SLOVENSKI STANDARD
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Namakalna tehnika - Bobenski namakalniki - 1. del: Velikostni razredi

Irrigation techniques - Reel machine systems - Part 1: Size series

Bewässerungsverfahren - Beregnungsmaschinen mit Regnereinzug - Teil 1: Baureihen

Techniques d'irrigation - Installations avec enrouleurs - Partie 1: Gammes dimensionelles

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English version

Irrigation techniques - Reel machine systems - Part 1: Size series

Techniques d'irrigation - Installations avec enrouleurs - Partie 1: Gammes dimensionelles

Bewässerungsverfahren - Beregnungsmaschinen mit Regnereinzug - Teil 1: Baureihen

This European Standard was approved by CEN on 18 November 1998.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 334 "Irrigation techniques", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

Within its work programme, the CEN/TC 334 requested the CEN/TC 334/WG 1 "Reel Machines Systems" Working Group to prepare the following standard :

prEN 12324-1	Irrigation Techniques - Reel machine systems - Part 1 : Size series

The other parts of this standard are :

prEN 12324-2	Irrigation Techniques - Reel machine systems - Part 2 : Specifications of polyethylene tubes for reel machines
prEN 12324-3	Irrigation Techniques - Reel machine systems - Part 3 : Presentation of technical characteristics
prEN 12324-4	Irrigation Techniques - Reel machine systems - Part 4 : Check list for user requirements
prEN ISO 8224-1	Traveller irrigation machines - Part 1 : Laboratory and field test methods

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of prEN 12324 gives the dimensional specifications of the reel machine structures and of the corresponding polyethylene tubes.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

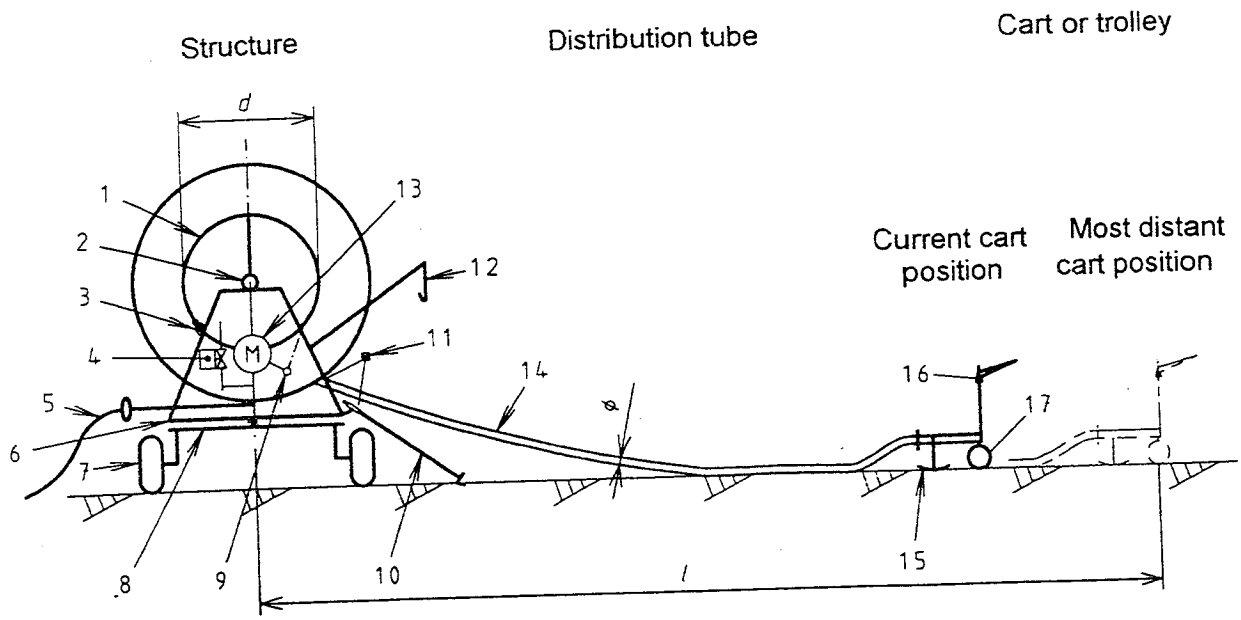
prEN 12324-2	1996	Irrigation Techniques - Reel machine systems - Part 2 : Specifications of polyethylene tubes for reel machines
prEN 908		Agricultural and forestry machinery - Reel machines for irrigation - Safety

3 Definitions

For the purpose of this European Standard, the following definitions apply :

3.1 reel machine : Type of traveller irrigation machine featuring a stationary structure with a reel, coiling a tube which carries irrigation water to, and drags a travelling cart upon which is affixed the distribution system, which is most often an irrigation gun.

