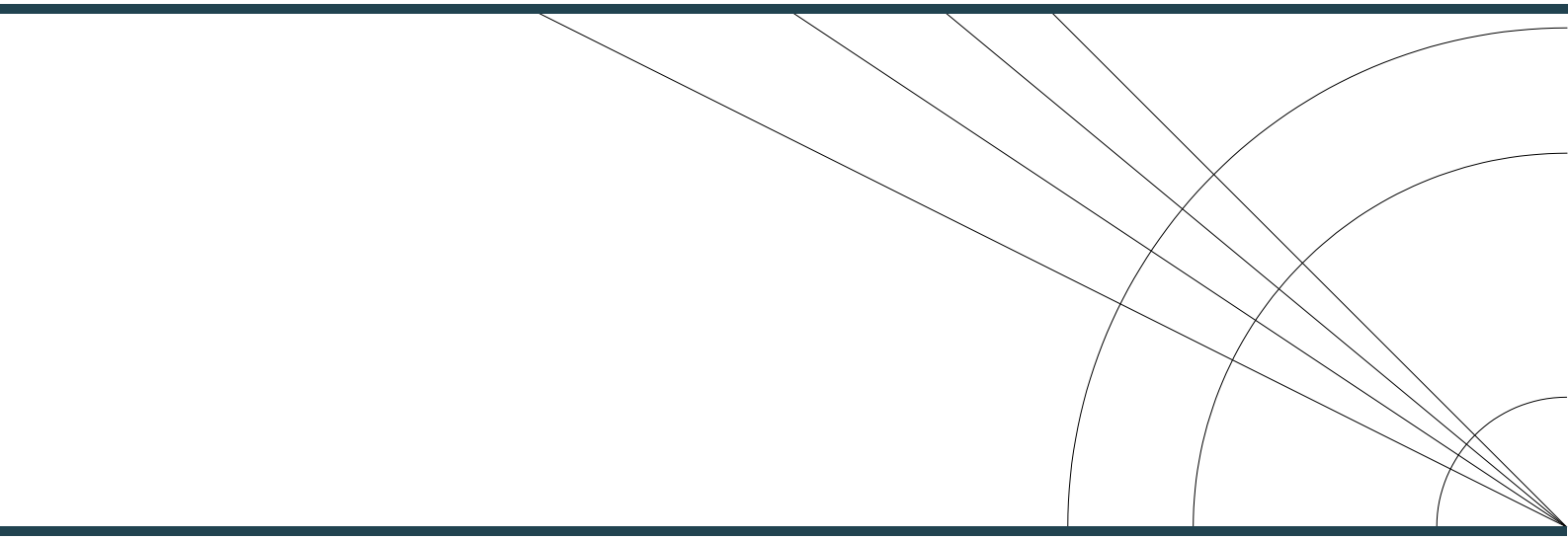
DBI
FIRE AND SECURITY

# TEST REPORT
# NON-LOADBEARING WALL

| | | | |
|---|---|---|---|
| **Name of sponsor:** | ERIKarkitekter A/S | | |
| **Product name:** | Non loadbearing wall | | |
| **File no.:** | PGA12220A | **Revision no.:** | 0 |
| **Test date:** | 10-08-2023 | **Date:** | 2023-09-15 |
| **Pages:** | 9 | **Encl.:** | 32 |
| **Ref:** | RKP / JBK | | |



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ilac-MRA DANAK
TEST Reg.no.0012

## Client information

Client: ERIKarkitekter A/S

Address: Flæsketorvet 75

Den hvide kødby

1711 København V

Denmark

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# 1 Date of test

The test was conducted on 10-08-2023.

# 2 Purpose of test

Examination of the fire-resistance of one non-loadbearing wall.

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 1364-1:2015 Fire resistance tests for non-loadbearing elements Part 1: Walls

# 3 Test specimen

The trade name and sponsors identification mark is stated below:

| | |
|---|---|
| Trade name: | Cirkulær skillevæg (CSV) |
| Identification mark: | None. |

The components for the test specimen were delivered and mounted by the sponsor.

# 4 Drawings and description

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

| Type | Drawing No. | Dated | Subject |
|---|---|---|---|
| Drawing | K01_H5_NO1 | 07-07-2023 | Opstalt / 3D |
| Drawing | K01_H5_NO2 | 07-07-2023 | Snit Skørt, Snit CSV, Tilslutning testramme |
| Drawing | K01_H5_NO3 | 07-07-2023 | VÆGMODUL, Præfabrikation |
| Drawing | K01_H5_NO4 | 07-07-2023 | KOMPONENTER, Præfabrikation |
| Drawing | K01_H5_NO5 | 07-07-2023 | SAMLING, in-situ |

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 sponsor carried out the selection of the products for the test specimen as well as the mounting.

**Test specimen**

External measures: Height: 3000 mm Width: 2950 mm Thickness: 120 mm

The test specimen was a non-loadbearing wall construction consisting of 2 wall systems.
The wall systems consist of a prefabricated system of 2 x 12.5 mm gypsum plasterboards mounted to a special steel profile with a tongue and groove system connected to plywood and gypsum profile.

The top of the wall was constructed with 2x 12.5 mm gypsum plasterboards build on to a fixed steel framework.

**The fixed wall (top part)**

The fixed wall consists of 2 x 12,5 mm gypsum boards mounted on each side of a steel framework.

Top and bottom rails:

The top and bottom rails consisted of 1,5x70x2930 mm (thickness x depth x length) U-profile. The top rail is mounted to the testing frame.
There is placed a 70x12,5x2930 mm (width x thickness x length) gypsum board to the back of the bottom U-profile that is connected to the prefabricated wall. See photo 1-3 and drawing drawing K01_H5_NO2

Studs:

A total of 7 C-profiles of 70mm with a flange thickness of 1,0 mm were used as the steel frame wall studs, all 457,5 mm tall. The studs were spaced c/c 450 mm.

Gypsum boards:

Two layers of gypsum plaster boards designated Gyproc GNE 13 normal Ergo with a nominal surface weight of 9,0 kg/m$^2$ were used.
The boards were 900 x 470 x 12,5 mm (width x height x thickness). Mounted on the steel framework with staggered joints.

Fastening:

Both layer of gypsum boards was fastened to the steel framework with screws designated: Basixx plaster screw for steel w/bore 3.5x41mm loose, c/c 200mm. The screws were countersunk.

**Prefabricated wall module (bottom part).**

The prefabricated wall module is made to be mounted together as a tongue and groove system. See photo 6 -9 and drawing K01_H5_NO5.

Top and bottom rails:

Reinforcement rail 70 mm material thickness 1.25 mm with 58 mm high flanges.
The bottom rail is placed on a Gyproc GNE 13 R Normal Ergo – plasterboard, 12,5 which is fastened to the bottom of the test frame.
The top rail is placed on a Gyproc GNE 13 R Normal Ergo – plasterboard, 12,5 which is fastened to the fixed wall.

Components for prefabricated wall module Studs:

Special studs' profiles 60x45 mm (width x height), with a flange thickness of 1,25 of galvanized steel designated CSV specialprofile. Corrosion class c2, Length 2400mm.
The CSV 60x45x1,25 special profiles formed with a 10° slope are pre-mounted to the 2 x 12,5 Gyproc GNE 13 R Normal Ergo – plasterboard 12,5 straight edges with a nominal density of 9,0 kg/$m^2$, fastened with plasterboard screws Designated: Eurotec 48631314 Vingeborskrue Wing-reks fzb T25. Flush, placed 45 mm from wall modules edge and with c/c 200 mm.
See drawing K01_H5_NO3.
The CSV profiles are made to fit the prefabricated joints.

Joints:

The joints used were made from rigid plywood, with gypsum board designated Gyproc GEF 15 protect with a nominal surface weight of 12,70 kg/$m^2$ 15,5 x 80 x 2400mm (thickness x width x height) are mounted on the back of the plywood.
The plywood is cut with an angle of 10.0 ° fitter for the CSV-profile.
See drawing K01_H5_NO4
See photo 6-9 and drawing K01_H5_NO5.

Fastening:

The prefabricated wall is locked together using the tongue and groove system and then fastened to the fixed wall and the bottom profile using Eurotec 48631314 Vingeborskrue Wing-teks fzb T25. 90 mm from the prefab walls' vertical edges, with a c/c of 200mm
See drawing K01_H5_NO1 & K01_H5_NO5

## Measured by DBI

| Product | | Gyproc GNE 13 R Ergo | Gyproc, GFE 15 Protect | Krydsfinér |
|---|---|---|---|---|
| Density | kg/m³ | 732 | 829 | 312 |
| Thickness | mm | 12.5 | 15.5 | 11.7 |
| Moisture content | % | 0.66 | 0.72 | 7.25 |
| Sampling method | | Extra material | Extra material | Extra material |
| Drying temperature | °C | 55 | 55 | 105 |

# 5 Test conditions

## Conditioning

The test specimen was delivered on the 07-08-2023 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 in a concrete lined test frame with a clear opening of 3000 x 3000 mm.

A free edge was established along the left vertical edge of the test specimen as seen from the unexposed side. The free edge was made by 2 x 25 mm stone wool with alu-foil.

