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Firefighting hose-reel for fixed installations — Specification

EAST AFRICAN COMMUNITY

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PUBLIC REVIEW DRAFT FOR COMMENTS

Contents

Page

Foreword.....	iii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	1
4.1 Materials	1
4.2 Corrosion resistance	2
4.3 Sizes	2
5 Construction requirements.....	2
5.1 Reel	2
5.2 Fixing brackets.....	3
5.3 Stop-valve.....	3
5.4 Hose-reel tubing.....	3
5.5 Nozzle.....	3
6 Colour, marking and instruction	4
6.1 Colours	4
6.2 Marking	4
6.3 Instruction for use	4
6.4 Installation and maintenance instructions.....	4
7 Tests.....	4
Annex A (normative) Test for strength of reel	5
Annex B (normative) Hydrostatic pressure test	6
Annex C (normative) Unwind test for the reel	7
Annex D (normative) Test for nozzle	8
Annex E (normative) Throw range	9
Bibliography	10

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 039, *Mechanical engineering and metallurgy*.

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Firefighting hose-reel for fixed installations — Specification

1 Scope

This Draft East Africa Standard specifies the requirements for materials, constructional details and tests for hose reels intended for installation in buildings as emergency firefighting equipment.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

manual fire hose-reel; manual hose reel

fire-fighting appliance consisting of a reel with water supplied through the centre, manual inlet stop valve adjacent to the reel, semi-rigid hose, shut-off nozzle and where required, a hose guide

3.2

automatic fire hose reel ; automatic hose reel

firefighting appliance consisting essentially of a reel with water supplied through the centre, automatic inlet stop valve, semi-rigid hose, shut-off nozzle and, where required, a hose guide

3.3

nozzle

the outlet tube attached to the hose-reel tubing through which the water is directed and controlled

3.4

stop-valve

an automatic or manually operated valve which controls the flow of water from the mains to the hose-reel tubing

4 Requirements

4.1 Materials

4.1.1 The materials used in the manufacture of hose-reels shall be of adequate strength to satisfy the test requirements given in this standard. Care shall be taken to avoid juxtaposition of dissimilar metals, which are liable to cause electrolytic action, especially where aluminium alloy is used.

4.1.2 The following materials shall be used for the manufacture of hose reels:

- a) leaded tin bronze — leaded tin bronze used for castings and forgings;
- b) aluminium alloy; and
- c) mild steel — Mild steel sheets shall be used for the stop-valve components and may be also used for the manufacture of the sides of hose reel.

4.1.3 Where rubber is used for washers, it shall be acid and alkali-resistant.

4.1.4 Where material other than rubber is used, its quality and durability shall not be inferior to those of rubber in 3.1.3.

4.1.5 High density plastics may be used for the manufacture of reel provided the made out of it shall satisfy the tests prescribed in this standard.

4.2 Corrosion resistance

All parts which come in contact with water or through which water flows shall be either made out of corrosion resistant material or shall be suitably treated to resist corrosion.

4.3 Sizes

4.3.1 The nominal bore of the hose shall be one of the following:

- a) 19 mm; or
- b) 25 mm; or
- c) 33 mm.

4.3.2 The length of the hose in one piece shall not exceed 30 m.

5 Construction requirements

5.1 Reel

5.1.1 The diameter of the hub of the reel shall be not less than six times the outside diameter of hose-reel tubing.

5.1.2 The sides of the reel shall be rigid and shall satisfy the requirement set out in 6.1.

5.1.3 The width of the hub and the depth of the sides shall be adequate to hold the full length of hose-reel tubing, appropriate to the size specified in 3.3.

5.1.4 The reel shall be designed to rotate freely on its spindle or bearings with the full length of hose-reel tubing charged with water.

5.1.5 The spindle gland shall be leak-proof and shall be readily accessible without dismantling the reel. Where compression packing is provided for the gland, it shall be of square section with two or more rings and shall be treated with graphite to ensure a satisfactory joint. The joints shall be staggered.

5.1.6 The overall design of the reel shall be such that, it shall not get jammed or become inoperative because of treatment of which it is likely to be subjected to during normal usage.

5.1.7 Where necessary, a suitable guide or hose runner shall be fitted to the first-aid hose-reel in such a manner that it shall be possible to run out the hose freely in any direction and also to rewind it after use without kinking.

5.1.8 Dust cover for the reel, when provided shall be constructed in such a way as not to bind the reel nor cause obstruction to the removal of the hose-reel tubing.

5.2 Fixing brackets

The fixing brackets shall be designed to suit the type of mounting for the reel. These may be for rigid mounting or of the swinging type, either for normal or flush mounting.

5.3 Stop-valve

5.3.1 The stop-valve may be of any of the following types:

- a) manually operated; or
- b) automatic operated by pulling the hose-reel tubing off the reel.

5.3.2 The first-aid hose-reel fitted with automatic stop valve shall also, in addition to it, be fitted with a manually operated valve.

5.3.3 The stop valve design shall be such as to ensure that water under pressure shall be admitted to the hose-reel tubing in such a manner that the tubing is not subjected to sudden stresses.

5.4 Hose-reel tubing

5.4.1 The hose-reel tubing shall be so connected to the hub that it does not get deformed in any way when it is rewound on the reel in accordance with the manufacturer's instructions.

