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SIMPLIFIED TEST REPORT

Nr. 24/32304673-1-S (EN)

Bellaterra: **8 April 2025**

Sponsor's reference: **ROS CHIMNEYS, S.L.U.**
PLA POLIGER SECTOR NORD SAU 1
C.P. 17814 SANT JAUME DE LLIERCA
(Girona)

Date of the tests: **9 August 2024**
15 November 2024

This report, issued on 8 April 2025, is the English version of the original Spanish report 24/32304673-1-S In the event of litigation, the original version will be valid.

This document does not contain all the information of the classification report 24/32304673-1. Complete information can be consulted in the test reports 24/32304672, 24/32304673 and classification report 24/32304673-1, all held by the sponsor.

MATERIAL RECEIVED:

The elements tested are defined as isolated circular chimneys:

Internal Laboratory reference	Reference provided by the sponsor	Exposure direction	Thermal treatment	Orientation
24333-1	Doble Pared (DP)	Exterior (configuration A)	T600	Horizontal
24338-1	Doble Pared (DP)	Exterior (configuration A)	T600	Vertical

(The full description of the chimneys is included in test reports number 24/32304672, 24/32304673 and in classification report 24/32304673-1):

Chimney Doble Pared (DP) (Sample 24333-1):

General features:

- Material: stainless steel.
- Orientation: horizontal.
- Dimensions of specimen:
  - Length: 7198 mm.
  - Exposed length (inside the furnace): 4000 mm.
  - Unexposed length (outside the furnace): 3048 mm.
  - Overlap with supporting construction: 150 mm.
  - Inner section: Ø200 mm.
  - Outer section: Ø250 mm.

- Composition of specimen (see Annex D of the test report):
  - Constituent elements:
    - Twin wall flue:
      - Material:
        - Inner wall: AISI 316L stainless steel.
          - Thickness: 0.4 mm (inner wall).
        - Outer wall: AISI 304 stainless steel.
          - Thickness: 0.4 mm (Outer wall).

    - Insulation between inner and outer walls
      - Material: mineral wool.
      - Thickness: 25 mm.
      - Density: 135 kg/m^3.

Chimney Doble Pared (DP) (Sample 24338-1):

General features:

- Material: stainless steel.
- Orientation: vertical.
- Dimensions of specimen:
  - Height: 7198 mm.
  - Exposed length (inside the furnace): 2000 mm.
  - Unexposed length (outside the furnace): 2371 mm.
  - Overlap with supporting construction: 150 mm.
  - Inner section: Ø200 mm.
  - Outer section: Ø250 mm.

Composition of specimen (see Annex D of the test report):
  - Constituent elements:
    - Twin wall flue:
      - Material:
        - Inner wall: AISI 316L stainless steel.
          - Thickness: 0.4 mm (inner wall).
        - Outer wall: AISI 304 stainless steel.
          - Thickness: 0.4 mm (Outer wall).

    - Insulation between inner and outer walls
      - Material: mineral wool.
      - Thickness: 25 mm.
      - Density: 135 kg/m^3.

TEST REQUESTED:

The samples have been subjected to the conditions specified in Standard EN 1366-13:2019 "Fire resistance tests for service installations. Part 13: Chimneys."

DETAILS OF TESTED ELEMENTS

Function:

The tested elements, a chimney measuring 7198 mm in length and 200 mm in internal diameter, and a chimney measuring 4521 mm in height and 200 mm in internal diameter, are defined as fire-resistant circular metal chimneys, configuration A, assembled horizontally and vertically, respectively.

Description:

A full description of the tested elements is provided in test reports number 24/32304672, 24/32304673 and in classification report 24/32304673-1, on which the results of this document are based.

REFERENCE REPORTS:

File number	**24/32304672**
Laboratory	LGAI Technological Center, S.A.
Sponsor	ROS CHIMNEYS, S.L.U.
Test date	09 August 2024
Test standard	EN 1366-13:2019 Fire resistance tests for service installations. Part 13: Chimneys.*

File number	**24/32304673**
Laboratorio	LGAI Technological Center, S.A.
Sponsor	ROS CHIMNEYS, S.L.U.
Fecha de ensayo	15 November 2024
Norma de ensayo	EN 1366-13:2019 Fire resistance tests for service installations. Part 13: Chimneys.*

DETAILS AND RESULTS OF THE TEST

File number	24/32304672
Parameter	**Details**
Sample	24333-1
Temperature-time curve	T = 345 $\log_{10}$ (8t+1) + 20
Exposure direction	Exposed to fire from the outside.
Orientation	Horizontal.
Supporting construction	The chimney passes through a wall of aerated concrete blocks, with a total thickness of 150 mm and 500 kg/m^3 (see test report for further details).
Thermal treatment	T600 (700 ºC)

File number	24/32304673
Parameter	**Details**
Sample	24338-1
Temperature-time curve	T = 345 $\log_{10}$ (8t+1) + 20
Exposure direction	Exposed to fire from the outside.
Orientation	Vertical.
Supporting construction	Chimney passes through an aerated concrete slab, with a total thickness of 150 mm and 500 kg/m^3 (see test report for further details).
Thermal treatment	T600 (700 ºC)

RESULTS

Sample	24333-1	
Criterion	**Minute of failure**	**Comment**
Integrity	--	Is maintained throughout the test, 120 minutes.
Thermal insulation	--	Se mantiene durante todo el ensayo, 120 minutos.
Thermal treatment	366	It is maintained throughout the heat treatment test, (T600).