## 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.

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 furnace pressure was controlled at a level of 20 Pa at the top of the test specimen during the test.

# 6 Test results

Duration of the test was 72 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 | Vertical furnace pressure<br>The differential pressure in the furnace during the test, measured 1,16 m above notional floor level. |
| 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 rise<br>Measured with 5 thermocouples. |

| | |
|---|---|
| Enclosures 6.0 and 6.1 | Maximum temperature rise<br>Maximum temperature rise on the unexposed side |
| Enclosures 7.0 and 7.1 | Horizontal deformation<br>Negative values indicate movement towards the furnace. |

## Visual observations:

| Time / Minutes | Visual observations: | U = Unexposed side<br>E = Exposed side |
|---|---|---|
| 0 | Test commences | |
| 1 | Heavy smoke from top of specimen and between the soffit and the prefabricated wall. | U |
| 2 | Smoke mostly stopped, only faint smoke from top of specimen. | U |
| 6 | Smoke starting op again from between the soffit and the prefabricated wall | U |
| 7 | Slight smoke from between specimen and concrete frame. | U |
| 15 | No change | U |
| 20 | Slight increase of smoke | U |
| 21 | Gypsum boards starting to crack | E |
| 23 | Size of cracks increased | E |
| 30 | No place to do cotton pad test. | U |
| 38 | Size of cracks increased | E |
| 44 | Cotton pad test near TC3: Nothing. | U |
| 45 | Gypsum in prefab crevasse near TC 2,3 starting to darken. | U |
| 47 | Gypsum boards fell | E |
| 49 | Increase of smoke | U |
| 53 | Cotton pad test at TC 2,5: Nothing to observe | U |
| 56 | Burning sounds | U |
| 57 | Cotton pad test at TC 2,5: Nothing to observe | U |
| 59 | Cotton pad test at joints between soffit and prefabricated wall left and right side: Nothing to observe | U |
| 65 | Cotton pad test at TC 2,5: heavy charring but no flame or embers | U |
| 67 | Cotton pad test at TC 2,5: heavy charring but no flame or embers | U |
| 68 | Cotton pad test at TC 2,5: heavy charring but no flame or embers | U |
| 70 | Cotton pad test at TC 2,5: heavy charring but no flame or embers | U |
| 71 | Smoke from side, top and joints of specimen. | U |
| 72 | Cotton pad test at TC 2,5: Ignition - heavy charring and embers | U |
| 75 | 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 1364-1:2015 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:

**Integrity (E): 72 minutes**

- Sustained flaming did not occur during the test.
- The cotton pad was ignited in the 72nd minute during the test.
- No through-going openings in the test specimen were created during the test.

**Insulation (I): 72 minutes**

- Failure of insulation occurred after 72 minutes of testing due to failure of integrity.
- The average temperature rise on the unexposed surface of the test specimen did not exceed 140 ° C during the test.
- The maximum average temperature during the test was 62°C.
- The maximum temperature rise on the unexposed surface of the test specimen did not exceed 180°C during the test.
- The maximum temperature rise during the test was 138°C.

# 8 Remarks

The field of direct application of the test results appears from EN 1364-1:2015, 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.

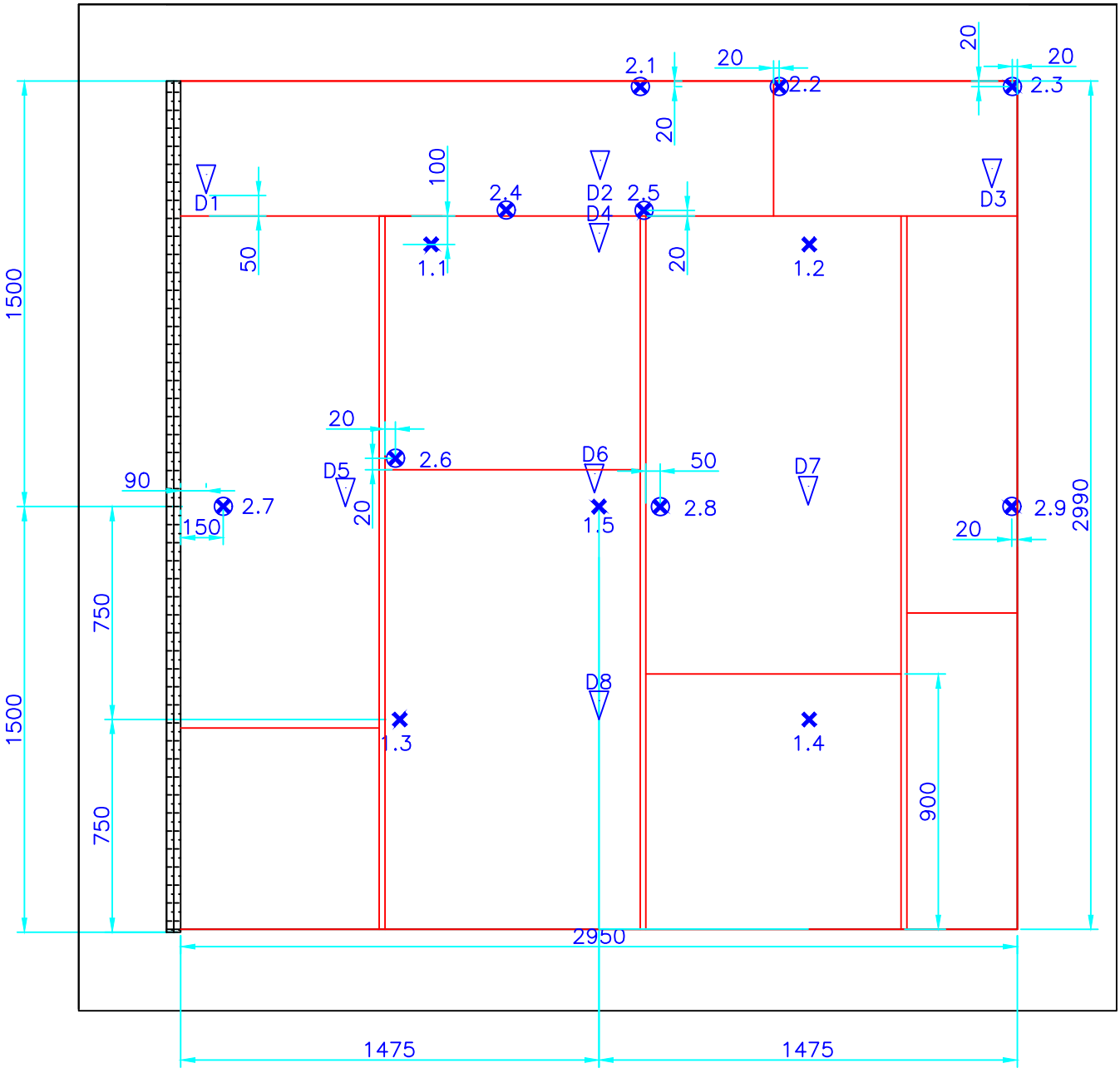
All values mentioned in this report are nominal values, production tolerances are not considered.

**Danish Institute of Fire and Security Technology**

**Rasmus Krogh Lynge Pedersen**
Resistance to Fire Engineer

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

| **ERIKarkitekter A/S** | **Enclosures:** | **32** |
|---|---|---|
| Flæsketorvet 75 | DBI drawings: | 1 |
| Den hvide kødby | DBI graphs and tables: | 12 |
| 1711 København V | Photo sheets: | 14 |
| Denmark | Sponsors drawings: | 5 |



