



MEMBER OF



REPORT No. 079429-001-1-a (M2)

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ADDRESS	ZAE LES DIX MUIDS - RUE LAVOISIER FR-59770 MARLY FRANCE
PURPOSE	FIRE-RESISTANCE TEST ACCORDING TO EN 1364-5:2017
TESTED SAMPLE	9 VENTILATION GRILLES - REF.: "V60 600x600mm P+P", "VC60 Ø 400mm P+P", "V50 600x600mm P+P", "VC60 Ø 400mm P+P", "VC60 Ø 400mm", "V60 600x600mm", "V50 600x600mm", "V40 600x600mm", "V40 600x600mm (P+P)"
RECEPTION DATE	12.03.2019
TEST DATE	Test 1: 29.05.2019 / Test 2: 17.06.2019 / Test 3: 09.07.2019
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Fire Safety Lab

- * The results of the current report concern only and exclusively the sample tested.
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- * In case of a lawsuit, the original Spanish version shall be taken as reference.
- * This report reverses and replaces report 079429-001-1-a (M1), by correction of the footnote number from page 2 onwards.

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1.- REGULATORY REFERENCES

- [A] *EN 1363-1:2012 “Fire resistance tests. Part 1: General Requirements”.*
- [B] *EN 1364-5:2017 “Fire resistance tests for non-loadbearing elements. – Part 5: Air transfer grilles”.*

2.- TEST CONDUCTED

Test type	[A] and [B].									
Test date	3 tests were conducted:									
	<table> <tr> <td>Test 1</td> <td>079429-001</td> <td>29.05.2019</td> </tr> <tr> <td>Test 2</td> <td>079429-002</td> <td>17.06.2019</td> </tr> <tr> <td>Test 3</td> <td>082495-001</td> <td>09.07.2019</td> </tr> </table>	Test 1	079429-001	29.05.2019	Test 2	079429-002	17.06.2019	Test 3	082495-001	09.07.2019
Test 1	079429-001	29.05.2019								
Test 2	079429-002	17.06.2019								
Test 3	082495-001	09.07.2019								
Test location	Azpeitia Facilities									

3.- TEST SAMPLES

Material received	18 intumescent grilles and 20 metal grilles were received in the laboratory.
Selection of test samples	From the samples delivered, the laboratory selected the test samples.
Sampling	The laboratory did not participate in the sampling of the test materials, thus there is no evidence that the samples derive from sampling.
Number of samples	079429-001: 9 samples, 7 of which are described in this document. The other 2 are left undescribed at the customer's request. 079429-002: 1 sample. 082495-001: 1 sample.
Number of sides tested	All the samples tested were symmetrical on both sides.
Material of the grilles	<u>Sample 1</u> : “V60 600x600mm P+P”: Intumescent grille of 597x597x60 mm + aluminium grille on both sides of the

sample (P+P). Sealed with ACRYLODICE F intumescent sealant.

Sample 2: “VC60 Ø 400mm P+P”: Intumescent grille of 397 mm diameter and 60 mm thickness + aluminium grille on both sides of the sample (P+P). Sealed with ACRYLODICE F intumescent sealant.

Sample 3: “V50 600x600mm P+P”: Intumescent grille of 597x597x50 mm + aluminium grille on both sides of the sample (P+P). Sealed with ACRYLODICE F intumescent sealant.

Sample 4: “VC60 Ø 400mm P+P”: Intumescent grille of 397 mm diameter and 60 mm thickness + aluminium grille on both sides of the sample (P+P). Sealed with ACRYLODICE F intumescent sealant.

Sample 5: “VC60 Ø 400 mm”: Intumescent grille of 397 mm diameter and 60 mm thickness. Sealed with ACRYLODICE F intumescent sealant.

Sample 6: “V60 600x600mm”: Intumescent grille of 597x597x60 mm. Sealed with ACRYLODICE F intumescent sealant.

Sample 7: “V50 600x600mm”: Intumescent grille of 597x597x50mm. Sealed with ACRYLODICE F intumescent sealant.

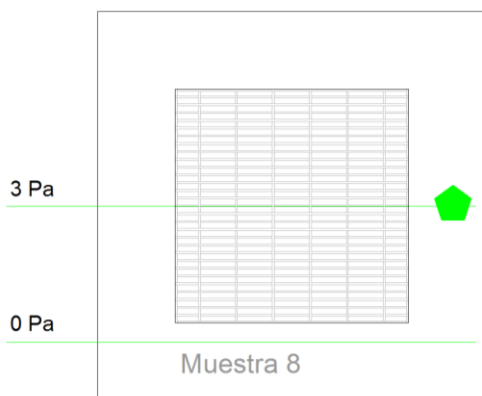
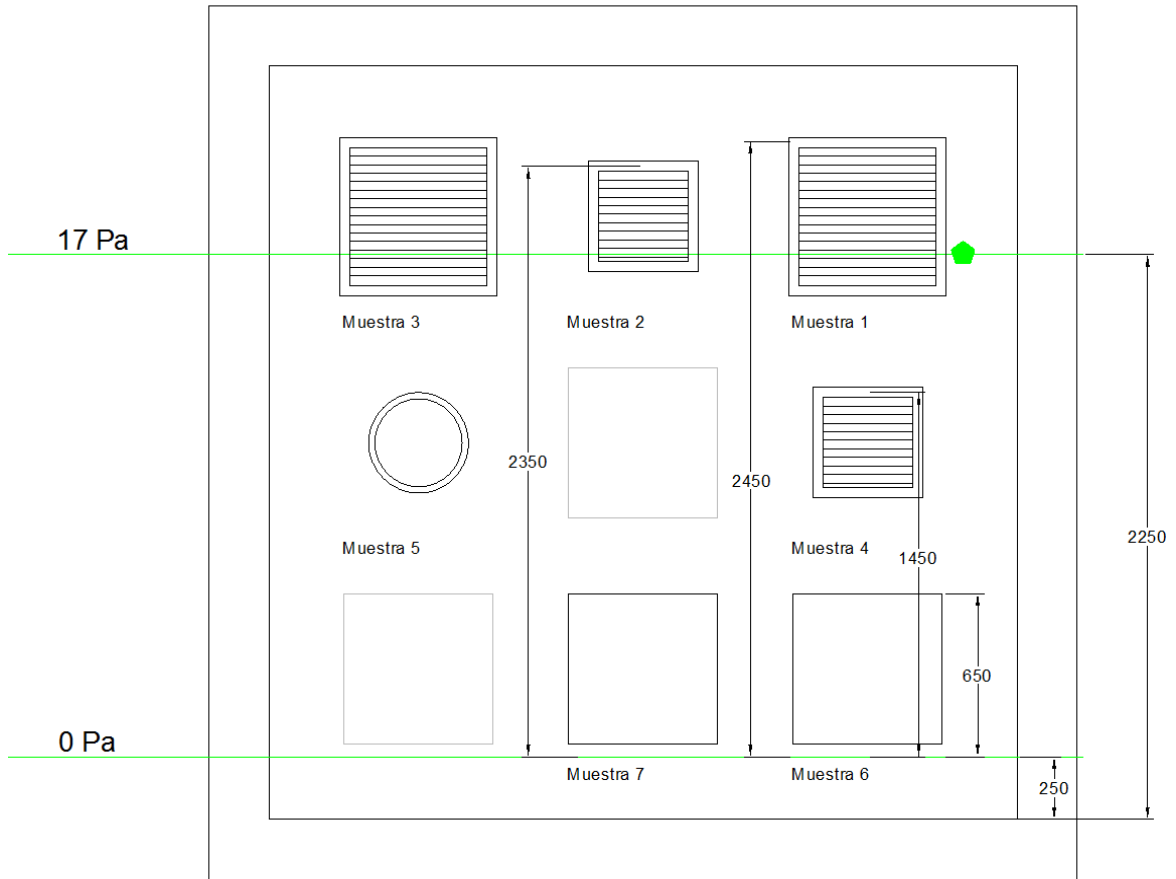
Sample 8: “V40 600x600mm sans grille de protection”: Intumescent grille of 597x597x40 mm. Sealed with ACRYLODICE F intumescent sealant.

Sample 9: “V40 600x600mm (P+P)”: Intumescent grille of 597x597x40mm + aluminium grille on both sides of the sample (P+P). Sealed with ACRYLODICE F intumescent sealant.

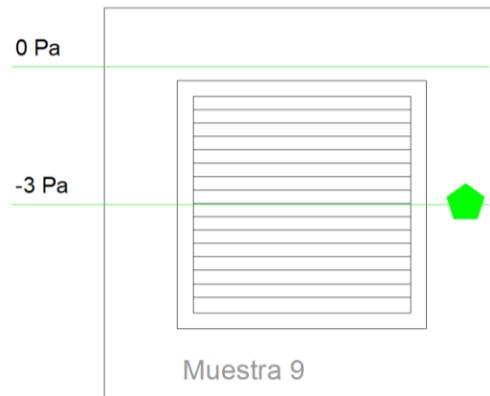
Location of the samples on the test frame:

Samples 1, 2, 3, 4, 5, 6, 7 and 8 were installed in the positive pressure zone.

Sample 9 was installed in the negative pressure zone.



◆ Pressure sensor



◆ Pressure sensor

Sample definition

Verification of the samples was carried out superficially during their assembly along with the technical documentation issued by the applicant, which is available in Annex 4 to this report.

Fastening method

A 3 mm gap was left between the grilles and the construction opening.

All the samples were fastened using ACRYLODICE F sealant, one 4.0 x 40 mm bolt and plastic plug on each side, both on the top and bottom.

The grilles were centred with respect to the thickness of the supporting construction.



The trim grilles were installed in the outer surface of the supporting construction and fastened to each corner using 4.0 x 40 mm bolts and plastic plug.

Sample 1: VENTILODICE “V60 600x600mm P+P” (with aluminium wall grille on each side):

Structural Opening:

- Intumescent grille: 597x597x60 mm.
- External grille: 633x633 mm.
- Construction opening: 600x600 mm.

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 2950 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- Decorative grille. Aluminium return grilles with 45° fins.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Internal intumescent grille.



Exposed side after test.

Sample 2: VENTILODICE “VC60 Ø 400mm P+P” (with aluminium wall grille on each side):

Structural Opening:

- Intumescent grille: Ø 397 mm, 60 mm thickness.
- External grille: 433x433 mm.
- Construction opening: Ø 400 mm

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 2850 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- Decorative grille. Aluminium return grilles with 45° fins.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Internal grille.



Exposed side after test.

Sample 3: VENTILODICE “V60 600x600mm P+P” (with aluminium wall grille on each side):

Structural Opening:

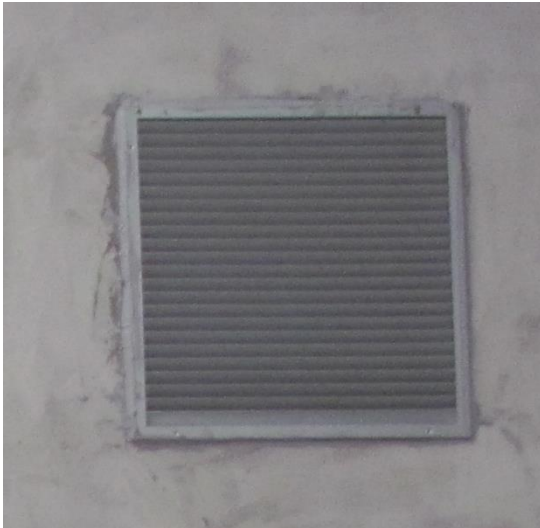
- Intumescent grille: 597x597x50 mm.
- External grille: 633x633 mm.
- Construction opening: 600x600 mm.

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 2950 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- Decorative grille. Aluminium return grilles with 45° fins.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Internal grille.



Exposed side after test.

Sample 4: VENTILODICE “VC60 Ø 400mm P+P” (with aluminium wall grille on each side):

Structural Opening:

- Intumescent grille: Ø 397 mm, 60 mm thickness.
- External grille: 433x433 mm.
- Construction opening: Ø 400 mm

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 1950 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- Decorative grille. Aluminium return grilles with 45° fins.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Internal grille.



Exposed side after test.

Sample 5: VENTILODICE “VC60 Ø 400mm”:**Structural Opening:**

- Intumescent grille: Ø 397 mm, 60 mm thickness.
- Construction opening: Ø 400 mm

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 1950 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Exposed side after test.

Sample 6: VENTILODICE “V60 600x600mm”:

Structural Opening:

- Intumescent grille: 597x597x60 mm.
- Construction opening: 600x600 mm.

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 1150 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Exposed side after test.

Sample 7: VENTILODICE “V50 600x600mm”:

Structural Opening:

- Intumescent grille: 597x597x50 mm.
- Construction opening: 600x600 mm.

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 1150 mm from the floor.

Composition:

- Slats made using thermoplastic covers filled with PALUSOL.
- ACRYLODICE F. sealant.



Exposed side.



Unexposed side.



Exposed side after test.

Sample 8: VENTILODICE “V40 600x600mm”:

Structural Opening:

- Intumescent grille: 597x597x40 mm.
- Construction opening: 600x600 mm.

Height of installation: At positive pressure.

- Lower part at ≥ 500 mm from the floor.
- Upper part at no more than 1150 mm from the floor.

Composition:

- Slats made using thermoplastic covers filled with PALUSOL.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Appearance of the samples at the end of the test.

Sample 9: VENTILODICE “V60 600x600mm (P+P)” (with aluminium wall grille on each side):

Structural Opening:

- Intumescent grille: 597x597x50 mm.
- External grille: 633x633 mm.
- Construction opening: 600x600 mm.

Height of installation: Negative pressure:

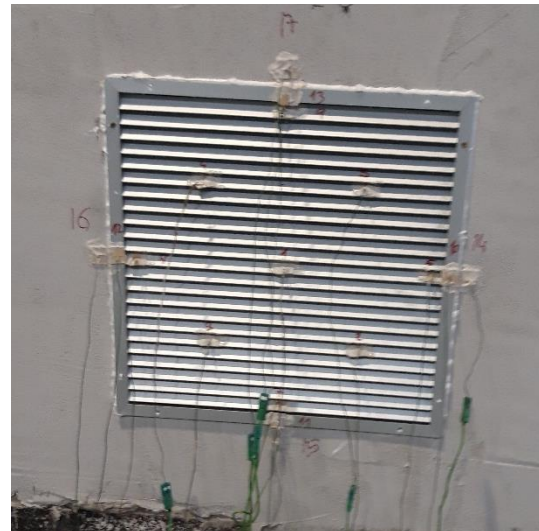
- Upper part at no more than 500 mm from the floor.

Composition:

- Intumescent grille. Slats made using thermoplastic covers filled with PALUSOL.
- Decorative grille. Aluminium return grilles with 45° fins.
- ACRYLODICE F sealant



Exposed side.



Unexposed side.



Appearance of the samples at the end of the test.

The drawings prepared by the laboratory after verifying the samples are included in Annex 1.

4.- SAMPLE ASSEMBLY

Assembly Sample assembly was entirely performed by ODICE staff.

No further additions were made on the sample.

Date of end of assembly:

Test 1	29.05.2019
Test 2	17.06.2019
Test 3	09.07.2019

Supporting construction	Type	Standardised
	Sub-type	Rigid high-density
	Description	Concrete block (190 x 190 x 390) mm packed with cement mortar and rendered with mortar on both sides.
	Thickness	210 mm
	Density	1200 kg/m ³ approx.
	Completion date of the supporting construction:	
	Test 1	21.05.2019
	Test 2	11.06.2019
	Test 3	01.07.2019

5.- TEST CONDITIONS

Test procedure According to [A] and [B].

Environmental conditions in the laboratory

Test 1	Average temperature (°C)	24
	Humidity (%)	68
	Conditioning period	14
Test 2	Average temperature (°C)	20

	Humidity (%)	57
	Conditioning period	33
Test 3	Average temperature (°C)	18
	Humidity (%)	63
	Conditioning period	55
Sample conditioning	According to [A] Annex F.	
Furnace temperature	According to the thermal programme in 5.1.1 of [A].	
	$T=345 \log_{10}(8t+1)+20$.	
Pressure inside the furnace	During the test, pressure of 0 Pa has been maintained on 500 mm of the element's theoretic floor.	
	As shown in Figure 3 of Annex 1, pressure should be measured in the sensor as follows:	
	$P_{sensor} = P_{test} + (8.5 \times d_{sensor})$	
	$P_{sensor} = 0 Pa + (8.5 Pa/m \times 2.0 m)$	
	$P_{sensor} \approx 17 Pa$	
	where:	
	P_{sensor} :	Pressure in the furnace sensor.
	$P_{neutral}$:	Neutral pressure in the theoretical floor of the element.
	d_{sensor} :	Distance between the horizontal parallels, secant to the sensor and $P_{neutral}$.
Environmental conditions prior to the test		
Test 1	Average temperature (°C)	18
	Humidity (%)	63
Test 2	Average temperature (°C)	21
	Humidity (%)	72
Test 3	Average temperature (°C)	23
	Humidity (%)	73

6.- RESULTS

Test 1

Duration of the test	150 minutes
Reason for stopping the test	Customer's request.
Observations during the test	

Minute	Observations
0	Beginning of test (12:30)
5	All grilles are closed.
7	Slight smoke emission in all the samples.
15	Smoke emissions are reduced.
78	Sample 3 is covered.
108	Samples 2 and 5 are covered.
114	Sample 1 is covered.
150	The test is stopped at the customer's request

Test 2

Duration of the test	63 minutes
Reason for stopping the test	Customer's request.
Observations during the test	

Minute	Observations
0	Beginning of test (12:22)
1	Smoke emission.
4	The grille begins to close.
6	The grille is closed.
15	The test proceeds.
30	The test proceeds.
40	The test proceeds.

50	The test proceeds.
60	The test proceeds.
63	Tr 6 increase exceeds 180 °C. The test is stopped as the customer's requested.

Test 3

Duration of the test 132 minutes

Reason for stopping the test Customer's request.

Observations during the test

Minute	Observations
0	Beginning of test (11:50)
1	The trim grille begins to contort.
2	The intumescent grille begins to seal.
16	The grille remains fully closed.
18	The smoke emission stops, the supporting construction cracks on the lintel.
30	The test proceeds without incident.
60	The test proceeds without incident.
75	The test proceeds without incident.
90	The test proceeds without incident.
105	The test proceeds without incident.
120	The test proceeds without incident.
132	Tr 4 increase exceeds 180 °C. Insulation failure. The test is stopped at the customer's request

Test results.

