

JELD-WEN Sverige AB  
Box 148  
571 03 FORSERUM  
SWEDEN**CLASSIFICATION OF FIRE RESISTANCE IN  
ACCORDANCE WITH EN 13501-2:2016****Sponsor:**JELD-WEN Sverige AB  
Box 148  
571 03 FORSERUM  
SWEDEN**Prepared by:**RISE – Research institutes of Sweden  
Box 857  
SE-501 15  
Sweden**Product name:**

PL (60 mm), VL(60 mm), RU (60 mm), RL (60 mm), RLS (60 mm), NL (60 mm), GT (60 mm), GTS (60 mm), HL (87 mm)

**Classification report No.:**

3P02156-8 rev2

**Date of issue:**

May 9, 2018.

This classification report consists of 11 pages and may only be used or reproduced in its entirety.

*This report replaces the previous edition dated 2016-06-14.*

*Rev 1: Additional parameters included.*

*Rev 2: Additional parameters included.*

**RISE Research Institutes of Sweden AB**

Postal address	Office location	Phone / Fax / E-mail
Box 857	Brinellgatan 4	+46 10 516 50 00
SE-501 15 BORÅS	SE-504 62 BORÅS	+46 33 13 55 02
Sweden		info@ri.se

This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

## 1 Introduction

This classification report defines the classification assigned to element “PL (60 mm), VL(60 mm), RU (60 mm), RL (60 mm), RLS (60 mm), NL (60 mm), GT (60 mm), GTS (60 mm), HL (87 mm)” in accordance with the procedures given in EN 13501-2:2016.

## 2 Details of classified product

### 2.1 General

The element “PL (60 mm), VL(60 mm), RU (60 mm), RL (60 mm), RLS (60 mm), NL (60 mm), GT (60 mm), GTS (60 mm), HL (87 mm)” is defined as a hinged wooden door assembly.

### 2.2 Description

The construction of the doorset and its variations is fully described in the test reports and the extended application report in support of classification listed in 3.1.

## 3 Reports and results in support of this classification

### 3.1 Reports

<i>Name of laboratory</i>	<i>Name of sponsor</i>	<i>Reference number</i>	<i>Method</i>
SP Technical Research Institute of Sweden	JELD-WEN Sverige AB	3P02156-4 rev2, 2018-05-09	Extended application EN 15269-20:2009
SP Technical Research Institute of Sweden	JELD-WEN Sverige AB	PX28153-3, 2013-01-02	Test method EN 1634-3:2004/AC:2006
SP Technical Research Institute of Sweden	JELD-WEN Sverige AB	PX28153-4, 2013-01-18	Test method EN 1634-3:2004/AC:2006
SP Technical Research Institute of Sweden	JELD-WEN Sverige AB	PX28153-5, 2013-01-22	Test method EN 1634-3:2004/AC:2006
SP Technical Research Institute of Sweden	JELD-WEN Sverige AB	PX28153-6, 2013-01-24	Test method EN 1634-3:2004/AC:2006

### 3.2 Results

Smoke control level	Direction	Result
Leakage rate for Class S <sub>a</sub>	Both directions	Pass
Leakage rate for Class S <sub>200</sub>	Both directions	Pass

## 4 Classification and field of application

### 4.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2016.

### 4.2 Classification

This element “PL (60 mm), VL(60 mm), RU (60 mm), RL (60 mm), RLS (60 mm), NL (60 mm), GT (60 mm), GTS (60 mm), HL (87 mm)” has been classified:

**Smoke control classification: S<sub>a</sub> and S<sub>200</sub>**

### 4.3 Field of application

This classification is valid for the following end use applications in accordance with the field of direct application in accordance with EN 1634-3:2004 / AC:2006 and the field of extended application in accordance with EN 15269-20:2009.

### 4.4 Application range for the product family

Application range for the product family according to the test report PX28153-3 carried out in conformity with the field of direct application of test results in the test standard 1634-3:2004 and the extended application report 3P02156-4 rev2 which is carried out in conformity with the parameter variations in the extended field of application-standard for smoke control EN 15269-20:2009.