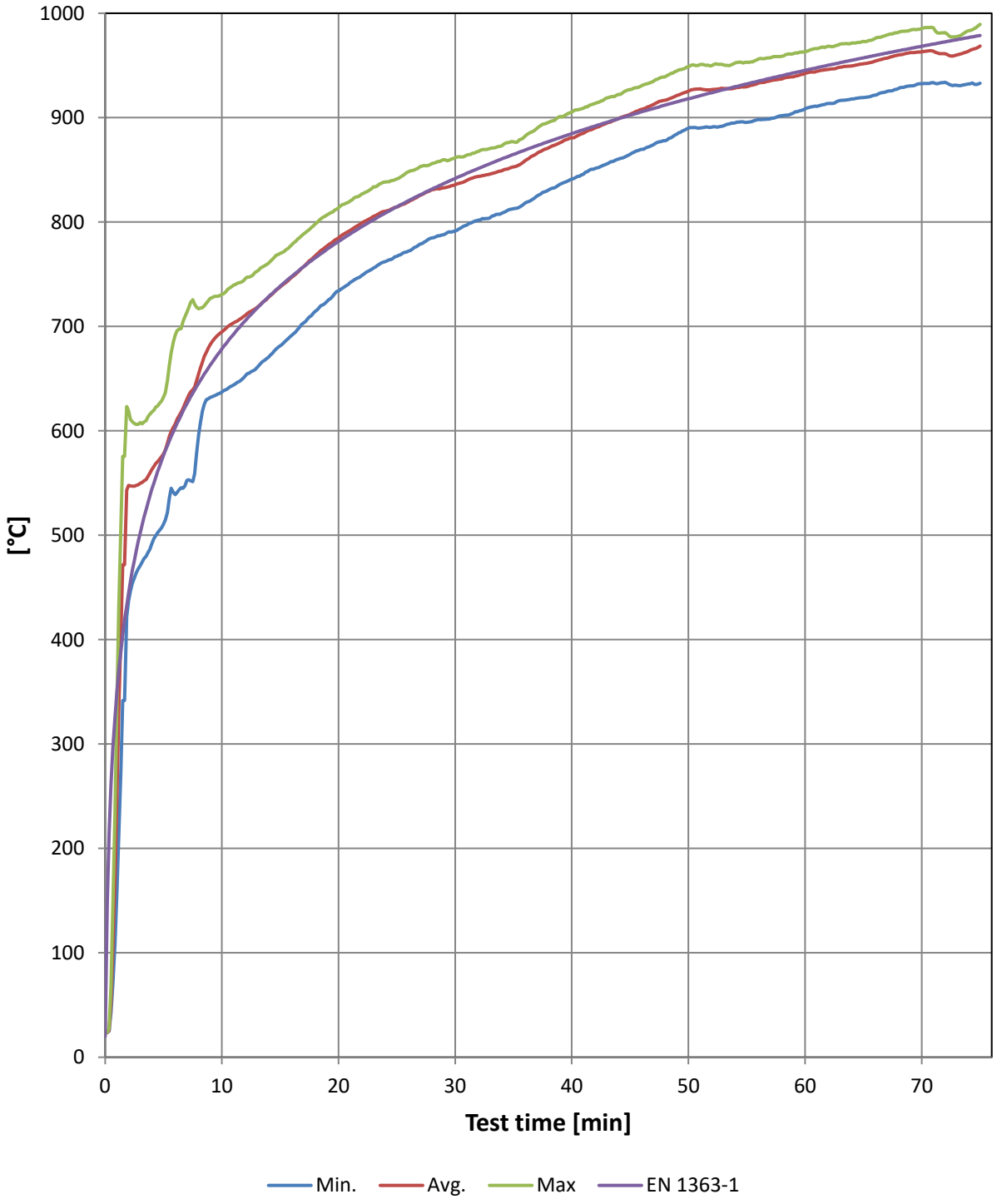

✖ Thermocouple placed on the unexposed surface (average)

⊗ Thermocouple placed on the unexposed surface (maximum)

▽ Deflection measuring point

All measurements are in mm

## Furnace temperature

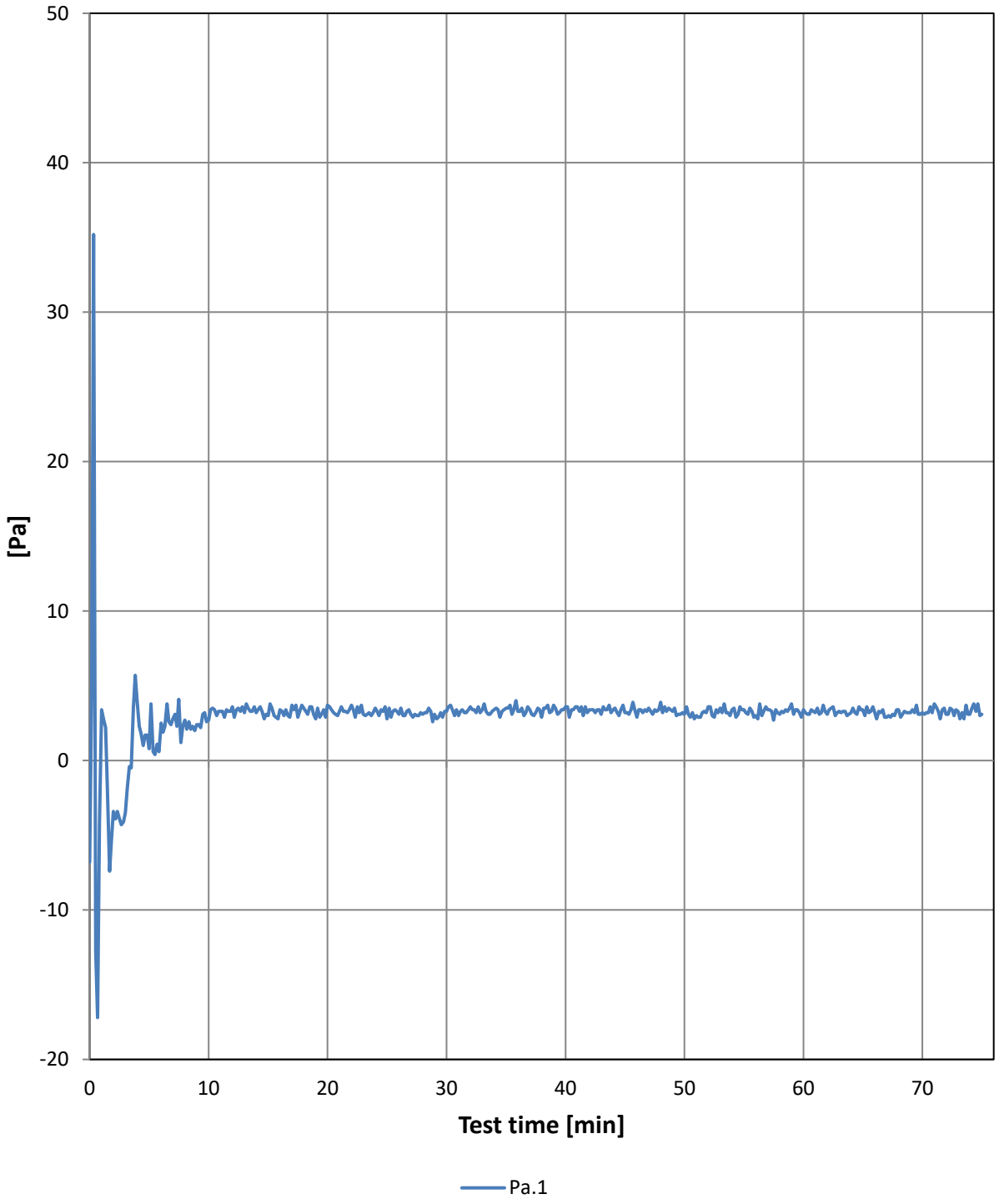


## Furnace temperature

| Time | Measured | | | Norm | Area under curve | | | |
|---|---|---|---|---|---|---|---|---|
| Minutes | Minimum | Average | Maximum | EN 1363-1 | Measured | EN 1363-1 | Dev. [%] | Limit [%] |
| **0** | 23 | 24 | 24 | 20 | 0 | 0 | 0.0 | |
| **3** | 471 | 550 | 608 | 502 | 1070 | 1115 | -4.1 | |
| **6** | 539 | 606 | 692 | 603 | 2788 | 2790 | -0.1 | 15 |
| **9** | 632 | 683 | 727 | 663 | 4717 | 4695 | 0.5 | 15 |
| **12** | 653 | 711 | 746 | 705 | 6813 | 6750 | 0.9 | 14 |
| **15** | 682 | 738 | 770 | 739 | 8983 | 8918 | 0.7 | 13 |
| **18** | 714 | 768 | 798 | 766 | 11240 | 11176 | 0.6 | 11 |
| **21** | 742 | 792 | 820 | 789 | 13582 | 13508 | 0.5 | 10 |
| **24** | 762 | 810 | 838 | 809 | 15988 | 15904 | 0.5 | 8 |
| **27** | 779 | 826 | 853 | 826 | 18440 | 18357 | 0.5 | 7 |
| **30** | 791 | 836 | 862 | 842 | 20934 | 20859 | 0.4 | 5 |
| **33** | 804 | 846 | 871 | 856 | 23459 | 23406 | 0.2 | 5 |
| **36** | 818 | 859 | 882 | 869 | 26012 | 25994 | 0.1 | 5 |
| **39** | 836 | 876 | 901 | 881 | 28617 | 28619 | 0.0 | 4 |
| **42** | 851 | 890 | 914 | 892 | 31266 | 31279 | 0.0 | 4 |
| **45** | 865 | 903 | 927 | 902 | 33957 | 33971 | 0.0 | 4 |
| **48** | 878 | 917 | 939 | 912 | 36688 | 36692 | 0.0 | 4 |
| **51** | 890 | 928 | 951 | 921 | 39457 | 39442 | 0.0 | 3 |
| **54** | 895 | 928 | 952 | 930 | 42239 | 42218 | 0.0 | 3 |
| **57** | 899 | 935 | 957 | 938 | 45033 | 45019 | 0.0 | 3 |
| **60** | 909 | 942 | 963 | 945 | 47849 | 47844 | 0.0 | 3 |
| **63** | 917 | 948 | 971 | 953 | 50685 | 50691 | 0.0 | 3 |
| **66** | 921 | 954 | 976 | 960 | 53537 | 53559 | 0.0 | 3 |
| **69** | 930 | 962 | 984 | 966 | 56413 | 56448 | -0.1 | 3 |
| **72** | 934 | 961 | 982 | 973 | 59301 | 59356 | -0.1 | 3 |
| **75** | 933 | 969 | 989 | 979 | 62188 | 62283 | -0.2 | 3 |