	“M1”	“M2”	“M3”	“M4”	“M5”	“M6”	“M7”	“M8”	“M9”
Integrity (E)	114	108	78	150	108	150	150	64	132
	min	min	min	min	min	min	min	min	min
Performance criterion									
Cotton pad	114 min ⁽³⁾	108 min ⁽³⁾	78 min ⁽³⁾	150 min ⁽³⁾	108 min ⁽³⁾	150 min ⁽³⁾	150 min ⁽³⁾	64 min ⁽³⁾	132 min ⁽³⁾
Gauge Ø 6 mm	114 min ⁽³⁾	108 min ⁽³⁾	78 min ⁽³⁾	150 min ⁽³⁾	108 min ⁽³⁾	150 min ⁽³⁾	150 min ⁽³⁾	64 min ⁽³⁾	132 min ⁽³⁾
Gauge Ø 25 mm	114 min ⁽³⁾	108 min ⁽³⁾	78 min ⁽³⁾	150 min ⁽³⁾	108 min ⁽³⁾	150 min ⁽³⁾	150 min ⁽³⁾	64 min ⁽³⁾	132 min ⁽³⁾
Sustained flaming > 10 s	114 min ⁽³⁾	108 min ⁽³⁾	78 min ⁽³⁾	150 min ⁽³⁾	108 min ⁽³⁾	150 min ⁽³⁾	150 min ⁽³⁾	64 min ⁽³⁾	132 min ⁽³⁾
Insulation (I)	99	86	61	150	91	127	108	62	122
	min	min	min	min	min	min	min	min	min
Performance criterion									
Maximum temperature	99 min ⁽²⁾	86 min	61 min	150 min ⁽³⁾	91 min	127 min	108 min	62 min	122 min ⁽²⁾
Average temperature	99 min	86 min ⁽¹⁾	61 min ⁽¹⁾	150 min ⁽³⁾	91 min ⁽¹⁾	127 min ⁽¹⁾	108 min ⁽¹⁾	62 min ⁽¹⁾	122 min

(1): Measurement for this criterion was interrupted due to lack of insulation, maximum temperature.

(2): Measurement for this criterion was interrupted due to lack of insulation, average temperature.

(3): Measurement for this criterion was interrupted at the customer's request.

NOTE: Due to the nature of the fire performance tests and the subsequent difficulty in quantifying the uncertainty of the measurements of fire resistance it is impossible to determine a degree of precision in the results; however, all the devices used in the performance of this test comply with the precision specified in [A].

NOTE: This test report details the construction method, test conditions and the results obtained when a specific construction element as the one described here has been tested following the procedure described in [A]. Any significant deviation regarding the size, construction details, loads, stress, sample limits or its ends, excluding those included in the scope of direct application of the test results specified in the relevant sampling method, shall not be covered by any means by this test report.



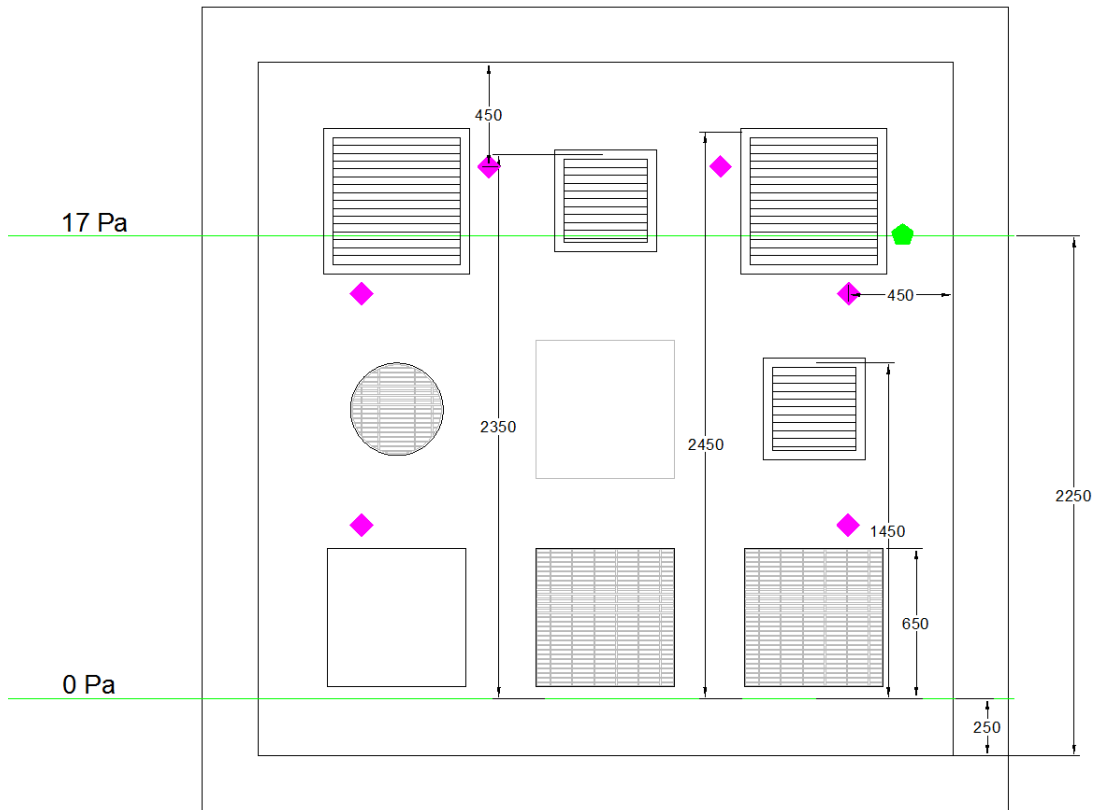
ANNEXES:

- ANNEX 1:** Sketch of tested samples and layout of measurement equipment.
- ANNEX 2:** Tables and graphics.
- ANNEX 3:** Test photographs.
- ANNEX 4:** Technical datasheets provided by the customer.

ANNEX 1: Sketch of tested samples and layout of measurement equipment.

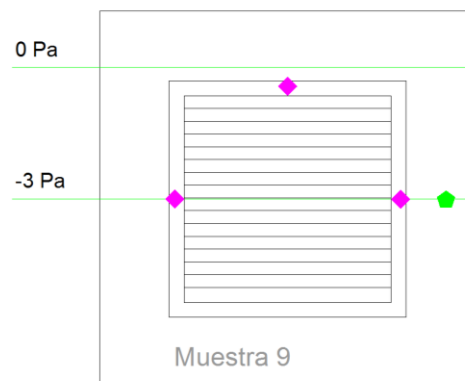
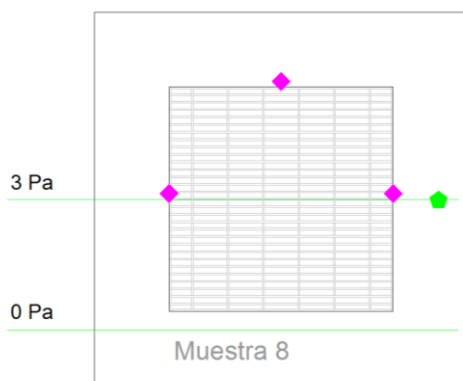
Figure 1	Location of the measurement and pressure equipment in the furnace.
Figure 2	Layout of the measurement equipment in the sample.

Figure 1 - Location of the measurement and pressure equipment in the furnace.



◆ Pressure sensor

◆ Furnace control thermocouple

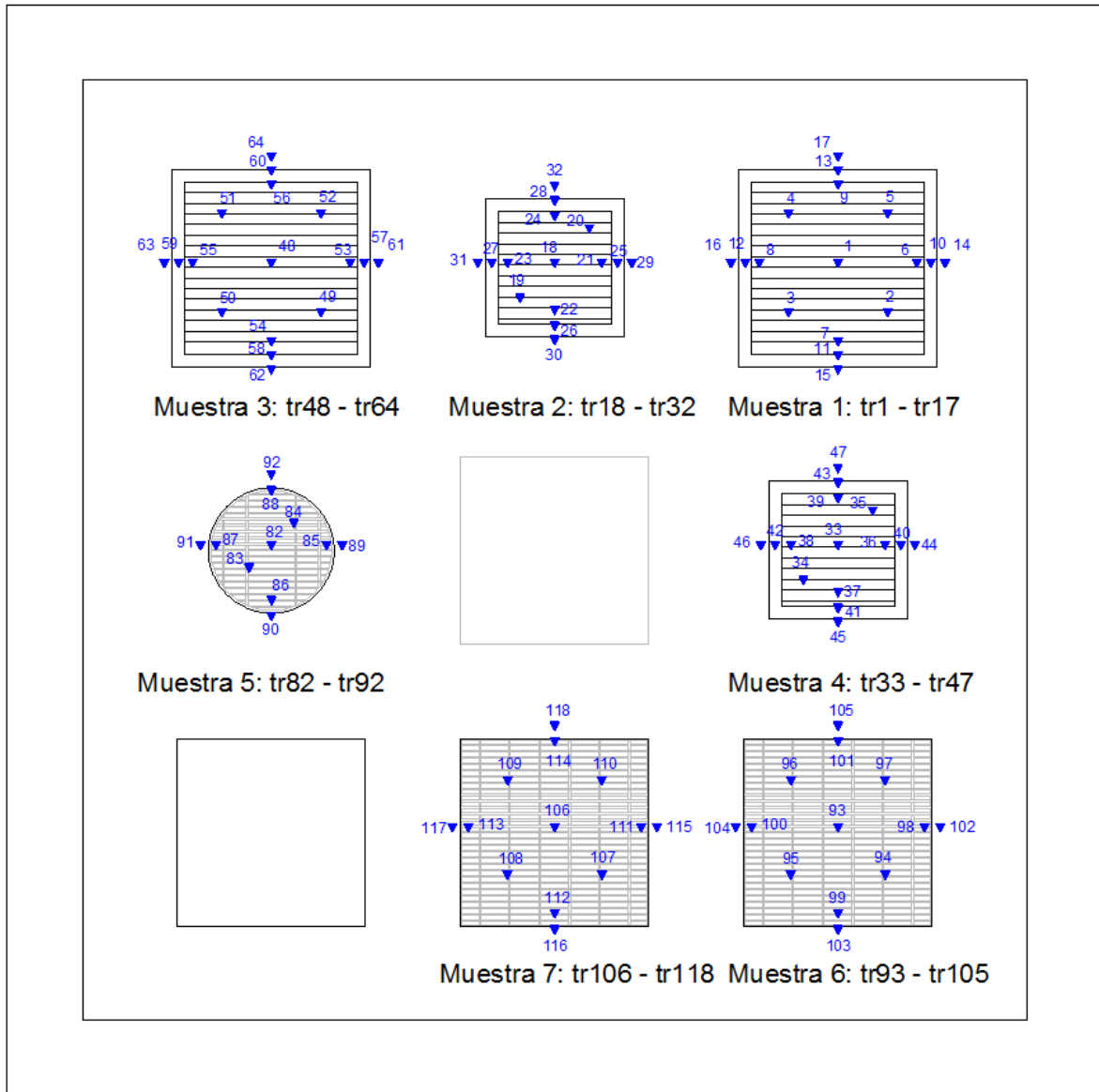


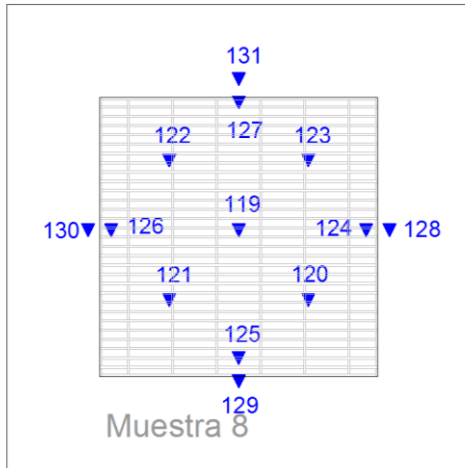
◆ Pressure sensor ◆ Furnace control thermocouple

◆ Pressure sensor ◆ Furnace control thermocouple

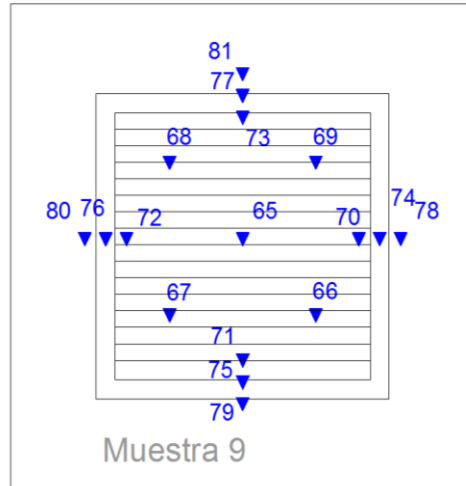
Not to scale,
Size (mm).

Figure 2 - Layout of the measurement equipment in the sample.





Muestra 8: tr119 - tr131



Muestra 9: tr65 - tr81

Blue: Average and maximum temperature thermocouples

Not to scale,
Size (mm).

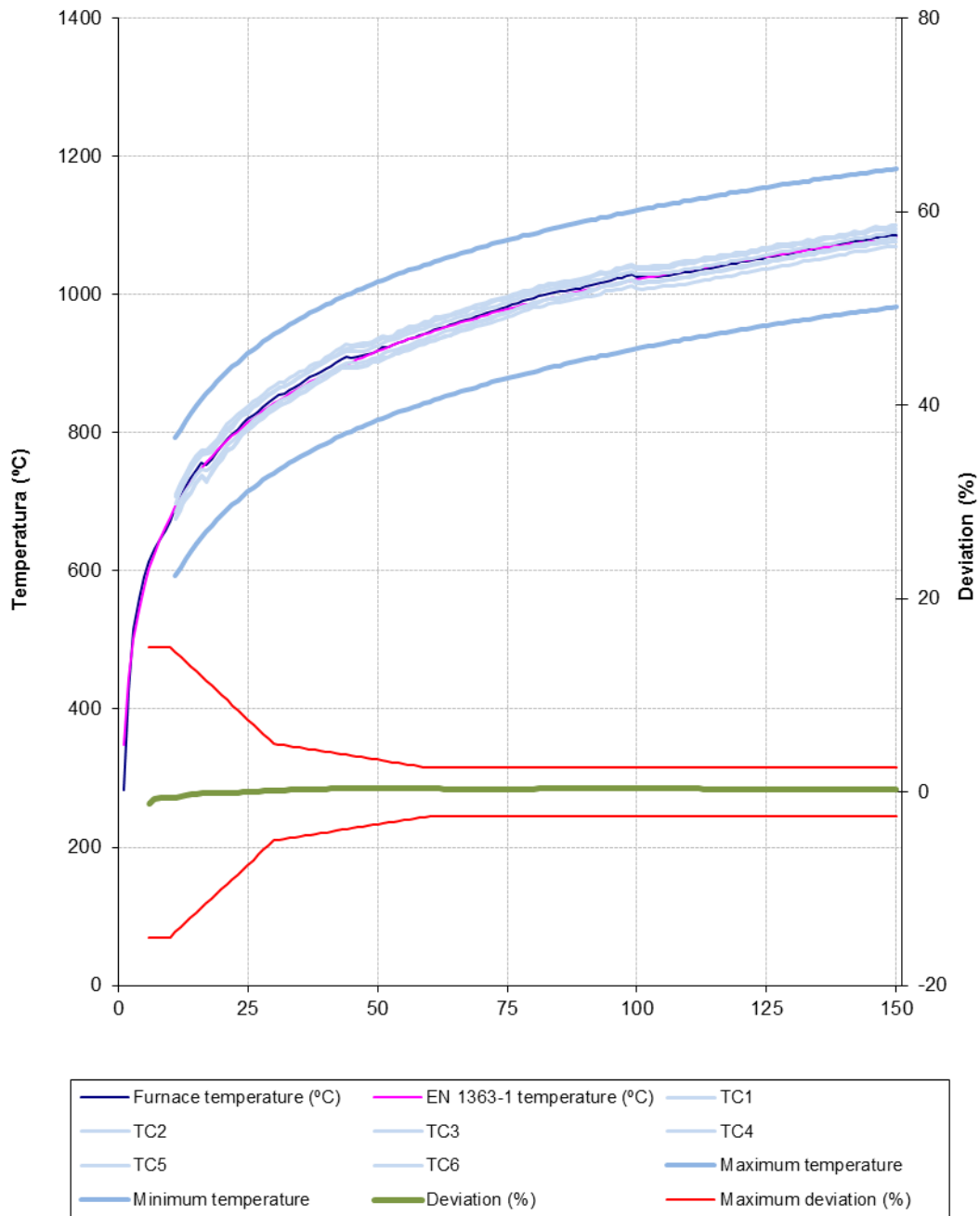
ANNEX 2: Tables and graphics.

Test 1:	
Graph 1	Evolution of furnace temperature.
Graph 2	Evolution of pressure within the furnace.
Graph 3	Evolution of room temperature.
Graph 4	Maximum temperatures sample 1
Graph 5	Average temperature sample 1
Graph 6	Maximum temperatures sample 2
Graph 7	Average temperature sample 2
Graph 8	Maximum temperatures sample 3
Graph 9	Average temperature sample 3
Graph 10	Maximum temperatures sample 4
Graph 11	Average temperature sample 4
Graph 12	Maximum temperatures sample 5
Graph 13	Average temperature sample 5
Graph 14	Maximum temperatures sample 6
Graph 15	Average temperature sample 6
Graph 16	Maximum temperatures sample 7
Graph 17	Average temperature sample 7
Test 2:	
Graph 18	Evolution of furnace temperature.
Graph 19	Evolution of pressure within the furnace.

