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**Pogoni avtomatskih nihajnih vrat za prehod ljudi s funkcijo samozapiranja -
Zahteve in preskusne metode**

Power operated pedestrian swing door drives with self closing function - Requirements and test methods

Antriebe für kraftbetätigte Drehflügeltüren mit Selbstschließfunktion - Anforderungen und Prüfverfahren

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Power operated pedestrian swing door drives with self closing function - Requirements and test methods

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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prEN 17372:2019 (E)

European foreword

This document (prEN 17372:2019) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

In addition to meeting requirements and test methods of this document, it could be essential that power-operated pedestrian swing door drives with self-closing function satisfy further technical rules (e.g. 2014/30/EU, Electromagnetic compatibility, 2006/42/EC, Machine Directive) in regard to the safety in use and the intended application in buildings.

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1 Scope

This document applies to power-operated pedestrian swing door drives with self closing function using mechanically stored energy for single and double leaf swing doors with fire resistance and smoke control characteristics.

This document does not apply to:

- Electrically controlled hold-open systems according to EN 14637;
- Door coordinating devices according to EN 1158;
- Electrically powered hold-open devices for swing doors according to EN 1155.

If a power-operated pedestrian swing door drive with self closing function is part of a door coordinator device for double leaf swing doors, the complete system will comply with EN 1158.

If a power-operated pedestrian swing door drive with self-closing function is part of an electrically controlled hold-open system, the complete system will comply with EN 14637.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1154, *Building hardware - Controlled door closing devices - Requirements and test methods*

EN 1155, *Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods*

EN ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1154, EN 1155 and the following apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

power-operated pedestrian swing door drive with self-closing function

drive for moving the swing door leaf that is equipped with a self-closing function

3.2

self-closing function

function for closing a swing door leaf by means of mechanically stored energy which is preserved even in case of power failure

prEN 17372:2019 (E)**3.3****adjustable closing force**

in-built function that allows the closing moment of the self-closing function to be adjusted over a range of power sizes

3.4**backcheck**

feature that allows a period of deceleration before the final opening position of the door leaf is reached

3.5**hold-open system**

combination of compatible components which has the function to hold open self-closing fire/smoke control doors and, in the case of fire, to release these doors for self-closing, at the earliest possible moment

Note 1 to entry: Hold-open systems, according to this document, are intended for the control of individual door assemblies only.

Note 2 to entry: A hold-open system consists at least of a fire detector, a hold-open device, a control unit and a power supply unit. All, or any, of these elements could be in a common enclosure.

3.6**hold-open device**

devices of a hold-open system that store the energy required for the closing and releases the door leaf to close on request by a triggering mechanism

Note 1 to entry: Common hold-open devices are, for example, magnetic clamps, door drives with magnetic valve and magnetic couplings.

3.7**transom mounting**

mounting of the power-operated pedestrian swing door drive with self-closing function to the door frame and/or the door lintel

3.8**door leaf installation**

mounting of the power-operated pedestrian swing door drive with self-closing function to the door leaf

3.9**lock release**

electrically activated device that keeps the door leaf closed in a deenergised state and that enables the opening of the door leaf when external power (open circuit principle) is supplied

Note 1 to entry: Common examples are door openers or motor locks.

3.10**control unit**

device connected to the power-operated pedestrian swing door drive with self-closing function, which executes the commands of activators, external safety devices into opening, closing and stop commands suitable for the operator

Note 1 to entry: Other functions of the control unit includes the control of the lock release, the regulation of the hold-open time and the execution of release signals e.g. caused by manually moving the door leaf out of the hold open position.

3.11**external protection device**

additional installed device, electrically connected to the power-operated pedestrian swing door drive with self-closing function, which monitors the swing range of the door leaf and interrupts the movement of the door leaf if a person or an object is within the swing range of the door leaf or if it sends a signal to reverse the door leaf

3.12**activator**

means by which the power operation of the doorset is started

Note 1 to entry: It is possible to have “conscious activators” (e.g. switches, manual pushing the door leaf, push-buttons) which are used to consciously open the door leaf and “unconscious activators” (e.g. radar, light barriers, contact mats) where the door leaf is unconsciously open when the monitored zone is entered.

3.13**triggering device**

device of a hold-open system that processes a sent signal from devices of this hold-open system and causes the shut down of the operator function when certain criteria are met whereby the self-closing function of the power-operated pedestrian swing door drive with self closing function shall be maintained

Note 1 to entry: Triggering devices include, for example, fire detectors.