Construction parameter	Valid for range
<b>A. Door leaf</b> <b>A.1 General</b> A.1.1 Number of leaves	Possible for class $S_a$ and class $S_m$ to have single leaf and double leaf doorset, see drawings 02 and 02:2 in report 3P02156-4-rev2.
<b>A.2 Meeting edge detail</b> A.2.1 Meeting edge detail	Possible for class $S_a$ and class $S_m$ change see drawing PL/NL/VL/RU-10:4 and RL-RLS-10:4 in report 3P02156-4-rev2.
A.2.2 Astragal	Possible for class $S_a$ and class $S_m$ add see drawing RL-RLS-10:4 in report 3P02156-4-rev2.
<b>A.3 Size variations</b> A.3.1 Size of leaf or panel (area, width, height)	Possible for class $S_a$ and class $S_m$ to decrease size, see drawings 02 and 02:2 in report 3P02156-4-rev2.
A.3.3 Thickness of the door leaf or panel	Possible for class $S_a$ and class $S_m$ to increase, see drawing PL-03:02, PL-04, VL-03:02, RL/RLS-03:2, VL-04, RU-03:2, RL/RU/RLS-04, NL-03:2, NL-04, GT/GTS-03, GT/GTS-04, HL-03 and HL-04 in report 3P02156-4-rev2.
<b>A.4 Materials and constructions</b> A.4.15 Metal protective sheet (internally mounted) used in leaf or panel	Possible for class $S_a$ and class $S_m$ to add, see drawing RL/RLS-03:2, RU-03:2, GT/GTS-03, HL-03 in report 3P02156-4-rev2.
A.4.17 Cross-section of perimeter framing elements in leaf or panel	Possible for class $S_a$ and class $S_m$ to increase, see drawing RL/RLS-03:2, RU-03:2, RL/RU/RLS-04, NL-03:2, NL-04, GT/GTS-03, GT/GTS-04, HL-03 and HL-04 in report 3P02156-4-rev2.
A.4.22 Threshold in the bottom of the door set	Possible for class $S_a$ to remove, see drawing 11:2 in report 3P02156-4-rev2. Not possible for class $S_m$ .
A.4.23 Threshold in the bottom of the door set	Possible for class $S_a$ to add, see drawing 43:2 in report 3P02156-4-rev2.  Possible for class $S_a$ and class $S_m$ to have an alternative type, see drawings 48:2, 11:3, 11:4, 11:5, 11:6, 11.7 and 11:8 in report 3P02156-4-rev2.

<p><b>B. Door frame</b> <b>B.1 General</b> B.1.2 Position of a door frame within the thickness of the supporting construction</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> providing that the door frame does not project beyond the face of the supporting construction.</p>
<p><b>B.2 Materials and constructions</b> B.2.1 External dimensions</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to increase providing that the rebate depth is maintained, see drawing 40:2, 40:4, 43:1 43:2, 48:2, 60-87mm-42, HL-10:3 PL,VL,NL,GT(S)-10:3, RU-10:3 and 40db-10:3 in report 3P02156-4-rev2.</p>
<p>B.2.2 External dimensions</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to decrease providing that the rebate depth is maintained, see drawing 40:2, 40:4, 43:1 43:2, 48:2, 60-87mm-42, HL-10:3 PL,VL,NL,GT(S)-10:3, RU-10:3 and 40db-10:3 in report 3P02156-4-rev2.</p>
<p>B.2.6 Type of frame material</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to change from steel to timber, see drawing 48:2 in report 3P02156-4-rev2.</p>
<p>B.2.7 Thickness of steel</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to increase thickness, see drawing 60-87mm-42 in report 3P02156-4-rev2.</p>
<p>B.2.9 Type of infill material in steel frame (in steel frame)</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to change, see drawings 43:1 43:2 and 60-87mm-42 in report 3P02156-4-rev2.</p>
<p><b>C Building hardware</b> <b>C.1 General</b> C.1.1 Latches / locks and strike plates</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to have an alternative, see drawings 24:1, 24:3 25:1, 25:2, 25:3, 25:4, 25:6, 35, P2008012-02 revC, P2008012-04 revC, P2008012-06 revD, P2008012-07 revB, P2008012-08 revD, P2008012-09 revB, P2008012-10 revC, P2008012-12 revC, P1000137-02 revB, P1000137-03 revB, P1000137-04 revA, P1000137-05 revA, P1000137-06 revA, P1000137-07 revA, P2009052-02 revB, P2009052-03 revB, P2009052-04 revA, P2009052-05 revA and Combination of Vingcard-locks and strikers in report 3P02156-4-rev2.</p>