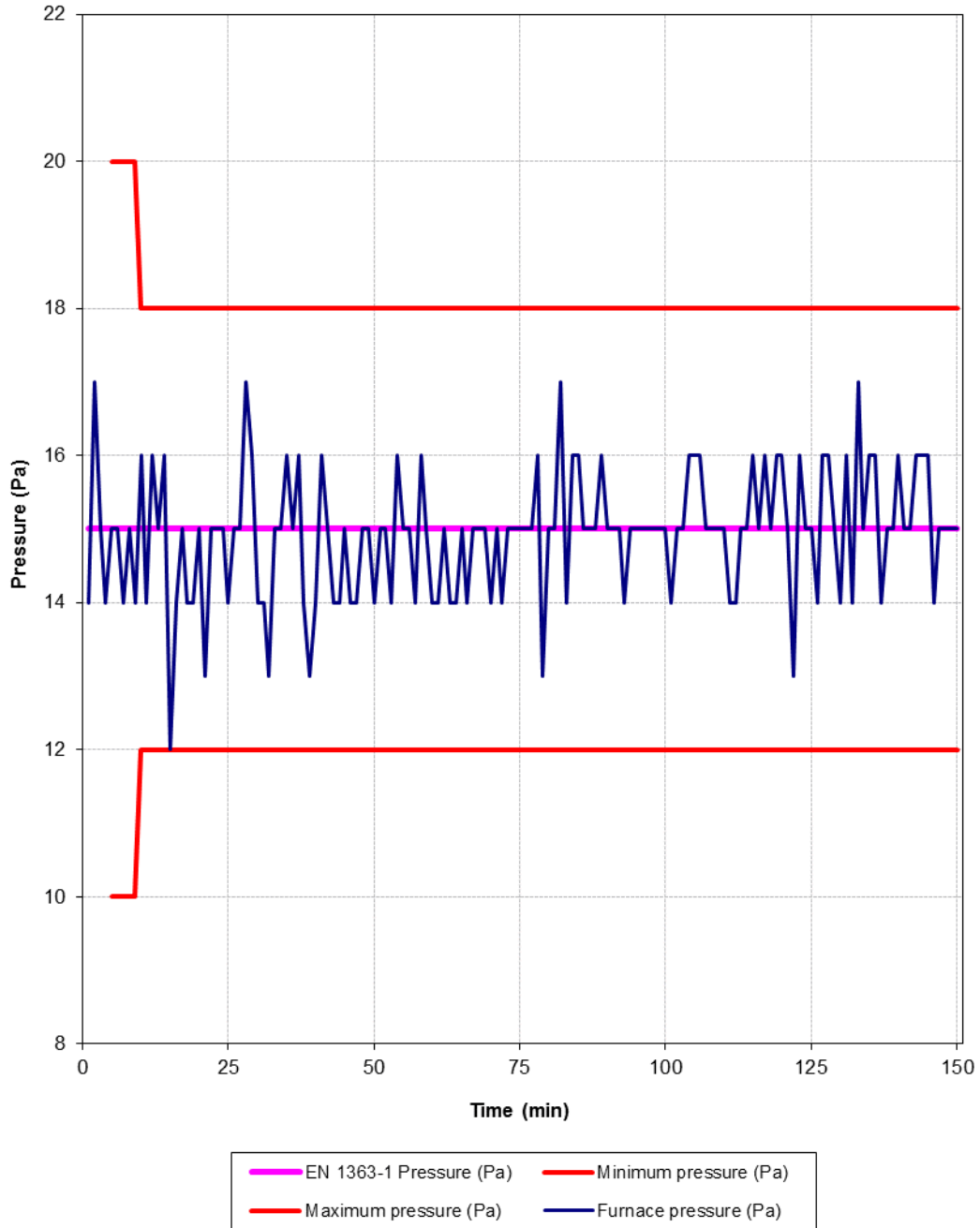
Graph 20	Evolution of room temperature.
Graph 21	Maximum temperatures sample 8
Graph 22	Average temperature sample 8
	Test 3:
Graph 23	Evolution of furnace temperature.
Graph 24	Evolution of pressure within the furnace.
Graph 25	Evolution of room temperature.
Graph 26	Maximum temperatures sample 9
Graph 27	Average temperature sample 9

Test 1:

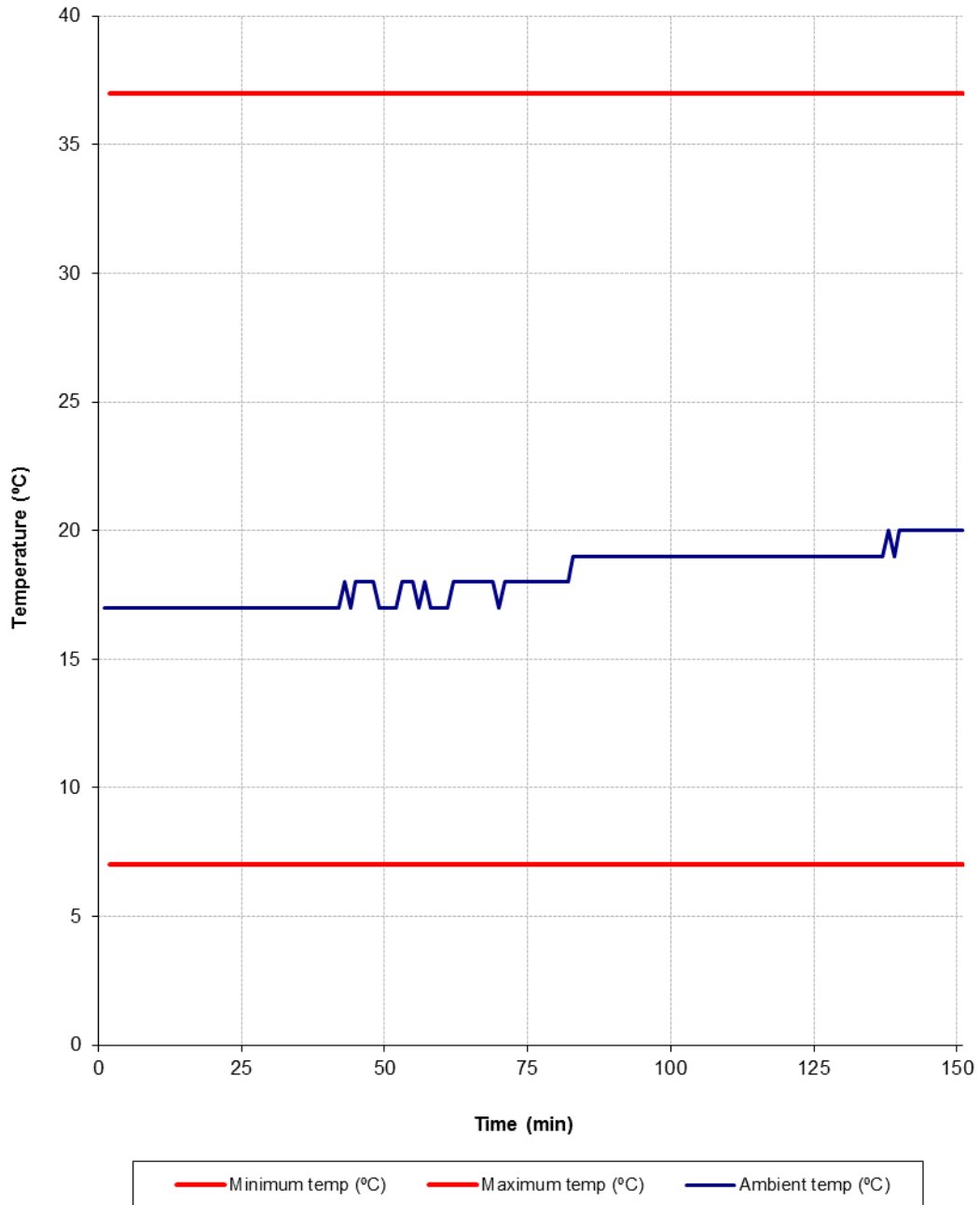
Graph 1: Evolution of furnace temperature.



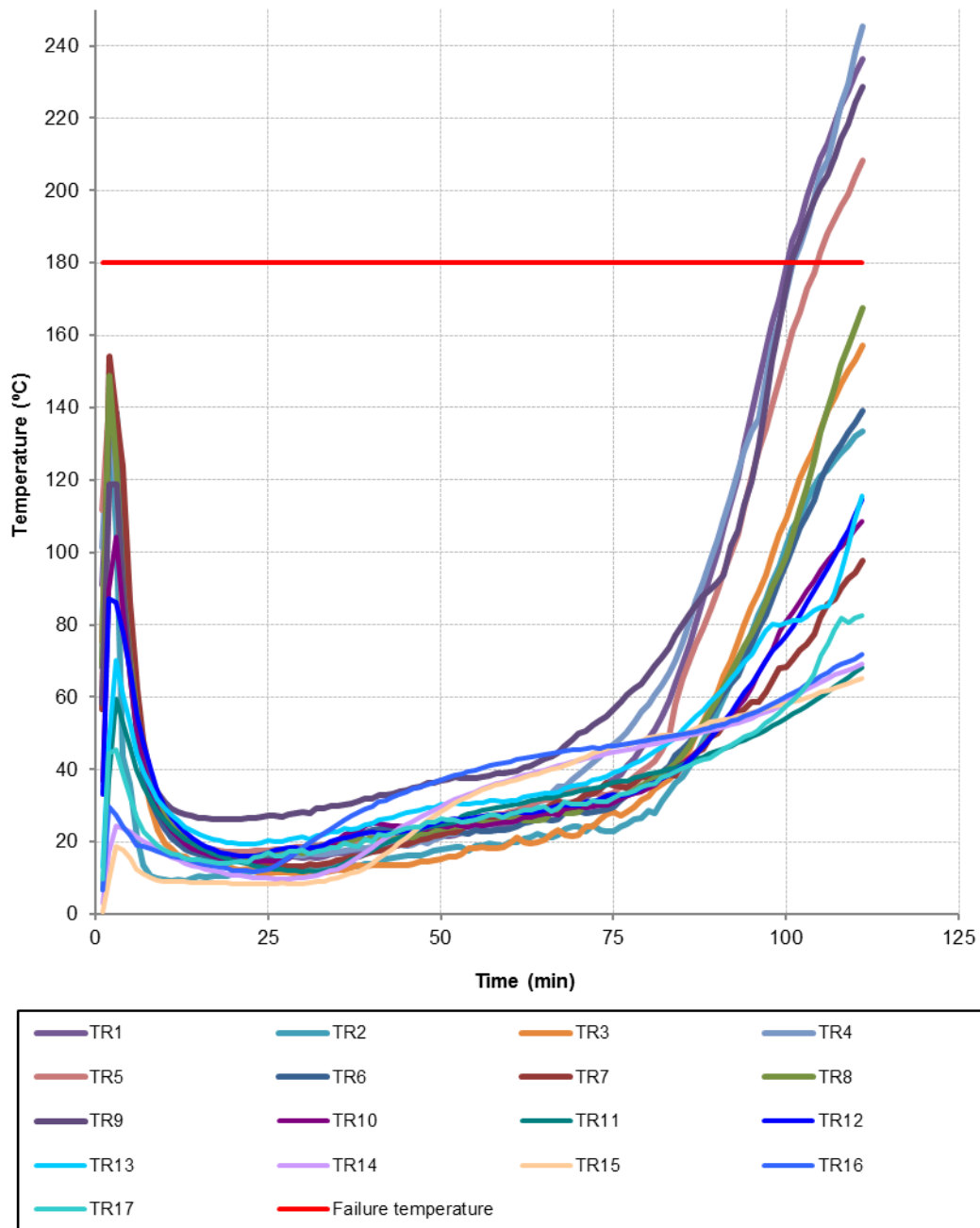
Graph 2: Evolution of pressure within the furnace.



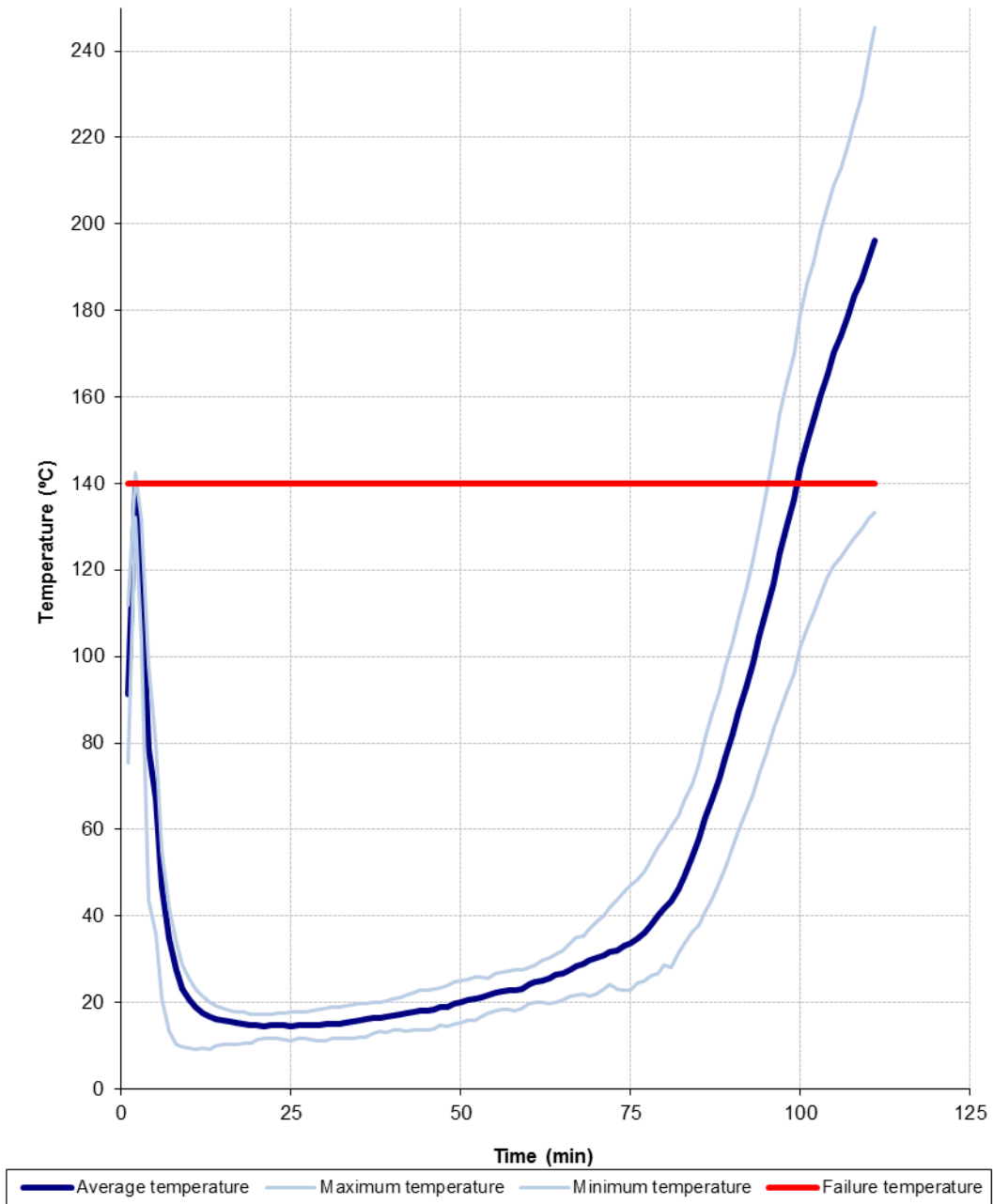
Graph 3: Evolution of room temperature.