## Vertical furnace pressure

*The differential pressure in the furnace during the test, measured 1,16 m above notional floor level*



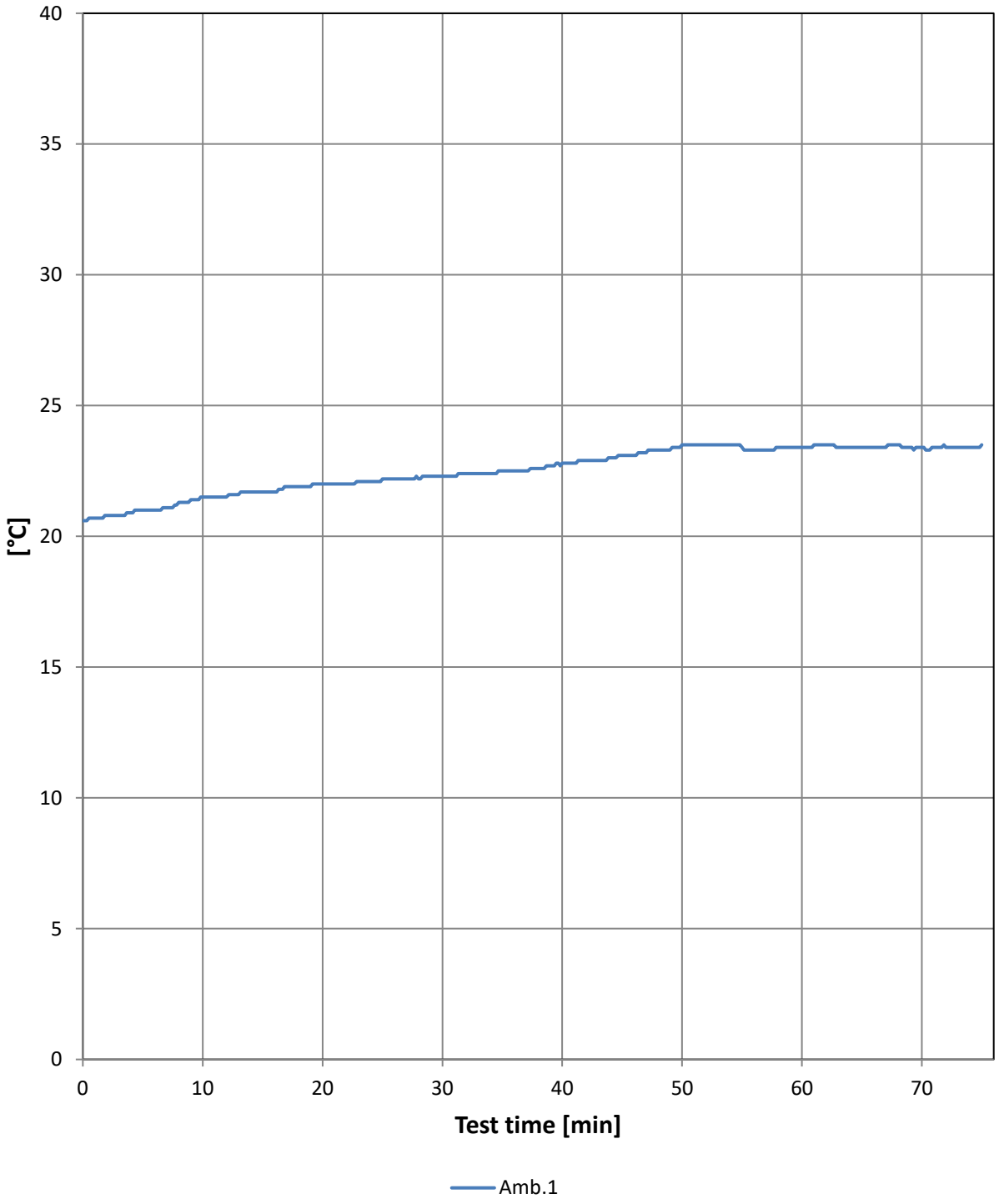
## Vertical furnace pressure

*The differential pressure in the furnace during the test, measured 1,16 m above notional floor level*

| Min. / Pa | Pa.1 |
|---|---|
| **0** | -6.8 |
| **3** | -3.5 |
| **6** | 2.5 |
| **9** | 2.4 |
| **12** | 3.6 |
| **15** | 3.0 |
| **18** | 3.5 |
| **21** | 3.3 |
| **24** | 3.5 |
| **27** | 3.1 |
| **30** | 3.3 |
| **33** | 3.4 |
| **36** | 3.3 |
| **39** | 3.7 |
| **42** | 3.4 |
| **45** | 3.2 |
| **48** | 3.9 |
| **51** | 3.0 |
| **54** | 3.4 |
| **57** | 3.4 |
| **60** | 3.4 |
| **63** | 3.3 |
| **66** | 3.2 |
| **69** | 3.2 |
| **72** | 3.1 |
| **75** | 3.1 |

## Ambient temperature

*The ambient temperature in the laboratory during the test*



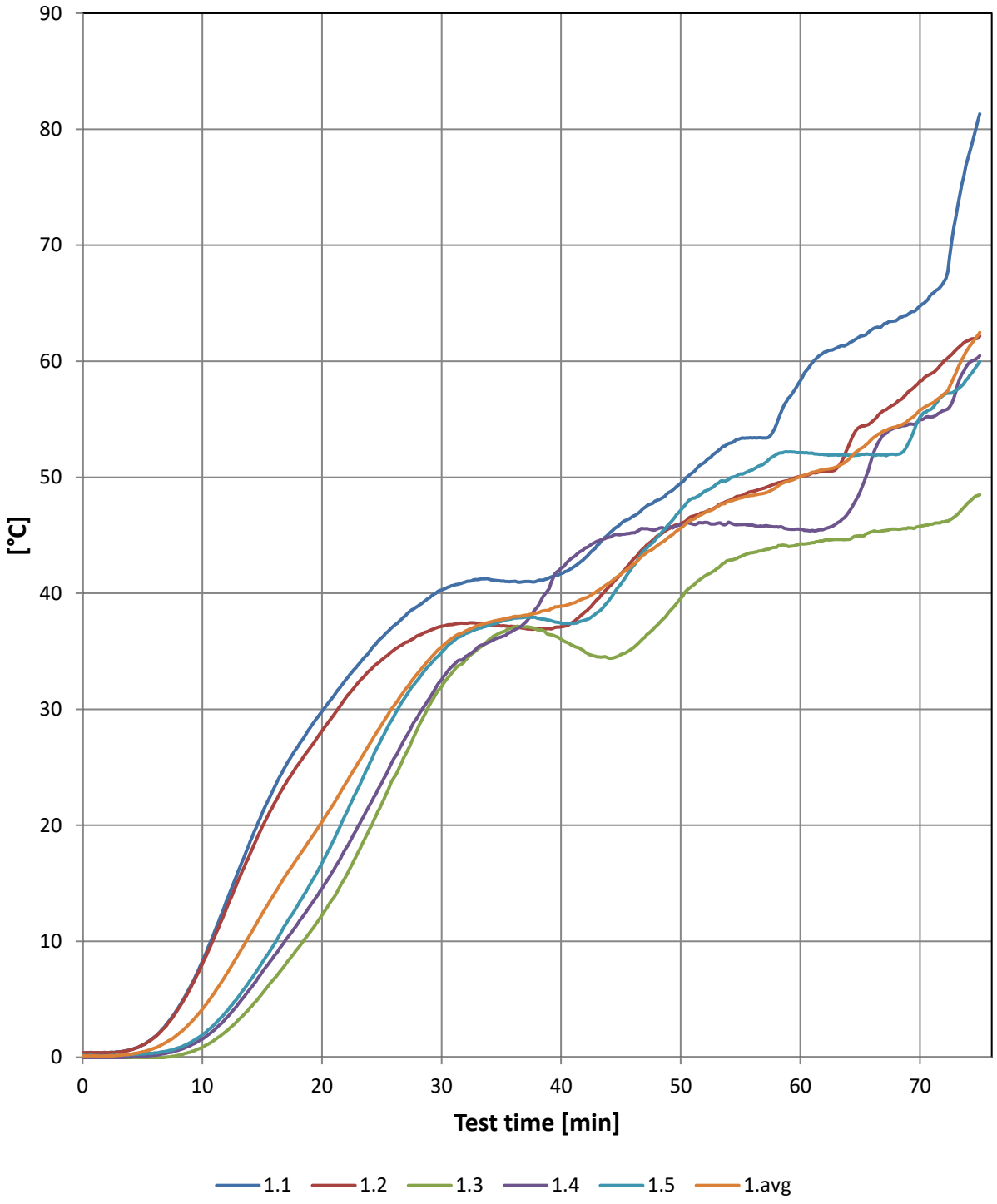
## Ambient temperature

*The ambient temperature in the laboratory during the test*

| Min. / °C | Amb.1 |
|---|---|
| **0** | 20.6 |
| **3** | 20.8 |
| **6** | 21.0 |
| **9** | 21.4 |
| **12** | 21.5 |
| **15** | 21.7 |
| **18** | 21.9 |
| **21** | 22.0 |
| **24** | 22.1 |
| **27** | 22.2 |
| **30** | 22.3 |
| **33** | 22.4 |
| **36** | 22.5 |
| **39** | 22.7 |
| **42** | 22.9 |
| **45** | 23.1 |
| **48** | 23.3 |
| **51** | 23.5 |
| **54** | 23.5 |
| **57** | 23.3 |
| **60** | 23.4 |
| **63** | 23.4 |
| **66** | 23.4 |
| **69** | 23.4 |
| **72** | 23.4 |
| **75** | 23.5 |