Sample	24338-1	
Criterion	**Minute of failure**	**Comment**
Integrity	--	Is maintained throughout the test, 120 minutes.
Thermal insulation	--	Se mantiene durante todo el ensayo, 120 minutos.
Thermal treatment	371	It is maintained throughout the heat treatment test, (T600).

CLASSIFICATION

This classification has been carried out in accordance with Clause 7.5 of the Standard EN 13501-2:2023.

Sample 24333-1

Insulated horizontal chimney with reference Doble Pared (DP). Thermal treatmente T600.	**EI 120 (o→i) h_o**

Sample 24338-1

Insulated vertical chimney with reference Doble Pared (DP). Thermal treatmente T600.	**EI 120 (o→i) v_e**

Note$_1$: (o→i): Fire from the outside.

Note$_2$: The classification has been carried out by correcting the error presented in the EN 13501-2:2023 standard in section 7.5.10.5.

The decision rule to declare conformance to the specification or standard, is by following a simple binary decision rule. In this case, the upper limit of the probability value of false acceptance or false rejection, according to ILAC G8, 50 %.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

FIELD OF APPLICATION
(acc/section 13 of the Standard EN 1366-13:2019)

The obtained results are directly applicable to the constructions equal to the model tested when one or more of the following modifications are made:

Characteristics	Tested sample reference*	Allowed modification
General	Circular section chimneys	- Valid for circular chimneys.
Chimney orientation	- Doble Pared (DP) (24333-1): horizontal. - Doble Pared (DP) (24338-1): vertical.	- Applicable to vertical and horizontal chimneys.
Distance (horizontal chimney)	- Doble Pared (DP) (24333-1). - Distance between the bottom of the roof and the chimney: 695 mm. - Maximum distance between hangers: 1037 mm.	- The distance between the tested constructions can in practice be increased and decreased against the tested distance - The clear distance used in practice between the underside of the ceiling and a horizontal part of a test specimen going through a wall can be smaller than the distance tested, but not larger for suspended systems. - The tension in the supports may not be higher than that tested. The distance between the supports may not be increased.
Sizes	Inner section: Ø200mm.	- Is applicable to all dimensions.
Thickness of used components	Steel thickness: 0.4 mm inner / 0.4 mm outer. Mineral wool: 135 kg/m^3.	- The thickness of used components may be increased but not decreased from that tested
Length of horizontal chimneys	Doble Pared (DP): 7198 mm.	- The length of a horizontal chimney can be increased to infinity.
Height of vertical Chimneys.	Supported chimneys on each floor Tested without additional loads.	- Applicable to any number of storeys provided the distance between supporting constructions does not exceed 5 m.

Pressure	Tested without underpressure inside the chimney.	- Applicable to a pressure of up to -40Pa y +5.000 Pa.
Construction[1]	- Inner wall made of AISI 316 stainless steel (inner wall). - Outer wall made of AISI 304 (outer wall).	- The results of the test results with an inner liner of stainless steel are transferable to all other materials. - Other exchange of the materials tested is not allowed without retesting. - Compensators may not be closer to a wall or floor in practice as tested
Supporting construction	Vertical: 150 mm aerated concrete slabs with a total density of 500 kg/m^3 de densidad. Horizontal: 150 mm aerated concrete blocks with a total density of 500 kg/m^3 de densidad.	- Is applicable to a supporting construction of the same type with a fire resistance equal to or greater than that of the standard supporting construction used for the test (thicker, higher density, more layers of board, as appropriate)
Fire stopping	Clear distance between the outer wall of the chimney and the supporting construction: 21 mm.	- Smaller clearance distances are allowed. - Is only valid for this fire stopper rsp. gap filling as tested.

[1] A test on at least a two layer system tested with a stainless steel tube in accordance to EN 1856-1 and EN 1856-2 inside is also suitable for a two or more layer system with increased distance to inner edges and also a two or more layer system with additional insulation.

The modifications permitted in the direct field of application are based on data included in the respective test reports.

This document cannot be considered either a type approval or a certification of the product.

Digitally signed by
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Fire Resistance Testing Technician
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This document does not represent a classification report or a test report.