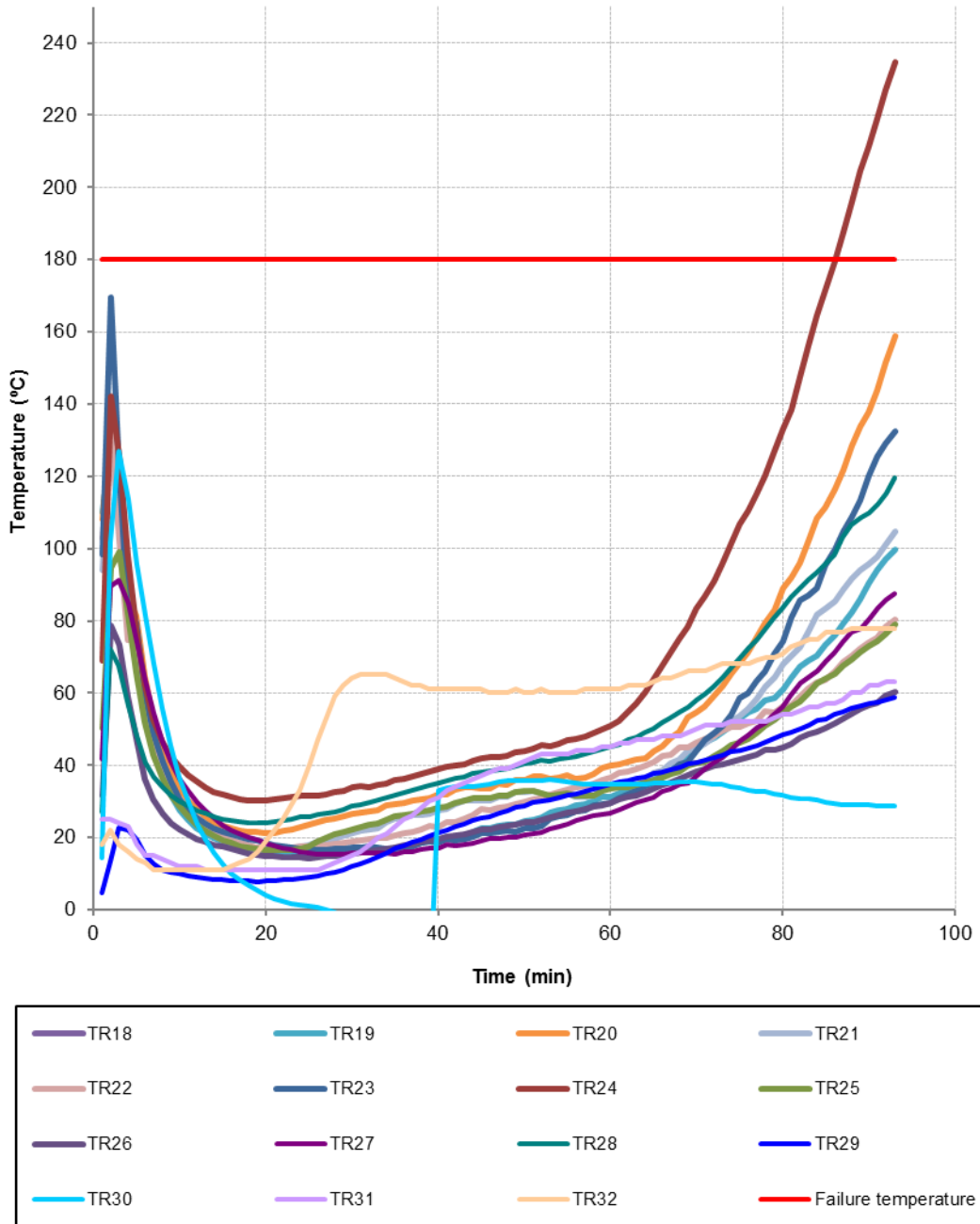
Graph 4: Maximum temperatures sample 1



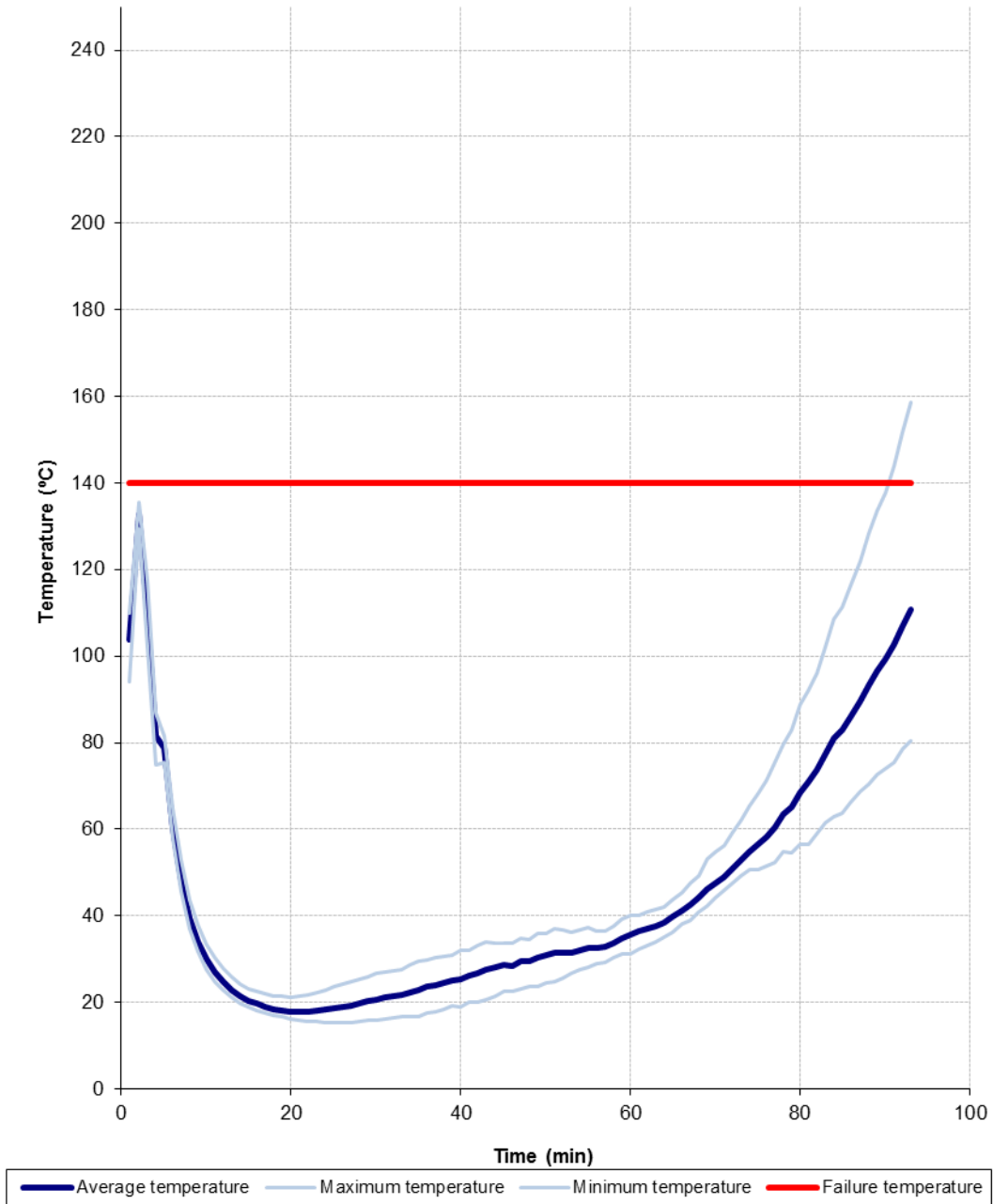
Graph 5: Average temperature sample 1



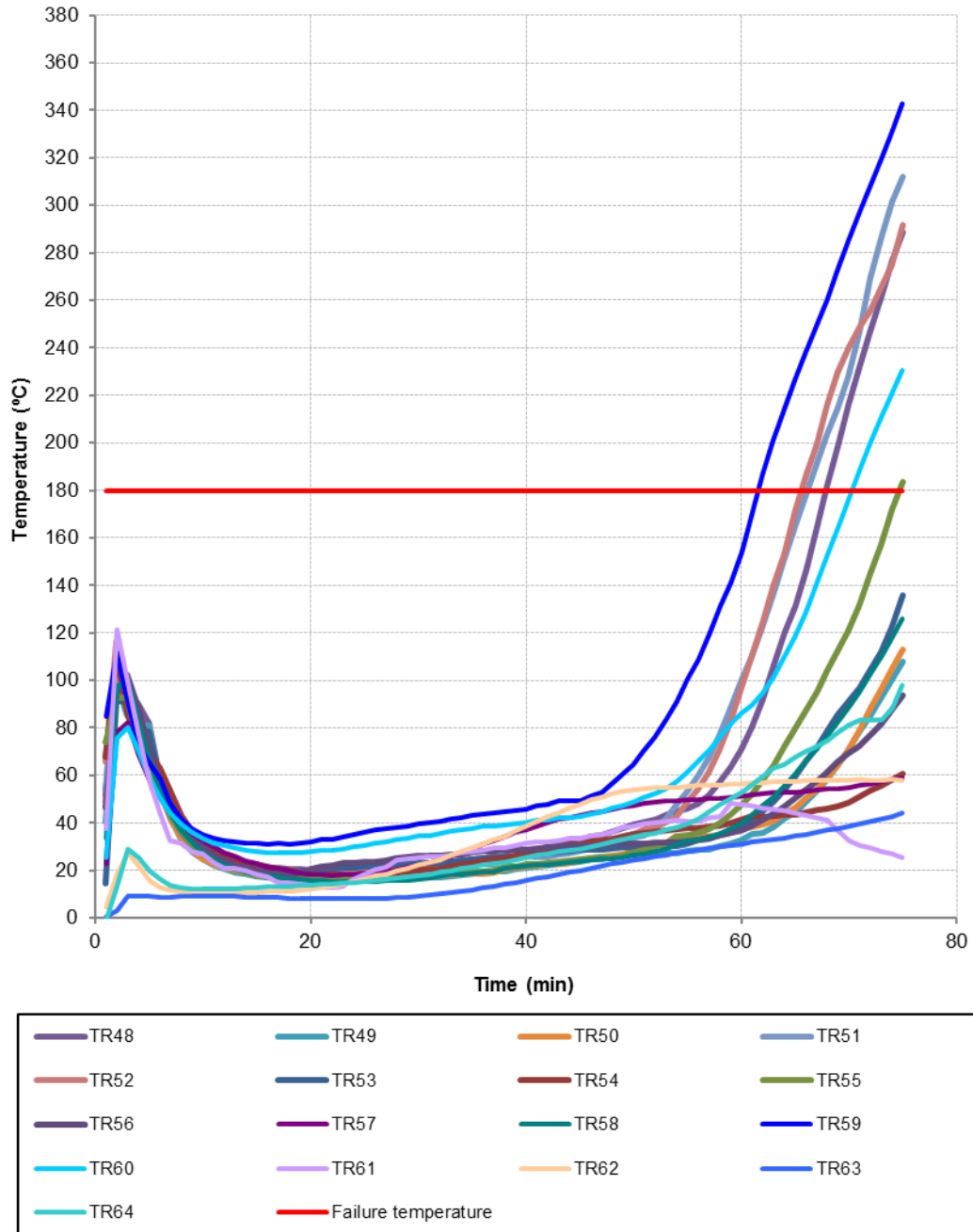
Graph 6: Maximum temperatures sample 2



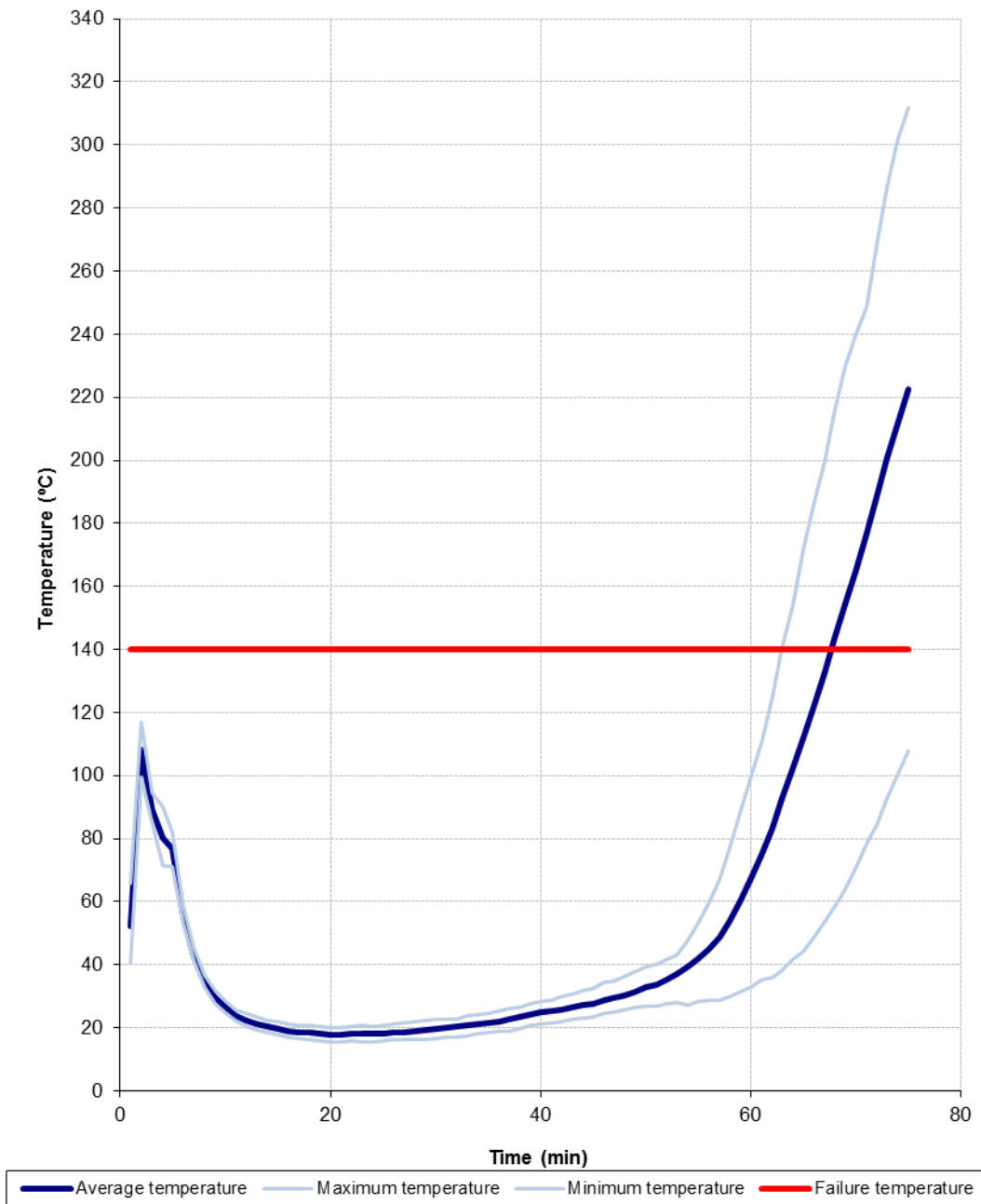
Graph 7: Average temperature sample 2



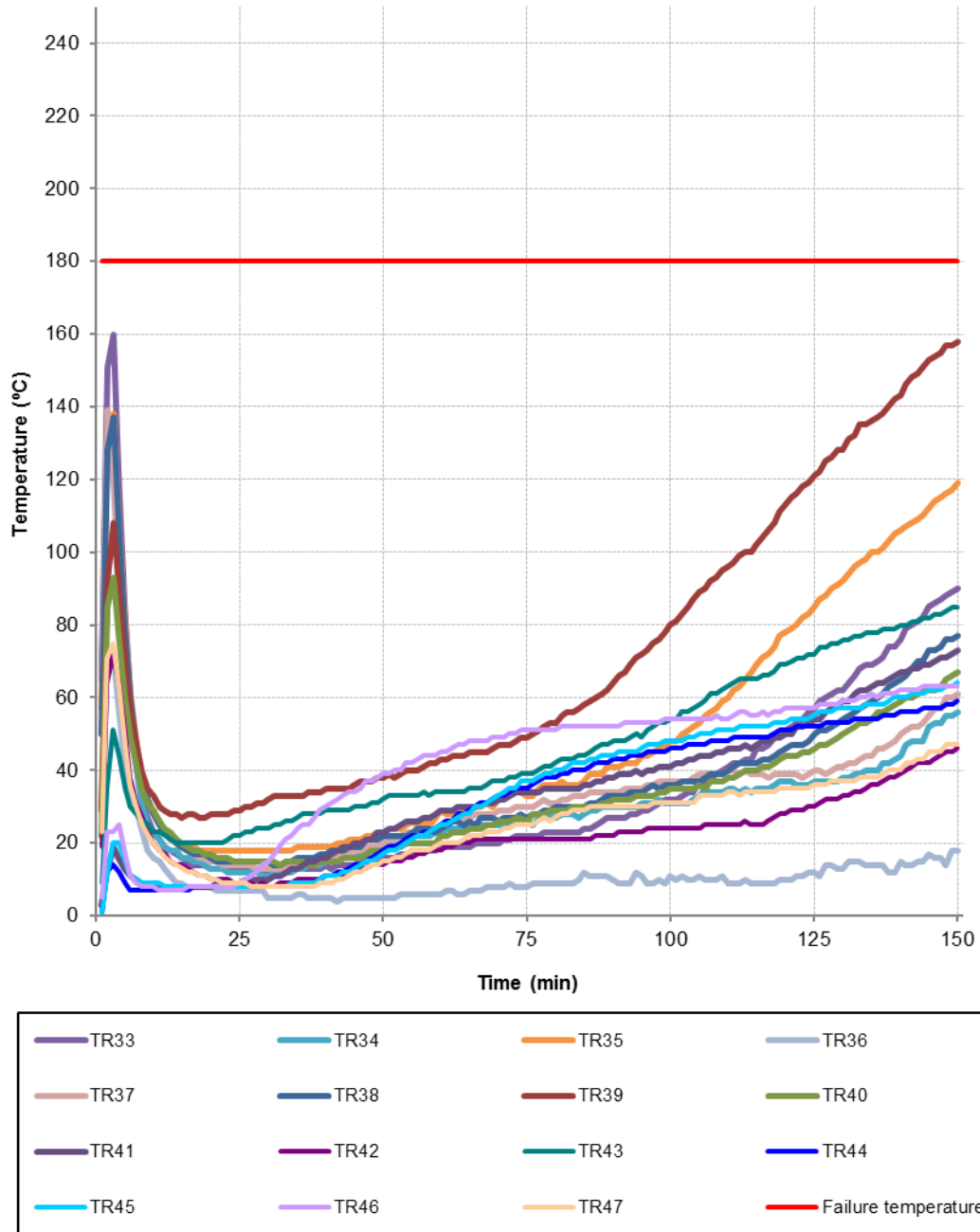
Graph 8: Maximum temperatures sample 3



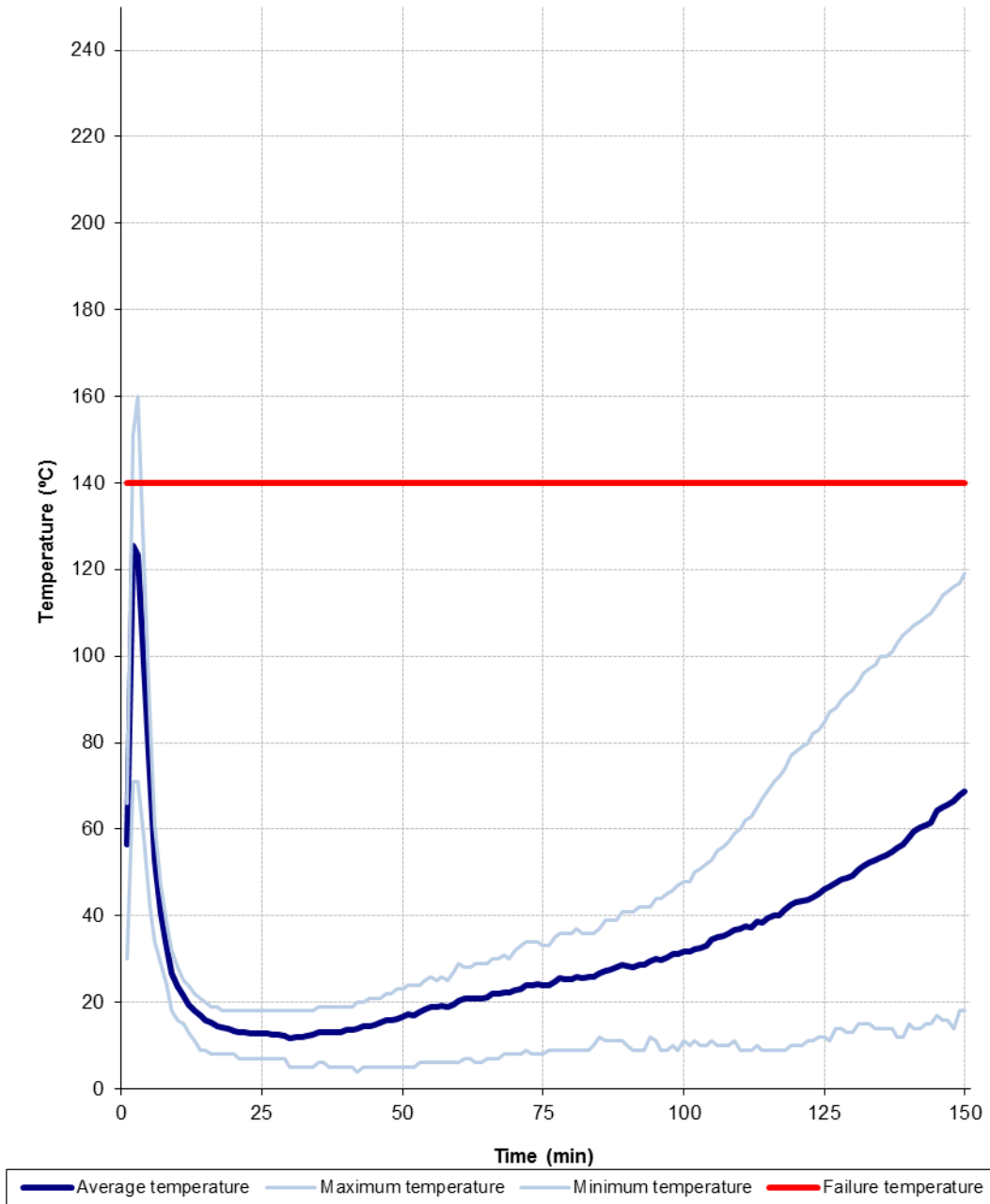