C.1.2 Strike plates for metallic frames	Possible for class S <sub>a</sub> and class S <sub>m</sub> to add, see drawings 24:3, 25:4, 25:6, 35 and Combination of Vingcard-locks and strikers in report 3P02156-4-rev2.
C.1.3 Number of latches locks and strike plates	Possible for class S <sub>a</sub> and class S <sub>200</sub> to increase, see drawings P2008012-02 revC, P2008012-04 revC, P2008012-06 revD, P2008012-07 revB, P2008012-08 revD, P2008012-09 revB, P2008012-10 revC, P2008012-12 revC, P1000137-02 revB, P1000137-03 revB, P1000137-04 revA, P1000137-05 revA, P1000137-06 revA, P1000137-07 revA, P2009052-02 revB, P2009052-03 revB, P2009052-04 revA and P2009052-05 revA. in report 3P02156-4-rev2.
C.1.7 Strike plates	Possible for class S <sub>a</sub> and class S <sub>m</sub> to have an alternative, see drawings 24:3, 25:4, 25:6 , 35, P1000137-02 revB, P1000137-03 revB, P1000137-04 revA, P1000137-05 revA, P1000137-06 revA, P1000137-07 revA, P2009052-02 revB, P2009052-03 revB, P2009052-04 revA, P2009052-05 revA and Combination of Vingcard-locks and strikers in report 3P02156-4-rev2.
C.1.11 Bolts (flush, morticed, internal, and surface mounted)	Possible for class S <sub>a</sub> to remove. Not possible for class S <sub>m</sub> .
C.1.12 Bolts (flush, morticed, internal, and surface mounted)	Possible for class S <sub>a</sub> and class S <sub>m</sub> to have an alternative, see drawings 37:1 and 37:2 in report 3P02156-4-rev2.
C.1.13 Size of leaf cut-out for through items	Possible for class S <sub>a</sub> and class S <sub>m</sub> to decrease in size but not possible to increase, see drawing 32 in report 3P02156-4-rev2.
C.1.25 Number of hinges/dog bolts	Possible for class S <sub>a</sub> to decrease, see drawing 29:1 in report 3P02156-4-rev2. Not possible for class S <sub>m</sub> .
C.1.28 Type of hinges	Possible for class S <sub>a</sub> and class S <sub>m</sub> to have an alternative type, see drawings 29:2 and 29.3 in report 3P02156-4-rev2.

C.1.32 Distance from top of upper hinge to top of door	Possible to for class S <sub>a</sub> and class S <sub>m</sub> increase, see drawing 29:1 in report 3P02156-4-rev2.
C.1.33 Distance from top of hinge to top of door	Possible for class S <sub>a</sub> and class S <sub>m</sub> to decrease, see drawing 29:1 in report 3P02156-4-rev2.
C.1.34 Distance from bottom of hinge lower hinge to bottom of door	Possible for class S <sub>a</sub> and class S <sub>m</sub> to increase, see drawing 29:1 in report 3P02156-4-rev2.
C.1.35 Distance from bottom hinge to bottom of door	Possible for class S <sub>a</sub> and class S <sub>m</sub> to decrease, see drawing 29:1 in report 3P02156-4-rev2.
C.1.37 Door closer positioning on face of doorset	Possible for class S <sub>a</sub> and class S <sub>m</sub> to change to alternative side, see drawing 39:4 in report 3P02156-4-rev2.
C.1.37 Concealed door closer positioning in the head/frame of doorset	Possible for class S <sub>a</sub> and class S <sub>m</sub> to change product, see drawings 39:1, 39:2 and 39:3 in report 3P02156-4-rev2.
C.1.39 Door closer (leaf or frame mounted)	Possible for class S <sub>a</sub> and class S <sub>m</sub> to exchange concealed to face fixed, see drawing 39:4 in report 3P02156-4-rev2.
C.1.41 Door closer of the same type	Possible for class S <sub>a</sub> and class S <sub>m</sub> to change manufacture / alternative, see drawings 39:1, 39:2, 39:3 and 39:4 in report 3P02156-4-rev2.
C.1.44 Power cable and protective conduits for electric locks (door or frame)	Possible for class S <sub>a</sub> and class S <sub>m</sub> to add, see drawing 60-88mm 33 in report 3P02156-4-rev2.
C.1.45 Door viewer	Possible for class S <sub>a</sub> and class S <sub>m</sub> to add, see drawing 32 in report 3P02156-4-rev2.
C.1.46 Key tubes	Possible for class S <sub>a</sub> and class S <sub>m</sub> to add, see drawing 32 in report 3P02156-4-rev2.