NOTE : A sketch showing the main parts of a reel machine and their names is given in figure 1.



1 spool drum
d drum diameter
2 shaft of the spool
3 brakes of the spool
4 control device for water distribution system travel
5 machine-source connection hose (supply hose)
6 spool support : fixed or orientable turntable / turret
7 wheel
8 chassis
9 external power shaft
10 stabiliser legs
11 distribution tube guide mechanism
12 cart (or trolley) lifting device
13 hydraulic drive (turbine or piston) and drive train
14 distribution tube (polyethylene tube)
Ø distribution tube, outer diameter
l distribution tube, reference length (usable length of tube)
15 cart skid
16 water distribution system : sector-adjustable irrigation gun, boom, or other system
17 cart wheel

Figure 1 : Sketch showing the main parts of a reel machine

3.2 structure (ST) : Conventional designation for the various sizes of a reel machine frame, allowing it to accommodate a polyethylene tube for reel-machines, the diameter of which is listed in a range of polyethylene tubes, and the length of which conforms to specific conditions.

3.3 polyethylene tube (for reel machine) : One of the parts of a reel machine which connects the cart to the structure (also = distribution tube).

NOTE : Distribution tubes are currently manufactured of polyethylene and currently referred to as polyethylene tubes.

3.4 range of the polyethylene tubes : List of those external diameters of the polyethylene tubes for reel machine that can be accommodated on a given structure.

3.5 central diameter of the range of the polyethylene tubes : The diameter of the reference polyethylene tube of the range of the polyethylene tubes that the structure must be able to accommodate.

3.6 minimal length of the tube of central diameter of the range of polyethylene tubes : the minimal length of polyethylene tube that the structure is required to accommodate, when the tube has a diameter equal to the central diameter of the range of polyethylene tubes corresponding to the structure.

3.7 series of a polyethylene tube : One of the characteristics of a polyethylene tube for reel-machines related to its length, in accordance with prEN 12324-2:1996, table 3, column 3.

4 Specifications of the structures

4.1 Range of polyethylene tubes

The various structures shall be able to accommodate the appropriate range of polyethylene tubes.

These ranges are specified in table 1.

They are constituted of a lower diameter of the range, a central diameter of the range, and possibly a greater diameter of the range.

4.1.1 Central diameter

The structure shall be able to accommodate a polyethylene tube, the diameter of which is the central diameter of the corresponding range of polyethylene tubes, and the reference length of which is at least equal to the minimum length of the tube of central diameter.

This central diameter is used as a reference for the dimensions of the structure.

4.1.2 Lower diameter

The structure shall also be able to accommodate a polyethylene tube, the diameter of which is immediately lower than the central diameter in the range. The length of this tube shall be at least 10 % greater than the reference minimum length of the hose of central diameter.

4.1.3 Greater diameter

The structure should also be able to accommodate a polyethylene tube, the diameter of which is immediately greater than the central diameter.

In this case, the length of the tube is not submitted to a condition of minimal length, but it shall be declared by the manufacturer.

4.2 Diameter of the spool drum

4.2.1 Minimal diameter of the drum

For each structure, the diameter of the spool drum shall not be lower than 15 times the central diameter of the range of polyethylene tubes corresponding to the structure.

4.2.2 Case of derogation

Nevertheless, by derogation to 4.2.1, in order to help comply with specific requirements for road transport, the diameter of the spool drum may be adapted in the following case (see in table 1 the specifications for the derogatory structures ST 8d and ST 9d).

For the structures ST 8d and ST 9d, the diameter of the spool drum may optionally be reduced to 14 times the central diameter of the range of polyethylene tubes, provided the two following conditions are satisfied :

a) no diameter greater than the central diameter shall appear in the range of diameters of polyethylene tubes that this structure shall accommodate, and

b) the minimal reference length of tube of central diameter shall be 10 % greater for this structure.