Graph 9: Average temperature sample 3



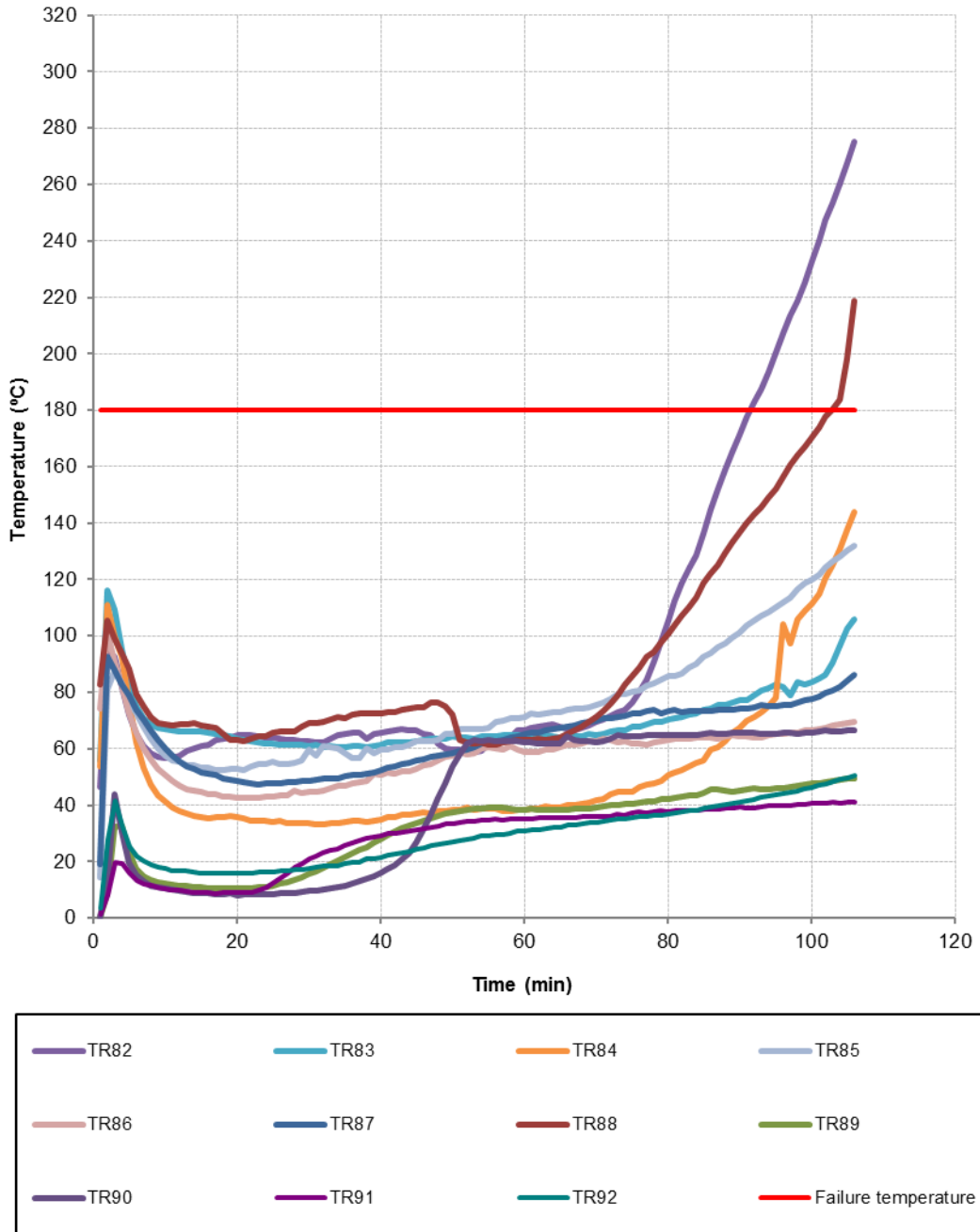
Graph 10: Maximum temperatures sample 4



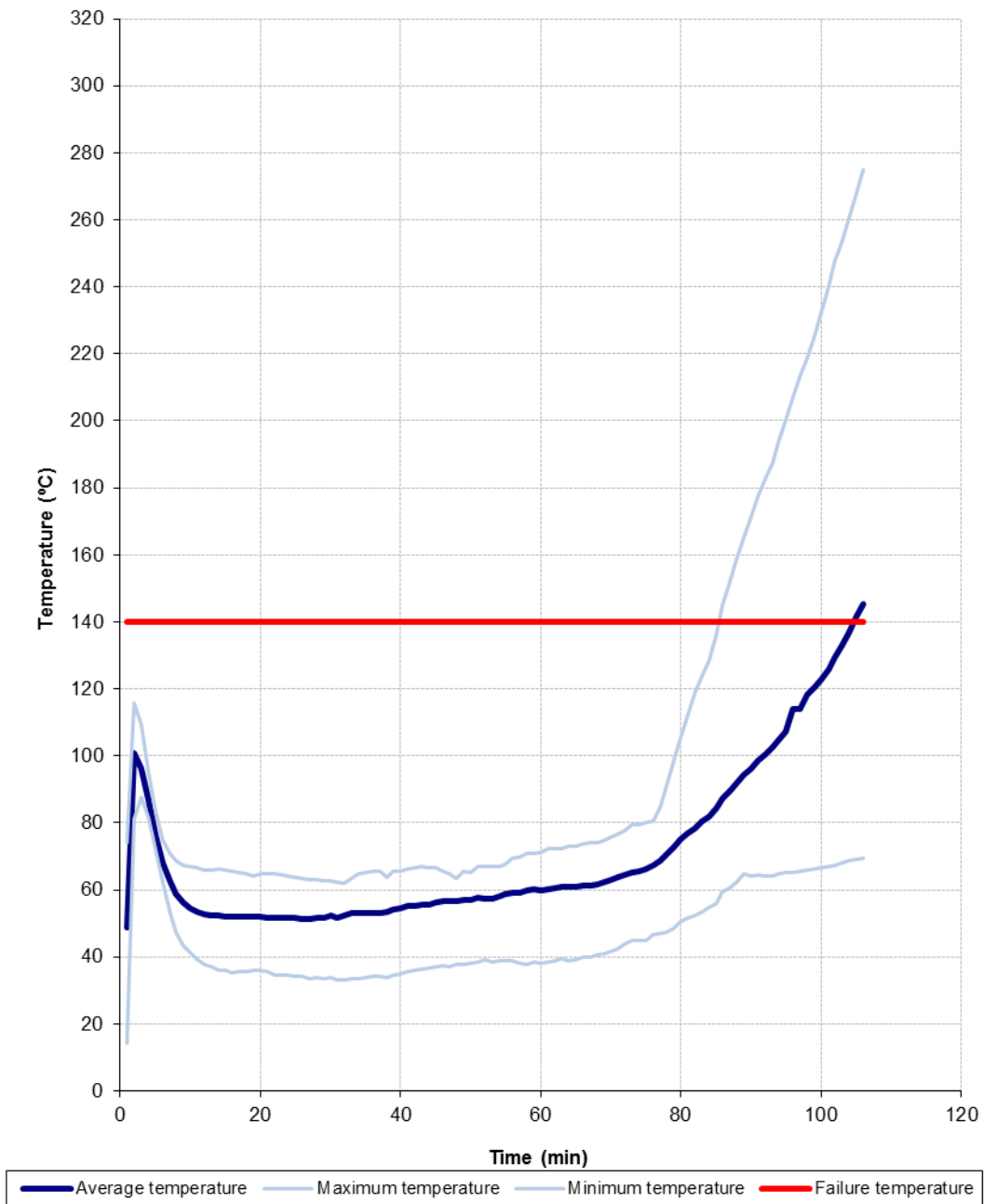
Graph 11: Average temperature sample 4



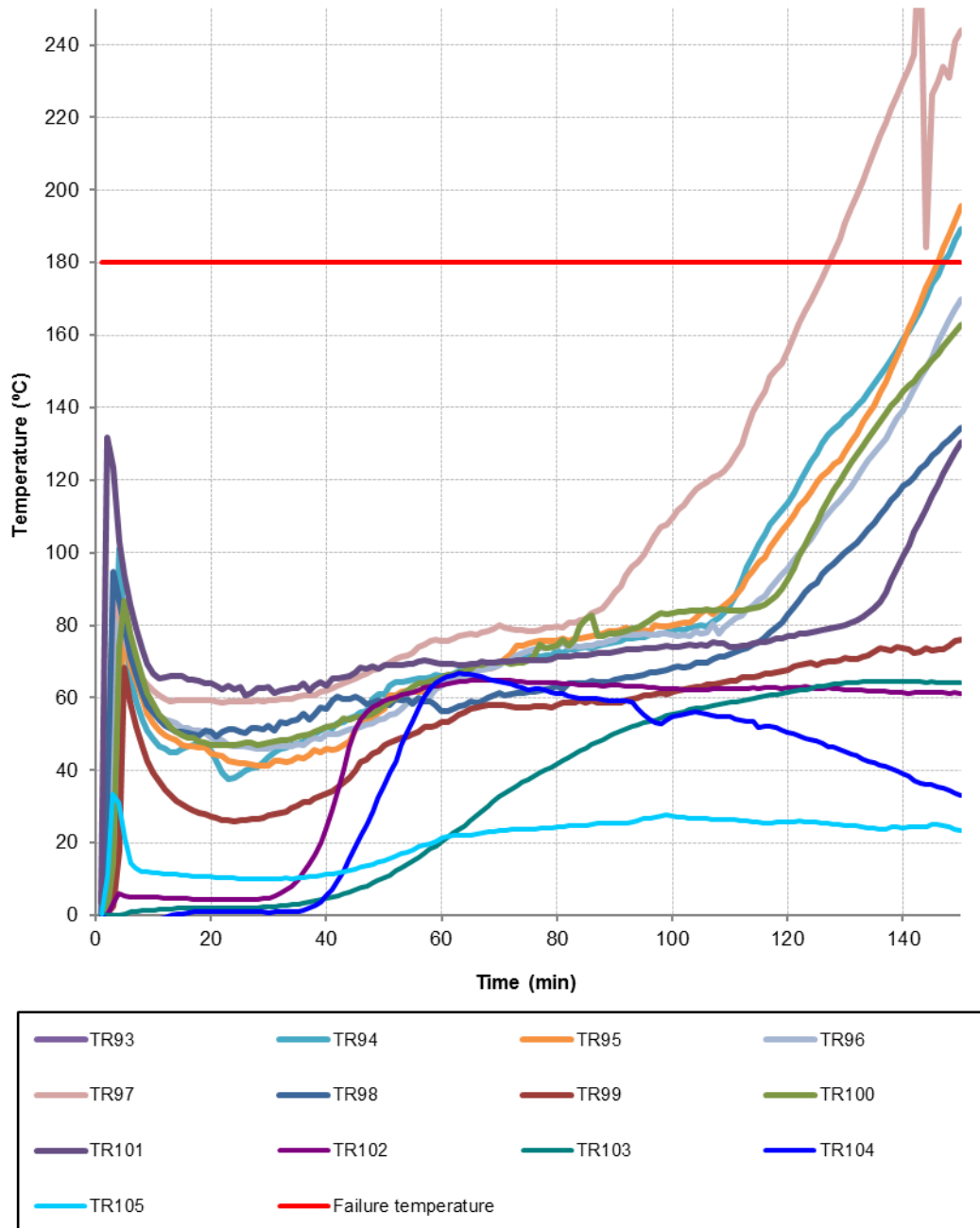
Graph 12: Maximum temperatures sample 5



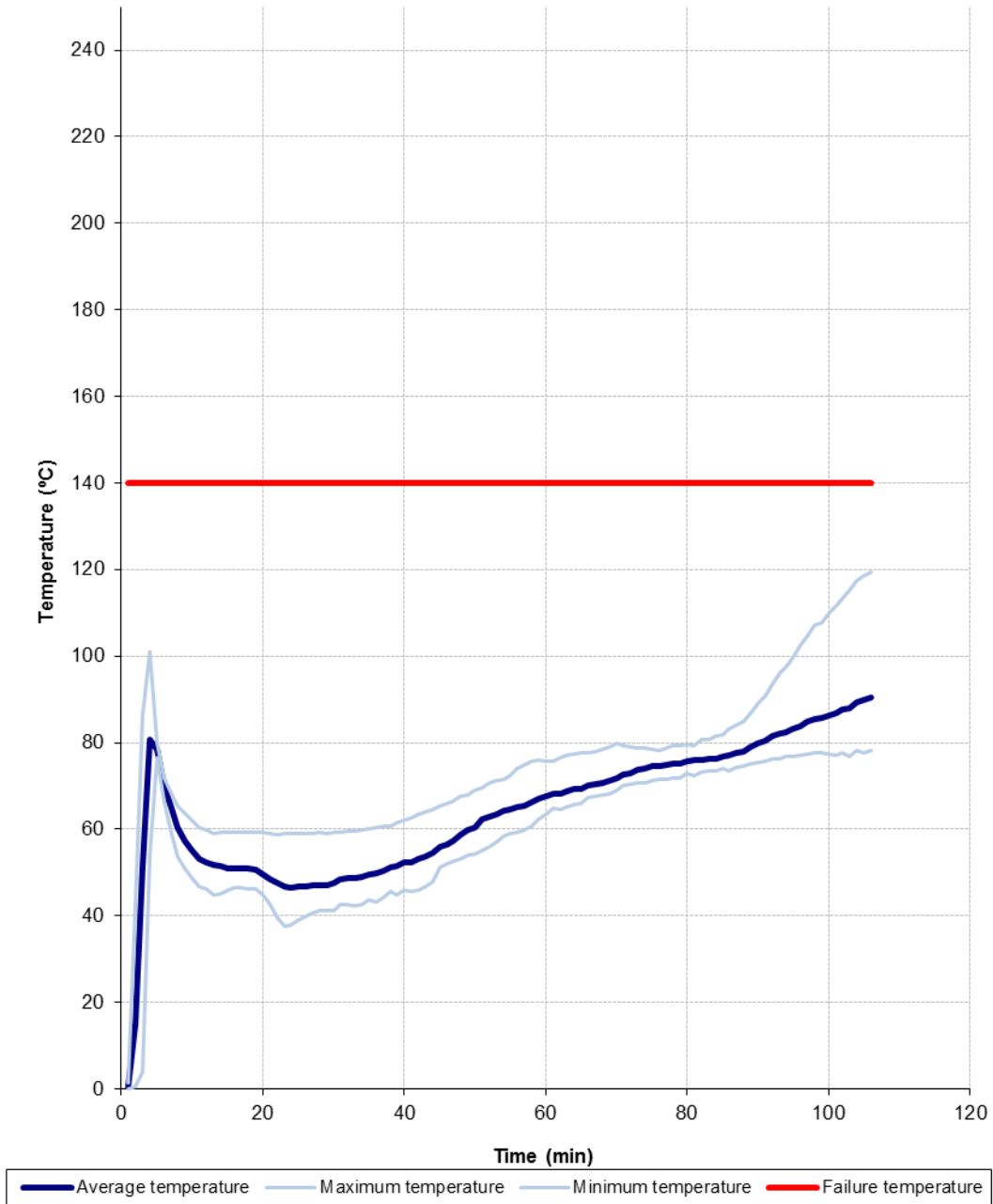
Graph 13: Average temperature sample 5



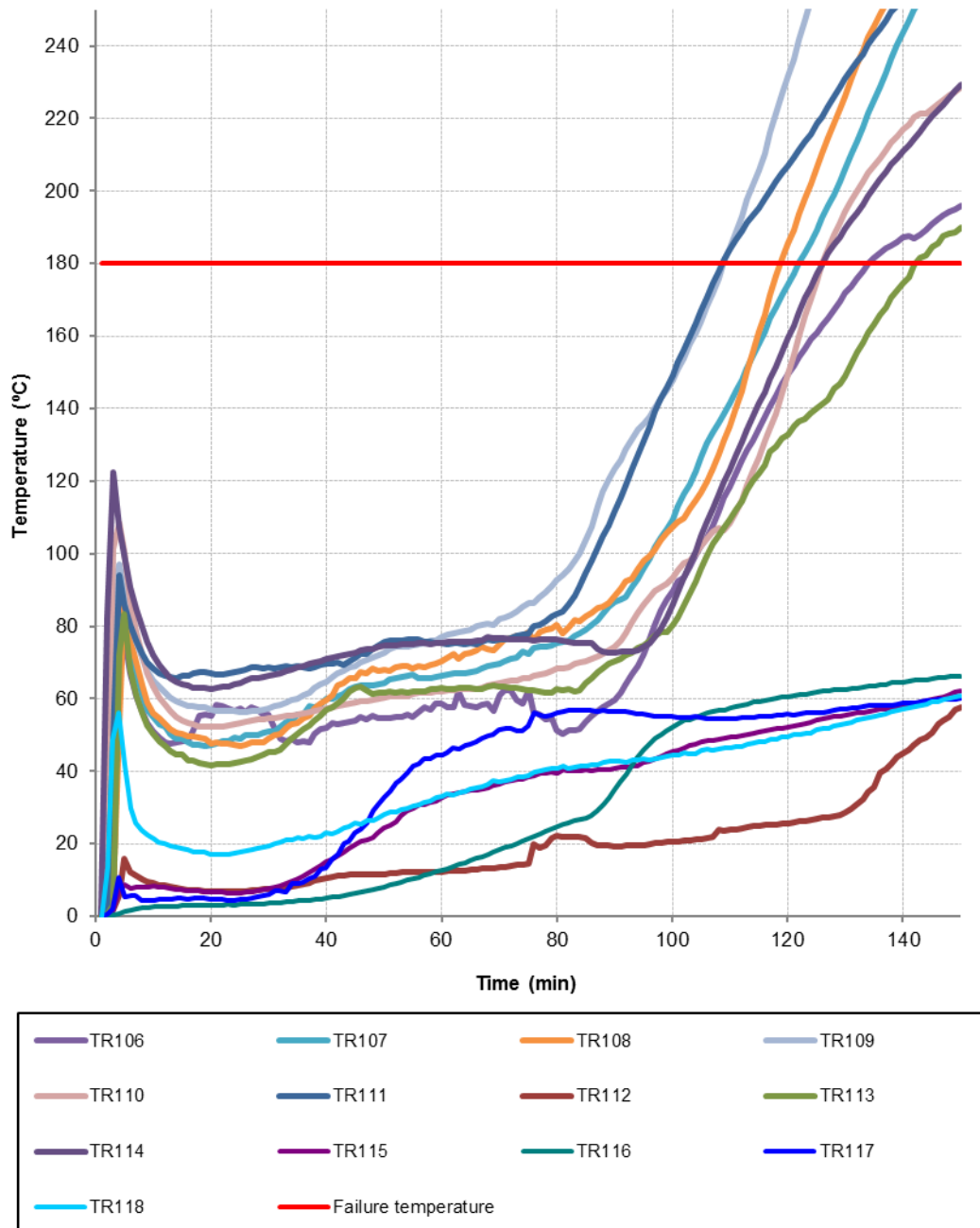
Graph 14: Maximum temperatures sample 6



