

FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-061-13-NURE

Steel rolling door (roller shutter) with electric engine

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FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION

FIRES-JR-061-13-NURE

Name of the product: Steel rolling door (roller shutter) with electric engine

Sponsor: Uslu Çelik San. Tic. Ltd. Şti.
Davutpaşa Cad. TIM2 Sitesi K:3 No.: 505 Topkapi
Istanbul
Turkey

Prepared by: FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

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1. INTRODUCTION

This expert judgement report with classification defines the resistance to fire classification assigned to element Steel rolling door (roller shutter) with electric engine in accordance with the classes given in EN 13501-2: 2007 + A1: 2009.

This expert judgement report defines field of application which is outside the field of direct application according test standard or outside the field of extended application according to relevant extended application standard. This expert judgement expresses the opinion of the FIRES and is based on the experience or internal rules of FIRES.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Steel rolling door (roller shutter) with electric engine, is defined as a fire resisting door according to EN 14600: 2005.

2.2 PRODUCT DESCRIPTION

The product is steel rolling door (roller shutter) with electric engine.

Overall dimension of the product: (2850 x 3300) mm (width x height)

The rolling shutter with above stated overall dimension is made of three parts; each part is 1500 mm high.

Construction of the product:

Shutter is made of galvanized steel sheet 1 mm thick. Edges of individual parts of shutter (lamellas) are made of shaped sheet which creates a groove. Individual parts are jointed together by means of mentioned grooves.

Stop profile is on the bottom part of shutter.

The shutter is jointed to the upper roller (steel tube) Ø 140 mm x 4,85 mm by the screws (Tr6,3*32 DIN 7504K) placed in spacing 200 mm. The upper roller is jointed to two steel brackets made of steel sheets 3 mm thick on the both edges of door by the bearing. There is placed a drive with gear-wheel and steel chain on one bracket.

The electric engine SIMU Box 220/12 5M (SIMU S.A.S.) is fixed to the same bracket like drive.

All the components of roller mechanism with engine are covered by casing which is made of steel sheet, 1,2 mm thick.

The side guide profiles are made of steel sheets, 3 mm thick. The lamellas of shutter are moving inside this side guide profiles which restrain lamellas to shear.

Product fixation:

Casing of the product is fixed to the load-bearing supporting block, 250 mm thick, with high bulk density according to EN 1363-1 by the screws M8 through the steel fasteners placed in spacing 500 mm.

The vertical guide profiles are fixed to the rigid supporting construction, 250 mm thick, with bulk density 613 kg.m^{-3} by the steel screws M8 through the steel fasteners placed in spacing 600 mm.

The shutter overlaps the supporting construction at both vertical edges. The overlap at both vertical edges is 100 mm.

More detailed information about product is shown in the test report [1] according to cl. 3.1 of this document.



3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	FIRES s.r.o., Batizovce, SK	Uslu Çelik San. Tic. Ltd. Şti., Istanbul, Turkey	FIRES-FR-174-08-AUNE	12. 08. 2008	STN EN 1634-1 / AC: 2007

[1] Test specimen was conditioned according to EN 1363-1 before the fire resistance test

3.2 TEST RESULTS

No./ Test method	Parameter	Results
[1] STN EN 1634-1/AC: 2007	applied load	-
	supporting construction	the casing is fixed to the load-bearing supporting block, 250 mm thick, with high bulk density according to EN 1363-1, the vertical guide profiles are fixed to the rigid supporting construction, 250 mm thick, with bulk density 613 kg.m ⁻³
	temperature curve	standard temperature time curve
	loadbearing capacity	-
	integrity	cotton pad
		gap gauges
		sustained flaming
	thermal insulation	l ₁
		l ₂
	radiation	23 minutes
	mechanical action	-
	self closing	25 cycles
	orientation of specimen	drive, roller and engine were on the unexposed door face

* According to EN 13501-2, where an element is classified E but without an “I” classification, the integrity value is defined as the time to failure of only the cracks/openings or sustained flaming criteria, whichever fails first.

[1] The test was discontinued in the 182nd minute because of high values of radiation and danger of damage of testing laboratory equipment.

4. CHANGES OF THE PRODUCT OR END USE CONDITIONS OUTSIDE OF THE FIELD OF DIRECT OR EXTENDED APPLICATION

Changes of the product outside of the field of direct or extended application which are permitted in this expert judgement report:

- it is allowed to increase the overall dimensions of product up to (7000 x 8000) mm or (9000 x 6000) mm (width x height) under the condition that the fire resistance classification of product is E 120-C0 (only in orientation with barrel and supporting components on unexposed face).



5. ARGUMENTS IN FAVOR OF THE EXTENSION

FIRES permitted the changes of the product outside of the field of direct or extended application stated in the clause 4 of this document because of arguments as follows:

1. the product underwent the fire resistance test, which proved, that the integrity of the product did not failed during the whole course of the test (181 minutes). Because all the performance criteria fulfilled for at least 132 minutes, it is allowed to increase the overall product dimension to (7000 x 8000) mm or (9000 x 6000) mm (width x height), under the condition, that the fire resistance classification of product is E 120-C0 (only in orientation with barrel and supporting components on unexposed face).

6. CLASSIFICATION AND FIELD OF APPLICATION

6.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with classes defined in clause 7.5.5 of EN 13501-2: 2007 + A1: 2009.

6.2 CLASSIFICATION

The element, Steel rolling door (roller shutter) with electric engine, is classified according to the following combinations of performance parameters and classes as appropriate.

Orientation of product	Fire resistance classification
Barrel and supporting components on unexposed face	E 180-C0 / EW 15-C0

6.3 FIELD OF APPLICATION

This classification is valid for the following end use applications:

General	- the number of leaves and the mode of operation shall not be changed;
Decorative finishes	- where the paint finish is not expected to contribute to the fire resistance of the door alternative paints are acceptable and may be added to door leaves or frame;
Door frame	- the number of fixings used to attach fire resisting doors to supporting constructions may be increased but shall not be decreased and the distance between fixings may be reduced but shall not be increased;
Hardware	- the number of any movement restrictors may be increased but shall not be decreased;
Size variations	- unlimited size reduction is permitted; - it is permitted to increase the overall product dimension to (7000 x 8000) mm or (9000 x 6000) mm (width x height) under the condition, that fire resistance classification will be changed to E 120-C0 (only in orientation with barrel and supporting components on unexposed face); - the material thickness may be increased up to 50 % but it shall not be reduced beyond acceptable steel industry tolerances; - the material thickness of side guides and barrel carrying end plates may be increased by up to 50 % but it shall not be reduced beyond acceptable steel industry tolerances; - the clearance between the end of the shutter laths and the inside faces of the guides shall be increased in proportion to the increase in width of the laths. The tightness (overlap) between the shutter curtain and the vertical guides shall not be reduced for size decreases, but shall be increased proportionally for size increases;



Supporting construction	- the product can be mounted in the same manner as described in cl. 2.2 of this document in a wall of the rigid type as follows: - the casing is fixed to the load-bearing supporting block, min. 250 mm thick, with high bulk density according to EN 1363-1 and the vertical guide profiles are fixed to the rigid supporting construction, min. 250 mm thick, with min. bulk density 613 kg.m⁻³.
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7. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The fire resistance expert judgement report with classification is valid until 22. 05. 2018, provided that the product, field of application and standards and regulations are not changed.

Approved:

Signed:

Ing. Štefan Rástocký
leader of the testing laboratory



Ing. Miroslava Rákociová
technician of the testing laboratory