DBI
FIRE AND SECURITY

# TEST REPORT
# LOADBEARING WALL

| | | | |
|---|---|---|---|
| **Name of sponsor:** | Wood:UpHigh | | |
| **Product name:** | Loadbearing deck | | |
| **File no.:** | PGA12222A | **Revision no.:** | 1 |
| **Test date:** | 2022-12-19 | **Date:** | 04-07-2023 |
| **Pages:** | 11 | **Encl.:** | 53 |
| **Ref:** | JBK / RKP | | |

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ilac-MRA DANAK
TEST Reg.no.0012

## Client information

Client: Wood:UpHigh

Address: Jernholmen 12

2650 Hvidovre

Denmark

The test is part of the project Wood:UpHigh. The project is partly sponsored by Uddannelses- og Forskningsstyrelsen through DBI's performance contract, Realdania and Grundejernes Investeringsfond. The project is headed by DBI, except for the construction of test specimens for the fire tests, which is headed by LOGIK&CO.



**Revision chronology**

| Rev. no. | Date | Description | Author | Approved |
|---|---|---|---|---|
| 0 | 15-06-2023 | | JBK | RKP |
| 1 | 04-07-2023 | Changed description of materials in tables and graphs to more generic. | JBK | RKP |

## Content

# 1 Date of test

The test was conducted on 2022-12-19

# 2 Purpose of test

The test specimen has been subjected to a standard fire test in accordance with the following standards:

DS/EN 1363-1:2020 Fire resistance tests – General requirements

in conjunction with

EN 1365-2:2014 Fire resistance tests for loadbearing elements - Part 2: Floors

# 3 Test specimen

The trade name and sponsors identification mark are stated below:

| | |
|---|---|
| Trade name: | None |
| Identification mark: | None |

The components for the test specimen were delivered and mounted by LOGIK&CO.

# 4 Drawings and description

Details of the construction are shown in the enclosed documentation as stated below:

| Type | Drawing No. | Subject |
|---|---|---|
| Drawing | 1.1 | Loadbearing deck – Overview of construction |
| Drawing | 1.2 | Loadbearing deck – Top layer (unexposed side) |
| Drawing | 1.3 | Loadbearing deck – Loadbearing beams |
| Drawing | 1.4 | Loadbearing deck – Chip board (on exposed side of beams) |
| Drawing | 1.5 | Loadbearing deck – Clay boards (upper layer) |
| Drawing | 1.6 | Loadbearing deck – Clay boards (lower layer) |
| Drawing | 1.7 | Loadbearing deck – Clay plaster (exposed side) |

The documentation is supplied by the sponsor and it is stamped by DBI - Danish Institute of Fire and Security Technology

## Description

The test specimen consisted of the components described in the following. DBI inspected the components during mounting, the test and after the test.

The test specimen consisted of the components described in the following. DBI inspected the components during mounting, the test and after the test.

LOGIK&CO carried out the selection of the products for the test specimen as well as the mounting.

**Test specimen**

| | | | |
|---|---|---|---|
| External measures: | Length: 4800 mm | Width: 3000 mm | Thickness: 348 mm |

The test specimen consisted of loadbearing timber beams with wood fibre insulation. The insulation inside the elements were protected with one layer of chipboard and two layers of clay boards from below, and the top of the test specimen consisted of one layer of chipboard.

| | |
|---|---|
| Loadbearing beams: | 45 x 295 mm dry graded C24 construction spruce wood with a nominal density of 450 kg/m³. 5 loadbearing beams were in the construction. Additional 2 outer edge beams were cut into 200 mm pieces to ensure no loadbearing capacity from them.<br><br>The sills on the short edges consisted of 45 x 295 mm dry graded C24 construction spruce wood with a nominal density of 450 kg/m³.<br><br>The beams were fixed to the sill with 8,0 x 240 mm screws designated [redacted]. Two screws in each beam.<br><br>See drawing no. 1.3 and photo no. 1. |

| | |
|---|---|
| Chipboard: | A 15 mm thick chipboard board, designated [redacted] (nominal density 670 kg/m³) was mounted above and below the load bearing beams with 5.0 x 50 mm screws, designated [redacted]. For each beam behind the board 3 screws were attached. A full size chipboard had the dimensions of 615 x 2500 mm with tongue and grove.<br>The board joints were floating and not backed by the wooden studs.<br><br>See drawing no. 1.2 and photo no. 10. |
| Clay boards | 2 layers of 10 mm clay boards designated [redacted], with a nominal density of 750 kg/m³ were attached below the chipboard on the exposed side.<br>The clay boards had the maximum dimension of 1000 x 1250 mm.<br><br>1st layer<br>The boards are fixed with 3.5 x 25 mm screws with a 300 x 450 mm array resulting in 15 screws in a full board.<br>See drawing 1.5 and photo no. 3.<br><br>2nd layer<br>The boards are fixed with 3.5 x 41 mm screws with a 300 x 450 mm array resulting in 15 screws in a full board. On each screw a steel washer with a diameter of 36 mm and thickness of 0.7 mm was used.<br>The second layer was staggered compared to the first layer with minimum 150 mm.<br>See drawing 1.6 and photo no. 4 to 6. |
| Clay plaster | The clay plaster was designated [redacted] and was mixed according to the producers' instructions. Over all joints a mesh reinforcement with a width of 245 and a mesh of 5 x 5 mm and a tread thickness of 0.25 mm was placed. The mesh was fixed to the clay boards with 10 mm staples. For mesh joint an overlap of minimum 100 mm was used.<br><br>The applied clay plaster thickness was 2-3 mm.<br><br>See drawing 1.7 and photo no. 7. |
| Insulation: | 95 mm thick wood fiber insulation with a nominal density of 43 kg/m³ designated [redacted] was blown in between the loadbearing beams and compacted to the nominal density.<br><br>See photo no. 8. |

## Measured by DBI

| Product | | Chipboard [redacted] | Clay plaster | Wood fiber insulation | Clayboard | Construction wood |
|---|---|---|---|---|---|---|
| Density | kg/m³ | 594* | 1396 | 43 | 840.6 | - |
| Moisture content | % | 6,63 | 1,36 | 10,75 | 1,96 | 11,07 |
| Sampling method | | Extra material | Extra material | Extra material | Extra material | Extra material |
| Drying temperature | °C | 55 | 55 | 105 | 105 | 105 |

* Density differ more than 10 % from the nominal density, the density measured is lower than the nominal density.

# 5 Test conditions

## Conditioning

The test specimen was delivered on the 13-12-2022 to the DBI laboratory and stored under room temperature. On the day of the fire testing the condition of the test specimen was similar with respect to its moisture content as the test specimen would be in normal service.

## Mounting

The test specimen was mounted simple supported in a test frame suitable for loaded tests with a clear opening of 4000 x 3000 mm (exposed area). The roof was supported 70 mm in from the furnace edge resulting in a total span of 4140 mm.

Free edge between the deck and furnace frame were established along both vertical edges of the test specimen (1 x 50 mm stone wool on each side) to allow for unrestrained deformation of the test specimen.

## Loading

The test specimen was loaded with a total applied load of 17.1 kN in each of the line loads during the test, corresponding to a total load of 34.2 kN including the weight of the loading equipment of 370 kg.

The load was chosen to simulate a moment of 4.1 kNm per beam with a shear force of 8.3 kN per 45 x 295 mm beams.

The load was applied in two lines, 1 m from each side of the transverse centreline of the test specimen, i.e., there was no eccentricity in the loading conditions.

The load was applied in 10 steps prior to the fire test. The fire test was commenced approx. 30 minutes after reaching the final load on the test specimen.

## Fire test

Observations were made during the test on the general behavior of the test specimen.

Temperature observations were taken continually during the entire testing time.

The surface temperatures were measured on the unexposed surface of the test specimen as indicated on DBI drawing no. 1.0, 1.1, 1.3, 1.4 and 1.5.

The furnace temperature was determined by means of plate thermocouples uniformly distributed at a distance of approximately 100 mm from the exposed side of the test specimen. The furnace temperature was continuously controlled so as to follow the standard time temperature curve within the accuracy specified in EN 1363-1:2020.

The thermocouples were constructed according to the description in EN 1363-1:2020.

The thermocouples 4.7 and 3.2 malfunctioned during the test.

After 38 minutes it was not possible to control the furnace pressure, due to the rapid increase in fire load, when the clay boards fell down.

# 6 Test results

Duration of the test was 54 minutes.

## Measurements

The enclosed graphs and tables show:

| | |
|---|---|
| Enclosures 2.0 and 2.1 | Furnace temperatures<br>The actual minimum-, average- and maximum furnace temperature in relation to the standard temperature. The table also shows the area under the actual time-temperature curve as well as the area under the standard time-temperature curve |
| Enclosures 3.0 and 3.1 | Horizontal furnace pressure<br>The differential pressure in the furnace during the test, measured 100 mm below the test specimen |
| Enclosures 4.0 and 4.1 | Ambient temperature<br>The ambient temperature in the laboratory during the test |
| Enclosures 5.0 and 5.1 | Average temperature<br>Temperature rise on the unexposed side |
| Enclosures 6.0 and 6.1 | Maximum temperatures |
| Enclosures 7.0 and 7.1 | Deformation<br>The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace) |
| Enclosures 8.0 and 8.1 | Load per hydraulic jack |
| Enclosures 9.0 and 9.1 | Between clay board layers |
| Enclosures 10.0 and 10.1 | Between clay board and chipboard |
| Enclosures 11.0 and 11.1 | Between chipboard and beams |
| Enclosures 12.0 and 12.1 | Between chipboard and wood fiber insulation |
| Enclosures 13.0 and 13.1 | In the middle of wood fiber insulation |
| Enclosures 14.0 and 14.1 | On top of wood fiber insulation |
| Enclosures 15.0 and 15.1 | At mid height of beams |
| Enclosures 16.0 and 16.1 | Top side of beams |
| Enclosures 17.0 and 17.1 | Deflection rate |
| Enclosures 18.0 and 18.1 | Deformation during the loading phase<br>The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace) |

| | |
|---|---|
| Enclosures 19.0 and 19.1 | Load per hydraulic jack during the loading phase<br>One hydraulic jack was used |

## Visual observations:

| Time / Minutes | Visual observations: | U = Unexposed side<br>E = Exposed side |
|---|---|---|
| 0 | Test commences | |
| 2 | Faint smoke development at mid span of test specimen | U |
| 5 | Faint smoke development from left back corner and right front corner | U |
| 7 | Faint smoke development between test specimen and inside at 1st beam on the right | U |
| 8 | Increase in smoke development from mid right side and front corner right side | U |
| 10 | Small gap between top surface and wood beam at back left side | U |
| 13 | Small gap between top surface and wood beam at front left side | U |
| 14 | Clay plaster is loosening around disks on clay boards | E |
| 15 | Increase smoke development from all points mentioned above | U |
| 24 | Deformation of clay boards and plaster | **E** |
| 25 | Increase in gap between top surface and wood beam front corner left side | **U** |
| 26 | Heavy smoke development from mid front side between insulation and test specimen | **U** |
| 28 | Heavy smoke development along both sides | **U** |
| 34 | Heavy smoke development between all edges of test specimen | **U** |
| 37 | All clay boards have fallen down. | **E** |
| 38 | Faint smoke development between joints in top surface | **U** |
| 41 | Popping sounds from burning wood | **U** |
| 42 | Cotton pad test over joint at mid length: no ignition, faint discoloration | **U** |
| 43 | Increase in smoke development from joint in top surface | **U** |
| 45 | Cotton pad test over joint at mid length: no ignition, discoloration | **U** |
| 46 | Discoloration at top surface along the short edge | **U** |
| 48 | 25 mm gap gauge could pass through construction by the second beam to the right | **U** |
| 49 | Test stopped | |

The photographs on the attached photo sheets show the test specimen during the mounting, testing and after the test. See the description at each photo.

# 7 Conclusion

Fire resistance testing according to EN 1365-2:2014 of the construction described in this test report showed that failure according to the performance criteria stated in the test method occurred at the following time:

**Load-bearing capacity (R): 47 minutes**

- The load on the test specimen was maintained during the entire test.
- The measured vertical deflection did not exceed the criteria of $D_{limit} = \frac{L^2}{400*d} = \frac{4140^2}{400*295} = 145\ mm$ during the test.
- The measured rate of vertical deflection did exceed the criteria of $\left(\frac{dD}{dT}\right)_{limit} = \frac{L^2}{9000*d} = \frac{4140^2}{9000*295} = 6{,}4\ {}^{mm}/_{min}$ after 47 minutes of testing.

**Integrity (E): 48 minutes**

- Sustained flaming did not occur during the test.
- The cotton pad was not ignited during the test.
- One through-going opening was created in the test specimen where a 25 mm gap gauge could pass through the construction after 48 minutes of testing.

**Insulation (I): 48 minutes**

- Failure of insulation occurred after 47 minutes of testing due to failure of loadbearing capacity
- The average temperature rise on the unexposed surface of the test specimen did not exceed 140°C during the test.
- The maximum temperature rise on the unexposed surface of the test specimen exceeded 180°C after 48 minutes of testing.

# 8 Remarks

The field of direct application of the test results appears from EN 1365-2:2014, clause 13.

This report details the method of construction, the test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in EN 1363-1:2020, and where appropriate EN 1363-2:1999. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the test method is not covered by this report.

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.

This report has only been printed in a pdf-version. DBI has not issued a hard copy version.

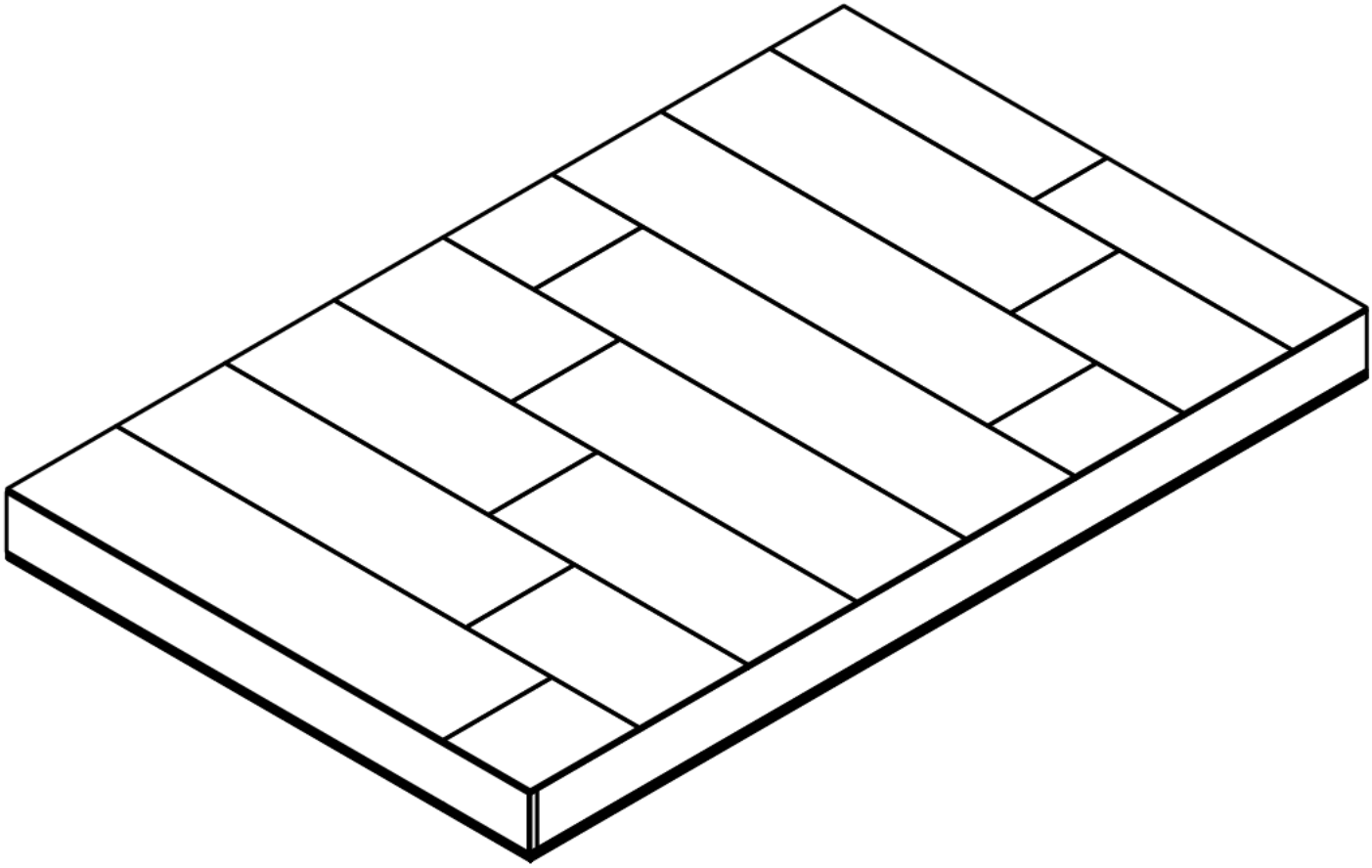
All values mentioned in this report are nominal values, production tolerances are not considered.