## Average temperature rise

*Measured with 5 thermocouples*



## Average temperature rise

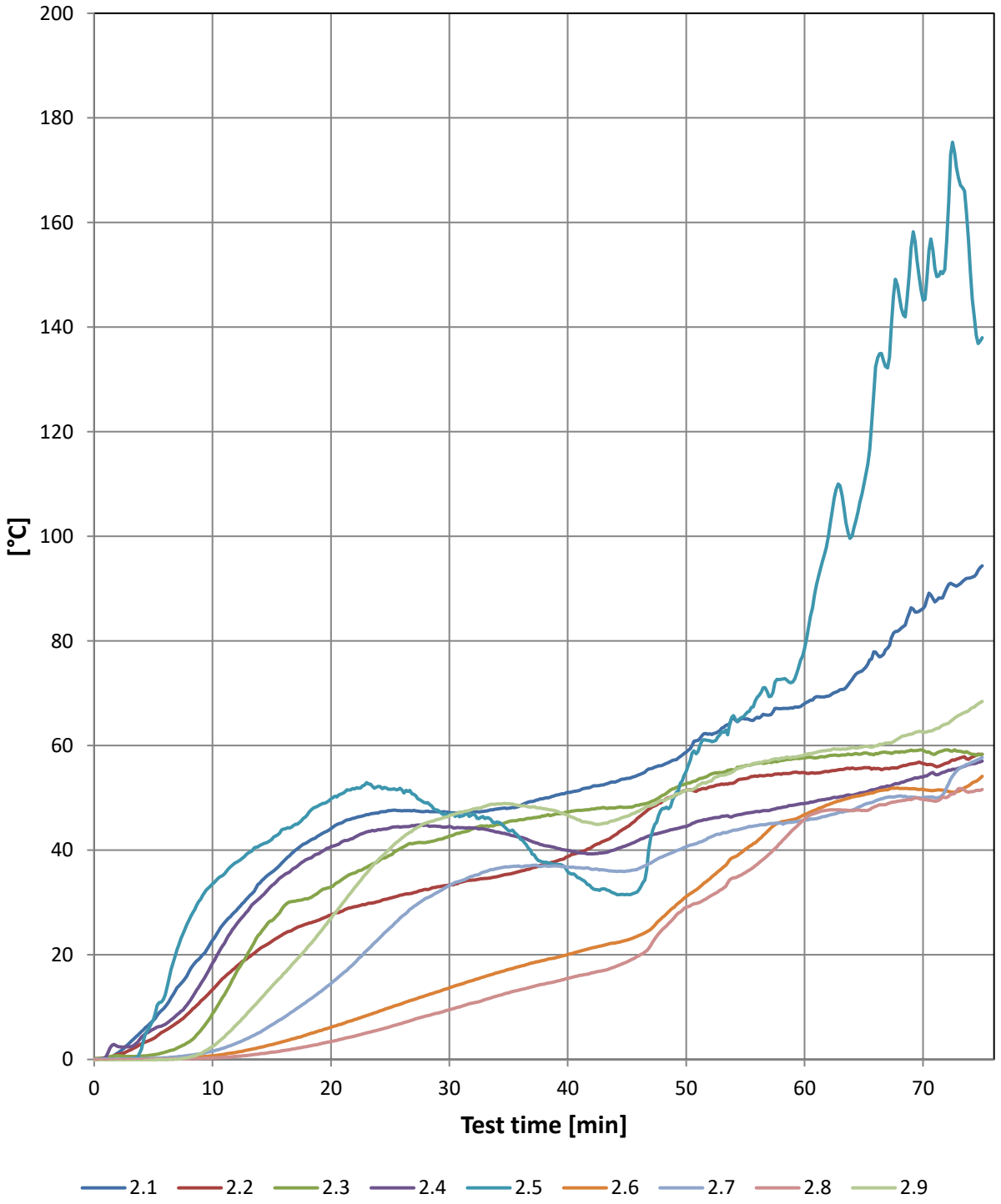
*Measured with 5 thermocouples*

| Min. / °C | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.Avg | 1.Max |
|---|---|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6** | 2 | 2 | 0 | 0 | 0 | 1 | 2 |
| **9** | 6 | 6 | 0 | 1 | 1 | 3 | 6 |
| **12** | 13 | 13 | 2 | 3 | 4 | 7 | 13 |
| **15** | 21 | 20 | 5 | 7 | 8 | 12 | 21 |
| **18** | 27 | 25 | 9 | 12 | 13 | 17 | 27 |
| **21** | 31 | 30 | 14 | 16 | 19 | 22 | 31 |
| **24** | 35 | 33 | 20 | 22 | 25 | 27 | 35 |
| **27** | 38 | 36 | 26 | 28 | 31 | 32 | 38 |
| **30** | 40 | 37 | 32 | 33 | 35 | 35 | 40 |
| **33** | 41 | 37 | 35 | 35 | 37 | 37 | 41 |
| **36** | 41 | 37 | 37 | 37 | 38 | 38 | 41 |
| **39** | 41 | 37 | 36 | 40 | 38 | 39 | 41 |
| **42** | 43 | 38 | 35 | 44 | 38 | 40 | 44 |
| **45** | 46 | 42 | 35 | 45 | 41 | 42 | 46 |
| **48** | 48 | 45 | 37 | 46 | 45 | 44 | 48 |
| **51** | 50 | 47 | 41 | 46 | 48 | 46 | 50 |
| **54** | 53 | 48 | 43 | 46 | 50 | 48 | 53 |
| **57** | 53 | 49 | 44 | 46 | 51 | 49 | 53 |
| **60** | 58 | 50 | 44 | 46 | 52 | 50 | 58 |
| **63** | 61 | 51 | 45 | 46 | 52 | 51 | 61 |
| **66** | 63 | 55 | 45 | 52 | 52 | 53 | 63 |
| **69** | 64 | 57 | 46 | 55 | 53 | 55 | 64 |
| **72** | 67 | 60 | 46 | 56 | 57 | 57 | 67 |
| **75** | 81 | 62 | 48 | 60 | 60 | 62 | 81 |

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

## Maximum temperature rise

*Maximum temperature rise on the unexposed side*



## Maximum temperature rise

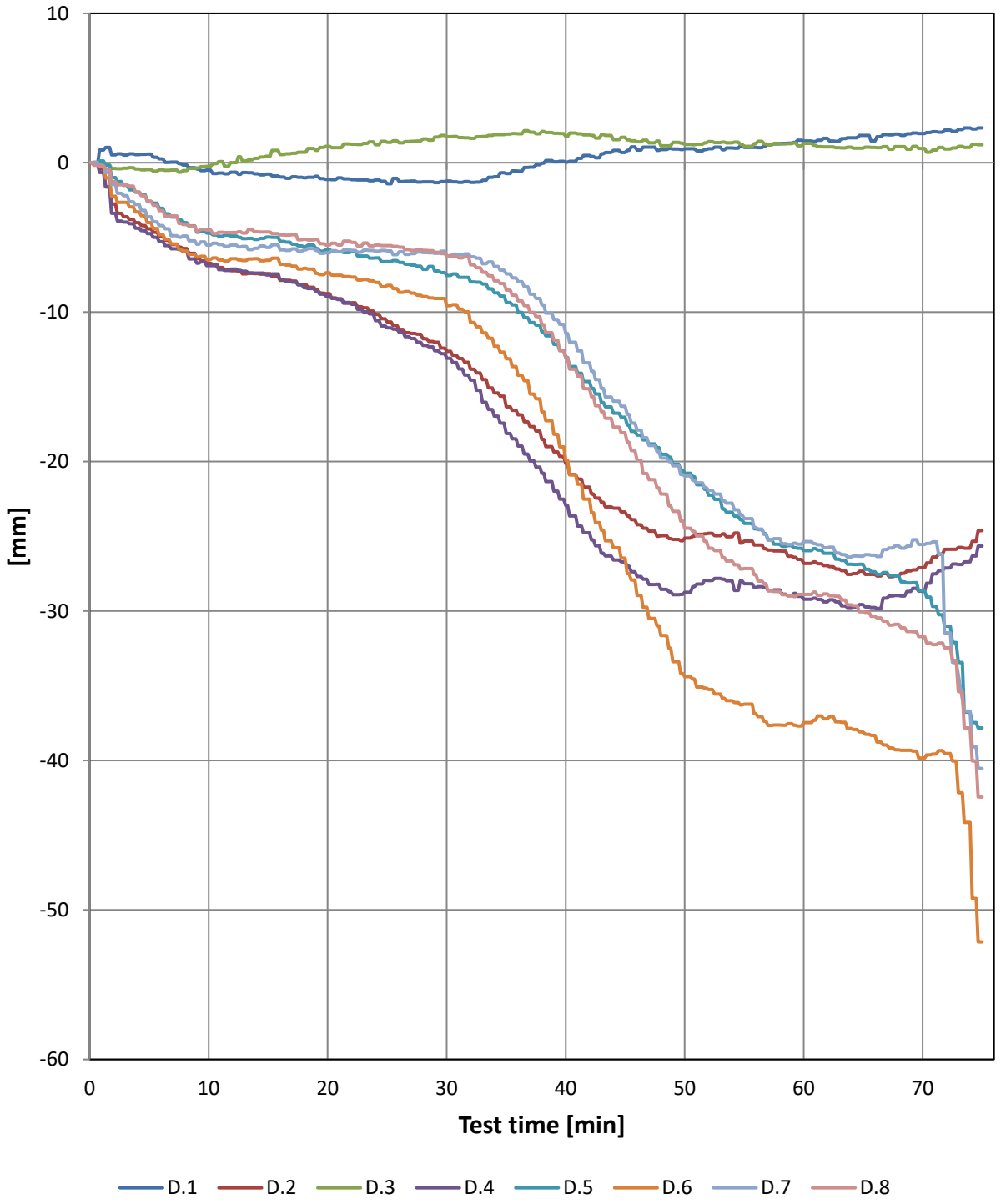
*Maximum temperature rise on the unexposed side*

