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| EMEA Engineering & Build Project Organization  Cargill B.V.  Lelyweg 29/31  4612 PS Bergen op Zoom  The Netherlands | |  | |
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# General

## Scope and objectives

This Leading Practice specifies the minimum characteristics and performance requirements of Doors for which the main intention is to be used in rooms for electrical, instrumentation and process control purpose (electrical rooms).

The purpose of this specification is to harmonize as far as practicable all rules and requirements of doors for electrical rooms in order to obtain uniformity of requirement.

The general design of the door shall provide:

* Safety for personnel
* Easy to maintain and to operate
* Suitable for harsh industrial environment
* All materials shall be suitable for continuous operation for at least 25 years

## General Rules

The general rules defined in the Cargill standard "General Specifications" are also part of this specification. The supplier has to inform himself about the content of this specification.

## Normative references

The general rules defined in the Cargill standard "General Specifications" are also part of this specification. The supplier has to inform himself about the content of this specification.

All national standards and legal requirements shall apply.

International

Among others especially the following normative documents shall apply:

EN 1363-1, Fire resistance tests — Part 1: General requirements

EN 1363-2, Fire resistance tests — Part 2: Alternative and additional procedures

EN 12519, Windows and pedestrian doors — Terminology

EN 13501-2, Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services

EN 14600, Doorsets and openable windows with fire resisting and/or smoke control characteristics —Requirements and classification

prEN 15269, (all parts), Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware

EN 16034, Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resistance and/or smoke control characteristics

EN 179, Building hardware – Emergency exit devices operated by a lever handle or push pad, use on escape routes

EN ISO 13943, Fire safety — Vocabulary (ISO 13943:2000)

EN 1125, Building hardware - Panic exit devices operated by a horizontal bar, for use on escape routes - Requirements and test methods

EN 1634-1, Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for doors and shutter assemblies and openable windows

EN 1634-3, Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 3: Smoke control test for door and shutter assemblies

EN 1670, Building hardware - Corrosion resistance - Requirements and test methods

## Definitions

* **Active leaf;** First opening and last closing leaf of a rebated single swing double doorset
* **(Fire) Doorset; EN 12519**: ‘complete unit consisting of a door frame and a door leaf or leaves, supplied with all essential parts from a single source’
* **(Fire) Door assembly;** from **EN 12519**: ‘complete assembly as installed, including door frame and one or more leaves, together with its essential hardware supplied from separate sources’
* **Door or shutter assembly;** Pedestrian doorset or industrial type doorset **including any frame** or guide, door leaf or leaves, rolling or folding curtain, etc., which is provided to give a fire resisting capability when used for the closing of permanent openings in fire resisting separating elements, which includes any side panel(s), vision panel(s), flush over panel(s) and/or transom panel(s) together with the building hardware and any seals (whether provided for the purpose of fire resistance or smoke control or for other purposes such as draught or acoustics) which form the assembly
* **Double action;** Action of a door leaf of a (single or double leaf) doorset that opens in two directions
* **Double doorset;** Assembly consisting of two hinged or pivoted exit doors within a single frame
* **Exit door;** Door on an escape route equipped with an exit device conforming to EN 179 and/or EN 1125
* **Flush over panel;** Panel which is incorporated within a doorset or openable window and fitted above the leaf or leaves within the frame head and the jambs and with no transom
* **Gap;** Clearance between two adjacent surfaces and/or edges e.g. between the edge of the leaf and the reveal of the frame or between the face of the leaf and the frame stop
* **Inactive leaf;** Last opening and first closing leaf of a rebated single swing double doorset
* **Inside;** Face of the door on which the lever handle or push pad is situated for operating an emergency exit device in order to exit
* **Lever handle;** Rotatable operating element as part of an emergency exit device whose axis of rotation is perpendicular to the face of the door and which operates the emergency exit device mechanism in order to release the bolt head(s)
* **Producer;** Manufacturer, entity or organization that has legal responsibility for placing the product on the market
* **Push-bar;** Activating horizontal bar of a panic exit device, designed to be fixed between pivoted support brackets that operates in the direction of exit and/or in an arc downwards
* **Outside;** Face of the door opposite to the face on which the lever handle or push pad for operating the emergency exit device is situated
* **Outside access device;** Optional part of an emergency exit device for opening an exit device from the outside
* **Operating element;** Abbreviation for lever handle or push pad
* **Push pad;** Operating element of an emergency exit device that operates the emergency exit device mechanism in order to release the bolt head(s)
* **Panic exit device;** Exit device conforming to EN 1125 intended to give safe and effective escape through a doorway with minimum effort and without prior knowledge of the panic exit device allowing safe escape even in the event of the door being under pressure such as by people being pushed against the door in the direction of escape
* **Side panel;** panel which is incorporated within a doorset or openable window and fitted at one side of a leaf and is bounded on all edges by the perimeter frame, the jambs and the transom (when applicable
* **Single action;** Action of a door leaf of a (single or double leaf) doorset that opens in only one direction
* **Transom panel;** Panel which is incorporated within a doorset or openable window and fitted above the leaf or leaves and is bounded on all edges by the frame head, the jambs and the transom