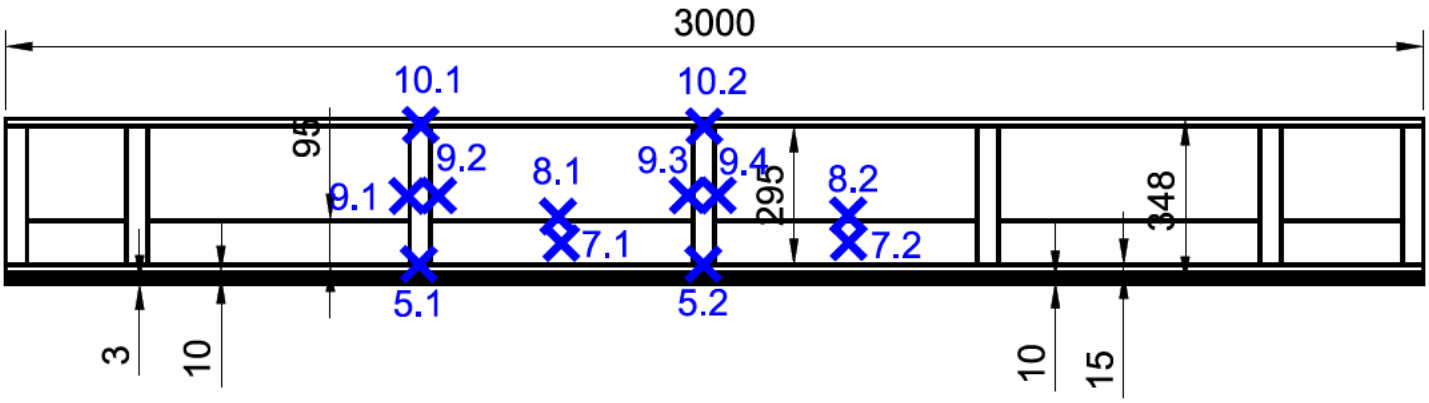
**Danish Institute of Fire and Security Technology**

**Jeanne B Kirk**
M.Sc. (Eng)

**Rasmus Krogh Lynge Pedersen**
Fire Resistance Engineer

| **Wood:UpHigh** | **Enclosures:** | **53** |
|---|---|---|
| Jernholmen 12 | DBI drawings: | 7 |
| 2650 Hvidovre | DBI graphs and tables: | 36 |
| Denmark | Photo sheets: | 10 |
| | Sponsors drawings: | 0 |

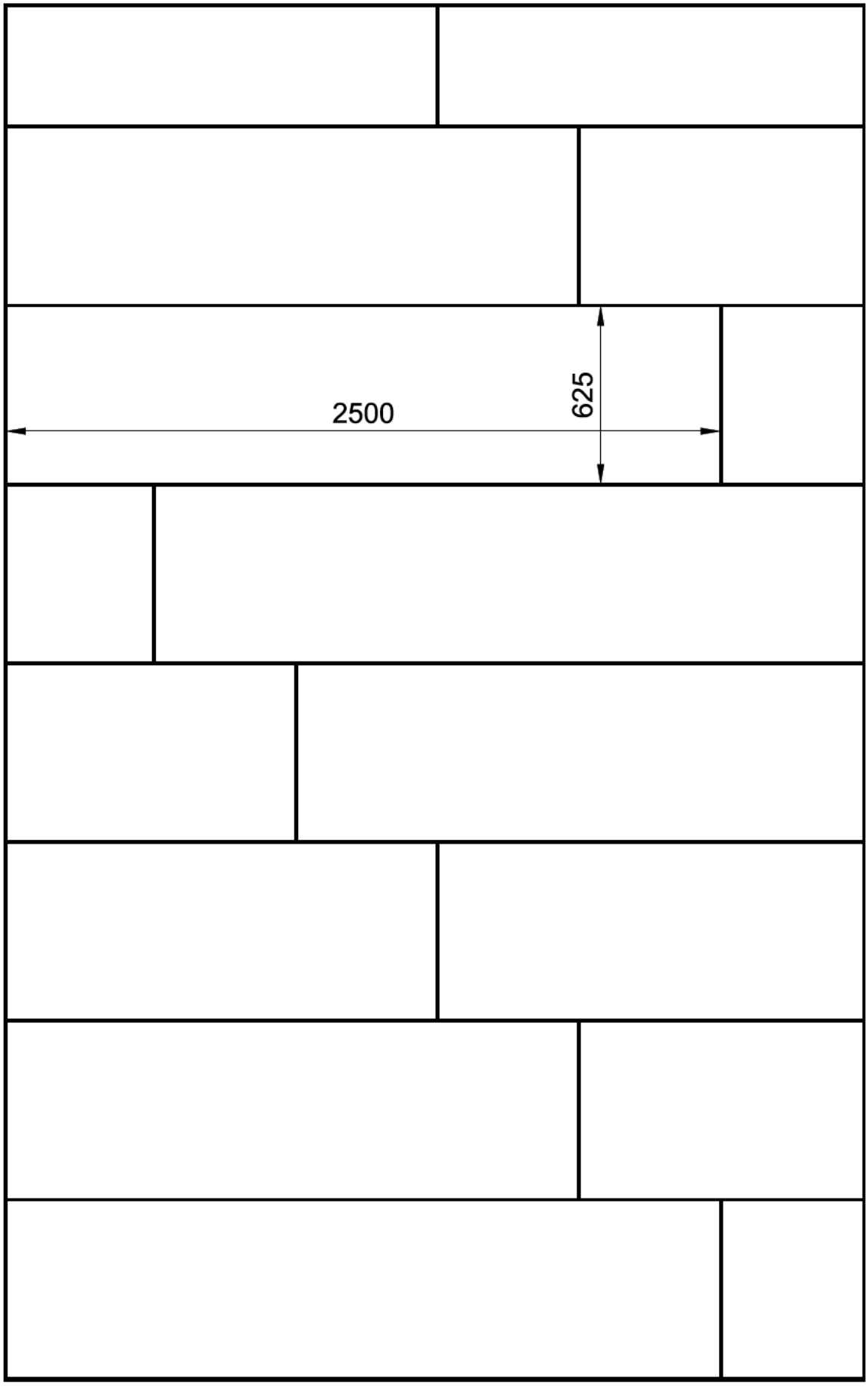





All measurements are in mm

**Danish Institute of Fire and Security Technology**
Sponsor: DBI - Project Wood:UpHigh
Subject: Loadbearing deck - Overview of construction

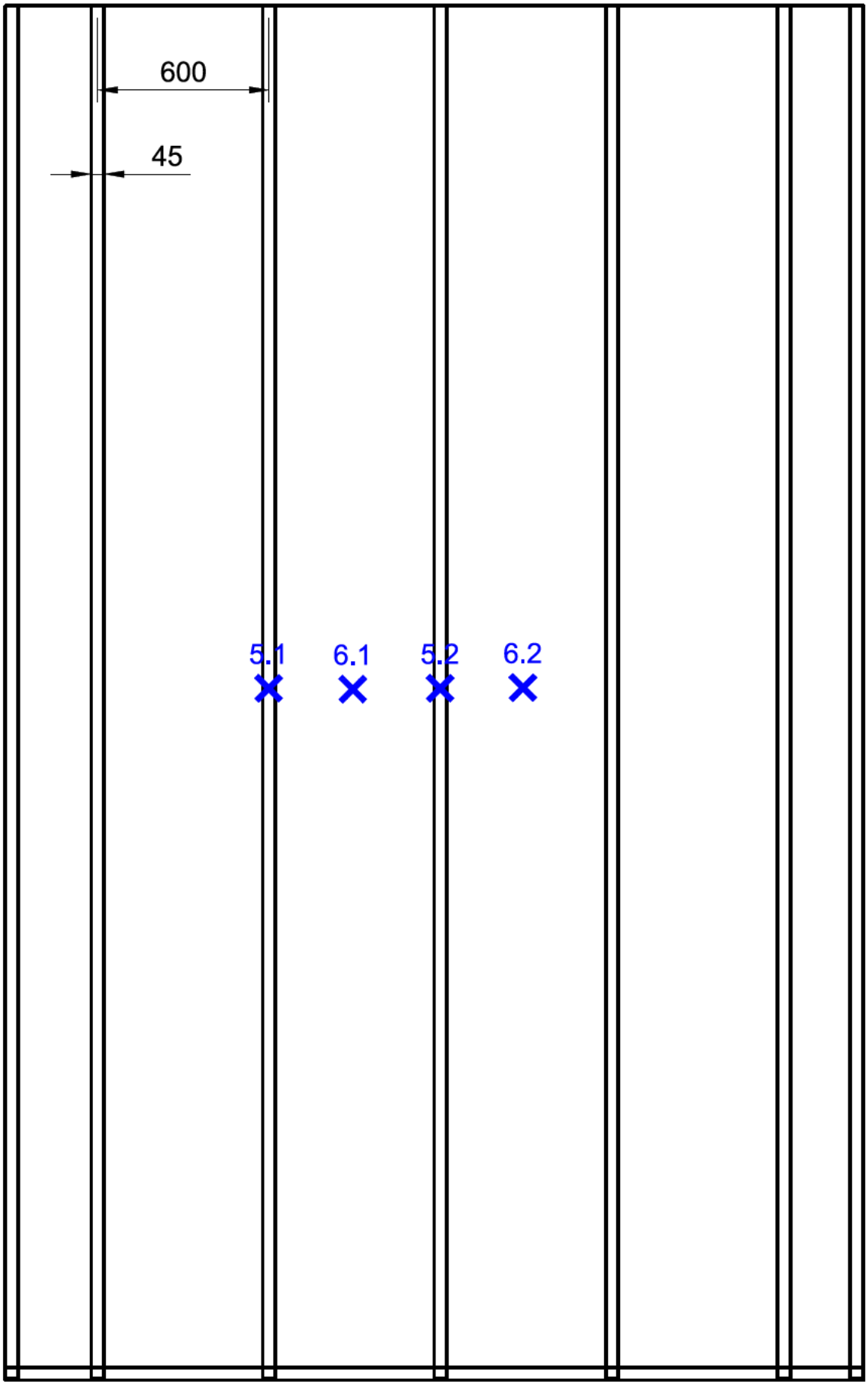
**File No.:** PGA12222A
Test date: 19-12-2022
Enclosure: 1.1




All measurements are in mm

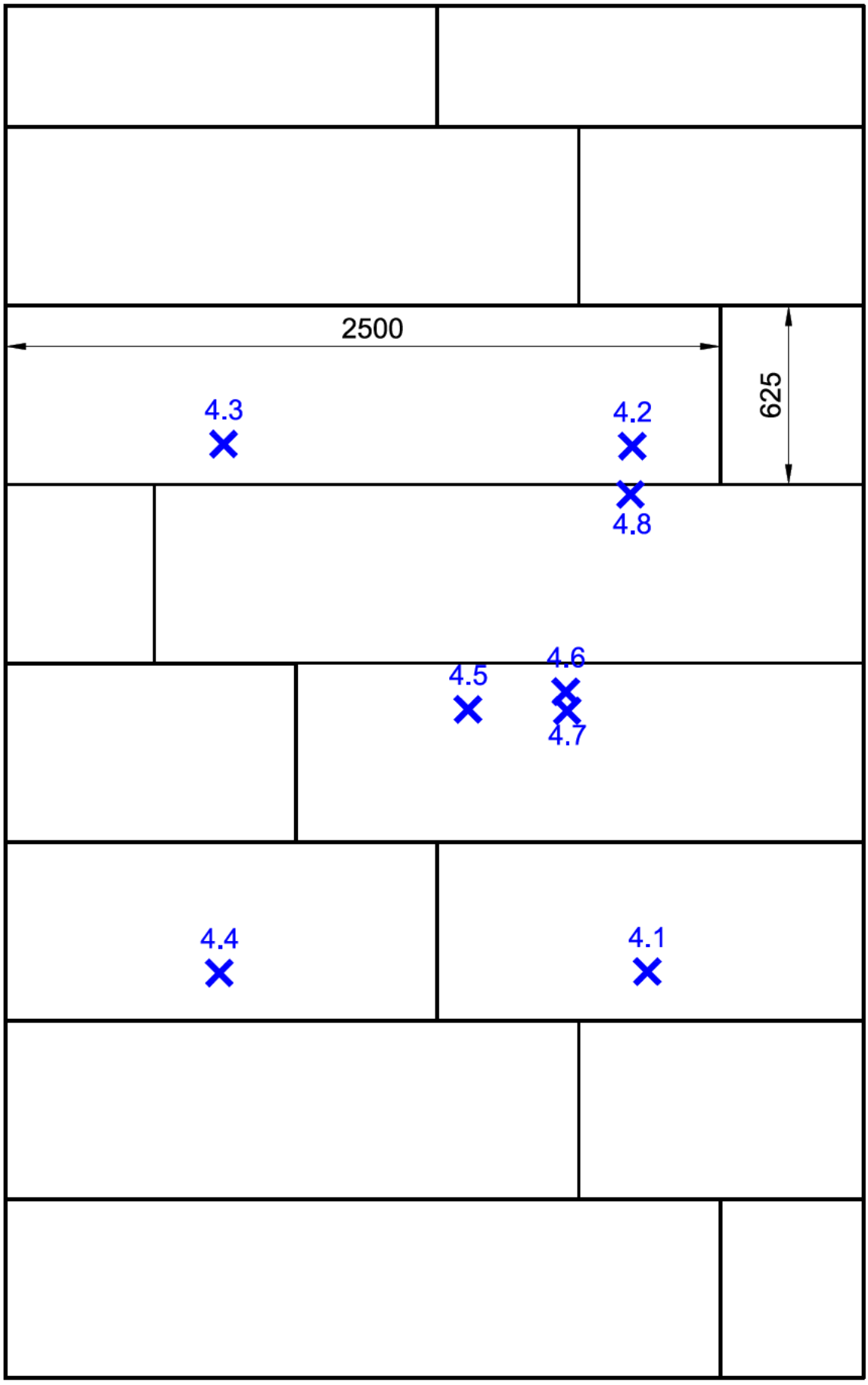
**Danish Institute of Fire and Security Technology**
Sponsor: DBI - Project Wood:UpHigh
Subject: Loadbearing deck - Top layer (unexposed side)

**File No.:** PGA12222A
Test date: 19-12-2022
Enclosure: 1.2




Seen from exposed side

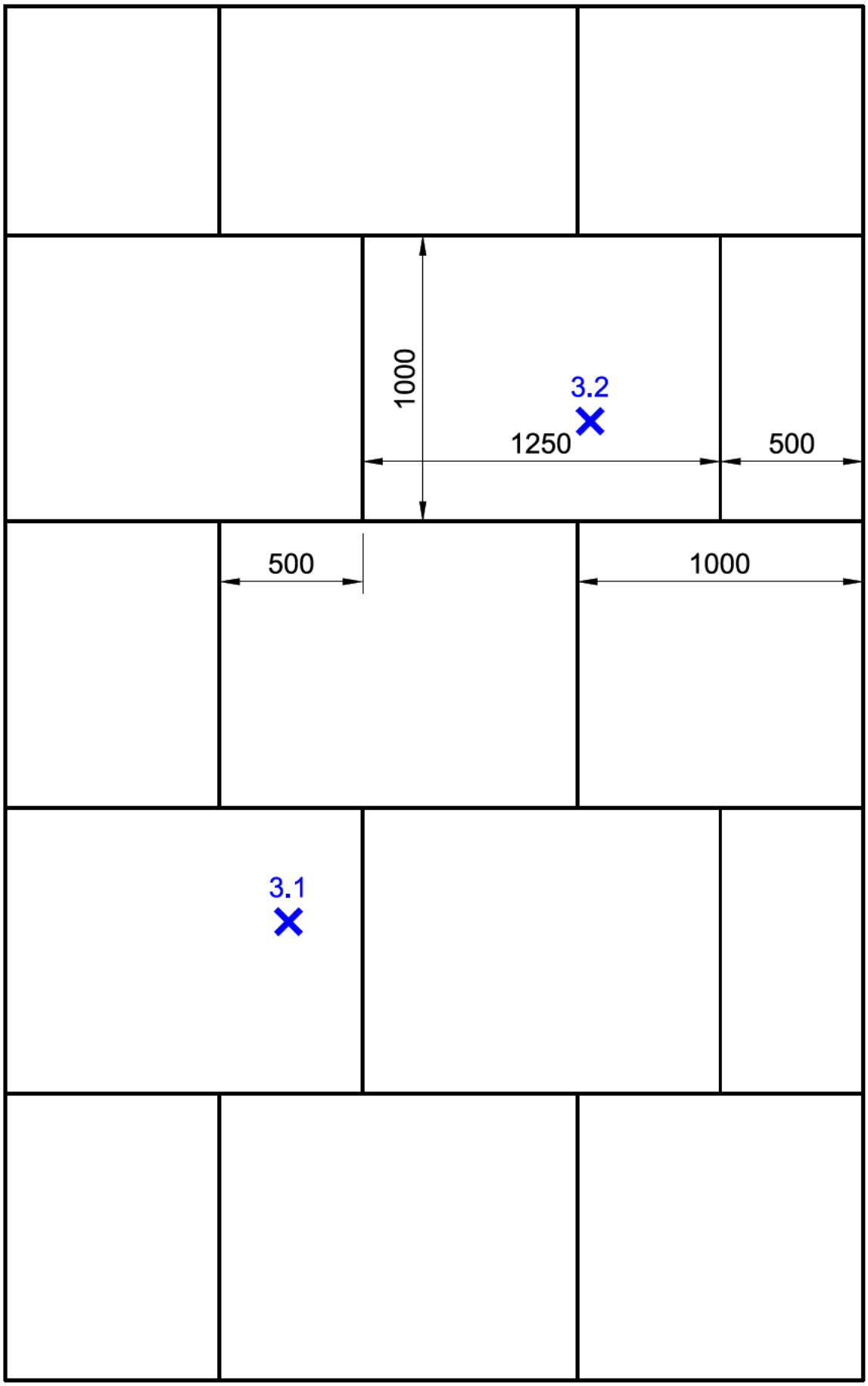
All measurements are in mm




All measurements are in mm

**Danish Institute of Fire and Security Technology**
Sponsor: DBI - Project Wood:UpHigh
Subject: Loadbearing deck - chip board (on exposed side of beams)