5.4.2 The hose-reel tubing shall be connected to the reel by a suitable connecting device.

5.4.3 Where two lengths of hose are joined together to obtain the required length, crow's foot couplings shall be used to join these.

5.5 Nozzle

5.5.1 The nozzle may be manufactured from leaded tin bronze, aluminium alloy or high density plastics.

5.5.2 The effective throw ranges of the discharges at 0.2 MPa when determined in accordance with annex E shall not be less than as follows:

- a) jet discharge — 10 m;
- b) sheet spray discharge — 6 m; and
- c) conical spray discharge — 3 m.

NOTE The discharge from the nozzle shall be controlled by a non-jamming control handle which shall stay at the 'ON' 'OFF' position as set.

5.5.3 The nozzle shall be attached to the hose-reel tubing by a crow's foot coupling.

5.5.4 A suitable designed bracket shall be installed for holding the nozzle. The height of the bracket shall be 1.35 m from the floor level.

6 Colour, marking and instruction

6.1 Colours

The colour of the reel discs shall be red.

6.2 Marking

Each hose-reel shall be clearly and permanently marked with the following information:

- a) manufacturer's name and/or registered trademark;
- b) year of manufacture;
- c) maximum working pressure;
- d) length and bore of hose; and
- e) nozzle diameter (marked on the nozzle).

6.3 Instruction for use

Fire hose reel assemblies shall be provided with full operational instructions for display on or adjacent to the hose reel.

6.4 Installation and maintenance instructions

The supplier shall make available an installation and maintenance manual for the hose reel.

NOTE National or other regulations may apply to the installation and maintenance of hose reels.

7 Tests

Each hose-reel shall be subjected to the tests given in annexes A to E.

These tests may be carried out at the manufacturer's works or after installing the hose-reel.

Annex A
(normative)
Test for strength of reel

The inside length of the side of the reel shall be measured from hub to the rim. A force equal to 17.5 N/cm of this length shall then be applied between the rims of the two sides for a period of one minute. When the force is released at the end of one minute, there shall be no permanent deformation of the sides.

PUBLIC REVIEW DRAFT FOR COMMENTS

Annex B
(normative)
Hydrostatic pressure test

B.1 The nozzle control shall be set in the off position and the stop valve shall be fully opened.

B.2 A pressure of 105 N/cm² shall then be applied at the mains supply side of the stop valve and maintained for 5 minutes. While under pressure, the reel shall be unwound and rewound. There shall be no leakage of water from any part of the equipment during this test.

PUBLIC REVIEW DRAFT FOR COMMENTS

Annex C
(normative)

Unwind test for the reel

The tractive 'take' force in any direction required to unwind the hose-reel tubing, fully charged with water, shall be not more than 90 N. While carrying out this test, the hose tubing shall not trail on the floor or taken round corners.

PUBLIC REVIEW DRAFT FOR COMMENTS

Annex D
(normative)

Test for nozzle

The nozzle shall be subjected to a hydrostatic pressure test of 210 N/cm² for 2 ½ minutes to check porosity in casting or leakage through the control valve.

PUBLIC REVIEW DRAFT FOR COMMENTS

Annex E (normative)

Throw range

Mount the nozzle to a support tilted at 30° to the ground with the discharge outlet (0.6 ± 0.01) m above the ground generally as shown in the figure below. Adjust the inlet pressure to (0.2 ± 0.025) MPa at the inlet valve. With the nozzle in the appropriate (jet or spray) position, measure the effective throw of water. Test nozzles with a conical spray angle at the minimum spray angle. Measure the effective range as $0.9 \times$ the maximum range.

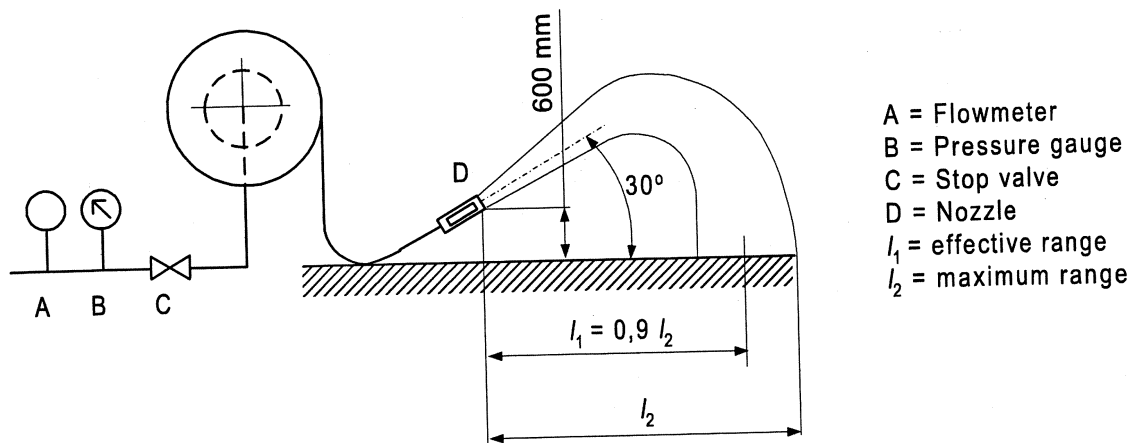


Figure E.1 — Test arrangement for measurement of throw range

Bibliography

KS 2003: 2006, *Hose-reel for firefighting (for fixed installations) — Specification*

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