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CLASSIFICATION

Classification of fire resistance according to EN 13501-2:2016 of a sectional doorset type Elysium

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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to a Next Door Systems BV sectional doorset, in accordance with the procedures given in EN 13501--2:2016.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, a sectional doorset type Elysium, is defined as a door construction consisting of a galvanized steel rail track, an insulated galvanized steel sectional doorset and an insulated galvanized steel wicket door.

2.2 DESCRIPTION

The element, a sectional doorset type Elysium, is fully described in the test report in support of classification listed in chapter 3.

3. TEST REPORT AND TEST RESULTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

Name of laboratory	Name of sponsor	Report ref. no	Test standard
Efectis Nederland	Next Door Systems BV	2015-Efectis-R001053[Rev.1]	EN 1634-1:2014

3.2 TEST RESULTS

Test results of the sectional doorset type Elysium

Test report: 2015-Efectis-R001053[Rev.1] according to EN 1634-1:2014 Test June 29th 2015, barrel and supports mounted on the fire side	
Criterion	Test results
Integrity (E)	
▪ Cotton pad	94
▪ Gap Gauge:	
Ø 6 mm	94
Ø 12 mm	94
Ø 25 mm	94
▪ Flaming	94
Insulation (I)	
▪ Average temperature	94
▪ Maximum temperature, I_1	92
▪ Maximum temperature, I_2	94
Heat radiation (W)	0.45 kW/m^2 at 94 min
The heating was terminated after 94 minutes after consulting the client	

Test report: 2015-Efectis-R001053[Rev.1] according to EN 1634-1:2014 Test September 29th 2015, barrel and supports mounted on the non-fire side	
Criterion	Test results
Integrity (E) ▪ Cotton pad ▪ Gap Gauge: Ø 6 mm Ø 12 mm Ø 25 mm ▪ Flaming	 121 121 121 121 121
Insulation (I) ▪ Average temperature ▪ Maximum temperature, I_1 ▪ Maximum temperature, I_2	 107 101 101
Heat radiation (W)	10 kW/m^2 at 119 min
The heating was terminated after 121 minutes after consulting the client	

4. CLASSIFICATION

The element, a sectional doorset type Elysium, is classified according to the criteria and classes:

E 90

EI$_1$ 90

EI$_2$ 90

EW 90

5. FIELD OF DIRECT APPLICATION OF TEST RESULTS

The conclusions in this chapter apply exclusively to al doorset types mounted on an aerated concrete wall which are equivalent in detail, including fittings/furniture and materials used, to the structure described in this report and that also comply with the following conditions:

5.1 GENERAL

The field of direct application defines the allowable changes to the test specimen following a successful fire resistance test. These variations can be applied automatically without the need for the sponsor to seek additional evaluation, calculation or approval.

NOTE When extended product size requirements are envisaged, the dimensions of certain components within the test specimen can be less than those intended to be used at full size in order to maximize the extrapolation of the test results by modelling the interaction between components at the same scale.

Where referred to annex B or annex C in this paragraph, the annexes in EN 1634-1:2014 are meant.

5.2 MATERIALS AND CONSTRUCTIONS

Unless otherwise stated in the following text, the materials and construction of the doorset shall be the same as that tested. The mode of operation (e.g. sliding, single action) shall not be changed.

5.2.1 Decorative finishes

5.2.1.1 Paint

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 frames for which unfinished test specimens were tested. Where the paint finish contributes to the fire resistance of the door (e.g. intumescent paints) then no change shall be permitted.

5.2.1.2 Decorative laminates

Decorative laminates and timber veneers up to 1.5 mm thickness may be added to the faces (but not the edges) of doors that satisfy the insulation criteria (normal or supplementary procedure).

Decorative laminates and timber veneers applied to door leaves that do not satisfy the insulation criteria (normal or supplementary procedure) and/or those in excess of 1.5 mm thickness shall be tested as part of the test specimen. For all doorsets tested with decorative laminate faces, the only variations possible shall be within similar types and thicknesses of material (e.g. for colour, pattern, supplier).

5.2.2 Fixings

The number of fixings per unit length used to attach doorsets to supporting constructions may be increased, but shall not be decreased and the distance between fixings may be reduced but shall not be increased.

5.2.3 Building hardware

The number of hinges and dog bolts may be increased but shall not be decreased.

NOTE 1 The number of movement restrictors such as locks and latches is not covered by direct application.
NOTE 2 Interchange of building hardware is not covered by the field of direct application.

5.3 PERMISSIBLE SIZE VARIATIONS

5.3.1 General

Doorsets of sizes different from those of tested specimens are permitted within certain limitations, but the variations are dependent on product type and the length of time that the performance criteria are fulfilled. The increase and decrease of dimensions permitted by the field of direct application are applicable to the overall size and to each door leaf independently.

