

International Standard



5710

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Equipment for internal farm work and husbandry — Continuous manure scraper conveyors for stalls

Matériel d'intérieur de ferme et d'élevage — Évacuateurs à raclettes à mouvement continu pour étables

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5710 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in September 1978.

It has been approved by the member bodies of the following countries :

Australia	India	Romania
Austria	Italy	South Africa, Rep. of
Belgium	Korea, Dem. P. Rep. of	Spain
Brazil	Korea, Rep. of	Sweden
Bulgaria	Libyan Arab Jamahiriya	Switzerland
Chile	Mexico	Turkey
Czechoslovakia	Netherlands	United Kingdom
Denmark	Poland	USSR
Egypt, Arab Rep. of	Portugal	Yugoslavia

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Finland
Germany, F. R.

Equipment for internal farm work and husbandry — Continuous manure scraper conveyors for stalls

1 Scope

This International Standard specifies requirements for the characteristics, dimensions, methods of installation and safety of closed-circuit continuous manure scraper conveyors.

2 Field of application

This International Standard applies to evacuation devices fitted with scrapers, moving continuously in a closed circuit, intended to remove solid and liquid manure collected in non-grid covered channels in enclosed stalls.

This International Standard applies to elevators only in so far as these form part of the circuit.

3 Reference

ISO 3600, *Agricultural tractors and machines — Operator manuals and technical publications — Presentation*.

4 Description

The continuous manure scraper conveyor generally comprises the following parts :

- a) a driving device;
- b) traction gear, flexible connector to which the scrapers are fixed;
- c) scraper, horizontal element which pushes the solid and liquid manure;
- d) guide, loose pulley or slide at each point where there is a change of direction;
- e) tightener, to tighten the traction gear;
- f) cleaner, designed to clear the scrapers;
- g) tipping device, installation or device on the evacuation circuit enabling solid and liquid manure to be discharged.

The conveyor is discharged with or without elevation by means of a fixed or adjustable device.

5 Specifications

5.1 Characteristics

5.1.1 The power of the motor and the strength of the traction gear shall be calculated on the basis of the particular conditions of the installation.

5.1.2 The speed at which the traction gear moves shall not exceed 10 m/min.

5.1.3 The scrapers shall be fixed to the traction gear by bolts, by welding or by any other method which will ensure that the assembly is sufficiently robust in all conditions.

5.2 Dimensions

5.2.1 The scrapers shall be equidistant from each other at a maximum of 750 mm apart for that portion of the chain normally situated to the rear of the cattle.

5.2.2 The overall width of the traction gear/scraper assembly is $360 + {}^{10}_0$ mm, $410 + {}^{10}_0$ mm, $460 + {}^{10}_0$ mm or $560 + {}^{10}_0$ mm such that when housed in channels with widths of 400 mm, 450 mm, 500 mm or 600 mm respectively, there is a total lateral clearance of 30 to 40 mm.

5.2.3 The scrapers shall be between 40 and 60 mm in height.

5.2.4 The upper surface of the scraper shall be a minimum of 15 mm wide over its entire length.

5.3 Toxicity of materials

Any anti-corrosive treatments of the materials shall not leave any residual toxicity.

5.4 Methods of installation

5.4.1 The channel shall be so designed that it is able to house the traction gear/scraper assembly without any external projection and also to ensure adequate scraping of the base.

5.4.2 When solid manure is to be evacuated, a minimum vertical clearance of 300 mm shall be left on the evacuation circuit above the base of the channel if it is covered or passes through a wall or partition.

5.4.3 It is necessary to allow for the drainage of liquids at the lowest points and particularly at the base of the elevator where an elevator is used.

5.4.4 All the points at which lubrication and cleaning are carried out shall be readily accessible in order to allow regular maintenance.

5.5 Safety

5.5.1 The electrical equipment shall comply with the provisions in force in the country concerned.

5.5.2 The conveyor shall be fitted with a safety overload device which will prevent damage to the installation.

5.5.3 The tipping device with ramp shall be designed so as to ensure continuous evacuation without any fall-back dangerous

to personnel. The lifting or adjustment mechanism of this ramp shall not make it necessary for the operator to stand under it.

5.5.4 The guides of the traction gear are to be provided with effective protection so as to prevent accidental contact by personnel.

5.5.5 Any belts and chains on the motor-reduction gear unit shall be completely covered.

5.5.6 The conveyor shall be finished such that no unnecessary sharp edges or projecting parts are left which could cause injury.

5.5.7 The tightener of the traction gear shall be easily accessible at floor level.

6 Delivery

At the time of delivery, the supplier shall provide an instruction sheet on the use and maintenance of the conveyor. This document shall be worded in the language of the user. (See ISO 3600.)

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