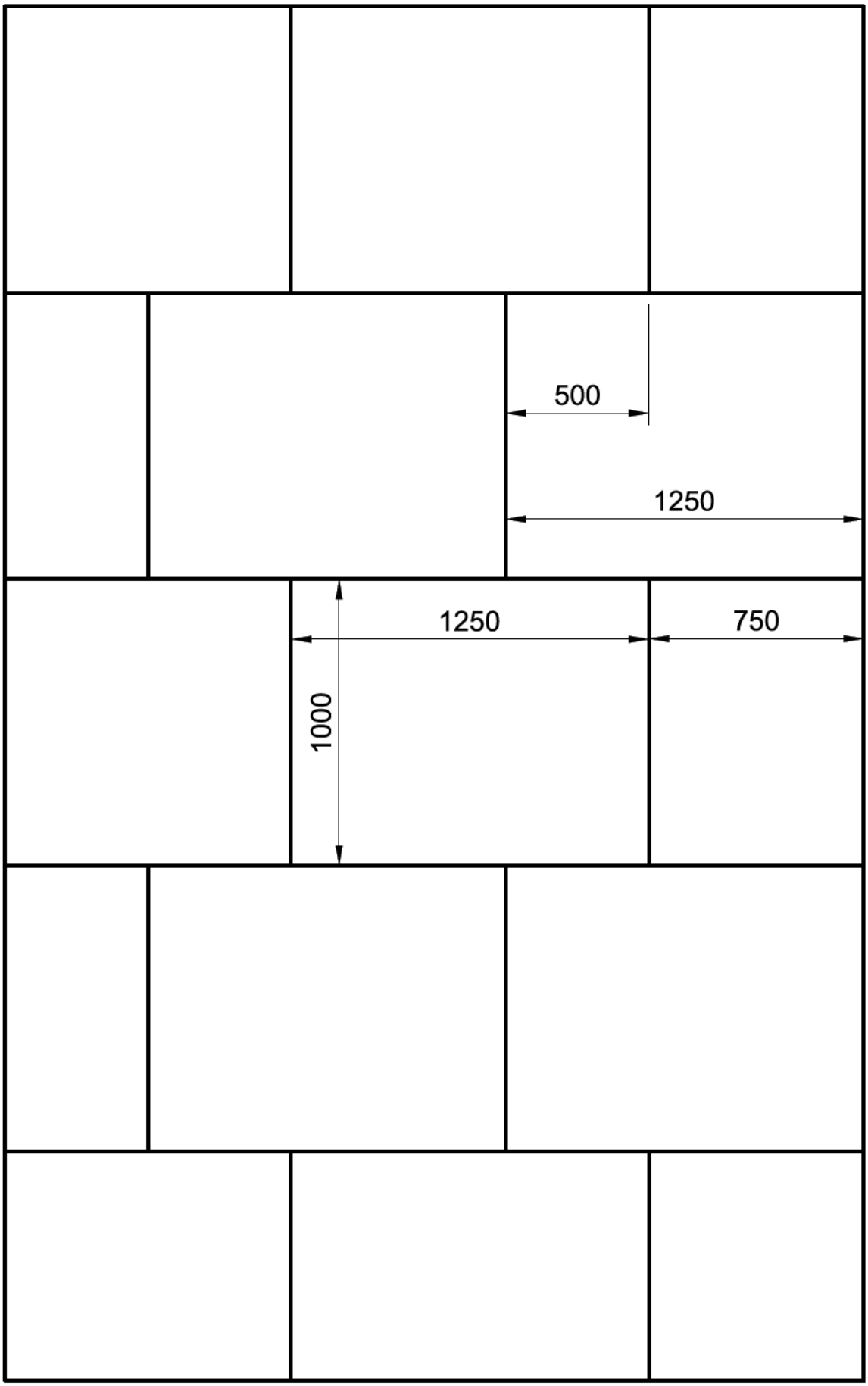
**File No.:** PGA12222A
Test date: 19-12-2022
Enclosure: 1.4



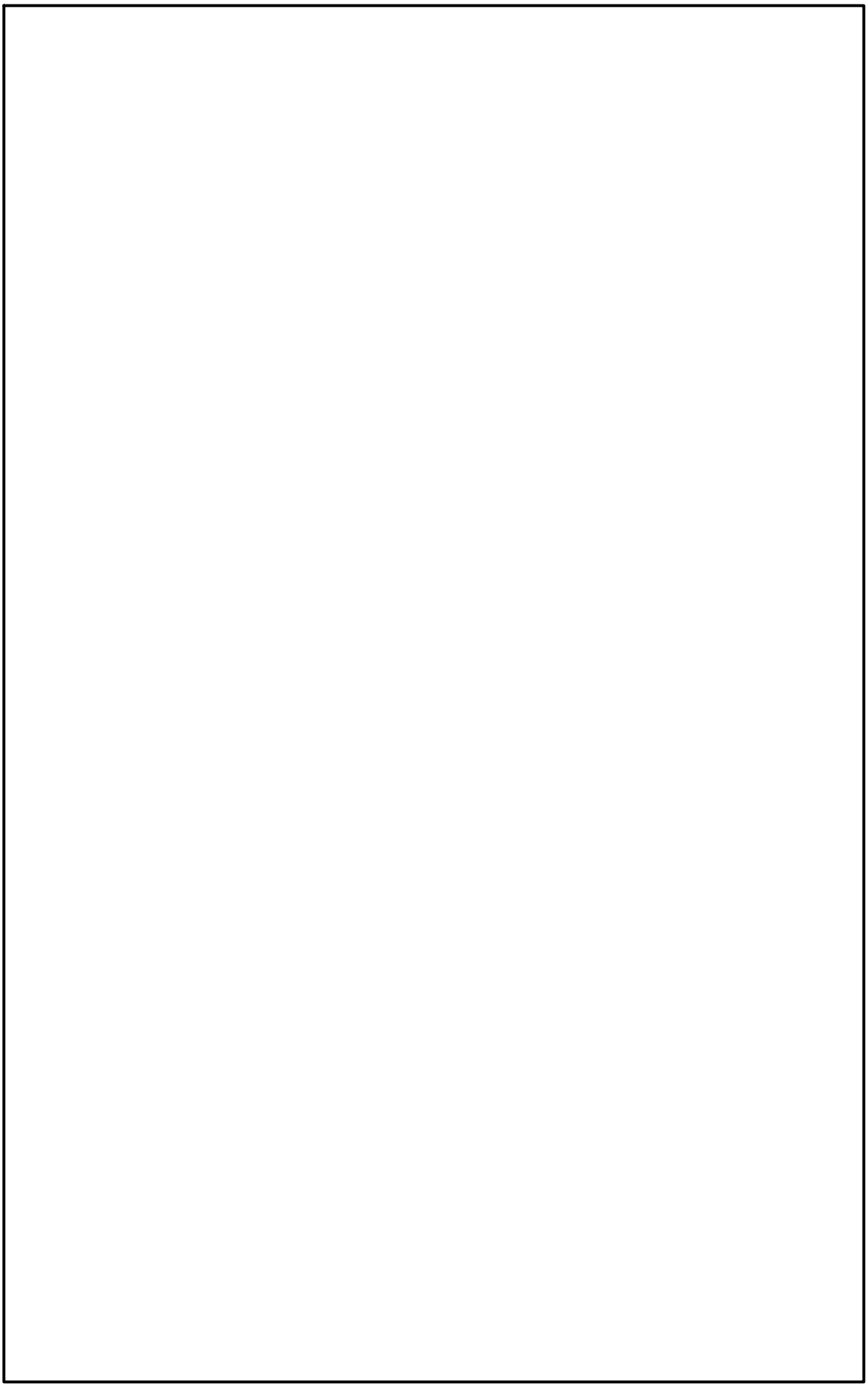

All measurements are in mm

**Danish Institute of Fire and Security Technology**
Sponsor: DBI - Project Wood:UpHigh
Subject: Loadbearing deck - Clay boards (upper layer)

**File No.:** PGA12222A
Test date: 19-12-2022
Enclosure: 1.5

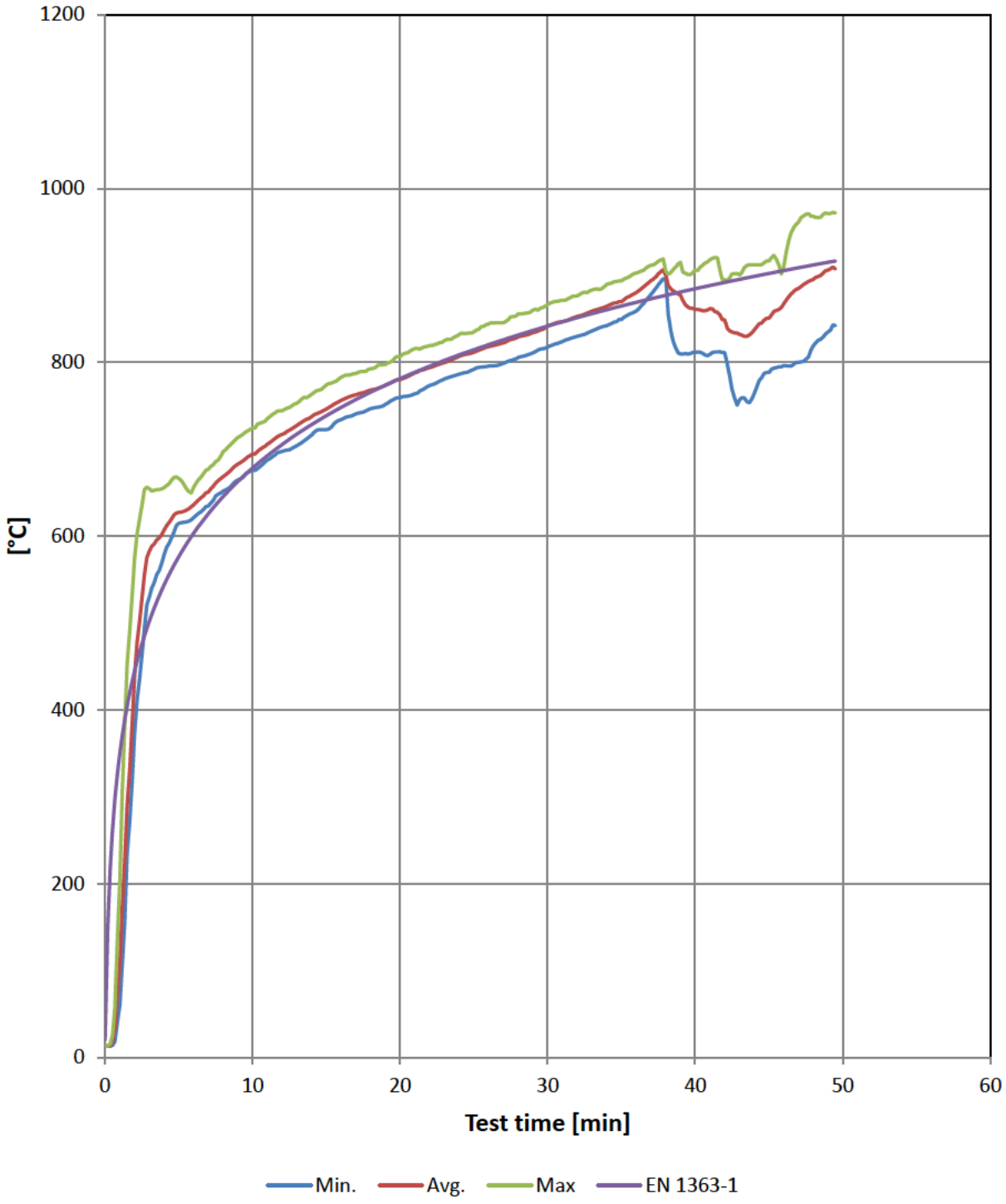



All measurements are in mm



All measurements are in mm

## Furnace

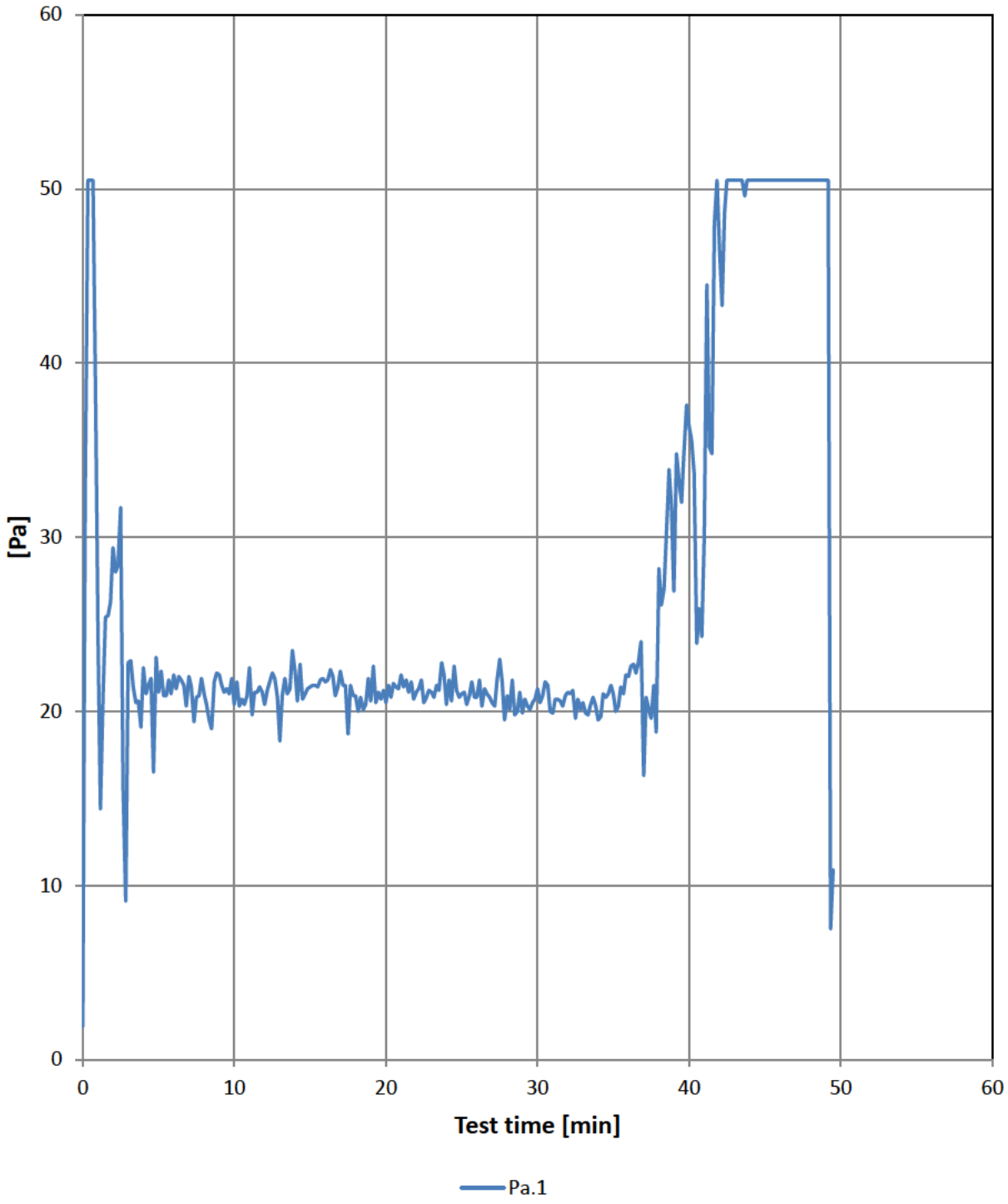

1200
1000
800
600
400
200
0
[°C]
0
10
20
30
40
50
60
Test time [min]
Min.
Avg.
Max
EN 1363-1

## Furnace

| Time | Measured | | | Norm | Area under curve | | | |
|---|---|---|---|---|---|---|---|---|
| Minutes | Minimum | Average | Maximum | EN 1363-1 | Measured | EN 1363-1 | Dev. [%] | Limit [%] |
| 0 | 13 | 13 | 13 | 20 | 0 | 0 | 0.0 | |
| 2 | 372 | 439 | 574 | 445 | 315 | 640 | -50.8 | |
| 4 | 578 | 607 | 656 | 544 | 1434 | 1639 | -12.5 | |
| 6 | 621 | 636 | 656 | 603 | 2684 | 2790 | -3.8 | 15 |
| 8 | 652 | 669 | 697 | 645 | 3988 | 4041 | -1.3 | 15 |
| 10 | 676 | 694 | 725 | 678 | 5353 | 5366 | -0.2 | 15 |
| 12 | 698 | 717 | 744 | 705 | 6764 | 6750 | 0.2 | 14 |
| 14 | 716 | 737 | 763 | 728 | 8218 | 8185 | 0.4 | 13 |
| 15 | 723 | 746 | 774 | 739 | 8961 | 8918 | 0.5 | 13 |
| 16 | 734 | 756 | 783 | 748 | 9712 | 9662 | 0.5 | 12 |
| 18 | 747 | 768 | 793 | 766 | 11237 | 11176 | 0.5 | 11 |
| 20 | 759 | 780 | 807 | 781 | 12785 | 12723 | 0.5 | 10 |
| 22 | 773 | 794 | 819 | 796 | 14360 | 14300 | 0.4 | 9 |
| 24 | 787 | 807 | 832 | 809 | 15960 | 15904 | 0.3 | 8 |
| 26 | 796 | 818 | 844 | 820 | 17584 | 17534 | 0.3 | 7 |
| 28 | 806 | 829 | 856 | 832 | 19230 | 19186 | 0.2 | 6 |
| 30 | 818 | 842 | 866 | 842 | 20899 | 20859 | 0.2 | 5 |
| 32 | 830 | 853 | 877 | 851 | 22594 | 22552 | 0.2 | 5 |
| 34 | 842 | 865 | 890 | 860 | 24311 | 24264 | 0.2 | 5 |
| 36 | 859 | 880 | 903 | 869 | 26054 | 25994 | 0.2 | 5 |
| 38 | 895 | 900 | 905 | 877 | 27842 | 27740 | 0.4 | 4 |
| 40 | 811 | 861 | 906 | 885 | 29591 | 29502 | 0.3 | 4 |
| 42 | 811 | 849 | 895 | 892 | 31308 | 31279 | 0.1 | 4 |
| 44 | 764 | 837 | 913 | 899 | 32976 | 33070 | -0.3 | 4 |
| 46 | 796 | 867 | 910 | 906 | 34681 | 34875 | -0.6 | 4 |
| 48 | 819 | 896 | 968 | 912 | 36450 | 36692 | -0.7 | 4 |
| 49 | 835 | 906 | 971 | 915 | 37351 | 37606 | -0.7 | 3 |

## Horizontal furnace pressure

*The differential pressure in the furnace during the test, measured 100 mm below the test specimen*