<p>C.1.49 Threshold seal</p>	<p>Possible for class S<sub>a</sub> to add, see drawing 43:2 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to add, see drawings 11:4, 11:5, 11:6 and 11:8. in report 3P02156-4-rev2.</p>
<p>C.1.50 Threshold seal</p>	<p>Possible for class S<sub>a</sub> to remove, see drawing 11:2 in report 3P02156-4-rev2. Not possible for class S<sub>m</sub>.</p>
<p>C.1.51 Threshold seal</p>	<p>Possible for class S<sub>a</sub> to add, see drawing 43:2 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to have an alternative type, see drawings 11:3, 11:4, 11:5, 11:6, 11.7 and 11:8. in report 3P02156-4-rev2.</p>
<p>C.1.54 Letter plates</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to add a letter box, see drawing 32 in report 3P02156-4-rev2.</p>
<p><b>E Glazing for door leaf or side / over panels</b> <b>E.1 General</b> E.1.1 Glazed panel</p>	<p>Possible for class S<sub>a</sub> to add, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>m</sub> to add if the glass pane is fire resistant, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p>
<p>E.1.2 Glazed panel</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to remove glass.</p>
<p>E.1.3 Thickness of glass</p>	<p>Possible for class S<sub>a</sub> to increase, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>m</sub> to increase if the glass pane is fire resistant, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p>
<p>E.1.4 Thickness of glass</p>	<p>Possible for class S<sub>a</sub> to decrease, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>m</sub> to decrease if the glass pane is fire resistant, see drawings 14:10, 14:11</p>



	and 14:12 in report 3P02156-4-rev2.
E.1.6 Dimension of each pane	<p>Possible for class S<sub>a</sub> to decrease, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p> <p>Possible for class S<sub>m</sub> to decrease if the glass pane is fire resistant, see drawings 14:10, 14:11 and 14:12 in report 3P02156-4-rev2.</p>
E.1.7 Type of glass	<p>Possible to change manufacturer and/or glass type for class S<sub>a</sub>.</p> <p>Possible to change manufacturer and/or glass type for class S<sub>m</sub> if the glass is fire resistant.</p>
E.1.10 Shape of glazing	Possible to have an alternative shape for class S <sub>a</sub> and class S <sub>m</sub> providing that the new shape is within the area of the tested glass, see drawings 14:10, 14:11, 14:12 and 15 in report 3P02156-4-rev2.
E.1.11 Number of glazed apertures	<p>Possible to increase for class S<sub>a</sub> providing the air leakage rate is calculated proportionally, see drawing 15 in report 3P02156-4-rev2.</p> <p>Not possible for class S<sub>m</sub>.</p>
E.1.12 Number of glazed apertures	Possible for class S <sub>a</sub> to decrease number of glazed apertures. Possible up to 50% increase of the tested gap if the sealing system remains the same, see drawing 15 in report 3P02156-4-rev2.
E.1.13 Distance between the edge of the glazing and the perimeter of the door leaf / panel	Possible for class S <sub>a</sub> and class S <sub>m</sub> to increase, see drawing 15 in report 3P02156-4-rev2.
E.1.14 Smallest tested distance between the edge of the glazing and the perimeter of the door leaf / panel	<p>Possible for class S<sub>a</sub> to decrease, see drawing 15 in report 3P02156-4-rev2.</p> <p>Not possible for class S<sub>m</sub>.</p>
E.1.15 Distance between glazed apertures	Possible for class S <sub>a</sub> and class S <sub>m</sub> to increase, see drawing 15 in report 3P02156-4-rev2.

<p>E.1.16 Smallest tested distance between glazed apertures</p>	<p>Possible for class S<sub>a</sub> to decrease, see drawing 15 in report 3P02156-4-rev2.</p> <p>Not possible for class S<sub>m</sub>.</p>
<p><b>F Supporting constructions and attachment (technique) of door frame or side / over panels</b> <b>F.1 General</b> F.1.1 Supporting construction</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to change from flexible to rigid.</p>
<p>F.1.3 Type of fixings</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to have an alternative type and/or manufacturer.</p>
<p>F.1.4 Number and size of fixings</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to increase.</p>
<p>F.1.5 Number and size of fixings</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to decrease.</p>
<p>F.1.6 Distance between fixings</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to increase.</p>
<p>F.1.7 Distance between fixings</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to decrease.</p>
<p>F.1.10 Gap between door leaf and floor</p>	<p>Possible for class S<sub>a</sub> to increase.</p> <p>Not possible for class S<sub>m</sub>.</p>
<p>F.1.11 Gap between door leaf and floor</p>	<p>Possible for class S<sub>a</sub> to decrease.</p> <p>Not possible for class S<sub>m</sub>.</p>
<p>F.1.13 Gap between door frame and wall</p>	<p>Possible for class S<sub>a</sub> and class S<sub>m</sub> to decrease.</p>

Class  $S_m$  mentioned in test standard EN 1634-3:2004 and extended application standard EN 15269-20:2009 has the same meaning as class  $S_{200}$  according to the classification standard EN 13501-2:2016.

## 5 Limitations

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

### **RISE Research Institutes of Sweden AB Safety - Fire Research Resistance**

Performed by

Examined by

Andreas Tranlöv

Patrik Johansson