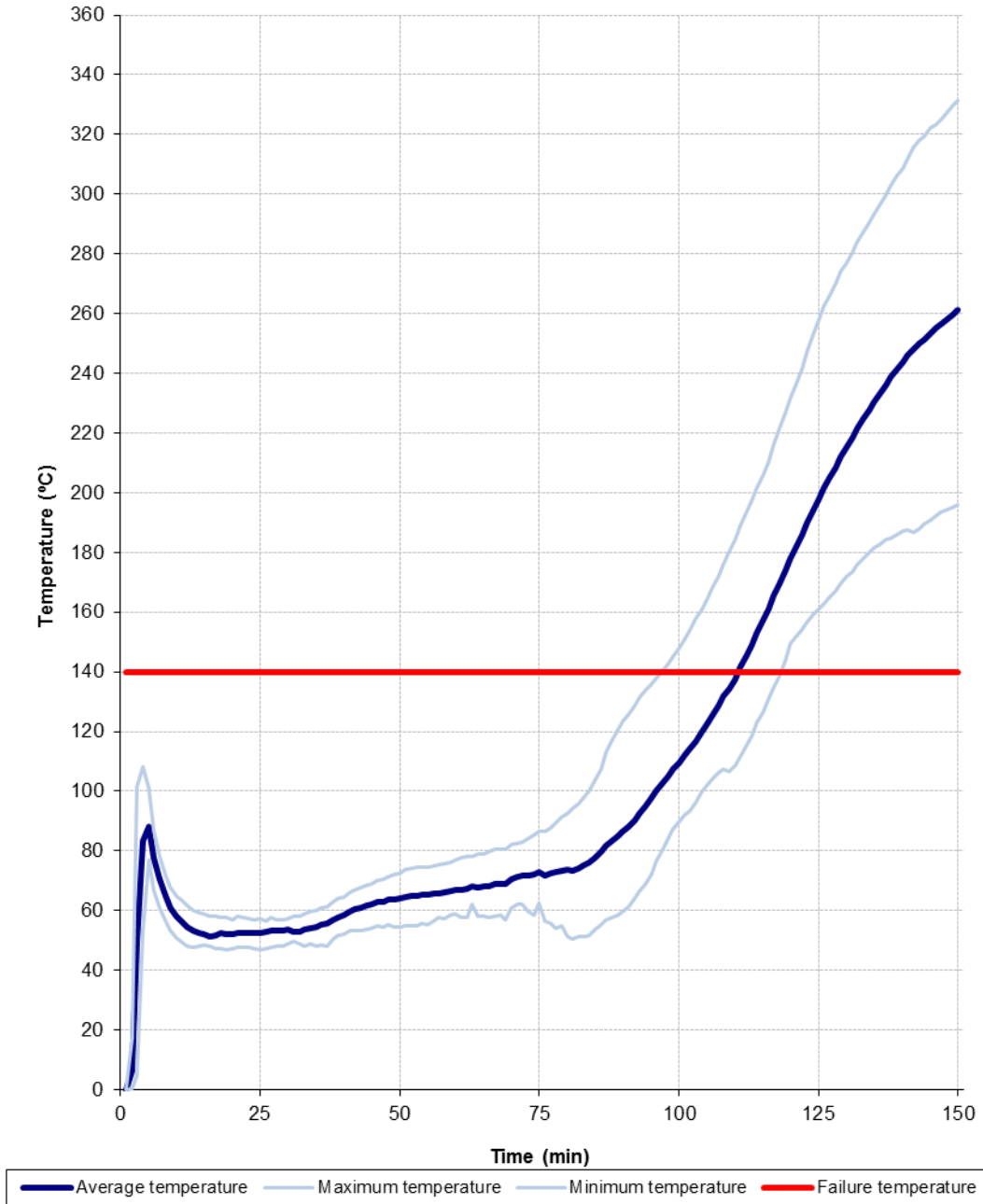
Graph 15: Average temperature sample 6



Graph 16: Maximum temperatures sample 7

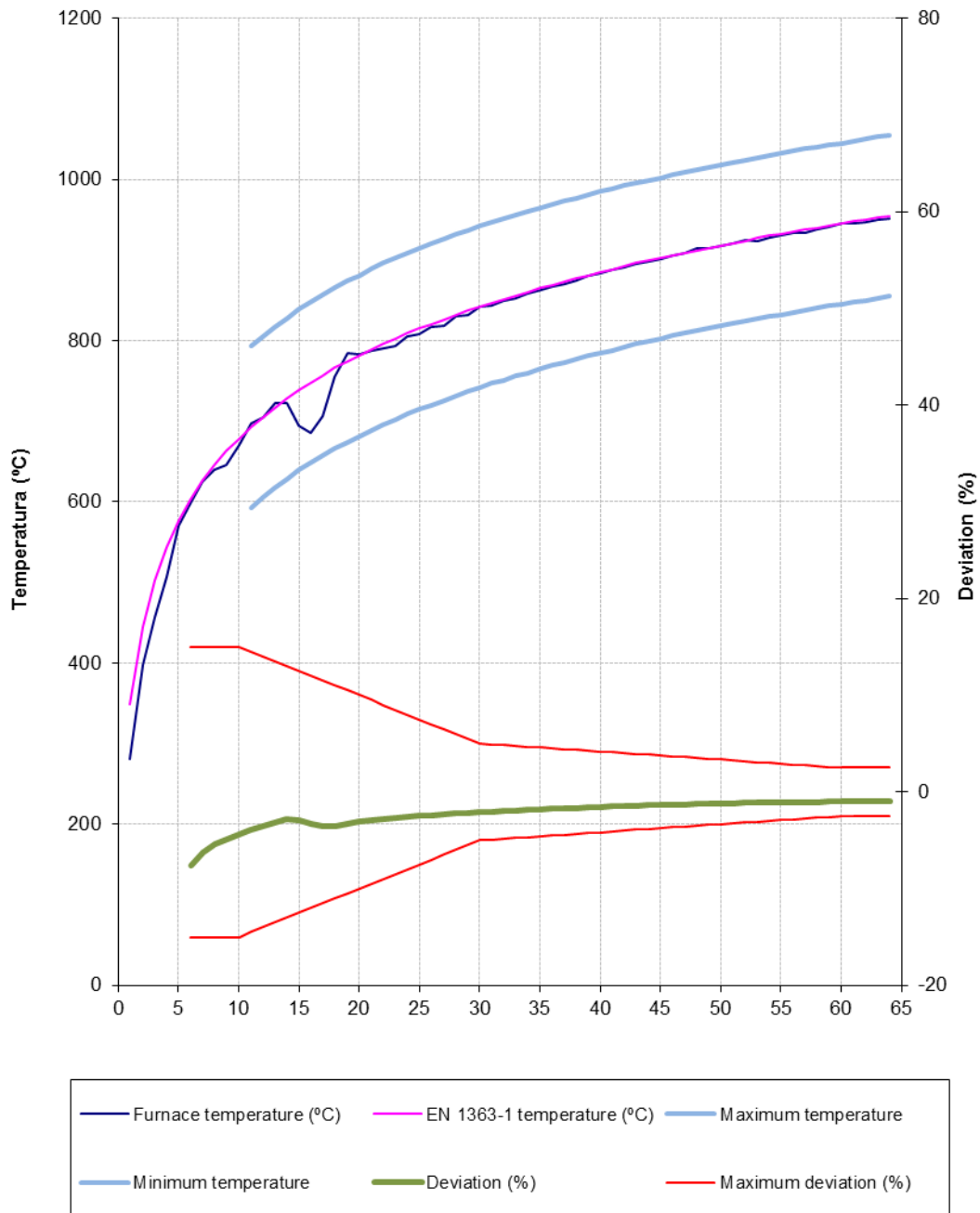


Graph 18: Average temperature sample 7

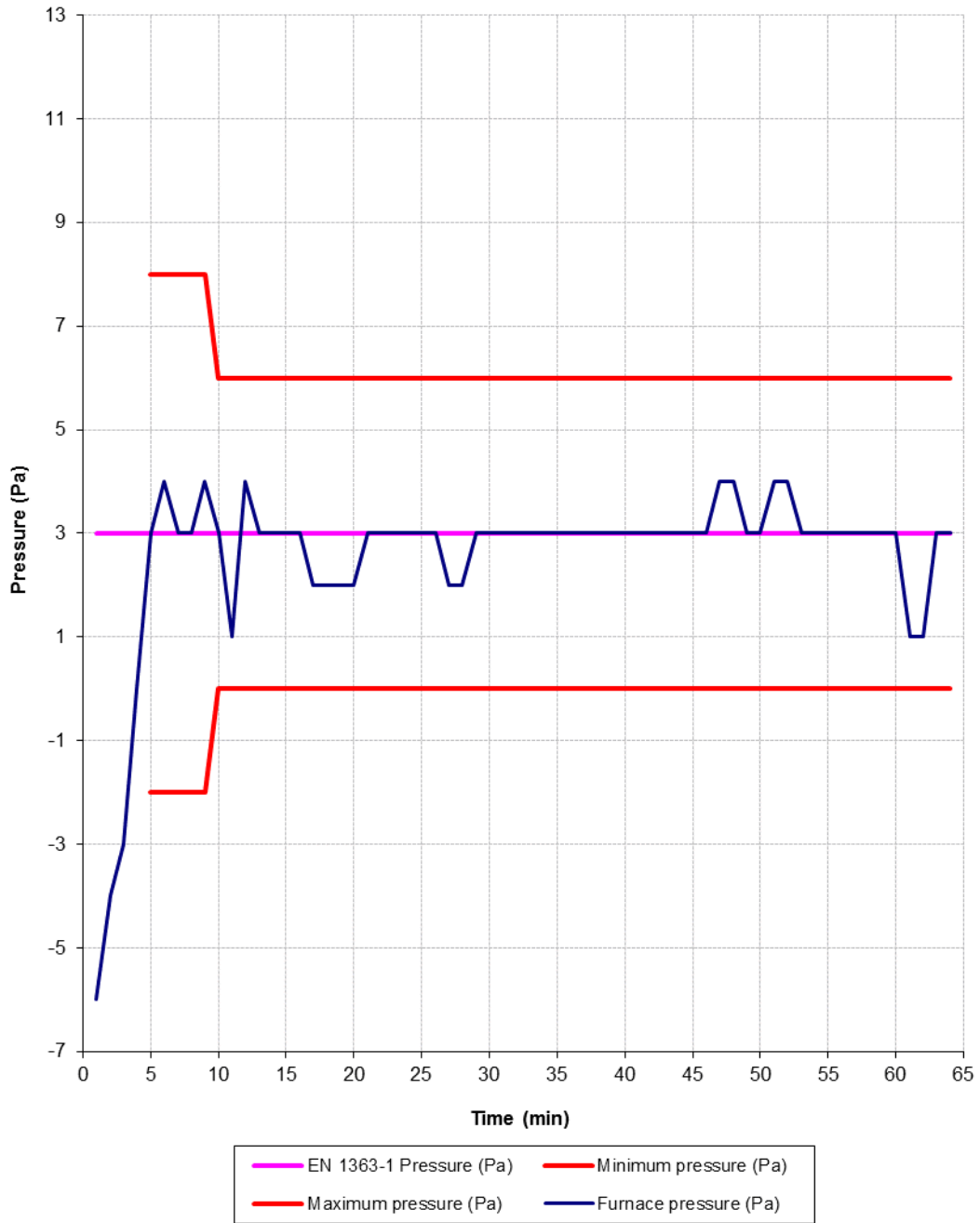


Test 2:

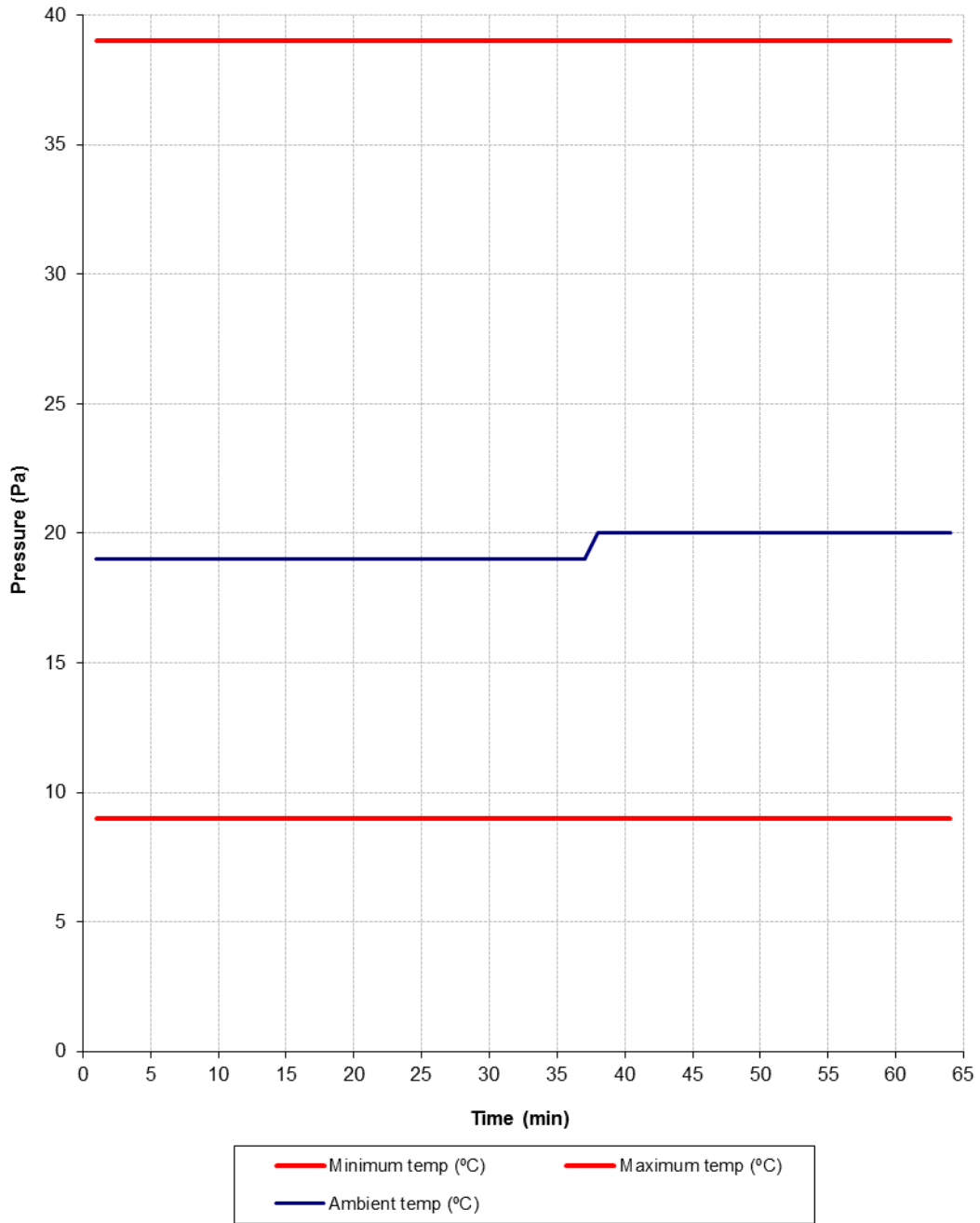
Graph 18: Evolution of furnace temperature.



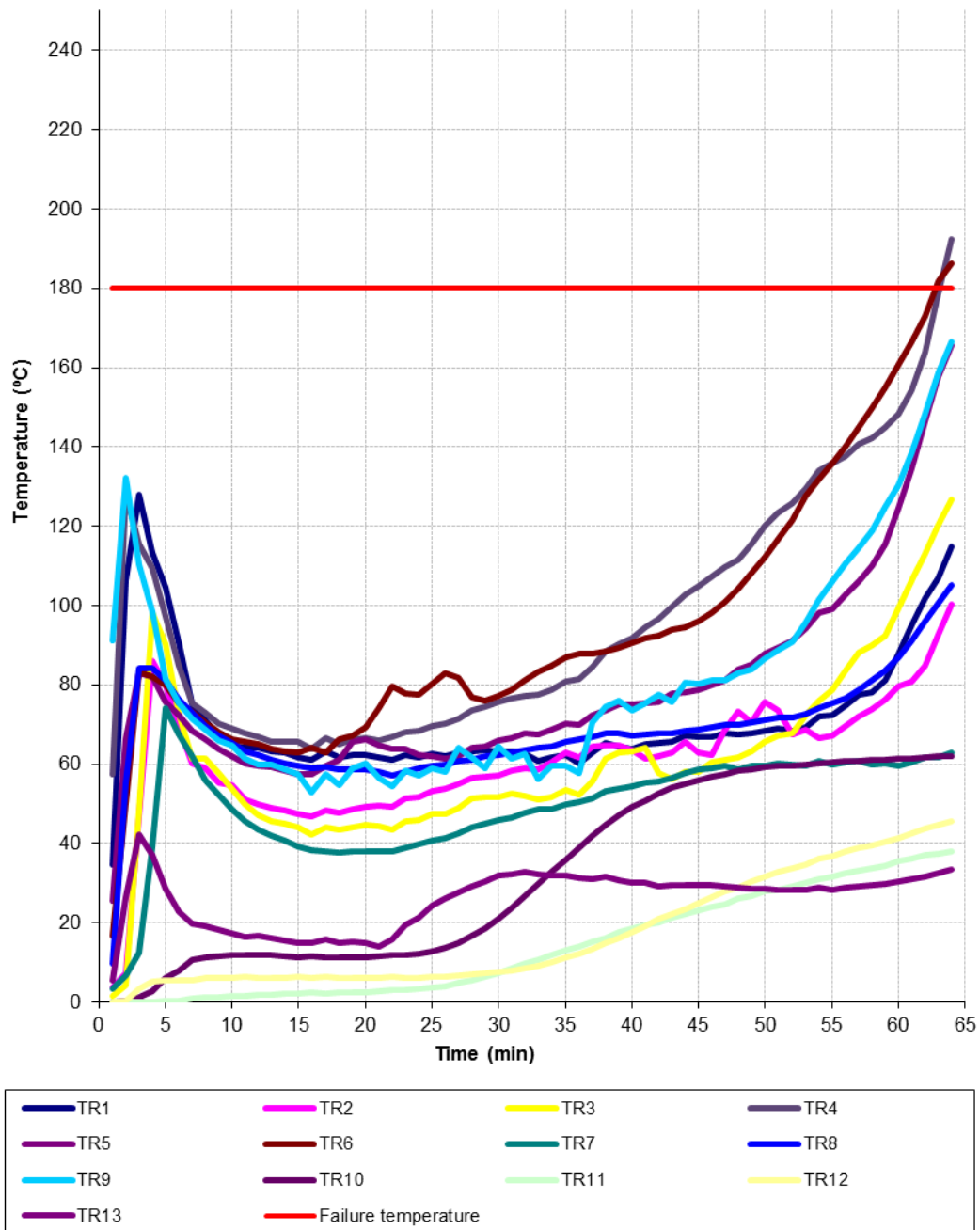
Graph 19: Evolution of pressure within the furnace.