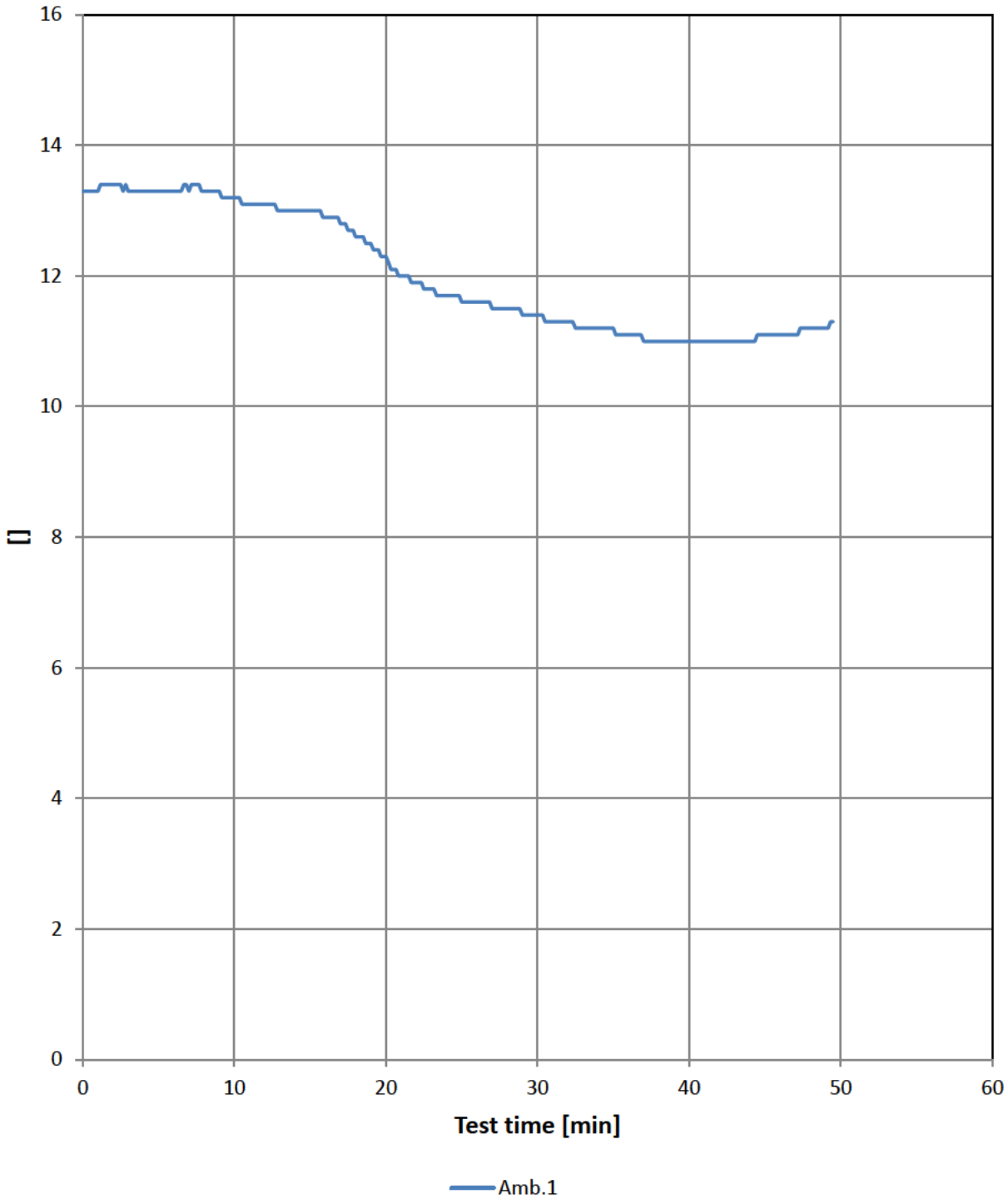
## Horizontal furnace pressure

*The differential pressure in the furnace during the test, measured 100 mm below the test specimen*

| Min. / Pa | Pa.1 |
|---|---|
| **0** | 1.9 |
| **2** | 29.4 |
| **4** | 22.5 |
| **6** | 22.1 |
| **8** | 21.0 |
| **10** | 20.4 |
| **12** | 20.4 |
| **14** | 22.3 |
| **15** | 21.4 |
| **16** | 21.7 |
| **18** | 20.9 |
| **20** | 20.5 |
| **22** | 21.1 |
| **24** | 20.4 |
| **26** | 20.8 |
| **28** | 20.9 |
| **30** | 21.3 |
| **32** | 21.1 |
| **34** | 19.5 |
| **36** | 22.0 |
| **38** | 28.2 |
| **40** | 36.4 |
| **42** | 46.7 |
| **44** | 50.5 |
| **46** | 50.5 |
| **48** | 50.5 |
| **49** | 50.5 |

## Ambient temperature

*The ambient temperature in the laboratory during the test*



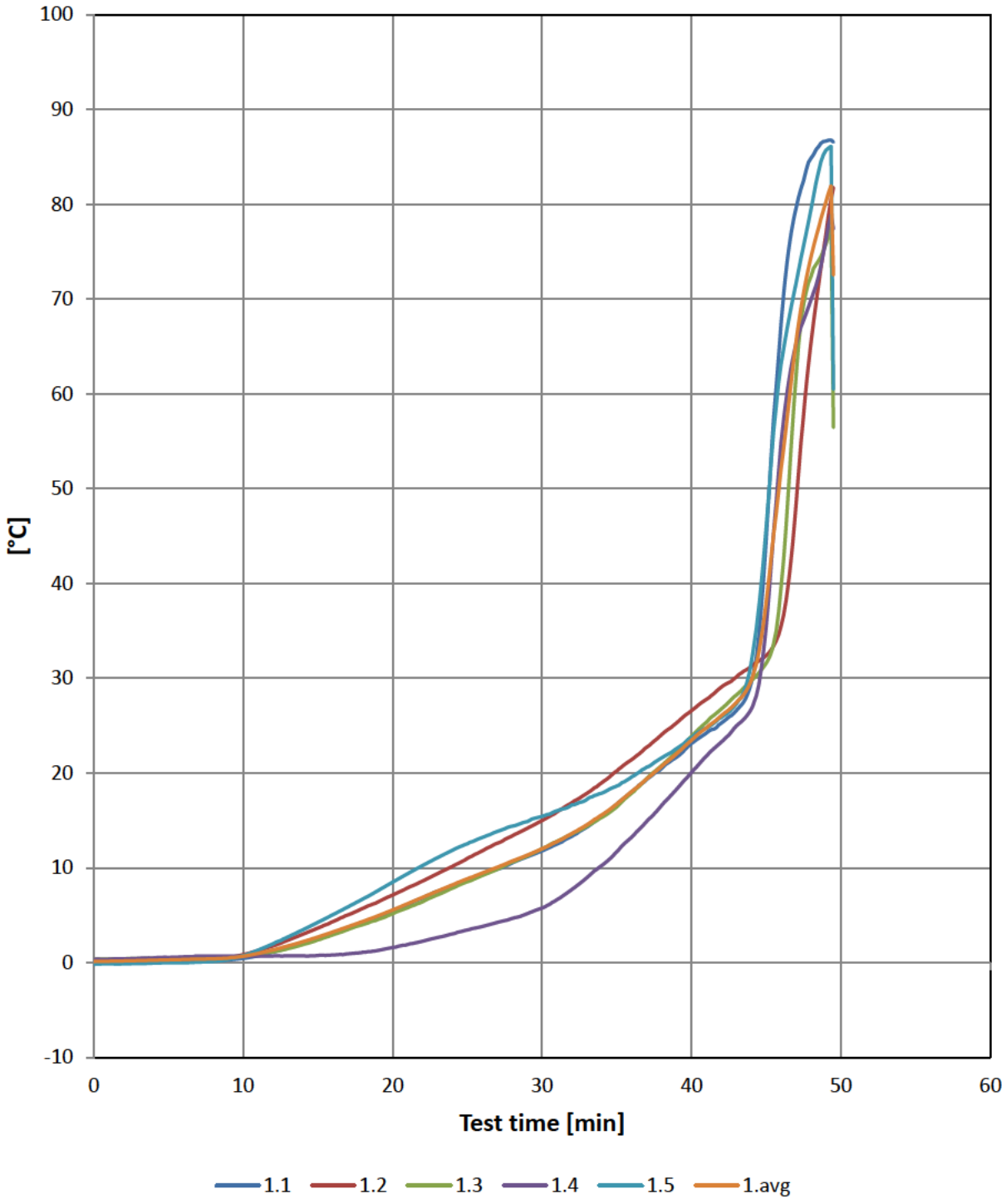
## Ambient temperature

*The ambient temperature in the laboratory during the test*

| Min. / | Amb.1 |
|---|---|
| 0 | 13.3 |
| 2 | 13.4 |
| 4 | 13.3 |
| 6 | 13.3 |
| 8 | 13.3 |
| 10 | 13.2 |
| 12 | 13.1 |
| 14 | 13.0 |
| 15 | 13.0 |
| 16 | 12.9 |
| 18 | 12.6 |
| 20 | 12.3 |
| 22 | 11.9 |
| 24 | 11.7 |
| 26 | 11.6 |
| 28 | 11.5 |
| 30 | 11.4 |
| 32 | 11.3 |
| 34 | 11.2 |
| 36 | 11.1 |
| 38 | 11.0 |
| 40 | 11.0 |
| 42 | 11.0 |
| 44 | 11.0 |
| 46 | 11.1 |
| 48 | 11.2 |
| 49 | 11.2 |

## Average temperature

*Temperature rise on the unexposed side*



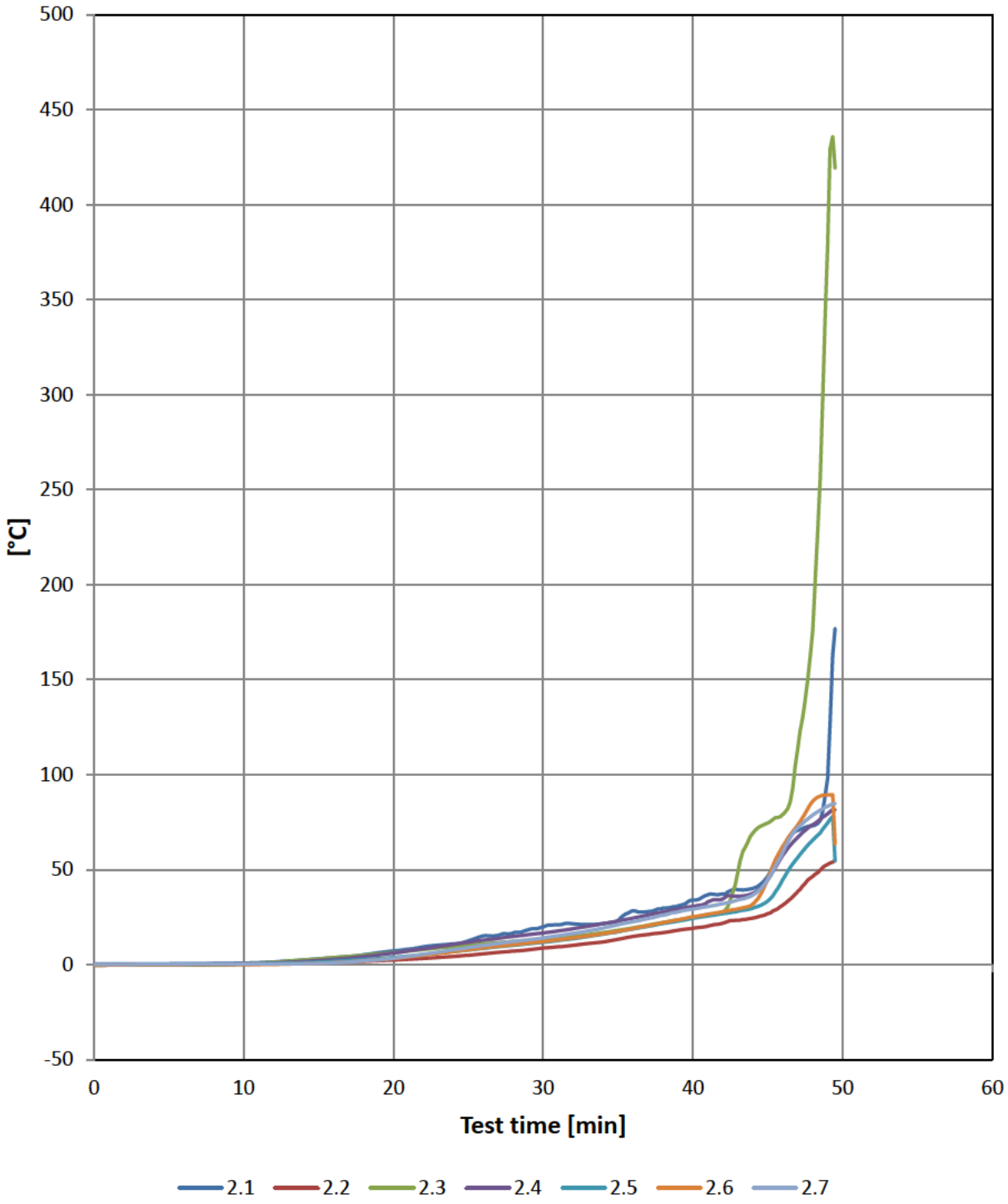
## Average temperature

*Temperature rise on the unexposed side*

| Min. / °C | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.Avg | 1.Max |
|---|---|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6** | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| **8** | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| **10** | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| **12** | 1 | 2 | 1 | 1 | 2 | 1 | 2 |
| **14** | 2 | 3 | 2 | 1 | 3 | 2 | 3 |
| **15** | 2 | 4 | 2 | 1 | 4 | 3 | 4 |
| **16** | 3 | 4 | 3 | 1 | 5 | 3 | 5 |
| **18** | 4 | 6 | 4 | 1 | 7 | 4 | 7 |
| **20** | 5 | 7 | 5 | 2 | 8 | 6 | 8 |
| **22** | 7 | 9 | 6 | 2 | 10 | 7 | 10 |
| **24** | 8 | 10 | 8 | 3 | 12 | 8 | 12 |
| **26** | 9 | 12 | 9 | 4 | 13 | 9 | 13 |
| **28** | 11 | 13 | 11 | 5 | 14 | 11 | 14 |
| **30** | 12 | 15 | 12 | 6 | 15 | 12 | 15 |
| **32** | 13 | 17 | 14 | 8 | 17 | 14 | 17 |
| **34** | 15 | 19 | 15 | 10 | 18 | 16 | 19 |
| **36** | 18 | 21 | 18 | 13 | 20 | 18 | 21 |
| **38** | 21 | 24 | 21 | 17 | 22 | 21 | 24 |
| **40** | 23 | 27 | 24 | 20 | 24 | 23 | 27 |
| **42** | 25 | 29 | 27 | 23 | 26 | 26 | 29 |
| **44** | 30 | 31 | 30 | 27 | 32 | 30 | 32 |
| **46** | 67 | 36 | 40 | 55 | 63 | 52 | 67 |
| **48** | 85 | 65 | 72 | 70 | 79 | 74 | 85 |
| **49** | 87 | 77 | 76 | 76 | 86 | 80 | 87 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Failure [min] | - | - | - | - | - | - | - |
| Failure°C | 180 | 180 | 180 | 180 | 180 | 140 | 180 |

## Maximum temperatures



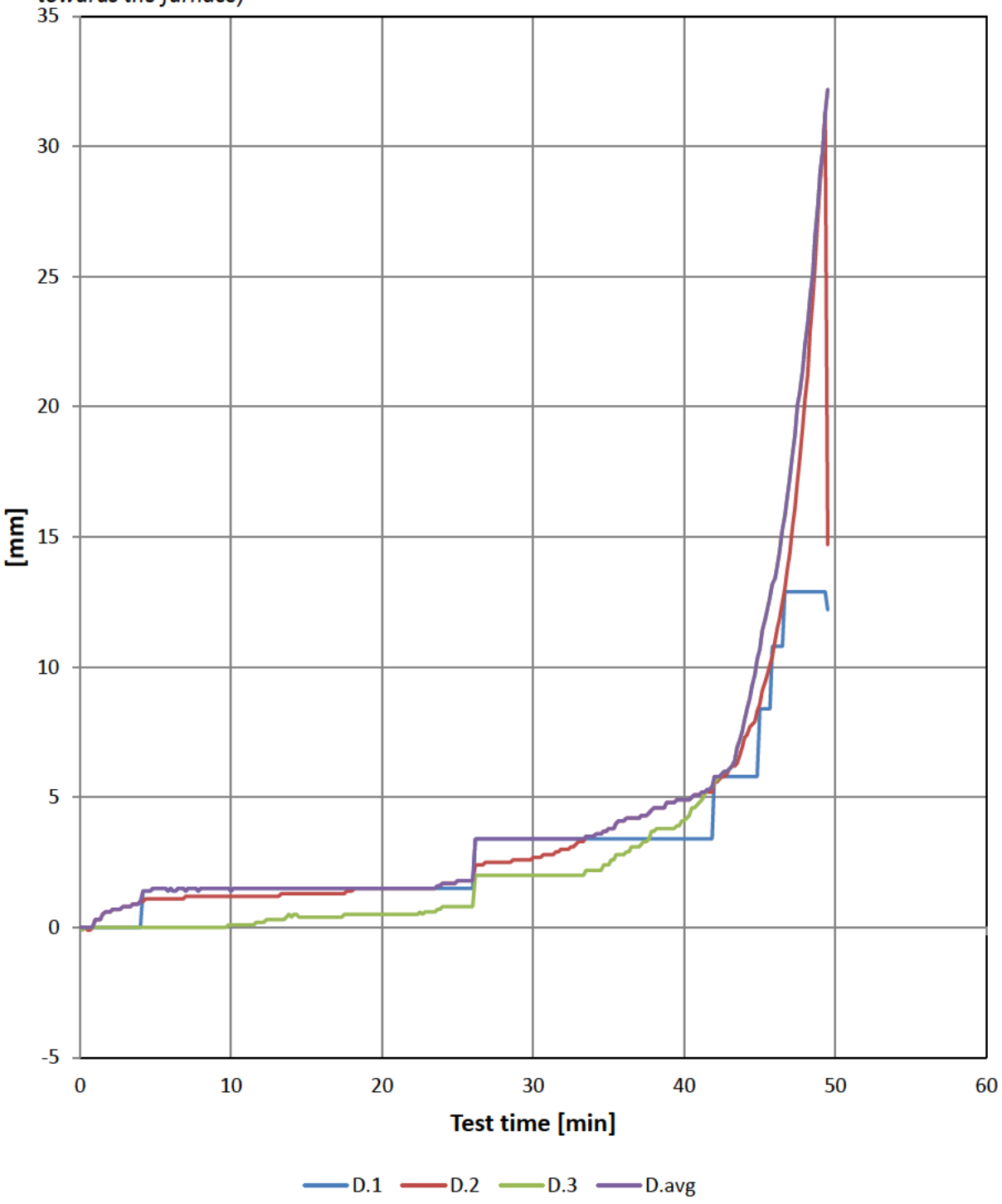
## Maximum temperatures

| Min. / °C | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.Max |
|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **8** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **10** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **12** | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |
| **14** | 2 | 1 | 2 | 2 | 1 | 0 | 1 | 2 |
| **15** | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 3 |
| **16** | 4 | 1 | 4 | 3 | 2 | 1 | 1 | 4 |
| **18** | 5 | 2 | 5 | 4 | 3 | 2 | 2 | 5 |
| **20** | 7 | 2 | 6 | 6 | 4 | 3 | 3 | 7 |
| **22** | 9 | 3 | 8 | 8 | 5 | 5 | 6 | 9 |
| **24** | 11 | 4 | 9 | 11 | 7 | 7 | 8 | 11 |
| **26** | 15 | 6 | 11 | 13 | 9 | 9 | 10 | 15 |
| **28** | 17 | 7 | 12 | 15 | 10 | 11 | 12 | 17 |
| **30** | 20 | 9 | 13 | 17 | 12 | 12 | 14 | 20 |
| **32** | 21 | 10 | 15 | 19 | 14 | 14 | 16 | 21 |
| **34** | 22 | 12 | 17 | 22 | 16 | 16 | 19 | 22 |
| **36** | 28 | 15 | 19 | 25 | 19 | 19 | 23 | 28 |
| **38** | 30 | 17 | 22 | 28 | 22 | 22 | 26 | 30 |
| **40** | 34 | 19 | 25 | 31 | 24 | 25 | 29 | 34 |
| **42** | 37 | 22 | 27 | 35 | 27 | 28 | 32 | 37 |
| **44** | 40 | 24 | 69 | 37 | 30 | 32 | 37 | 69 |
| **46** | 61 | 31 | 79 | 58 | 45 | 62 | 59 | 79 |
| **48** | 73 | 46 | 176 | 74 | 65 | 86 | 79 | 176 |
| **49** | 98 | 53 | 379 | 79 | 75 | 89 | 83 | 379 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Failure [min] | - | - | 48 | - | - | - | - | 48 |
| Failure°C | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |

