Flow performance and characteristics.....	16
5.11.2	Coefficient of pressure increase upon closure R	16
5.11.3	Irregularity coefficient i	16
5.12	Flow performance for a VIPR with a flow metering device.....	16
5.13	Pressure relief valve.....	16
5.14	Leakage.....	17
5.15	Mechanical strength.....	17
5.16	Pressure resistance.....	17
5.17	Resilience to ignition.....	17
5.18	Design requirements for manufacture.....	18
5.19	Resistance to vibration.....	18
5.20	Resistance to shock.....	18
5.21	Over torque of the pressure adjusting device.....	18
6	Type testing.....	18
6.1	General.....	18
6.2	Documentation.....	19
6.3	Test samples.....	19
6.4	Test report.....	20
6.5	Test temperatures.....	20
6.6	Test gas.....	20
6.6.1	Gas quality.....	20
6.6.2	Reference conditions.....	20
6.6.3	Leak tightness tests.....	20
6.6.4	Endurance of a VIPR pressure regulating system.....	20

6.7	Test schedule.....	20
6.8	Mechanical strength test of the low-pressure chamber.....	22
6.9	Pressure resistance test of the low-pressure chamber.....	22
6.10	Mechanical strength test of flowmeters.....	22
6.11	Overpressure and leak tightness test for pressure indicators and flow gauges.....	22
6.12	Flow and pressure performance test for a VIPR with a pressure outlet.....	22
6.12.1	General.....	22
6.12.2	Standard discharge, Q_1 , nominal outlet pressure, p_2 , and maximum discharge Q_{\max} test.....	22
6.12.3	Flow characteristic test.....	23
6.12.4	Coefficient of pressure increase upon closure R test.....	25
6.12.5	Irregularity coefficient i test.....	25
6.13	Accuracy and flow stability of a VIPR with a flow metering device test.....	28
6.14	Pressure relief valve test.....	28
6.15	Operating and loosening torques test.....	28
6.16	Endurance of the VIPR pressure regulating system.....	28
6.17	Leak tightness test.....	29
6.17.1	Number of samples.....	29
6.17.2	Internal leakage across the regulating valve seat.....	29
6.17.3	External leakage.....	29
6.18	Visual examination.....	30
7	Marking.....	30
8	Instructions.....	30
Annex A	(informative) Vibration test.....	32
Annex B	(informative) Shock test.....	33
Annex C	(informative) Over torque test for the pressure adjusting device.....	34
Annex D	(informative) Promoted ignition test.....	35
Bibliography	36