

ISO 11601:2017-07 (E)

Fire fighting - Wheeled fire extinguishers - Performance and construction

Contents	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Types of wheeled fire extinguishers	3
5 Extinguishing media, propellants and fill densities	4
5.1 Extinguishing media	4
5.1.1 Carbon dioxide	4
5.1.2 Clean agents	4
5.1.3 Powder	4
5.1.4 Foam concentrates	4
5.2 Propellants	4
5.3 Fill density	4
5.4 Filling tolerance	4
5.5 Charges	5
5.5.1 Nominal charge	5
5.5.2 Gross weight	5
6 Performance	5
6.1 Operating temperatures	5
6.2 Effective discharge time and bulk range of discharge	5
6.2.1 Effective discharge time	5
6.2.2 Bulk range	5
6.3 Resistance to temperature changes	6
6.3.1 Requirements	6
6.3.2 Test procedure	6
6.4 Retention of charge	7
6.4.1 Checking	7
6.5 Intermittent discharge test	7
6.6 Resistance to corrosion	7
6.6.1 External corrosion test	7
6.6.2 Internal corrosion test for water and foam extinguishers	8
6.7 Durability test	8
6.8 Electrical conductivity of extinguisher discharge	9
6.8.1 Requirement	9
6.8.2 Procedure used to test for electrical conductivity	9
7 Fire performance tests	9
7.1 Suitability for the various classes of fire	9
7.2 Class A fire tests	10
7.3 Class B fire tests	10
7.4 Class D fire tests	10
8 Construction requirements	10
8.1 General requirements	10
8.2 High-pressure cylinders	11
8.3 Low-pressure cylinders	11

8.3.1	General	11
8.4	Steel cylinders	11
8.4.1	Welded low-carbon steel	11
8.4.2	Stainless steel cylinders	12
8.5	Aluminium cylinders	12
8.6	Minimum wall thickness	12
8.7	Caps, valves and closures	12
8.8	Safety and anti-overfill devices	13
8.8.1	Safety devices	13
8.8.2	Anti-overfill devices	13
8.9	Manufacturing tests	13
8.9.1	Low-pressure cylinders	13
8.9.2	Leakage tests	13
8.10	Requirements for plastic components	14
8.10.1	General requirements	14
8.10.2	Requirements for normally pressurized components	14
8.10.3	Ultraviolet light exposure	14
8.10.4	Normally non-pressurized components	15
8.10.5	Exposure to extinguishing agent test	15
8.11	Discharge assembly	15
8.12	Control valve	16
8.13	Horn for carbon dioxide extinguisher	16
8.14	Method of operation	17
8.15	Safety locking devices	17
8.16	Pressure gauges for low-pressure extinguishers	17
8.16.1	General	17
8.16.2	Pressure gauge calibration test	18
8.16.3	Pressure gauge burst strength test	18
8.16.4	Pressure gauge overpressure test	19
8.16.5	Pressure gauge impulse test	19
8.16.6	Pressure gauge relief test	19
8.16.7	Pressure gauge water resistance test	19
8.16.8	Pressure gauge leakage test	19
8.16.9	Pressure gauge plastics components	20
8.17	Siphon tubes and filters for water-based extinguishers	20
8.18	Carriage assembly	20
8.18.1	Carriage	20
8.18.2	Mobility	20
8.18.3	Hose retaining unit	20
8.19	Gasket and O-rings	21
8.19.1	Tensile strength, elongation, maximum set and hardness	21
8.19.2	Compression set	21
9	Colour and marking	21
9.1	Colour	21
9.2	Marking	21
9.3	Operating instructions	22
9.4	Warning markings	23
9.5	Use-code symbols	23
9.6	Recharging instructions	23
9.7	Inspection instructions	24
10	Manuals	24
10.1	User manual	24
10.2	Service manual	25
Annex A (normative) Clean agent FK-5-1-12 -- Extinguishing agent physical properties		26
Annex B (normative) Clean agent HCFC Blend B -- Extinguishing agent physical properties		29
Annex C (normative) Clean agent HFC-227ea -- Extinguishing agent physical properties		32

Annex D (normative) Clean agent HFC-236fa -- Extinguishing agent physical properties	35
Bibliography	38