# Design

Doors of electrical rooms are special compare to standard doors due to:

* Escape function
* Fire resistance
* Colours and Identification
* Non-standard dimension of door
* Auxiliary

The purpose of the specification is to standardize and document the specific requirements and to avoid unnecessary uniqueness

This standard is based on International Systems of Units (SI) except where otherwise specified.

All correspondence, drawings, documents, certificates, including testing, installation procedure etc. shall be in English.

## Escape functionality

All doors installed in an electrical room shall be fitted with panic exit devices operated by a horizontal bar to common European Standard specifications EN 1125.  
In this specification priority is given to the panic operation rather than pressure and resistance to the door opening from seals, weather-stripping, multiple bolt heads etc, the main objective is to enable a door to be opened at all times by hand or body pressure along its inside face on the panic exit device and not requiring the use of a key or any other object.

**Release function.** All electrical doors shall have a release function. An emergency exit device shall be designed to release a door at all times from the inside in less than 1 s, by one single hand/or body pressure operation only, not requiring the use of a key or other similar object. It shall be designed to release the door without any delay from the time the operating element is operated to the released position of the mechanism.  
The operation of the operating element shall enable immediate exit from the inside at all times regardless of any auxiliary locking and/or unlocking means being incorporated, such as a deadbolt or outside access device.

**Release operation.** The release direction of an emergency exit device shall not be opposite to the direction of the   
door opening.

**Push-bar design**

**Bar length.** The design of a panic exit device shall be such that the effective length of the horizontal bar shall be as near as possible to the effective width of the door opening for which it is recommended, but never less than 60 %.

**Operating bar face.** The operating face of the push-bar shall be not less than 18 mm.

**Double doorset.** The design of an emergency exit device intended for use on double doorset leaves shall allow both leaves to be opened simultaneously and to swing freely in the direction of exit once the door has been released.

**Exposed edges and corners.** An emergency exit device shall have all edges and exposed corners, that are likely to cause injury to persons using the exit, rounded to a radius of not less than 0,5 mm.

**Temperature range.** Materials selected in the design of an emergency exit device shall be suitable for the operation of the emergency exit device between temperatures of -10 °C and +60 °C.

**Lubrication.** Where periodic lubrication is required, it shall be possible to lubricate without dismantling the emergency exit device. No additional lubrication shall be required before 20 000 cycles have been attained, and at no less interval than 20 000 cycles thereafter.

**Outside access device.** The provision for a connection of an outside access device (key, cylinder, lever handle, knob, etc.) shall not, in any, way make the emergency exit device inoperable from the inside, whether the outside access device is tested in the fully locked or unlocked position with the key removed.

When an outside access device is intended for use with a thumbturn cylinder, the size and any positioning of the thumbturn shall not interfere with the operation of the emergency exit device from the inside.  
Where an outside access device is intended for use with a cylinder and a key left inside a cylinder at any position shall not interfere with the operation of the emergency exit device from the inside.