3.14**active mode**

operating mode in which all actions of the power-operated pedestrian swing door drive with self closing function are controlled by the control unit

3.15**passive mode**

operating mode in which the power-driven movement of the door leaf, as well as any hold-open function of the door leaf, will be switched off

3.16**power supply**

device of a power-operated pedestrian swing door drive with self-closing function which is used to supply power to e.g. the control unit, motor, protection devices, lock releases, activators and, if applicable, triggering devices

3.17**installation position**

position at which a power-operated pedestrian swing door drive with self-closing function is mounted to the door construction

3.18**power-operated**

movement performed, at least in one direction, by an external energy supply (e.g. electrically) instead of manual or stored mechanical energy

4 Product characteristics

4.1 General

The materials and the structural design of the power-operated pedestrian swing door drive with self-closing function shall be such that for installation and adjustment according the manufacturer's specification and the intended use the requirements according to 4.2 to 4.3 are fulfilled.

The maximum door leaf width is relevant for the selection of the power size of a power-operated pedestrian swing door drive with self-closing function.

Table 1 — Power size of power-operated pedestrian swing door drive with self-closing function

Power size	Door leaf width	Weight of test door leaf	Closing torque				Opening torque between 4° and 60°	Efficiency between 0° and 4°	
			between 0° and 4°		between 88° and 92°	For any other opening angle			
			Nm	Nm	Nm	Nm			
	mm	kg	min.	max	min.	min.	Nm	max.	%
	max.								min.
1	750	20	9	13	3	2	26		50
2	850	40	13	18	4	3	36		50
3	950	60	18	26	6	4	47		50
4	1 100	80	26	37	9	6	62		50
5	1 250	100	37	54	12	8	83		50
6	1 400	120	54	87	18	11	134		50
7	1 600	160	87	140	29	18	215		50

NOTE 1 In case of unusually tall or heavy doors, windy environmental conditions or special installations the use of higher power sizes can be considered.

NOTE 2 The test door leaf weights are only related to power sizes for the purpose of the test procedure. These test door leaf weights are not intended to indicate max values for actual use.

4.2 Self-closing

4.2.1 Self-closing function during passive mode

Power-operated pedestrian swing door drive with self-closing function shall be such that they function during passive mode as a controlled door closing device.

A failure of the power supply for the power-operated pedestrian swing door drive with self-closing function and/or functional faults of the power-operated pedestrian swing door drive with self-closing function shall not negatively affect the self-closing function. The door shall close and switch into passive mode:

- within no more than 3 s after a triggering signal has been received from the triggering device of the hold-open system;
- within 15 s in case of a mains failure for the power-operated pedestrian swing door drive with self-closing function; or
- in case of a functional fault of the power-operated pedestrian swing door drive with self-closing function which will affect the self-closing function. The (functional) fault shall either be detected automatically or within no more than 3 s after a triggering signal has been received from the triggering device of the hold-open system. A recommissioning shall only be possible after fixing the fault.

In case the signal paths of the control unit according to 3.10 are used to realize these requirements, then the “Performance Level d” (category 2) according to EN ISO 13849-1 shall be verified for each relevant signal path.

The relevant signal paths are to be provided by the manufacturer in the form of a block diagram to support the test. The analysed signal paths are to be documented on the block diagram by the testing authority.

Compliance shall be verified by a test according to 5.2.1.

NOTE 1 A “Reset” can be part of the requirements according to 4.2.

NOTE 2 The mentioned requirements apply to the self-closing function. This is to ensure that a swing door is closed in case of fire. If a control unit according to 3.10 initiates the switching into the passive mode due to a functional fault (e.g. display, external protection device), this is not to be understood in terms of the previously mentioned requirements as long as a triggering signal of the triggering mechanism or a mains failure continues to switch into passive mode and the self-closing function is not affected under these requirements.

4.2.2 Reactivation of active mode

The switching from the passive to the active mode of the power-operated pedestrian swing door drive with self-closing function shall be carried out only via a manual reset on the device or in the visible door area.

NOTE This, for example, will be a reset via a button, the program switch of the operator or the door leaf.

The compliance shall be verified by a test according to 5.2.2.

4.2.3 Opening angle

The opening angle of the door leaf shall be adjustable for the active mode as well as limitable for the passive mode. The power-operated pedestrian swing door drive with self-closing function installed according to the manufacturer's specification shall ensure an opening angle of the door leaf of at least 95° in any operating mode.

The compliance shall be verified by a test according to 5.2.3.