## Deformation

*The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace)*



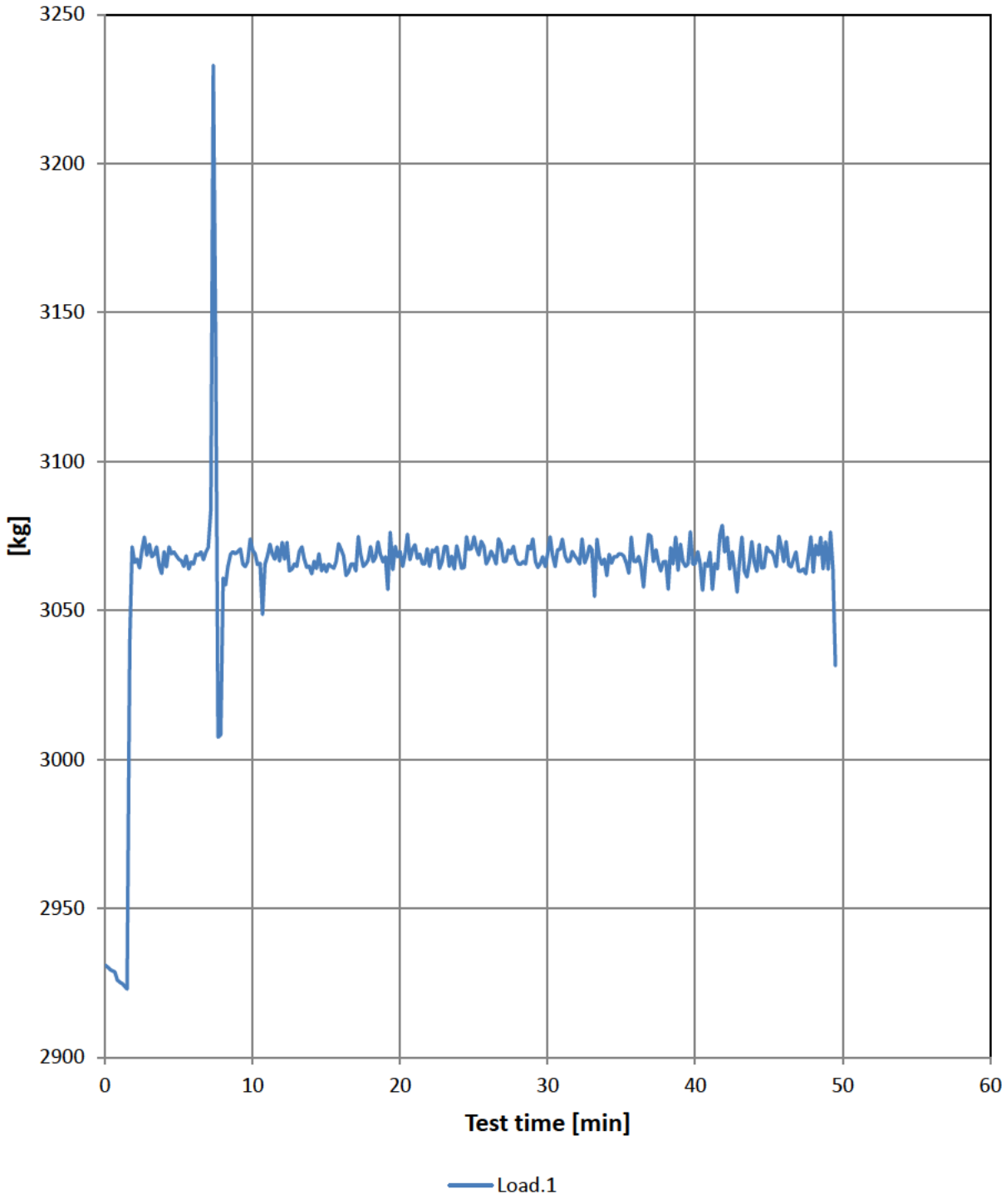
## Deformation

*The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace)*

| Min. / mm | D.1 | D.2 | D.3 | D.Avg | D.Max |
|---|---|---|---|---|---|
| **0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **2** | 0.0 | 0.6 | 0.0 | 0.6 | 0.6 |
| **4** | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 |
| **6** | 1.5 | 1.1 | 0.0 | 1.5 | 1.5 |
| **8** | 1.5 | 1.2 | 0.0 | 1.5 | 1.5 |
| **10** | 1.4 | 1.2 | 0.1 | 1.4 | 1.4 |
| **12** | 1.5 | 1.2 | 0.2 | 1.5 | 1.5 |
| **14** | 1.5 | 1.3 | 0.4 | 1.5 | 1.5 |
| **15** | 1.5 | 1.3 | 0.4 | 1.5 | 1.5 |
| **16** | 1.5 | 1.3 | 0.4 | 1.5 | 1.5 |
| **18** | 1.5 | 1.4 | 0.5 | 1.5 | 1.5 |
| **20** | 1.5 | 1.5 | 0.5 | 1.5 | 1.5 |
| **22** | 1.5 | 1.5 | 0.5 | 1.5 | 1.5 |
| **24** | 1.5 | 1.7 | 0.8 | 1.7 | 1.7 |
| **26** | 1.5 | 1.8 | 0.8 | 1.8 | 1.8 |
| **28** | 3.4 | 2.5 | 2.0 | 3.4 | 3.4 |
| **30** | 3.4 | 2.7 | 2.0 | 3.4 | 3.4 |
| **32** | 3.4 | 3.0 | 2.0 | 3.4 | 3.4 |
| **34** | 3.4 | 3.5 | 2.2 | 3.5 | 3.5 |
| **36** | 3.4 | 4.1 | 2.8 | 4.1 | 4.1 |
| **38** | 3.4 | 4.6 | 3.7 | 4.6 | 4.6 |
| **40** | 3.4 | 4.9 | 4.1 | 4.9 | 4.9 |
| **42** | 5.8 | 5.6 | 5.6 | 5.8 | 5.8 |
| **44** | 5.8 | 7.3 | 8.0 | 8.0 | 8.0 |
| **46** | 10.8 | 11.0 | 13.4 | 13.4 | 13.4 |
| **48** | 12.9 | 20.3 | 22.4 | 22.4 | 22.4 |
| **49** | 12.9 | 28.7 | 29.0 | 29.0 | 29.0 |

| | | | | | |
|---|---|---|---|---|---|
| Failure [min] | - | - | - | - | - |
| Failuremm | 218.0 | 218.0 | 218.0 | 145.0 | 218.0 |

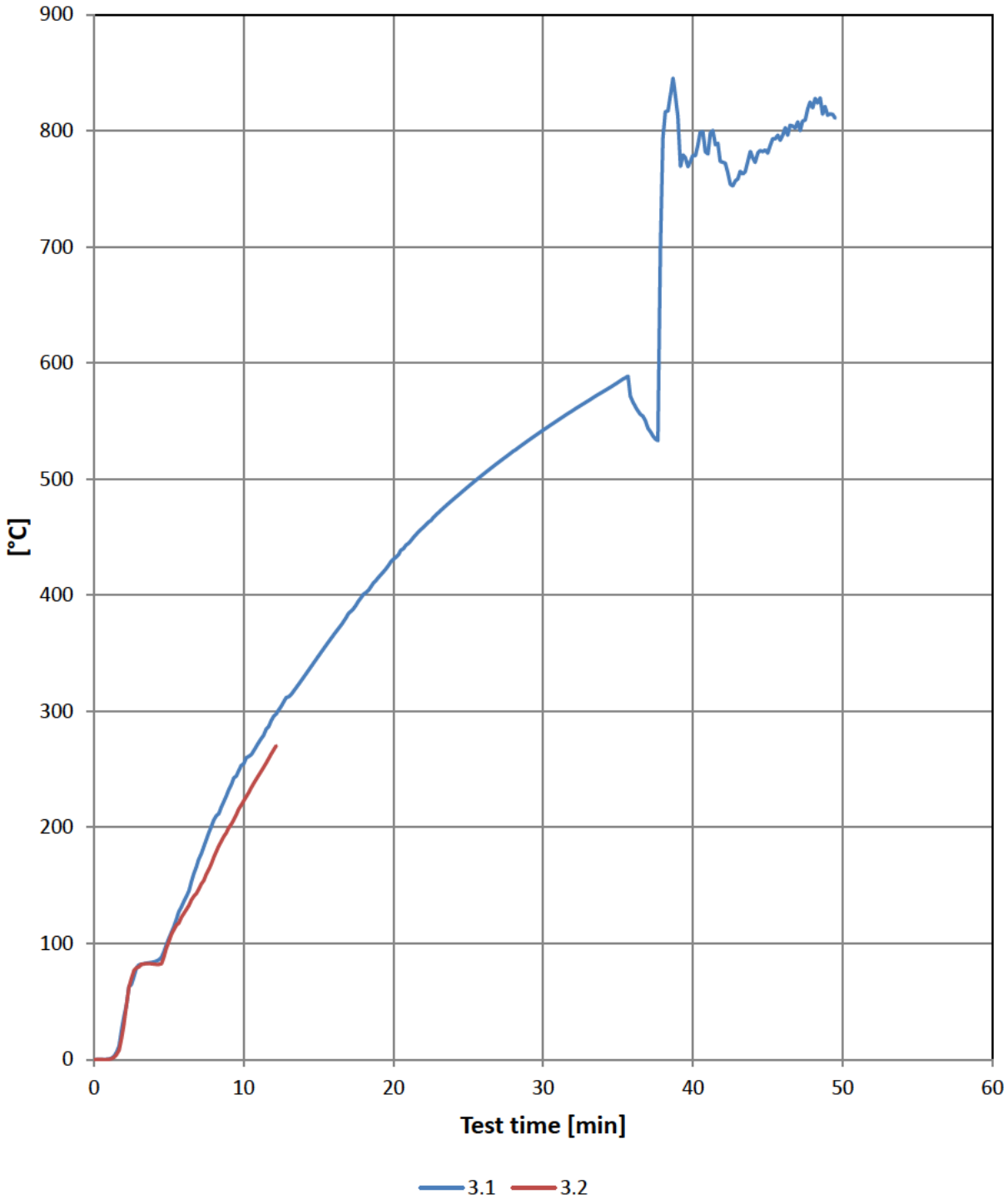
## Load per hydraulic jack



# Load per hydraulic jack

| Min. / kg | Load.1 |
|---|---|
| 0 | 2931 |
| 2 | 3066 |
| 4 | 3070 |
| 6 | 3066 |
| 8 | 3061 |
| 10 | 3070 |
| 12 | 3073 |
| 14 | 3062 |
| 15 | 3063 |
| 16 | 3070 |
| 18 | 3071 |
| 20 | 3070 |
| 22 | 3065 |
| 24 | 3068 |
| 26 | 3067 |
| 28 | 3066 |
| 30 | 3069 |
| 32 | 3067 |
| 34 | 3062 |
| 36 | 3067 |
| 38 | 3066 |
| 40 | 3066 |
| 42 | 3070 |
| 44 | 3066 |
| 46 | 3067 |
| 48 | 3063 |
| 49 | 3064 |

## Between clay board layers

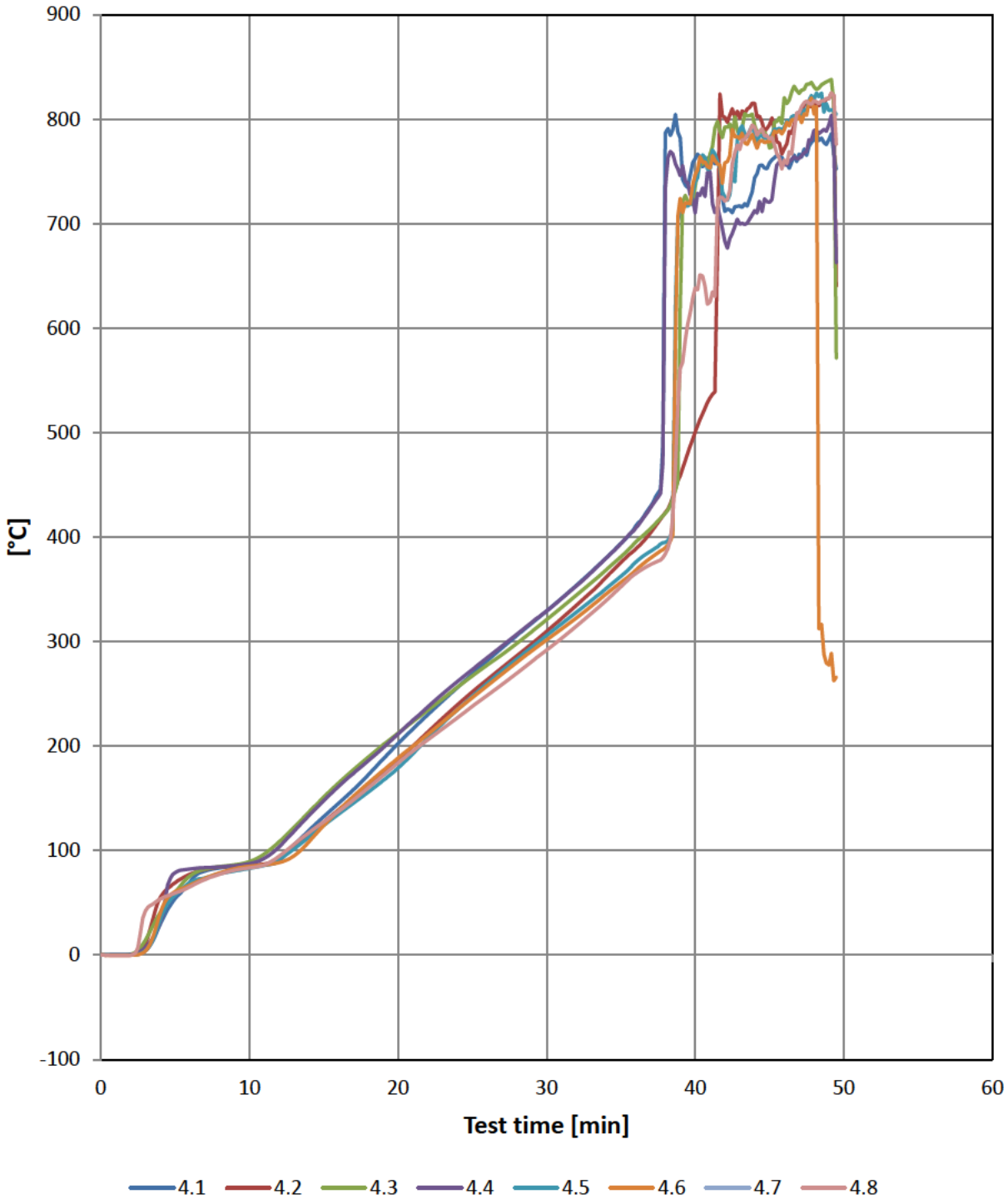


## Between clay board layers

| Min. / °C | 3.1 | 3.2 | 3.Max |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 2 | 37 | 30 | 37 |
| 4 | 84 | 82 | 84 |
| 6 | 136 | 126 | 136 |
| 8 | 206 | 174 | 206 |
| 10 | 255 | 223 | 255 |
| 12 | 296 | 267 | 296 |
| 14 | 329 | 0 | 329 |
| 15 | 348 | 0 | 348 |
| 16 | 366 | 0 | 366 |
| 18 | 401 | 0 | 401 |
| 20 | 431 | 0 | 431 |
| 22 | 459 | 0 | 459 |
| 24 | 483 | 0 | 483 |
| 26 | 504 | 0 | 504 |
| 28 | 524 | 0 | 524 |
| 30 | 542 | 0 | 542 |
| 32 | 559 | 0 | 559 |
| 34 | 575 | 0 | 575 |
| 36 | 566 | 0 | 566 |
| 38 | 794 | 0 | 794 |
| 40 | 779 | 0 | 779 |
| 42 | 773 | 0 | 773 |
| 44 | 777 | 0 | 777 |
| 46 | 796 | 0 | 796 |
| 48 | 820 | 0 | 820 |
| 49 | 814 | 0 | 814 |

| | | | |
|---|---|---|---|
| Failure [min] | 10.83 | 38.00 | 10.83 |
| Failure°C | 270 | 270 | 270 |