5.3.2 Test periods

The amount of variation of size permitted is dependent on whether the classification time was just reached (Category 'A') or whether an extended time (Category 'B') in accordance with the values shown in Table 1 were fulfilled before the test was concluded.

Table 1 Category B overrun requirements for E, EI_1 and EI_2

Classification time (min)	All performance criteria fulfilled for at least minutes
15	18
20	24
30	36
45	52
60	68
90	~~100~~
~~120~~	~~132~~
~~180~~	~~196~~

5.3.3 Size variation related to product type

5.3.3.1 General

The rules to cover increase or decrease of size without additional considerations are applicable only to horizontally sliding and vertically sliding doorsets including sectional doorsets and other sliding and folding doorsets (insulated).

No increases in size are permitted for doorsets which are required to satisfy radiation control levels unless the insulation criteria are also satisfied. This is because any increase in size will increase the radiation received at a fixed distance away from the door.
There are calculation methods which can be used to determine acceptable size increases for such doors; however, these are beyond the scope of direct application. Doors that satisfy both the radiation control levels and insulation criteria may have their sizes increased as outlined in Annex B (of EN1634-1:2014). This is accepted because the increase in radiation resulting from a size increase allowed under this section, for an insulated door, will be such that it will still satisfy the required radiation control levels. Size decreases are permitted for both doors which satisfy radiation control levels and those which satisfy insulation criteria and radiation control levels.

5.3.3.2 Horizontally sliding and vertically sliding doorsets including sectional doors

For size variations (see Annex B)

For Category 'A' tests (with no overrun of classification period) unlimited size reduction is permitted with the exception of insulated metal doorsets where the size reduction is limited.

For Category 'B' tests (with specified overrun of classification period) all smaller sizes are permitted and increases in height and width are permitted as stated below:

For test specimen with door leaves manufactured to the maximum size allowable in a standard 3.0 m by 3.0 m furnace, the height and/or the width can be increased provided that the area is not increased by more than 50 %. Additionally, test specimens comprising joined panels shall incorporate at least one full size panel with at least one example of each jointing technique for height and width as applicable.

Both of the above extensions to width and height are only permissible if the overlaps at the rear and head of the door are adjusted to increase the tightness of the interlock (shown in Figure 33 of EN1634-1:2014) by 10 mm per meter of increase in size.

The maximum gap at the bottom of the door may be decreased from the maximum tested but shall not be increased above the maximum tested.

5.4 ASYMMETRICAL ASSEMBLIES

5.4.1 General

EN 1363-1 states that for separating elements required to be fire resisting from both sides, two test specimens shall be tested (one from each direction) unless the element is fully symmetrical, i.e. the construction of the doorset is identical on both sides of the centre line when viewed in plan (from above). However, in some cases it is possible to develop rules whereby the fire resistance of an asymmetrical door assembly tested in one direction can apply when the fire exposure is from the other direction. The possibility to develop such rules increases if the consideration is limited to certain types of door assembly and on the criteria being applicable (e.g. integrity only doors). The following rules represent the minimum level of common agreement which shall be followed. The rationale behind the rules is given in Annex C.

5.4.2 Specific rules

The rules governing the applicability of tests carried out in one direction to other directions are given in the table below and are based on the following premises:

- that each of the door leaves are themselves of symmetrical construction with the exception of the edges e.g. lock/leading edge and hinge edge or double rebated doors);
- that any restraining/supporting elements of building hardware has been included in a test to EN 1634-1 when exposed in both directions so that they will retain their function when exposed to the heat of the test;
- that there is no change in the number of leaves or the mode of operation;

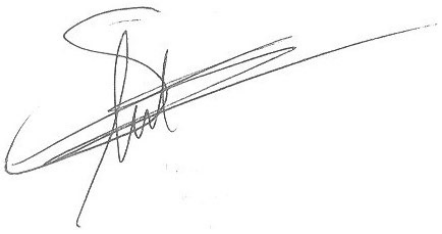
5.5 SUPPORTING CONSTRUCTIONS

5.5.1 General

The fire resistance of a door assembly tested in one form of standard supporting construction may or may not apply when it is mounted in other types of construction. Generally, the rigid and flexible types are not interchangeable and rules governing the direct application within each group are given in 13.5.2 to 13.5.4. However, in some cases it is possible for the result of a test on a particular type of door assembly tested in one form of standard supporting construction to be applicable to that door assembly when mounted in a different type of standard supporting construction. Specific rules governing the situation for hinged and pivoted door assemblies are given in 13.5.4. The rationale behind the rules is given in Annex C.

5.5.2 Rigid standard supporting constructions (high or low density)

The fire resistance of a doorset tested in a high or low density rigid standard supporting construction as specified in EN 1363-1 can be applied to a doorset mounted in the same manner in a wall provided the density and the thickness of the wall are equal to or greater than that in which the doorset was tested.



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