| Min. / °C | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 2.Max |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | 0 |
| **3** | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| **6** | 10 | 6 | 1 | 7 | 12 | 0 | 0 | 0 | 0 | 12 |
| **9** | 20 | 11 | 6 | 14 | 31 | 1 | 1 | 0 | 1 | 31 |
| **12** | 28 | 18 | 17 | 26 | 38 | 1 | 3 | 1 | 7 | 38 |
| **15** | 36 | 23 | 27 | 33 | 42 | 3 | 7 | 1 | 14 | 42 |
| **18** | 42 | 26 | 31 | 38 | 47 | 5 | 11 | 2 | 21 | 47 |
| **21** | 45 | 28 | 34 | 42 | 51 | 7 | 16 | 4 | 30 | 51 |
| **24** | 47 | 30 | 38 | 44 | 52 | 9 | 23 | 6 | 38 | 52 |
| **27** | 48 | 32 | 41 | 45 | 51 | 11 | 29 | 8 | 44 | 51 |
| **30** | 47 | 33 | 43 | 45 | 47 | 14 | 33 | 10 | 47 | 47 |
| **33** | 47 | 35 | 45 | 44 | 46 | 16 | 36 | 11 | 48 | 48 |
| **36** | 49 | 36 | 46 | 42 | 42 | 18 | 37 | 13 | 48 | 49 |
| **39** | 51 | 38 | 47 | 40 | 37 | 19 | 37 | 15 | 48 | 51 |
| **42** | 52 | 41 | 48 | 39 | 33 | 21 | 36 | 17 | 45 | 52 |
| **45** | 54 | 44 | 48 | 41 | 32 | 23 | 36 | 19 | 46 | 54 |
| **48** | 56 | 49 | 50 | 43 | 48 | 27 | 39 | 25 | 50 | 56 |
| **51** | 61 | 51 | 54 | 46 | 59 | 33 | 41 | 30 | 52 | 61 |
| **54** | 65 | 53 | 55 | 47 | 66 | 39 | 44 | 35 | 55 | 66 |
| **57** | 66 | 54 | 57 | 48 | 69 | 44 | 45 | 39 | 57 | 69 |
| **60** | 68 | 55 | 58 | 49 | 79 | 47 | 46 | 46 | 58 | 79 |
| **63** | 71 | 55 | 58 | 50 | 110 | 49 | 47 | 48 | 59 | 110 |
| **66** | 78 | 56 | 58 | 52 | 132 | 51 | 49 | 48 | 60 | 132 |
| **69** | 86 | 56 | 59 | 54 | 155 | 52 | 50 | 50 | 62 | 155 |
| **72** | 90 | 57 | 59 | 55 | 156 | 51 | 52 | 50 | 64 | 156 |
| **75** | 94 | 58 | 58 | 57 | 138 | 54 | 58 | 52 | 68 | 138 |

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

## Horizontal deformation

*Negative values indicate movement towards the furnace*



## Horizontal deformation

*Negative values indicate movement towards the furnace*

| Min. / mm | D.1 | D.2 | D.3 | D.4 | D.5 | D.6 | D.7 | D.8 |
|---|---|---|---|---|---|---|---|---|
| **0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **3** | 0.5 | -3.6 | -0.4 | -4.0 | -1.5 | -2.7 | -2.2 | -1.5 |
| **6** | 0.3 | -4.9 | -0.5 | -5.3 | -3.1 | -4.8 | -4.2 | -3.2 |
| **9** | -0.4 | -6.4 | -0.4 | -6.7 | -4.7 | -6.3 | -5.5 | -4.6 |
| **12** | -0.6 | -7.2 | 0.0 | -7.1 | -4.9 | -6.4 | -5.5 | -4.7 |
| **15** | -0.8 | -7.4 | 0.4 | -7.5 | -5.0 | -6.5 | -5.7 | -4.6 |
| **18** | -1.0 | -8.1 | 0.7 | -8.4 | -5.6 | -7.1 | -5.8 | -5.1 |
| **21** | -1.0 | -9.1 | 1.0 | -9.2 | -6.0 | -7.5 | -6.0 | -5.5 |
| **24** | -1.2 | -10.2 | 1.2 | -10.6 | -6.4 | -8.0 | -5.9 | -5.5 |
| **27** | -1.2 | -11.4 | 1.4 | -11.8 | -6.9 | -8.7 | -6.1 | -5.9 |
| **30** | -1.2 | -12.6 | 1.7 | -13.1 | -7.5 | -9.6 | -6.3 | -6.2 |
| **33** | -1.2 | -14.5 | 1.8 | -16.0 | -8.1 | -11.4 | -6.8 | -7.3 |
| **36** | -0.6 | -16.9 | 1.9 | -19.0 | -10.0 | -14.2 | -8.0 | -9.2 |
| **39** | 0.1 | -19.4 | 2.0 | -22.0 | -12.2 | -18.2 | -10.5 | -11.9 |
| **42** | 0.5 | -21.7 | 1.9 | -24.8 | -14.6 | -22.5 | -13.4 | -15.1 |
| **45** | 0.7 | -23.4 | 1.7 | -26.7 | -17.0 | -26.5 | -16.3 | -18.1 |
| **48** | 0.9 | -25.0 | 1.1 | -28.6 | -19.5 | -31.6 | -19.8 | -22.2 |
| **51** | 0.8 | -24.9 | 1.2 | -28.2 | -21.6 | -35.1 | -21.4 | -25.0 |
| **54** | 1.0 | -25.0 | 1.3 | -28.0 | -23.4 | -36.0 | -22.8 | -26.7 |
| **57** | 1.2 | -25.9 | 1.2 | -28.6 | -25.2 | -37.7 | -25.3 | -28.7 |
| **60** | 1.5 | -26.8 | 1.3 | -29.2 | -26.0 | -37.5 | -25.4 | -28.9 |
| **63** | 1.4 | -27.2 | 1.0 | -29.4 | -26.5 | -37.4 | -26.1 | -29.0 |
| **66** | 1.5 | -27.5 | 1.0 | -29.8 | -27.4 | -38.3 | -26.3 | -30.4 |
| **69** | 1.9 | -27.3 | 0.9 | -28.7 | -28.1 | -39.3 | -25.7 | -31.4 |
| **72** | 2.2 | -25.9 | 0.9 | -27.1 | -31.0 | -39.5 | -31.5 | -32.5 |
| **75** | 2.3 | -24.6 | 1.2 | -25.7 | -37.8 | -52.1 | -40.5 | -42.4 |


Photo No. 1 Mounting of fixed steel framework, top of specimen.


Photo No. 2 Fixed steel framework panel frame mounted with gypsum on one side and bottom.


Photo No. 3 Fixed steel framework mounted with gypsum boards.


Photo No. 4 Bottom 70mm U-profile mounted to a calcium silicate boards and test frame.


Photo No. 5 Mounting of prefabricated wall against free edge.


Photo No. 6 Prefabricated tongue and groove system, seen form inside the wall.


Photo No. 7 Prefabricated tongue and groove system, seen form outside the wall. connected to the fixed wall system.


Photo No. 8 Prefabricated tongue and groove system, seen form inside the wall, connected to the fixed wall system.


Photo No. 9 Prefabricated tongue and groove system, seen form outside the wall. connected to the testing frame.


Photo No. 10 Test specimen completed, seen from exposed side.


Photo No. 11 Test specimen at beginning of test.


Photo No. 12 Test specimen after 15 minutes of testing.


Photo No. 13 Test specimen after 44 minutes of testing. First cotton pad test.


Photo No. 14 Test specimen after 53 minutes of testing. Second cotton pad test.


Photo No. 15 Test specimen after 57 minutes of testing. Third cotton pad test.


Photo No. 16 Test specimen after 59 minutes of testing. Fourth and fifth cotton pad test.