## Between clay board and chipboard

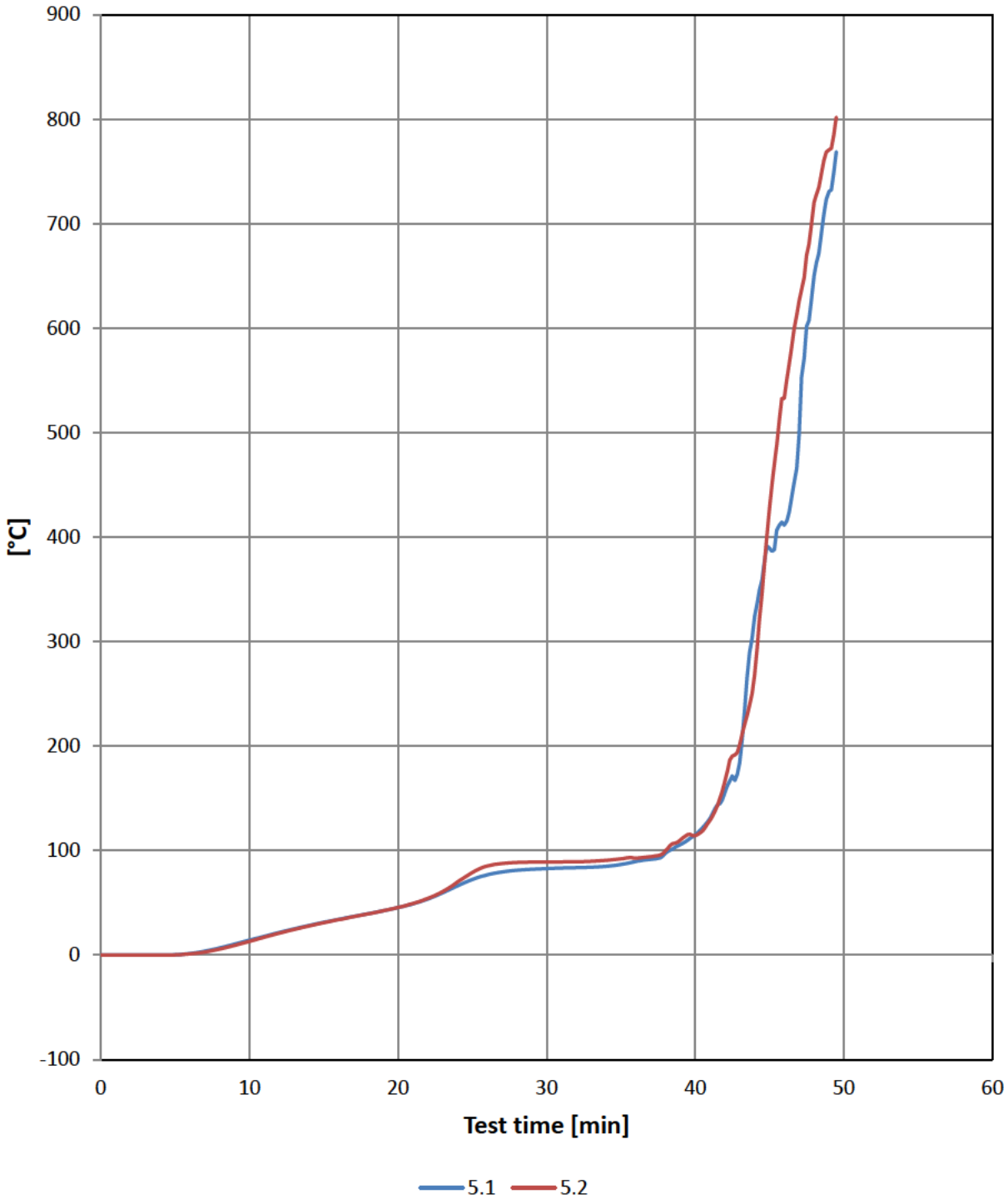


## Between clay board and chipboard

| Min. / °C | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.Max |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| **2** | 0 | 0 | 1 | 1 | 0 | 0 | - | 0 | 1 |
| **4** | 29 | 55 | 41 | 31 | 34 | 40 | - | 54 | 55 |
| **6** | 70 | 77 | 76 | 83 | 70 | 67 | - | 65 | 82 |
| **8** | 83 | 84 | 85 | 84 | 78 | 79 | - | 77 | 85 |
| **10** | 86 | 86 | 89 | 88 | 83 | 85 | - | 84 | 89 |
| **12** | 90 | 92 | 108 | 104 | 92 | 89 | - | 95 | 108 |
| **14** | 119 | 115 | 137 | 134 | 113 | 108 | - | 117 | 137 |
| **15** | 133 | 127 | 151 | 148 | 124 | 124 | - | 128 | 151 |
| **16** | 145 | 139 | 165 | 161 | 135 | 139 | - | 138 | 165 |
| **18** | 173 | 162 | 190 | 186 | 156 | 165 | - | 160 | 189 |
| **20** | 202 | 187 | 212 | 211 | 179 | 189 | - | 184 | 212 |
| **22** | 230 | 213 | 234 | 238 | 208 | 211 | - | 206 | 237 |
| **24** | 256 | 240 | 256 | 262 | 235 | 235 | - | 227 | 262 |
| **26** | 282 | 264 | 278 | 285 | 260 | 258 | - | 248 | 285 |
| **28** | 306 | 287 | 298 | 307 | 283 | 280 | - | 270 | 307 |
| **30** | 329 | 310 | 321 | 329 | 306 | 302 | - | 292 | 329 |
| **32** | 354 | 335 | 344 | 353 | 328 | 323 | - | 315 | 354 |
| **34** | 380 | 362 | 369 | 380 | 351 | 346 | - | 339 | 380 |
| **36** | 411 | 389 | 395 | 409 | 376 | 368 | - | 365 | 411 |
| **38** | 787 | 423 | 423 | 734 | 395 | 390 | - | 384 | 787 |
| **40** | 762 | 501 | 735 | 710 | 740 | 747 | - | 639 | 762 |
| **42** | 712 | 802 | 793 | 684 | 726 | 758 | - | 722 | 802 |
| **44** | 744 | 815 | 794 | 713 | 786 | 778 | - | 792 | 815 |
| **46** | 759 | 772 | 821 | 757 | 793 | 790 | - | 761 | 821 |
| **48** | 780 | 816 | 831 | 790 | 819 | 805 | - | 818 | 831 |
| **49** | 781 | 820 | 837 | 795 | 808 | 278 | - | 820 | 837 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Failure [min] | 25.00 | 26.50 | 25.17 | 24.67 | 26.83 | 27.00 | - | 28.00 | 24.67 |
| Failure°C | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 |

## Between chipboard and beams

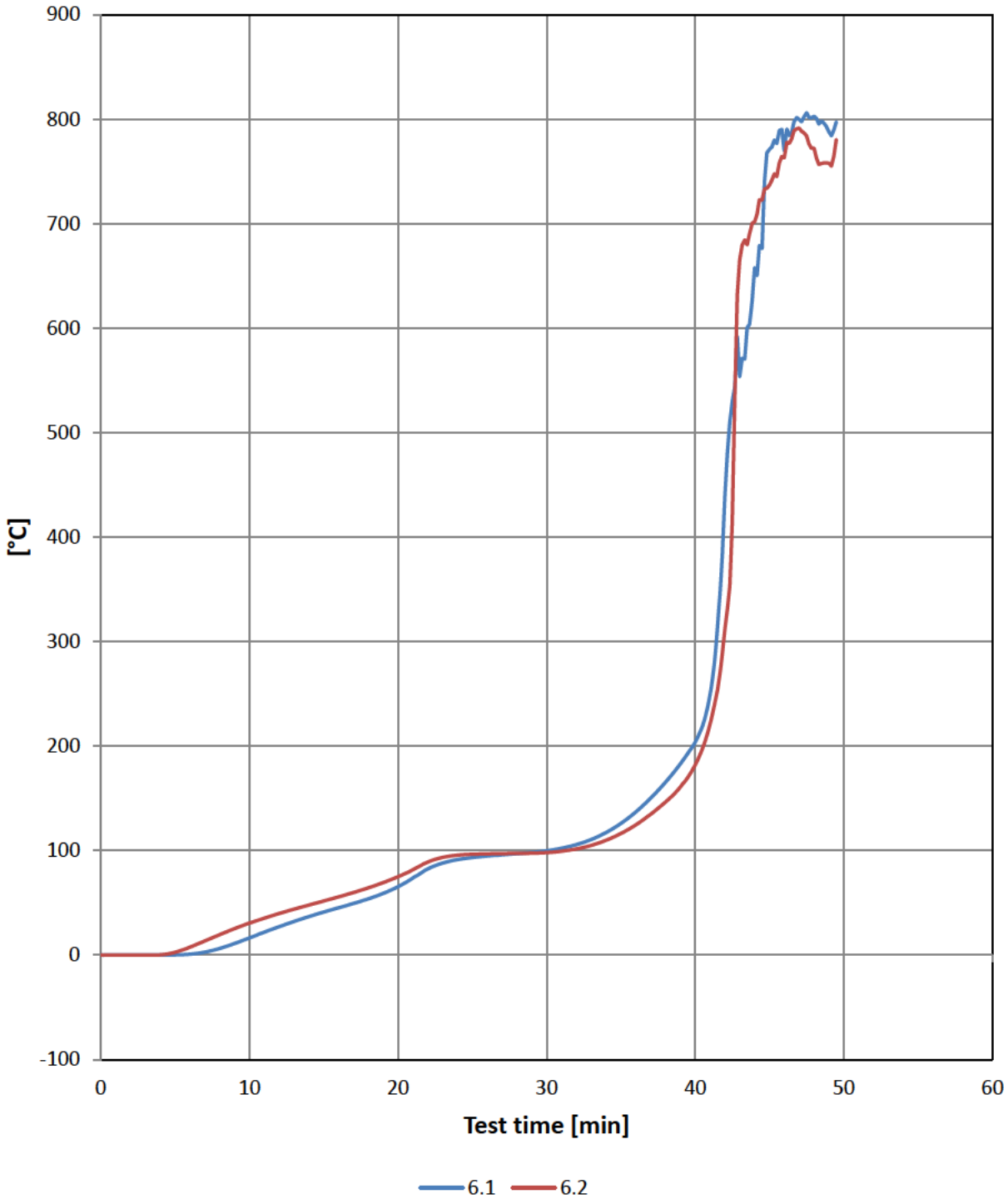


## Between chipboard and beams

| Min. / °C | 5.1 | 5.2 | 5.Max |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 6 | 1 | 1 | 1 |
| 8 | 7 | 6 | 7 |
| 10 | 14 | 13 | 14 |
| 12 | 22 | 21 | 22 |
| 14 | 28 | 28 | 28 |
| 15 | 31 | 31 | 31 |
| 16 | 34 | 34 | 34 |
| 18 | 40 | 40 | 40 |
| 20 | 45 | 46 | 46 |
| 22 | 54 | 54 | 54 |
| 24 | 66 | 70 | 70 |
| 26 | 77 | 85 | 85 |
| 28 | 81 | 89 | 89 |
| 30 | 83 | 89 | 89 |
| 32 | 84 | 89 | 89 |
| 34 | 85 | 91 | 91 |
| 36 | 90 | 93 | 93 |
| 38 | 98 | 100 | 100 |
| 40 | 115 | 114 | 115 |
| 42 | 155 | 166 | 166 |
| 44 | 324 | 268 | 324 |
| 46 | 411 | 533 | 533 |
| 48 | 650 | 720 | 720 |
| 49 | 731 | 771 | 771 |

| | | | |
|---|---|---|---|
| Failure [min] | 43.50 | 44.00 | 43.50 |
| Failure°C | 270 | 270 | 270 |

## Between chipboard and wood fiber insulation

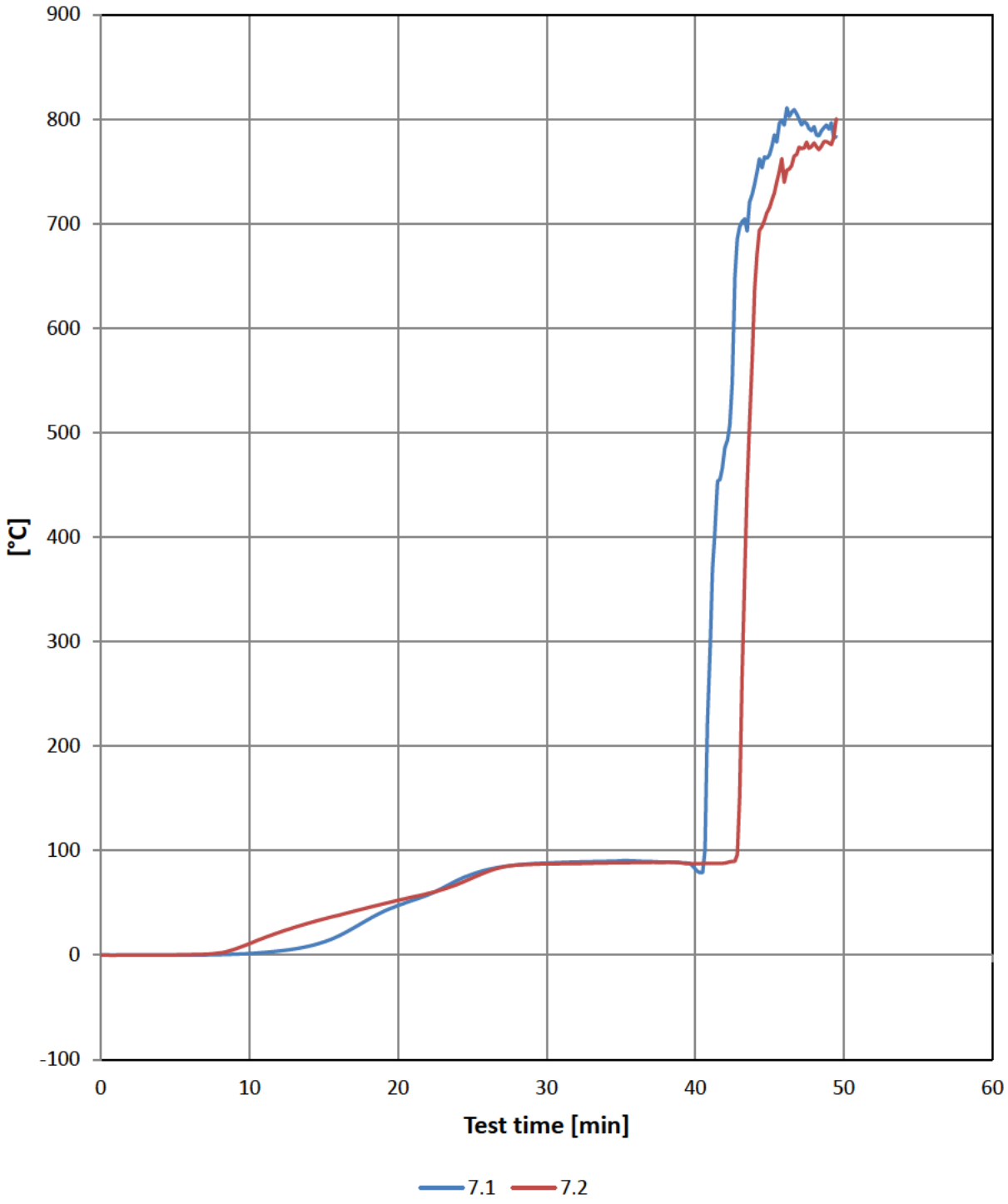


## Between chipboard and wood fiber insulation

| Min. / °C | 6.1 | 6.2 | 6.Max |
|---|---|---|---|
| **0** | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 |
| **4** | 0 | 0 | 0 |
| **6** | 1 | 8 | 8 |
| **8** | 6 | 20 | 20 |
| **10** | 16 | 31 | 31 |
| **12** | 27 | 40 | 40 |
| **14** | 37 | 48 | 48 |
| **15** | 41 | 52 | 52 |
| **16** | 45 | 56 | 56 |
| **18** | 54 | 65 | 64 |
| **20** | 66 | 75 | 75 |
| **22** | 82 | 89 | 89 |
| **24** | 91 | 96 | 96 |
| **26** | 95 | 97 | 97 |
| **28** | 97 | 97 | 97 |
| **30** | 100 | 98 | 100 |
| **32** | 106 | 102 | 106 |
| **34** | 117 | 110 | 117 |
| **36** | 137 | 125 | 137 |
| **38** | 165 | 146 | 165 |
| **40** | 204 | 182 | 204 |
| **42** | 437 | 311 | 437 |
| **44** | 658 | 702 | 702 |
| **46** | 770 | 763 | 770 |
| **48** | 803 | 772 | 803 |
| **49** | 788 | 758 | 788 |

| | | | |
|---|---|---|---|
| Failure [min] | 41.17 | 41.67 | 41.17 |
| Failure°C | 270 | 270 | 270 |