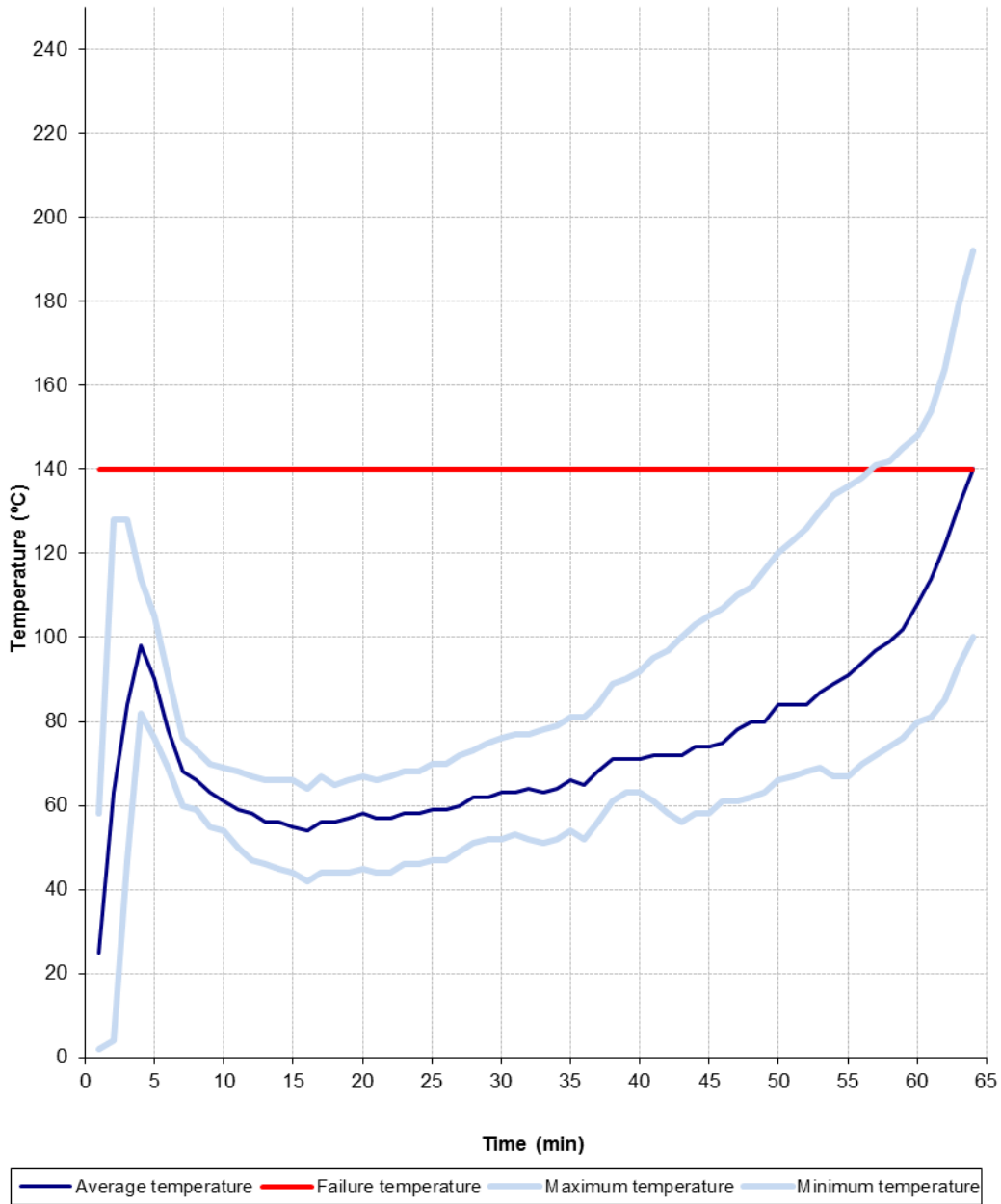
Graph 20: Evolution of room temperature.



Graph 21: Maximum temperatures sample 8

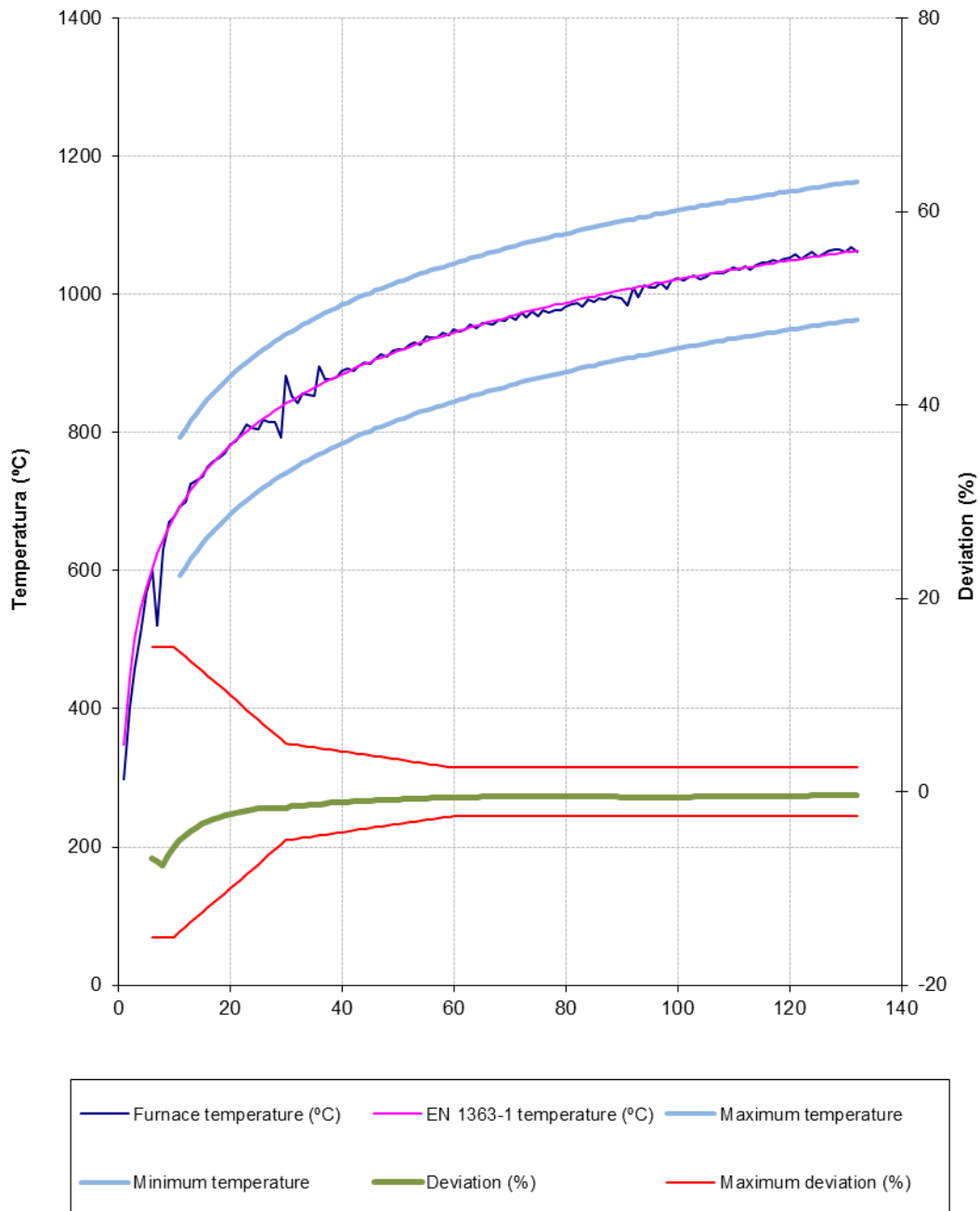


Graph 22: Average temperature sample 8

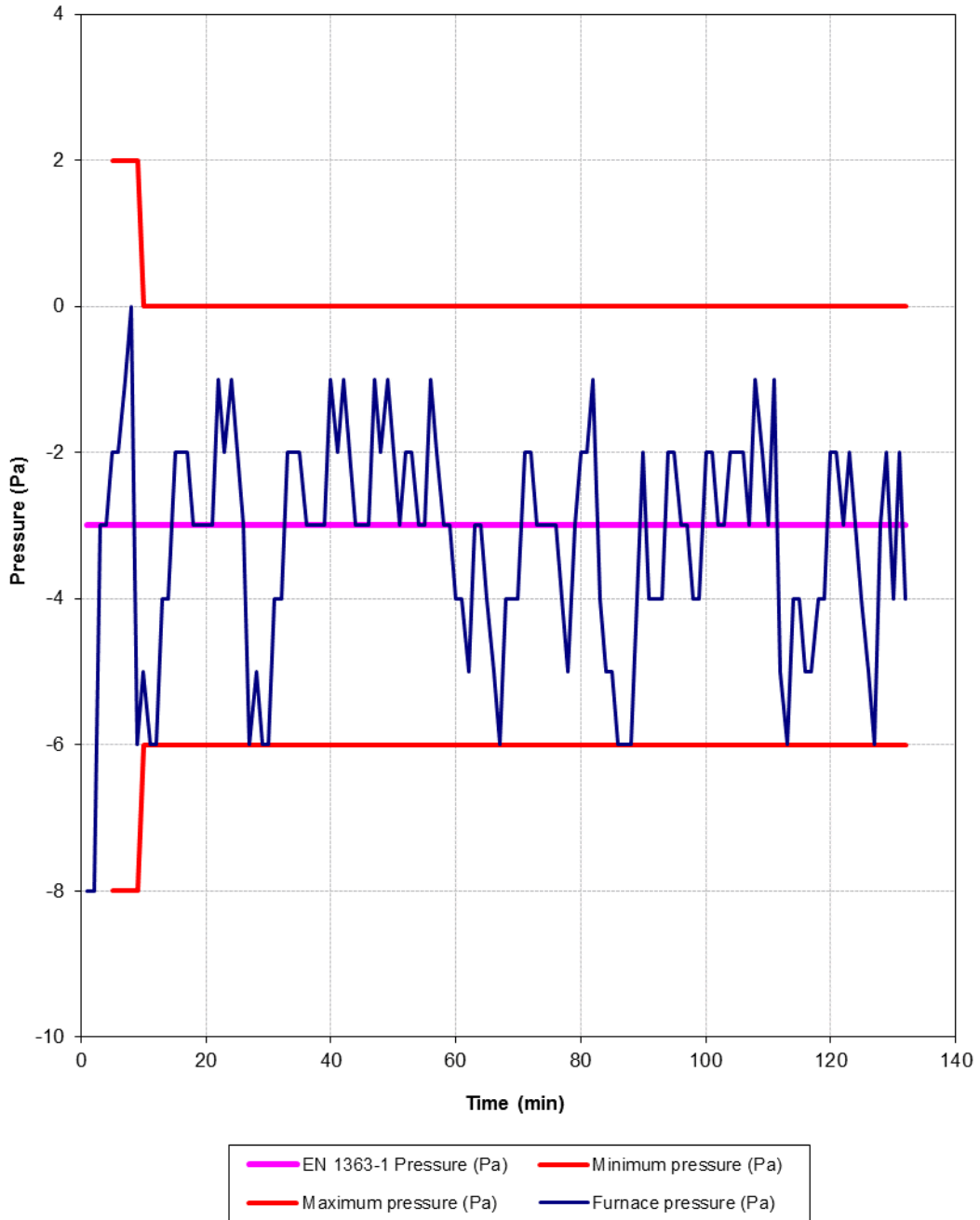


Test 3:

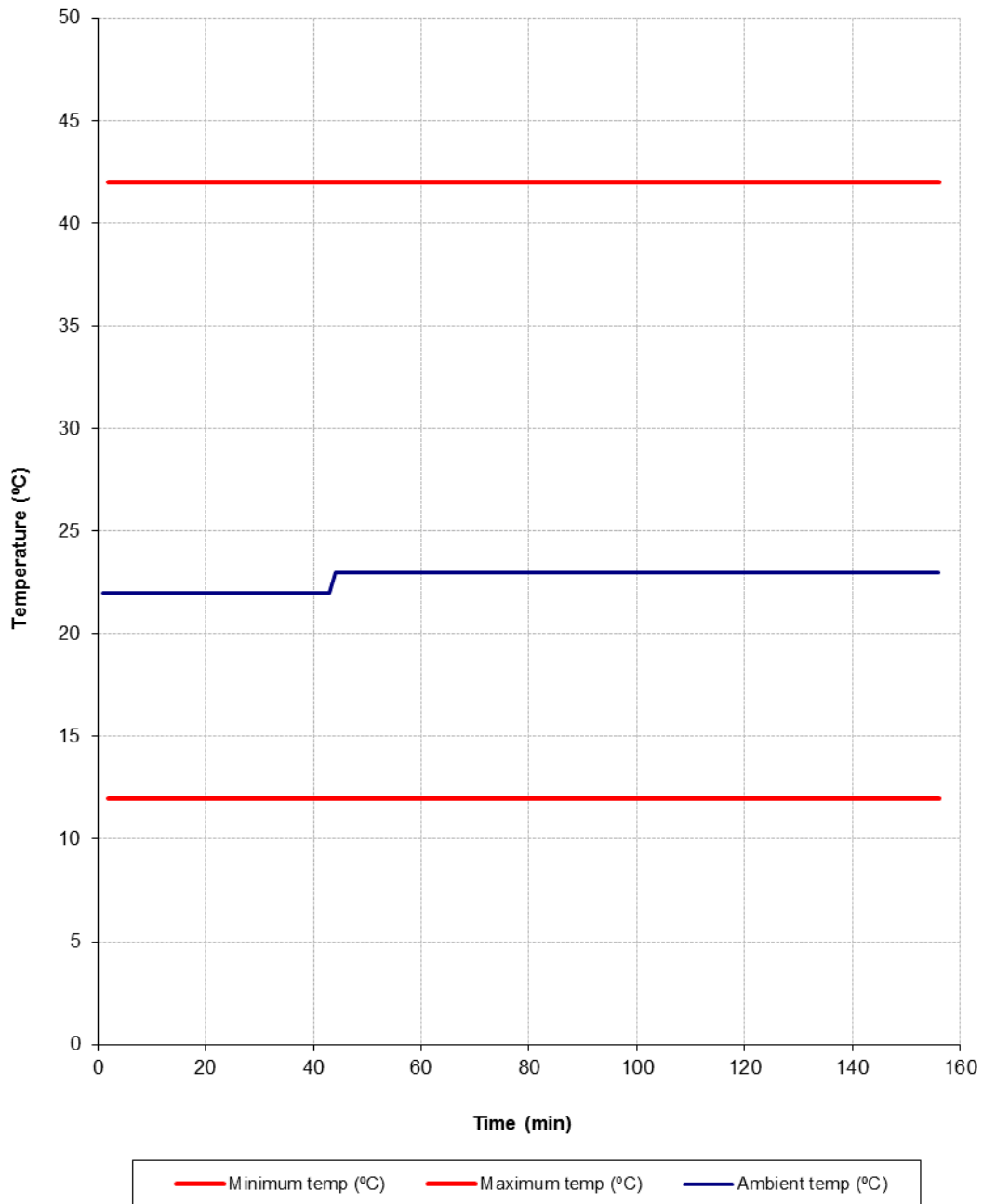
Graph 23: Evolution of furnace temperature.



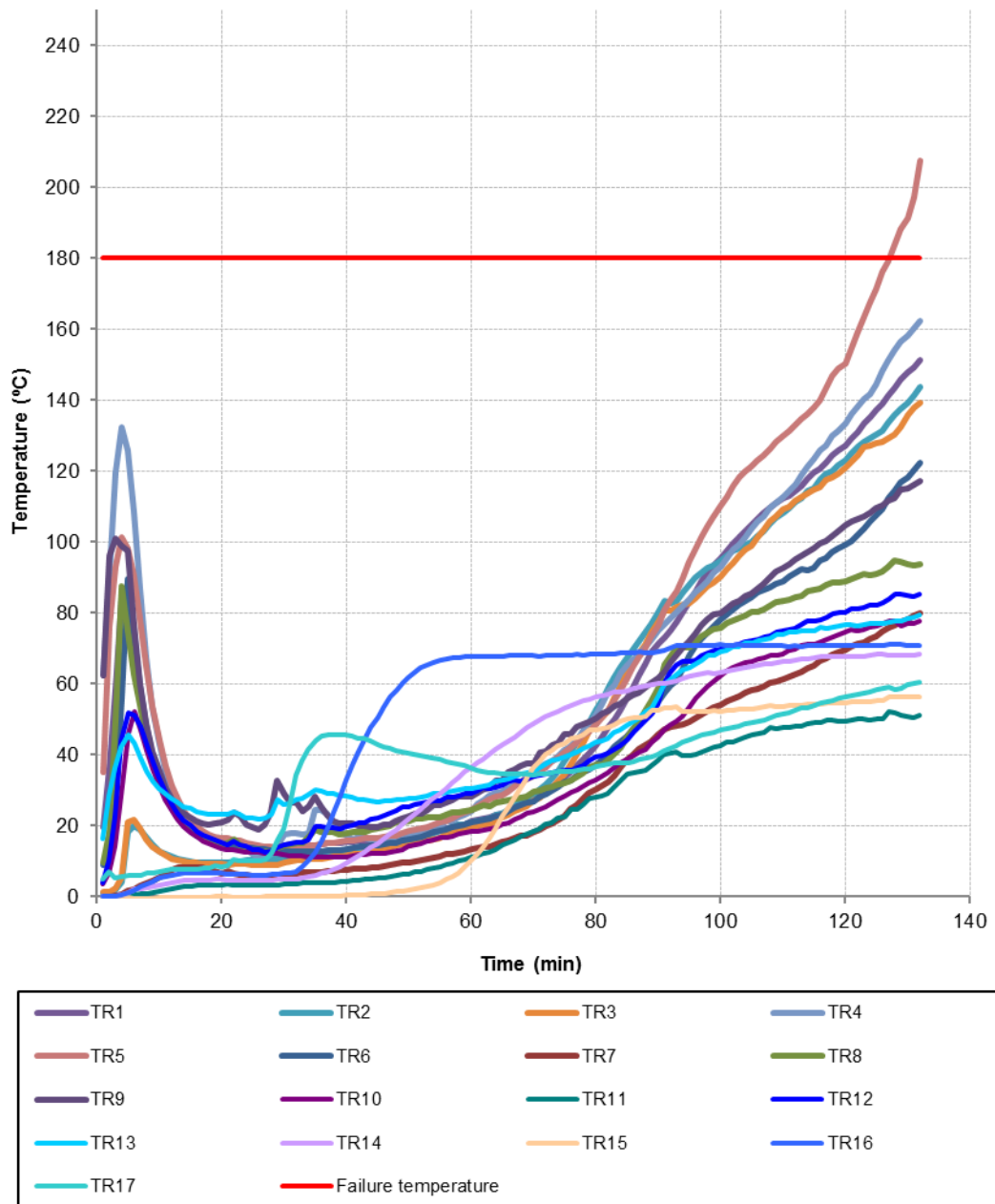
Graph 24: Evolution of pressure within the furnace.