**Classification for door with panic exit devices operated by a horizontal bar**

The doors shall be classified for its Panic exit devices according to EN 1125.   
For applications inside Cargill plants the required performance characteristics shall be:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Character | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Grade | 3 | 6 | 5 | B | 1 | 4 | 2 | 2 | A | A/B |

## Fireproofing Performance characteristics

The doors including frames (doorsets or door assemblies) shall be classified for its resistance to fire according to EN 13501-2. For applications inside Cargill plants the required performance characteristics shall be (if not mention different in the datasheet):

**EI260-CSa/200** (E=integrity, I=insulation, 60minutes, C=self-closing, S200=smoke tight up to 200⁰C smoke temp., if required – also Sa available for smoke at ambient temperatures)  
                - (the symbol R=load bearing capacity isn’t relevant and does not exist for doors)  
                - basic dimensions 1.000 x 2.500 for single doors / 2.000 x 2.500 for double doors

which means satisfying the performance criteria of integrity and insulation for a minimum time period of 60 minutes. Also, the doors should reduce the Smoke leakage.

*Note: Cargill’s minimum fire rating of the walls and doors is 1 hour. In some applications and geographies, the minimum requirement is 2 hours.*

## Marking

### On the product

The following information shall be marked on the product:

1. CE marking symbol;
2. Identification number of the certification body;
3. Producer’s name or trademark or other means of positive identification;
4. Number and year of this European Standard, i.e. EN 179:2008.
5. Full classification of the product;
6. Month and year of manufacture.

Only item a) CE marking symbol and items b) and c) shall need to be visible after installation. Item f) may be in coded form.

### On the packaging

The following information shall be marked on the packaging:

1. Producer’s name or trademark or other means of positive identification;
2. Number and year of this European Standard, i.e. EN 179:2008;
3. Producer’s product reference number.

### On the installation instructions

The information on the product and packaging shall be marked on the installation instructions.

The datasheet will provide the next information:

                - Size door, left / right hinged door / if double door to determine the fixed door blade  
                - EN 13501-1 material ≥ B (very little contribution to fire)  
                - Door colour  
                - Locks, kinds and materials of door handles, anti-panic see 3.2.9  
                - Door closer type  
                - CE mark and fire rating on a visible badge on the door, other signs

## Auxiliary

In drawings below illustrate the different auxiliary belonging to the scope

Only single door shown for clarity

Front Door

Door Shown from the inside opening out

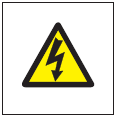
Single/Double Door

Note 1

Note 2

Note 3

NOTE:

1. Doors shall have a Push- bar and a handle
2. Warning Labels and Room identifier
3. Handle and lock,
4. Doors to open outward.
5. Doors shall have a door closer to prevent vermin to enter the building
6. The door shall be dust and airtight. This to prevent dust entering the electrical room.

Default colour is RAL 1023 Yellow, if another colour is needed this will indicated on the Datasheet

In general, an electrical room will have a single-entry door and a double equipment door.

# Documentation

A proper set of documentation shall be delivered together with the Doors. The general requirements for documentation are mentioned in the ‘General Specification’. The documentation shall be divided into chapters as detailed below:

* Drawings
* Technical Data
* Calculations
* Certificates, declarations, test reports
* Manuals

## Drawings

The supplier shall provide a set of drawings as detailed below:

* Civil door drawing

## Certificates

The supplier shall provide the following certificates:

* CE certificate
* Sample test report
* Special test report according to standards mentions in Normative references

## Technical Data

The supplier shall provide the following documents:

* General technical data sheet, showing at least all technical data of the Door as requested on the datasheet and the technical data as mentioned on the nameplate

## Certificates, declarations, test reports

The supplier shall provide the following certificates:

* According to EN 13501-1 and 2

## Manuals

The supplier shall provide the following manuals:

* Maintenance manual
* Installation manual