## In the middle of wood fiber insulation

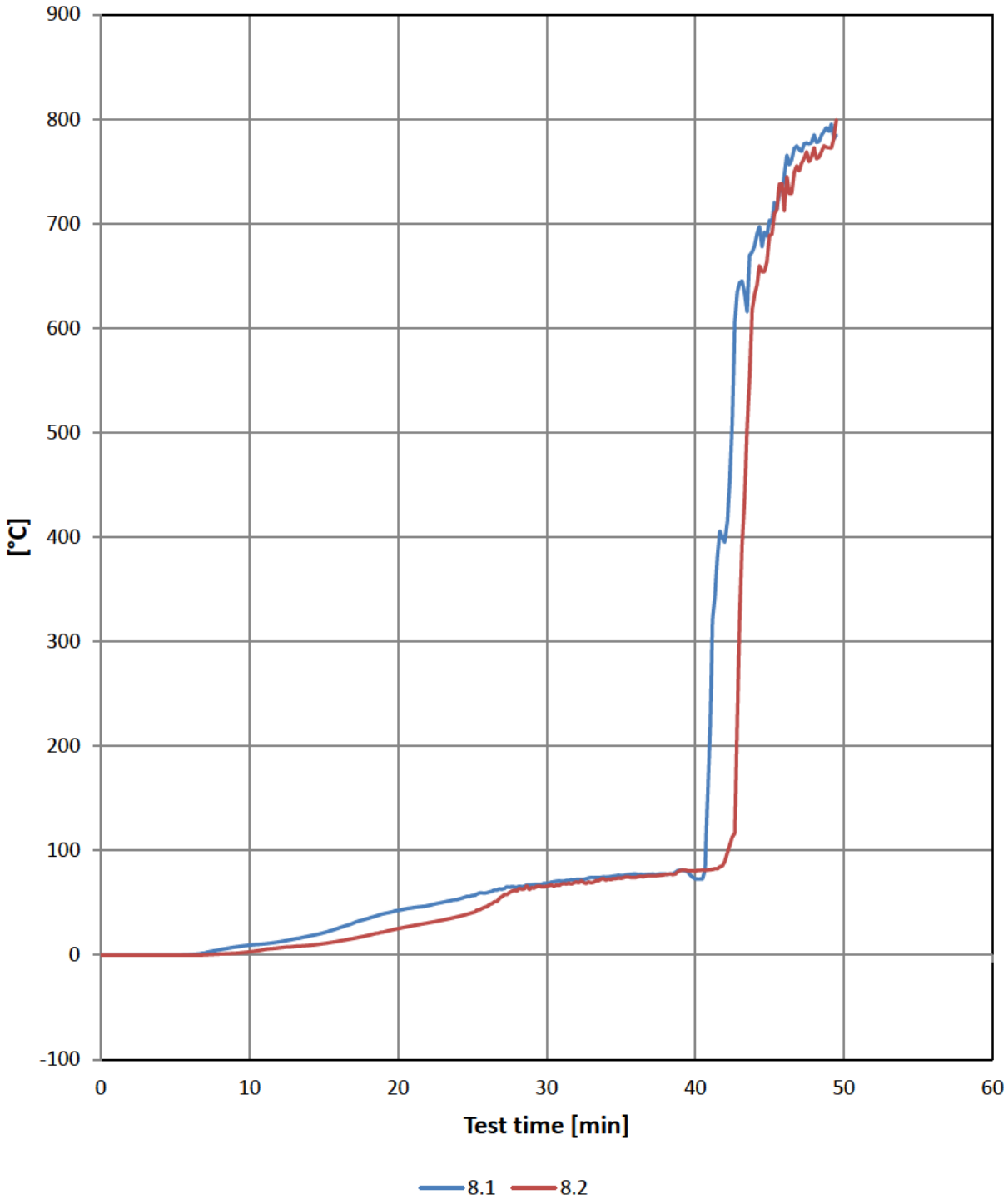


## In the middle of wood fiber insulation

| Min. / °C | 7.1 | 7.2 | 7.Max |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |
| 8 | 0 | 2 | 2 |
| 10 | 2 | 11 | 11 |
| 12 | 4 | 22 | 22 |
| 14 | 9 | 31 | 31 |
| 15 | 12 | 35 | 35 |
| 16 | 18 | 38 | 38 |
| 18 | 34 | 45 | 45 |
| 20 | 47 | 52 | 52 |
| 22 | 58 | 59 | 59 |
| 24 | 72 | 68 | 71 |
| 26 | 82 | 80 | 82 |
| 28 | 86 | 86 | 86 |
| 30 | 88 | 87 | 88 |
| 32 | 89 | 88 | 89 |
| 34 | 90 | 88 | 90 |
| 36 | 90 | 89 | 90 |
| 38 | 89 | 89 | 89 |
| 40 | 83 | 88 | 88 |
| 42 | 485 | 88 | 485 |
| 44 | 738 | 637 | 738 |
| 46 | 794 | 740 | 794 |
| 48 | 793 | 777 | 793 |
| 49 | 791 | 777 | 791 |

| | | | |
|---|---|---|---|
| Failure [min] | 40.83 | 43.17 | 40.83 |
| Failure°C | 270 | 270 | 270 |

## On top of wood fiber insulation

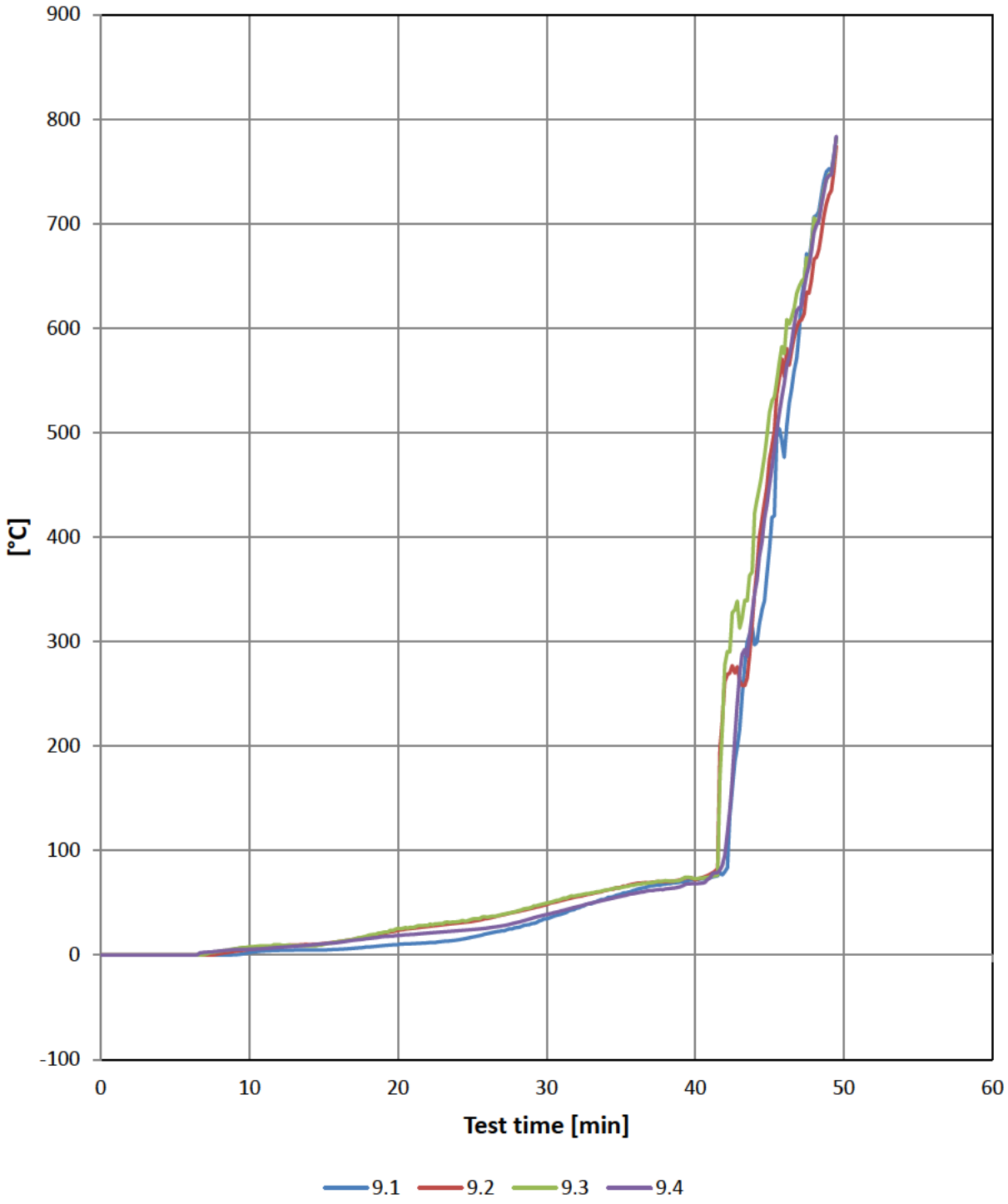


## On top of wood fiber insulation

| Min. / °C | 8.1 | 8.2 | 8.Max |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 6 | 1 | 0 | 1 |
| 8 | 5 | 1 | 5 |
| 10 | 9 | 3 | 9 |
| 12 | 13 | 7 | 13 |
| 14 | 18 | 9 | 18 |
| 15 | 21 | 11 | 21 |
| 16 | 26 | 13 | 26 |
| 18 | 35 | 19 | 35 |
| 20 | 43 | 25 | 43 |
| 22 | 47 | 31 | 47 |
| 24 | 53 | 37 | 53 |
| 26 | 60 | 47 | 60 |
| 28 | 65 | 61 | 65 |
| 30 | 69 | 66 | 69 |
| 32 | 72 | 70 | 72 |
| 34 | 75 | 72 | 75 |
| 36 | 78 | 74 | 78 |
| 38 | 77 | 77 | 77 |
| 40 | 73 | 80 | 80 |
| 42 | 395 | 89 | 395 |
| 44 | 679 | 632 | 679 |
| 46 | 745 | 712 | 745 |
| 48 | 785 | 773 | 785 |
| 49 | 789 | 773 | 789 |

| | | | |
|---|---|---|---|
| Failure [min] | 41.00 | 42.83 | 41.00 |
| Failure°C | 270 | 270 | 270 |

## At mid height of beams

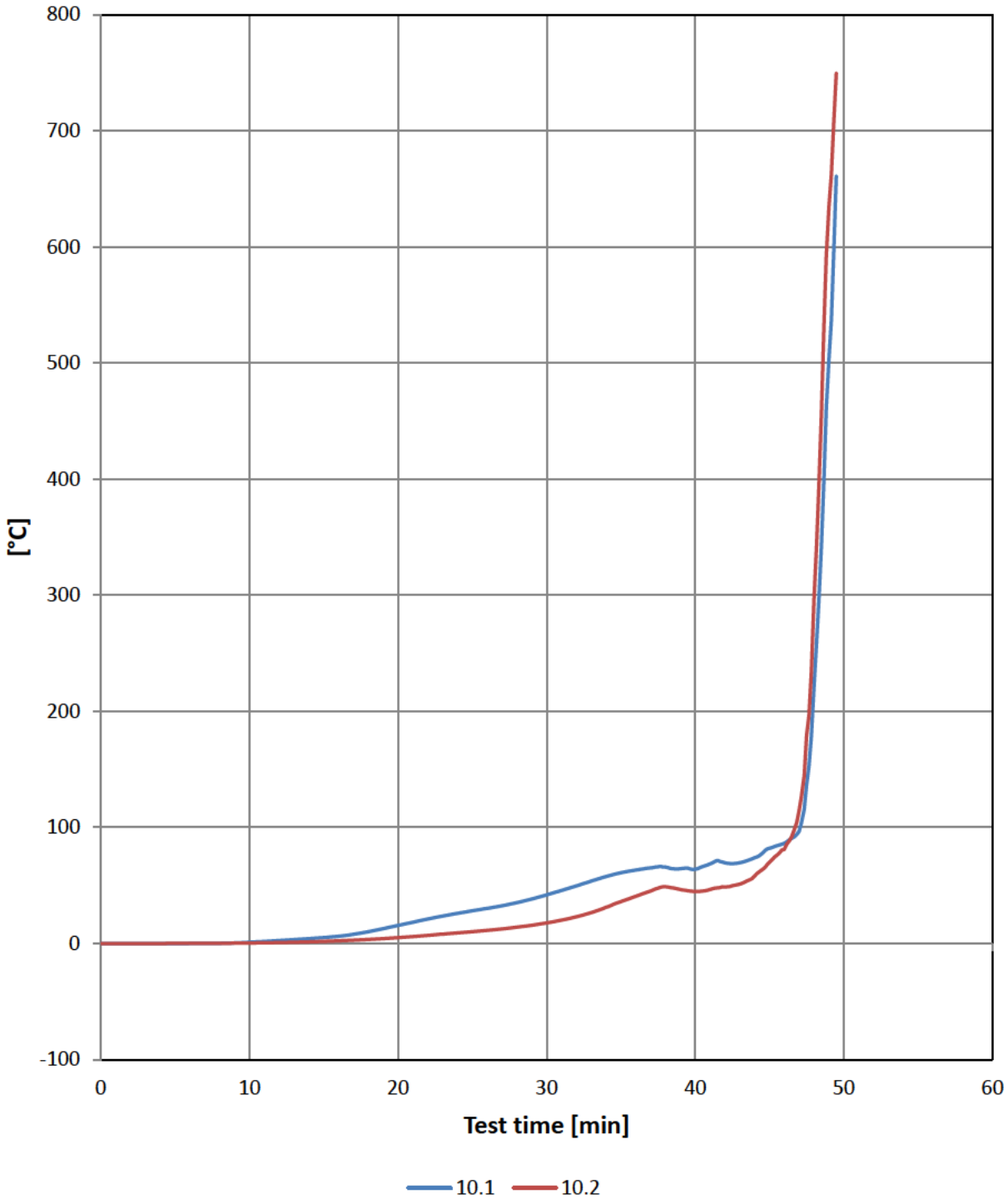


## At mid height of beams

| Min. / °C | 9.1 | 9.2 | 9.3 | 9.4 | 9.Max |
|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 0 | 0 |
| **4** | 0 | 0 | 0 | 0 | 0 |
| **6** | 0 | 0 | 0 | 0 | 0 |
| **8** | 0 | 1 | 4 | 4 | 4 |
| **10** | 2 | 5 | 8 | 6 | 8 |
| **12** | 4 | 9 | 10 | 7 | 10 |
| **14** | 5 | 10 | 9 | 10 | 10 |
| **15** | 5 | 11 | 10 | 11 | 11 |
| **16** | 6 | 13 | 13 | 12 | 13 |
| **18** | 8 | 18 | 19 | 16 | 19 |
| **20** | 10 | 23 | 26 | 19 | 25 |
| **22** | 12 | 27 | 29 | 21 | 28 |
| **24** | 15 | 31 | 32 | 23 | 32 |
| **26** | 20 | 35 | 36 | 26 | 36 |
| **28** | 26 | 41 | 42 | 31 | 42 |
| **30** | 35 | 48 | 50 | 39 | 50 |
| **32** | 45 | 56 | 57 | 46 | 57 |
| **34** | 54 | 62 | 62 | 53 | 62 |
| **36** | 62 | 68 | 67 | 59 | 68 |
| **38** | 68 | 71 | 71 | 63 | 71 |
| **40** | 72 | 72 | 73 | 68 | 73 |
| **42** | 80 | 262 | 278 | 96 | 277 |
| **44** | 297 | 348 | 423 | 346 | 423 |
| **46** | 476 | 554 | 576 | 547 | 575 |
| **48** | 707 | 666 | 706 | 692 | 707 |
| **49** | 753 | 728 | 747 | 746 | 753 |

| | | | | | |
|---|---|---|---|---|---|
| Failure [min] | 43.17 | 42.33 | 41.83 | 43.00 | 41.83 |
| Failure°C | 270 | 270 | 270 | 270 | 270 |

## Top side of beams

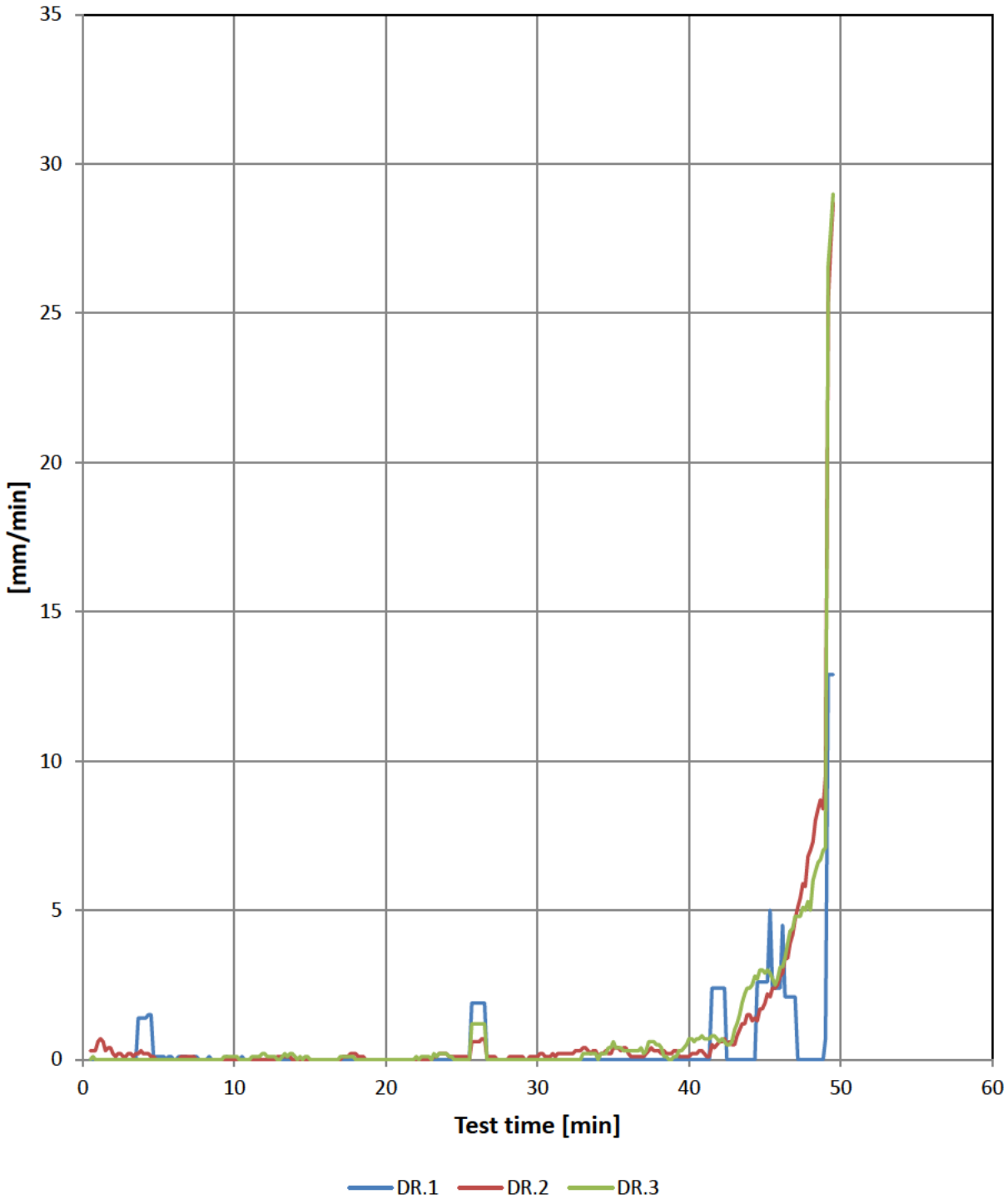


## Top side of beams

| Min. / °C | 10.1 | 10.2 | 10.Max |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 |
| 10 | 1 | 0 | 1 |
| 12 | 3 | 1 | 3 |
| 14 | 4 | 1 | 4 |
| 15 | 5 | 2 | 5 |
| 16 | 6 | 2 | 6 |
| 18 | 10 | 3 | 10 |
| 20 | 16 | 5 | 16 |
| 22 | 21 | 7 | 21 |
| 24 | 26 | 9 | 26 |
| 26 | 30 | 11 | 30 |
| 28 | 35 | 14 | 35 |
| 30 | 42 | 18 | 42 |
| 32 | 50 | 23 | 50 |
| 34 | 58 | 31 | 58 |
| 36 | 63 | 41 | 63 |
| 38 | 66 | 49 | 66 |
| 40 | 64 | 45 | 64 |
| 42 | 70 | 49 | 70 |
| 44 | 74 | 58 | 74 |
| 46 | 86 | 81 | 86 |
| 48 | 222 | 298 | 298 |
| 49 | 504 | 635 | 635 |

| | | | |
|---|---|---|---|
| Failure [min] | 48.17 | 47.83 | 47.83 |
| Failure°C | 270 | 270 | 270 |