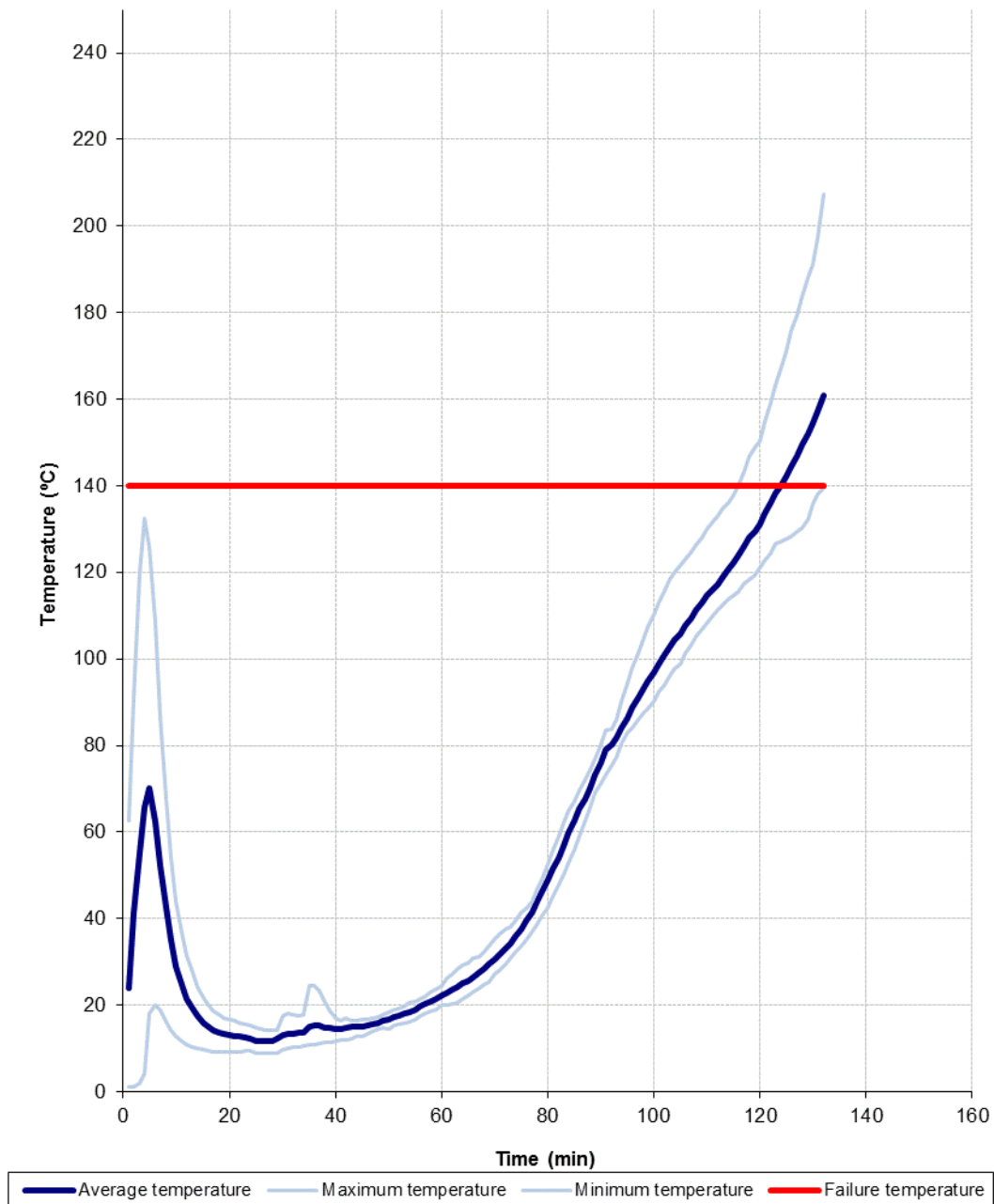
Graph 25: Evolution of room temperature.



Graph 26: Maximum temperatures sample 9



Graph 27: Average temperature sample 9



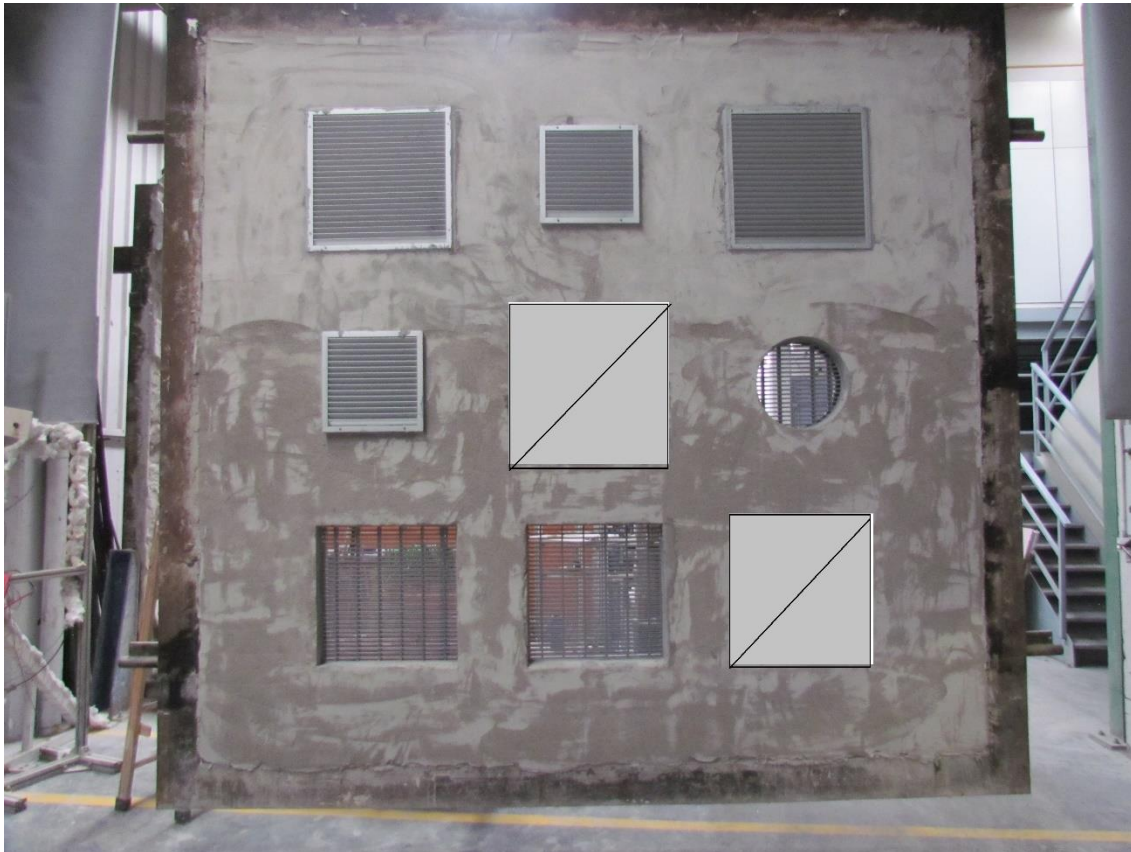
ANNEX 3: Test photographs

Photographs 1-3	Appearance of the test samples.
Photographs 4-6	Exposed side of samples.
Photographs 7-9	Appearance of the samples at the beginning of the test.
Photographs 10-12	Appearance of the samples during the test.

Photographs 1-3: Appearance of the test samples.



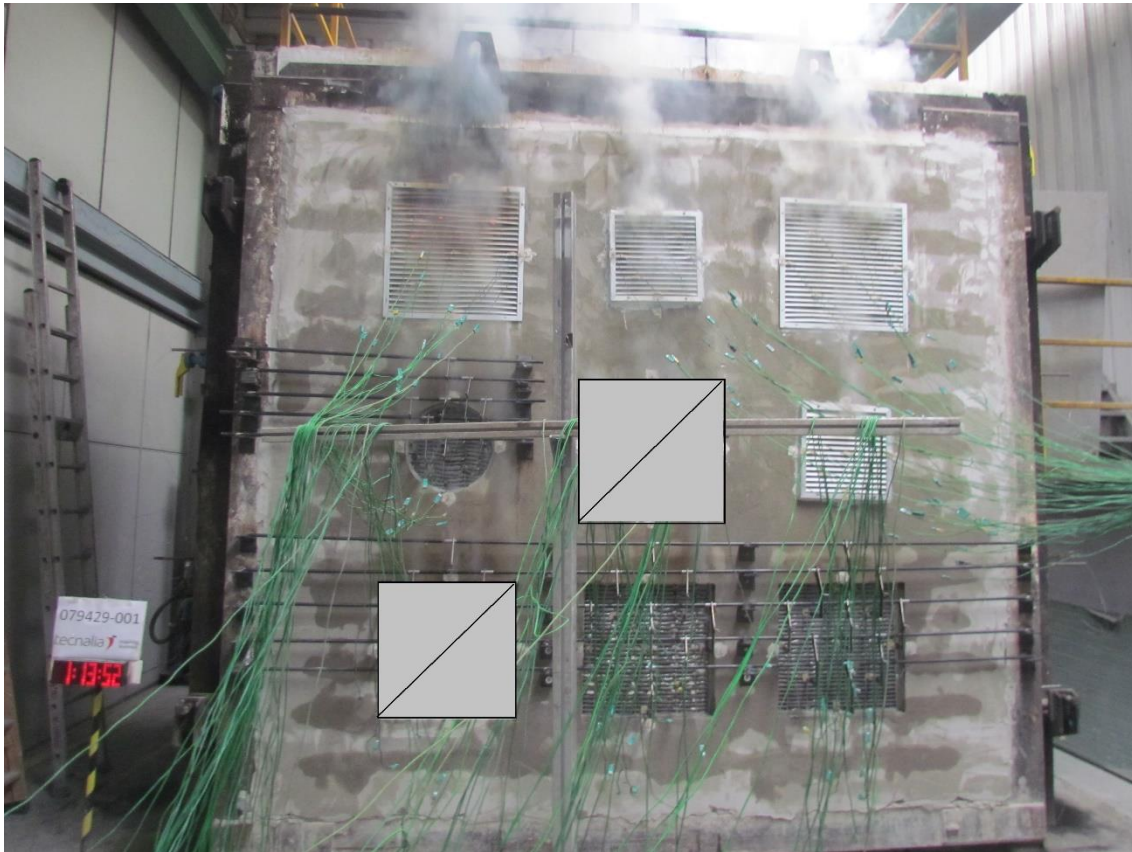
Photographs 4-6: Exposed side of samples.



Photographs 7-9: Appearance of the samples at the beginning of the test.



Photographs 10-12: Appearance of the samples during the test.





ANNEX 4: Technical documentation provided by the customer.



MEMBER



Data sheet



Vision fire resistant air transfer grilles

GB / 5.2 / Rev. 2

VENTILODICE V & VC



V E N T I L O D I C E V & V C

Product description

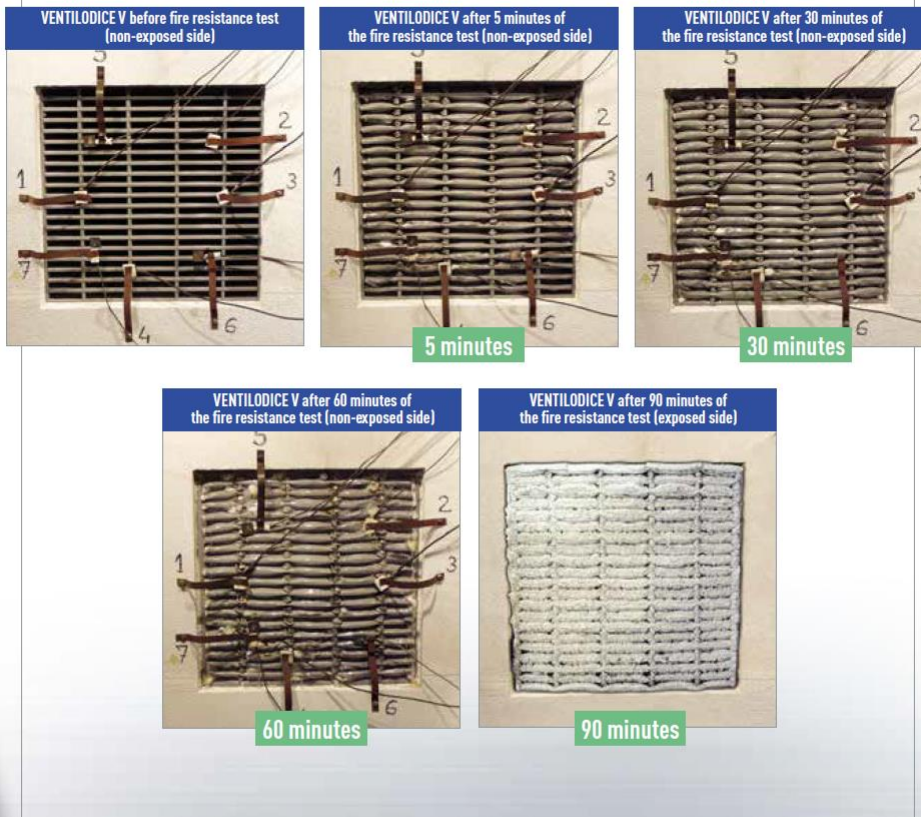
These fire resistant ventilation grilles are developed to allow the free circulation of air at room temperature through construction elements (walls, doors etc.) while at the same time offering effective protection against flames, smoke and gases in case of fire.

When the grilles are exposed to fire, the intumescent blades expand under the effect of the heat and prevent flames, smoke and gases from passing through.

VENTILODICE grilles are available in rectangular shape (Ventilodice V) and circular shape (Ventilodice VC).

Features

- The intumescent grilles VENTILODICE V&VC react at low temperature (from 100°C).
- The grilles block up rapidly (generally within 5 minutes, depending on the heat exposure).
- The grilles are made up of thermoplastic blades filled with PALUSOL® intumescent strips.
- Easy to install.
- Mainly for indoor applications (avoid contact with water, high humidity and temperatures >40°C).



VENTILODICE V & VC

The air transfer grilles **VENTILODICE V & VC** allow ventilation through :

- Fire resistant doors.
- Fire resistant walls.
- Fire resistant partitions.

Applications

VENTILODICE grilles are available in various sizes and thicknesses, making them suitable for all types of applications.

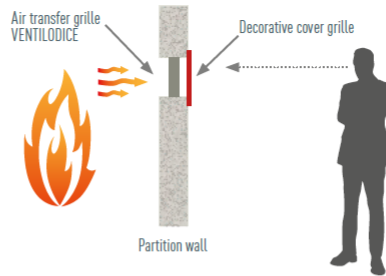
Standard color: grey (for other colors please consult us).

VENTILODICE V&VC grilles are manufactured by steps of 50mm (consult us if specific dimensions are required).

Product range

	VENTILODICE V25	VENTILODICE V40	VENTILODICE V50	VENTILODICE V60
Width	Please consult	100 mm to 600 mm	100 mm to 600 mm	100 mm to 600 mm
Height	Please consult	100 mm to 600 mm	100 mm to 600 mm	100 mm to 600 mm
Thickness	25 mm	40 mm	50 mm	60 mm
Free air flow	~60%	~60%	~60%	~60%
Fire rate classification	15 à 30 min (*) (**)	60 min (*)	90 min (*)	120 min (*)
Fire resistance with decorative cover grille		120 min (*)	120 min (*)	120 min (*)

Fire resistance with a decorative cover grille :
V40, V50, VC40 - EI 120



Note: Odice do not provide decorative covers.
Maximum dimension approved 600*600mm

	VENTILODICE VC 40	VENTILODICE VC 60
Diameter	100 mm to 400mm Ø125mm available	100 mm to 400mm Ø125mm available
Thickness	40 mm	60 mm
Free air flow	~60%	~60%
Fire rate classification	60 min (*)	120 min (*)
Fire resistance with decorative cover	120 min (*)	120 min (*)

Air transfer grilles were tested according to EN 1634-1, EN1366-1, and EN1364-1. Please consult our official fire test reports available on request (except for V25).

Laboratory note 14-F-122 according to 1363-1 and 1363-2. Fire test respecting the slow heating curve (cold smokes).

(*) The fire resistance depends on the kind of support and its thickness. Installer has to insure compliance of its products with national regulations.
(**) Fire resistance obtained by our customers in their official fire tests (classification reports are not available).

VENTILODICE V & VC

Installation

VENTILODICE V grilles must be fixed mechanically into walls or doors using appropriate screws. **VENTILODICE VC** grilles can be fixed only with intumescent fire resistant sealant **ACRYLODICE F**.

The actual dimensions of the **VENTILODICE V & VC** grilles (heights and widths) are always 3 mm smaller than nominal dimensions.

Any fitting clearances of up to 4 - 5 mm must be filled using **ACRYLODICE F** intumescent sealant or with **INTERDENS** intumescent strips (refer to the technical data sheets).

Consult the "Instructions for installing **VENTILODICE** intumescent air transfer grilles" for practical details.

Compatibility

The intumescent air transfer grilles are compatible with all materials used in the manufacture of fire resistant doors, walls, partitions, floors and ventilation ducts.

Storage

Store carefully in a dry, well-ventilated area.

Health and safety measures

Observe usual workplace health and safety rules.
Refer to the safety data sheet for **PALUSOL 100 and 104**.

PALUSOL is a registered trademark of **BASF SE**.

VENTILODICE is a trademark of **ODICE S.A.S.**

IMPORTANT: while the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by **ODICE** hereunder are given free of charge and **ODICE** assumes no obligation or liability for the description, designs, data and information given or results obtained, all such being given and accepted at your risk.



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