Photo No. 17 Test specimen after 64 minutes of testing.

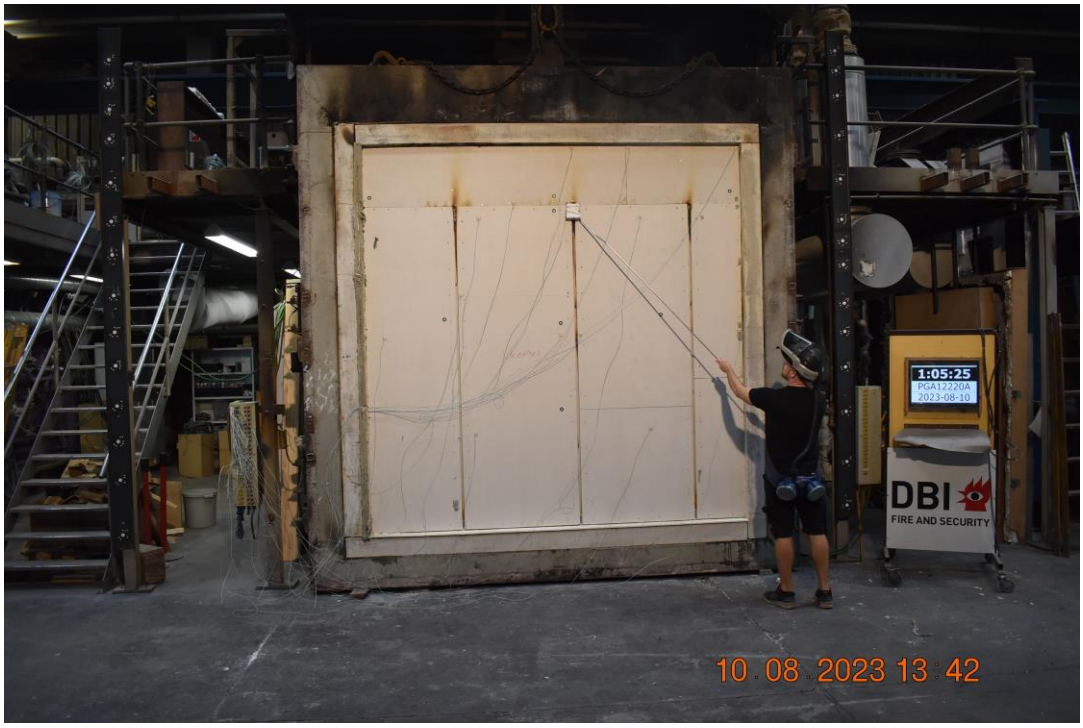



Photo No. 18 Test specimen after 65 minutes of testing. Sixth cotton pad test.


Photo No. 19 Heavy charring but no flame or embers. Cotton pad six.


Photo No. 20 Test specimen after 67 minutes of testing. Seventh cotton pad test.


Photo No. 21 Heavy charring but no flame or embers. Seventh cotton pad test.


Photo No. 22 Test specimen after 68 minutes of testing. Eight cotton pad test.


Photo No. 23 Heavy charring but no flame or embers. Eight cotton pad test.


Photo No. 24 Test specimen after 70 minutes of testing. Ninth cotton pad test.

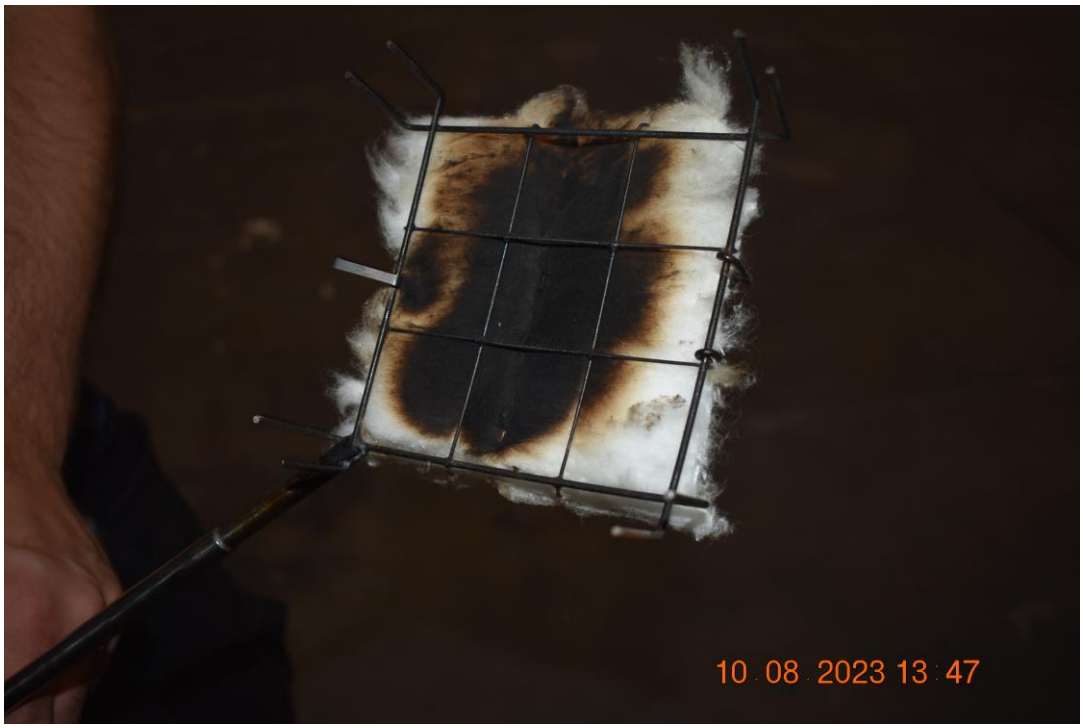
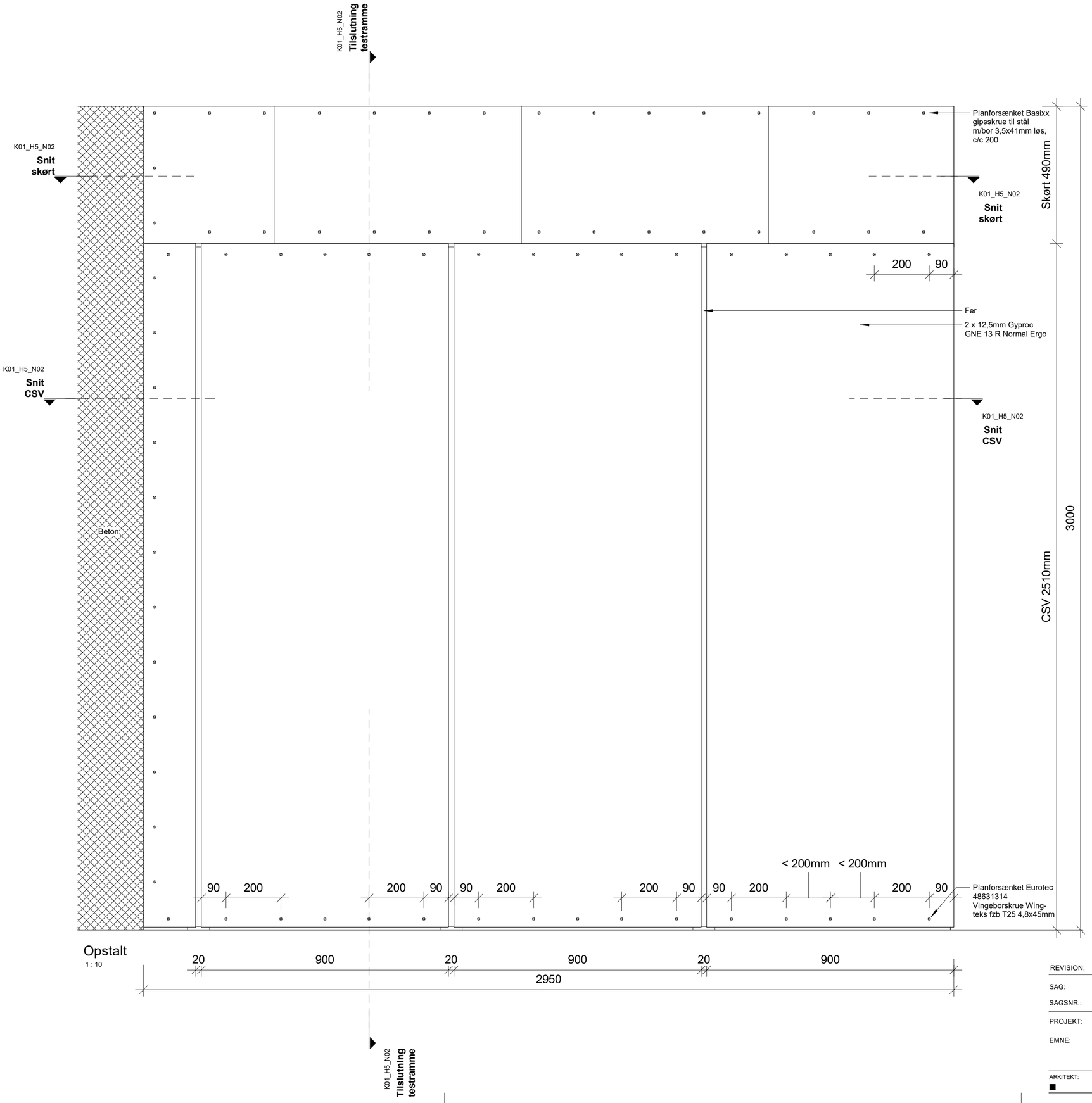