## Deflection rate



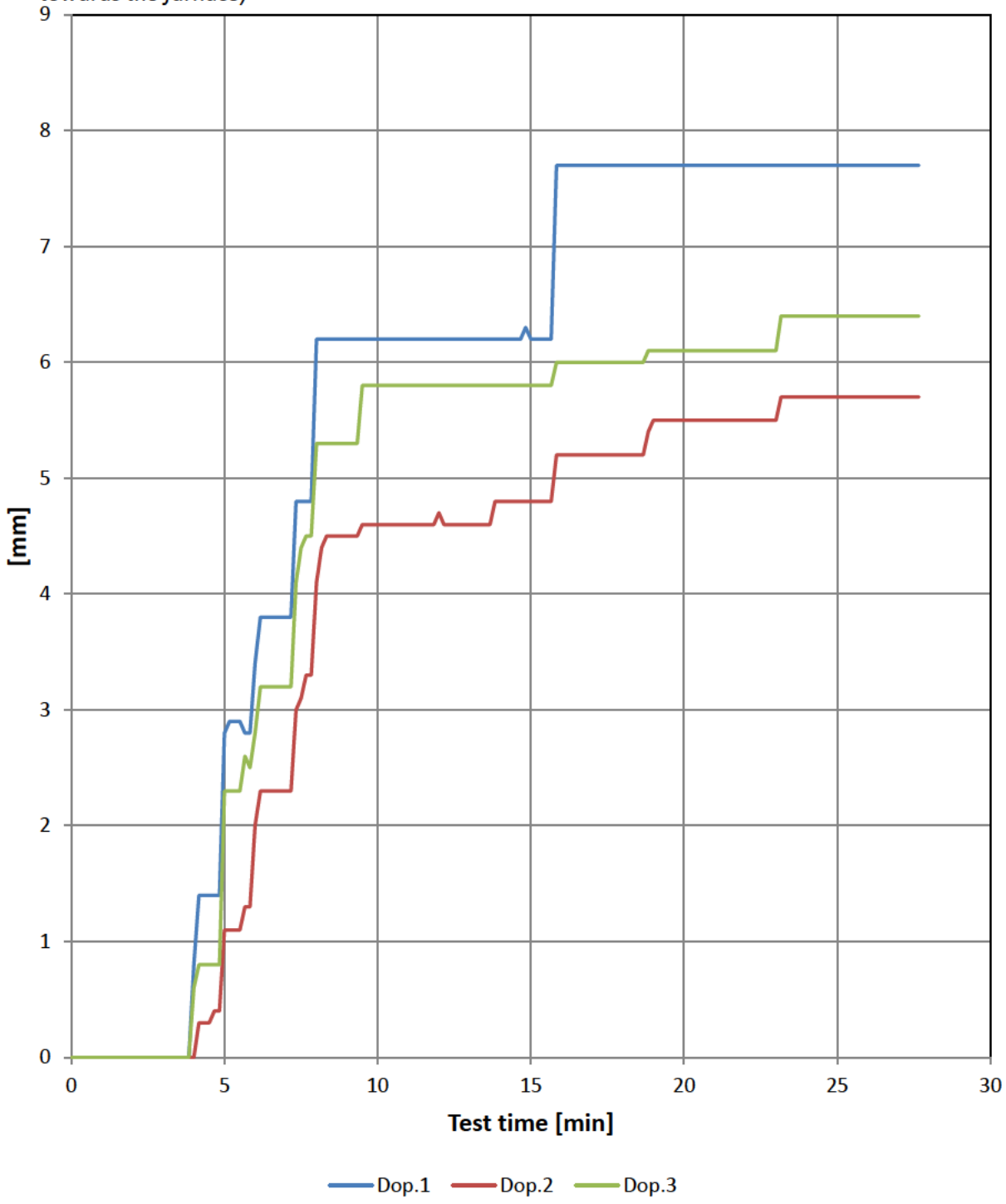
## Deflection rate

| Min. / mm/min | DR.1 | DR.2 | DR.3 | DR.Max |
|---|---|---|---|---|
| 0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.2 | 0.0 | 0.2 |
| 4 | 1.4 | 0.2 | 0.0 | 1.4 |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.0 | 0.1 | 0.1 |
| 12 | 0.0 | 0.0 | 0.2 | 0.2 |
| 14 | 0.0 | 0.0 | 0.1 | 0.1 |
| 15 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 0.0 | 0.2 | 0.0 | 0.2 |
| 20 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 0.1 | 0.1 |
| 24 | 0.0 | 0.2 | 0.2 | 0.2 |
| 26 | 1.9 | 0.6 | 1.2 | 1.9 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 0.0 | 0.1 | 0.0 | 0.1 |
| 32 | 0.0 | 0.2 | 0.0 | 0.2 |
| 34 | 0.0 | 0.1 | 0.0 | 0.1 |
| 36 | 0.0 | 0.2 | 0.3 | 0.3 |
| 38 | 0.0 | 0.3 | 0.5 | 0.5 |
| 40 | 0.0 | 0.1 | 0.7 | 0.7 |
| 42 | 2.4 | 0.6 | 0.6 | 2.4 |
| 44 | 0.0 | 1.5 | 2.4 | 2.4 |
| 46 | 2.4 | 2.8 | 3.1 | 3.1 |
| 48 | 0.0 | 7.0 | 5.0 | 7.0 |
| 49 | 0.7 | 9.5 | 7.1 | 9.5 |

| | | | | |
|---|---|---|---|---|
| Failure [min] | 49.00 | 47.67 | 48.33 | 47.67 |
| Failuremm/mi | 6.4 | 6.4 | 6.4 | 6.4 |

## Deformation during the loading phase

*The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace)*



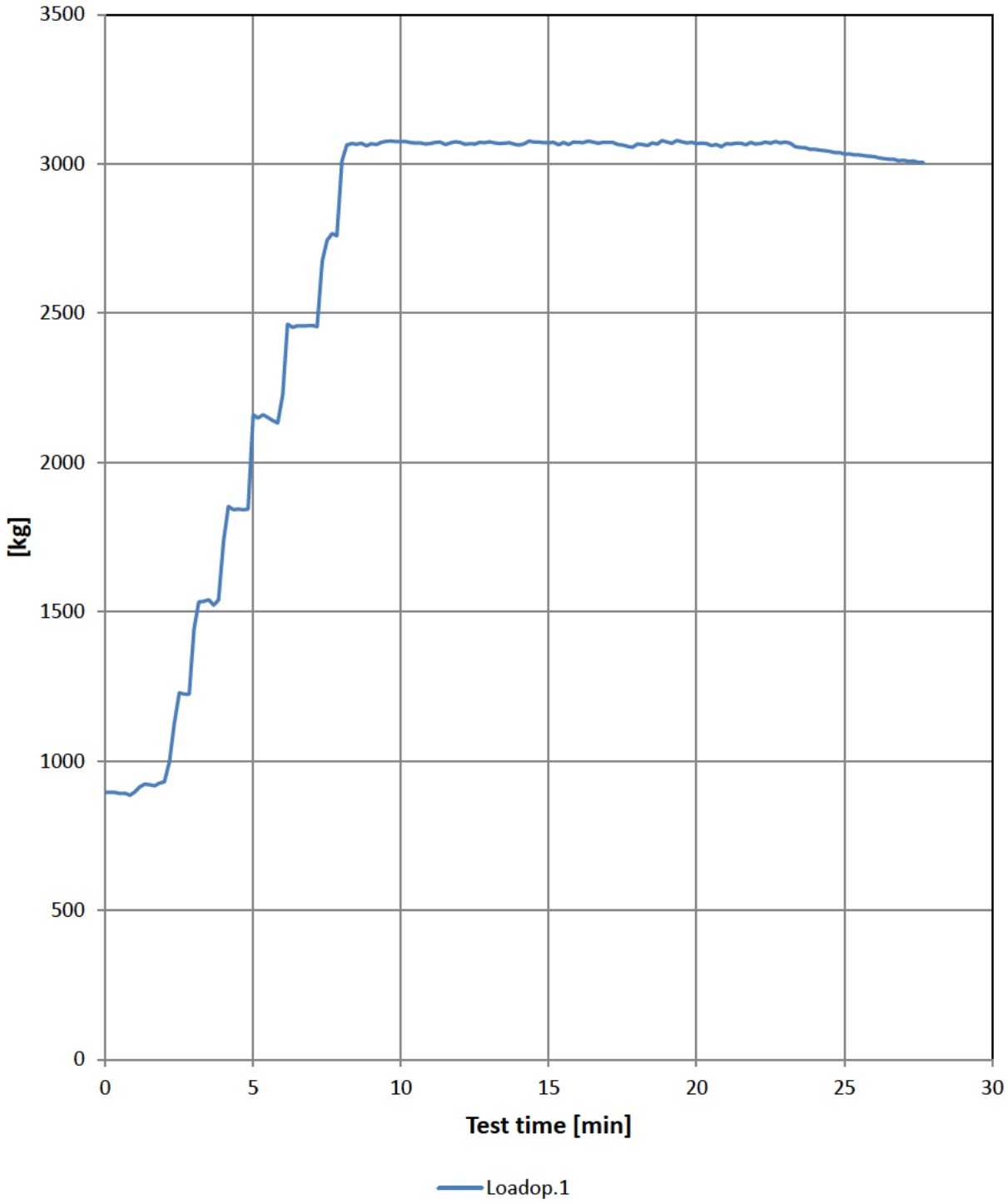
## Deformation during the loading phase

*The vertical deflection measured on the unexposed side (positive values indicates movement towards the furnace)*

| Min. / mm | Dop.1 | Dop.2 | Dop.3 |
|---|---|---|---|
| **0** | 0.0 | 0.0 | 0.0 |
| **1** | 0.0 | 0.0 | 0.0 |
| **2** | 0.0 | 0.0 | 0.0 |
| **3** | 0.0 | 0.0 | 0.0 |
| **4** | 0.8 | 0.0 | 0.6 |
| **5** | 2.8 | 1.1 | 2.3 |
| **6** | 3.4 | 2.0 | 2.8 |
| **7** | 3.8 | 2.3 | 3.2 |
| **8** | 6.2 | 4.1 | 5.3 |
| **9** | 6.2 | 4.5 | 5.3 |
| **10** | 6.2 | 4.6 | 5.8 |
| **11** | 6.2 | 4.6 | 5.8 |
| **12** | 6.2 | 4.7 | 5.8 |
| **13** | 6.2 | 4.6 | 5.8 |
| **14** | 6.2 | 4.8 | 5.8 |
| **15** | 6.2 | 4.8 | 5.8 |
| **16** | 7.7 | 5.2 | 6.0 |
| **17** | 7.7 | 5.2 | 6.0 |
| **18** | 7.7 | 5.2 | 6.0 |
| **19** | 7.7 | 5.5 | 6.1 |
| **20** | 7.7 | 5.5 | 6.1 |
| **21** | 7.7 | 5.5 | 6.1 |
| **22** | 7.7 | 5.5 | 6.1 |
| **23** | 7.7 | 5.5 | 6.1 |
| **24** | 7.7 | 5.7 | 6.4 |
| **25** | 7.7 | 5.7 | 6.4 |
| **26** | 7.7 | 5.7 | 6.4 |
| **27** | 7.7 | 5.7 | 6.4 |

## Load per hydraulic jack during the loading phase

*One hydraulic jack was used*



## Load per hydraulic jack during the loading phase

*One hydraulic jack was used*

| Min. / kg | Loadop.1 |
|---|---|
| 0 | 895.91 |
| 1 | 896.46 |
| 2 | 930.94 |
| 3 | 1441.41 |
| 4 | 1736.73 |
| 5 | 2160.01 |
| 6 | 2227.94 |
| 7 | 2458.88 |
| 8 | 3010.54 |
| 9 | 3067.92 |
| 10 | 3075.21 |
| 11 | 3068.66 |
| 12 | 3072.82 |
| 13 | 3074.51 |
| 14 | 3063.62 |
| 15 | 3071.89 |
| 16 | 3072.80 |
| 17 | 3072.74 |
| 18 | 3067.02 |
| 19 | 3073.58 |
| 20 | 3068.81 |
| 21 | 3067.80 |
| 22 | 3067.37 |
| 23 | 3073.74 |
| 24 | 3049.23 |
| 25 | 3033.61 |
| 26 | 3024.89 |
| 27 | 3012.49 |


Photo No. 1 Loadbearing beams during mounting


Photo No. 2 Bottom layer of chipboard


Photo No. 3 1st layer of clay boards

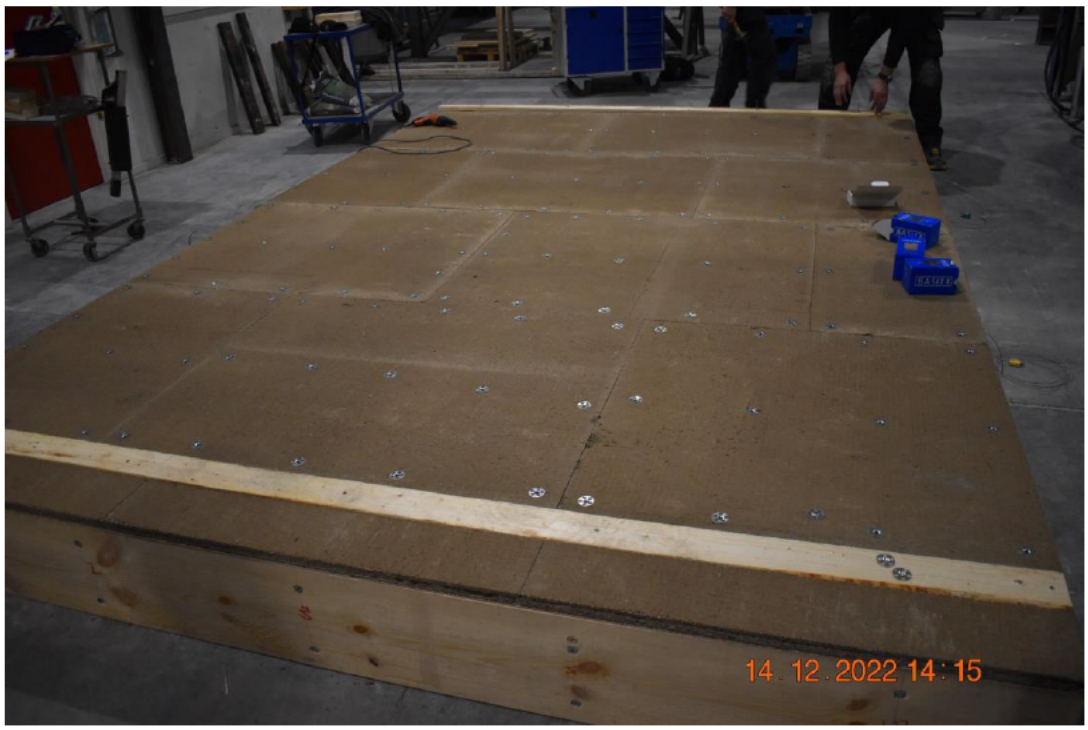



Photo No. 4 2nd layer of clay boards


Photo No. 5 Washers for 2nd layer of clay boards


Photo No. 6 Reinforcement mesh before application of clay plaster


Photo No. 7 Clay plaster and exposed side before test start


Photo No. 8 Insulation of construction


Photo No. 9 Chipboard installation on unexposed side


Photo No. 10 Test specimen seen from unexposed side at test start


Photo No. 11 Test specimen seen from unexposed side after 15 minutes of testing

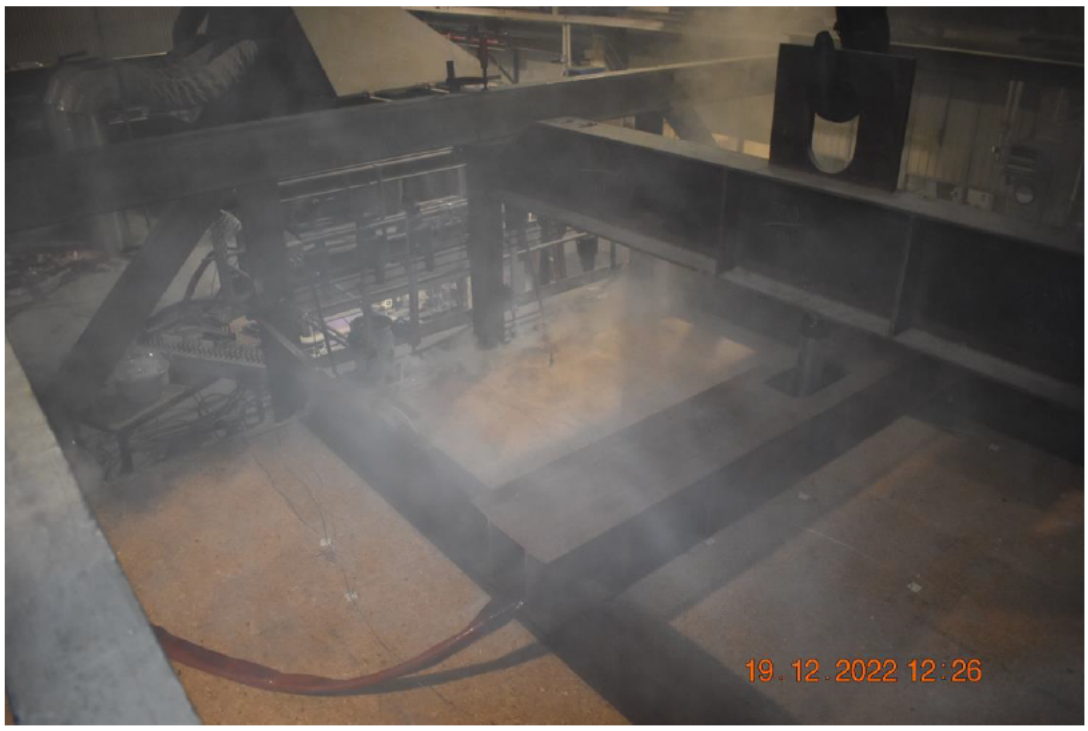



Photo No. 12 Test specimen seen from unexposed side after 29 minutes of testing


Photo No. 13 Test specimen seen from unexposed side after 40 minutes of testing


Photo No. 14 Test specimen seen from unexposed side after 43 minutes of testing


Photo No. 15 Test specimen seen from unexposed side after 49 minutes of testing


Photo No. 16 Test specimen seen from unexposed side after 50 minutes of testing


Photo No. 17 Test specimen seen from exposed side after the test


Photo No. 18 Loadbearing beams after the test


Photo No. 19 Loadbearing beams after the test