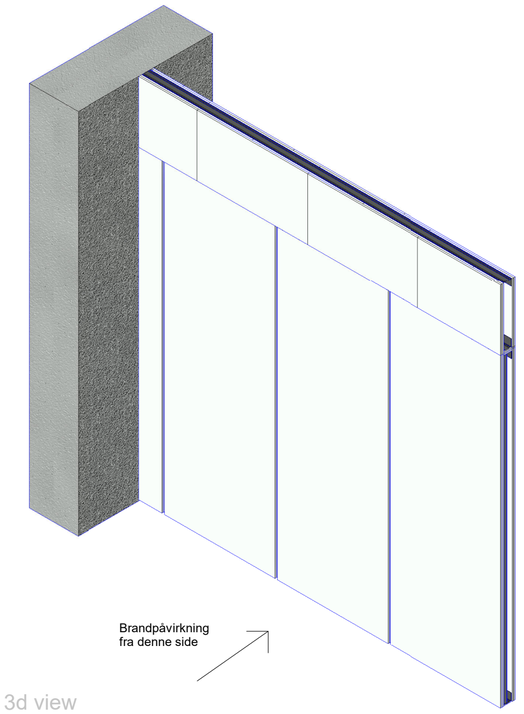

Photo No. 25 Heavy charring but no flame or embers. Ninth cotton pad test.


Photo No. 26 Test specimen after 71 minutes of testing. Tenth cotton pad test.


Photo No. 27 Heavy charring and embers. Tenth cotton pad test.


Photo No. 28 Test specimen after removed from furnace, seen from exposed side.




3d view

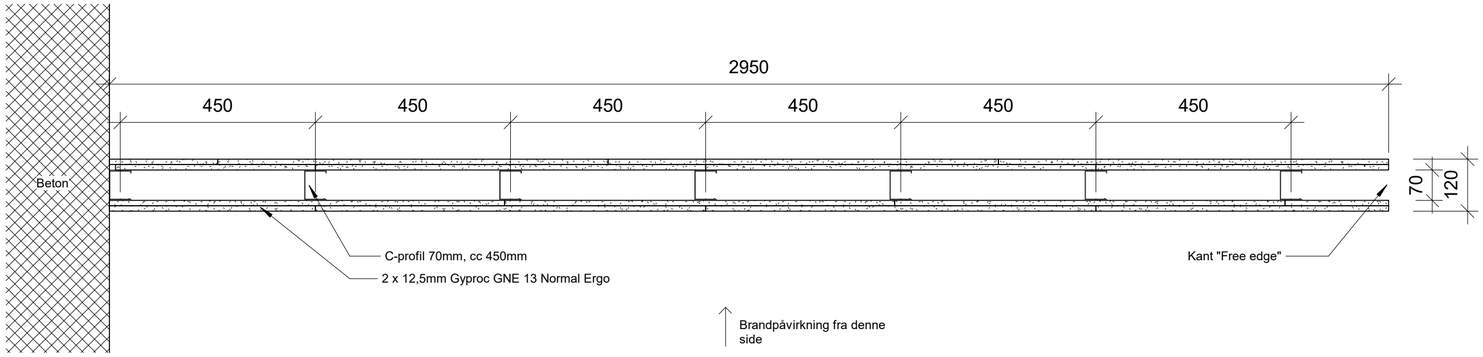
**K01_H5_N01**

Cirkulær skillevæg (CSV)

DBI
PGA12220A

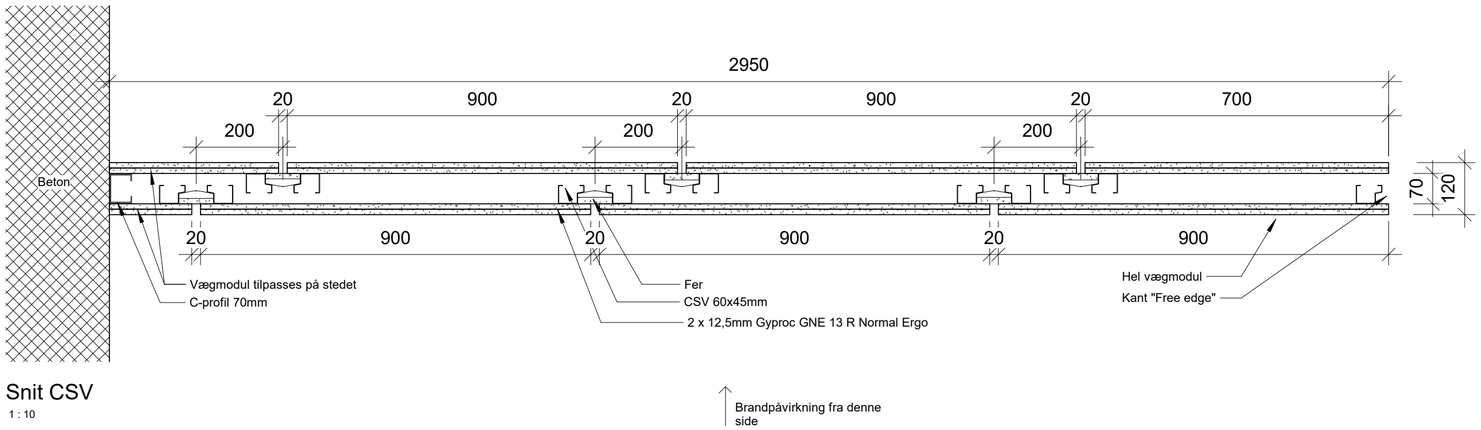
| | | | |
|---|---|---|---|
| REVISION: | DATO: EMNE: | | UDFØRT AF: |
| SAG: | **Cirkulær skillevæg (CSV)** | TEGN NR.: | **K01_H5_N01** |
| SAGSNR.: | 303250 | DATO: | 07-07-2023 |
| PROJEKT: | Cirkulær skillevæg (CSV) | INITIALER: | CBO |
| EMNE: | **Fuldskalabrandtest, DBI** | KS: | JMG |
| | | MÅL: | 1 : 10 |
| | | FORMAT: | 594 x 420 |


ARKITEKT: ERIK arkitekter A/S TLF: 2942 0532 MAIL: kbh@erik.dk
Flæsketorvet 75 / DK-1711 København V WEB: www.erik.dk
ERIKarkitekter



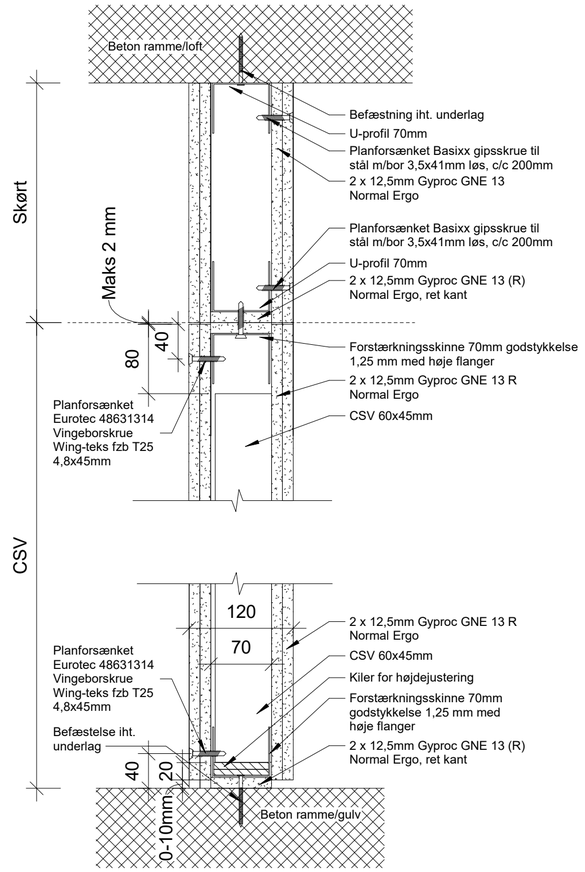

Snit Skørt

1 : 10




Snit CSV

1 : 10




Tilslutning testramme

1 : 5

**K01_H5_N02**

Cirkulær skillevæg (CSV)

**Note:**
Stål i korrosionsklasse C2

DBI PGA122210A

| REVISION: | DATO: | EMNE: | UDFØRT AF: |
|---|---|---|---|
| SAG: | **Cirkulær skillevæg (CSV)** | TEGN NR.: | **K01_H5_N02** |
| SAGSNR.: | 303250 | DATO: | 07-07-2023 |
| PROJEKT: | Cirkulær skillevæg (CSV) | INITIALER: | CBO |
| EMNE: | **Fuldskalabrandtest, DBI** | KS: | JMG |
| | | MÅL: | As indicated |
| | | FORMAT: | 594 x 420 |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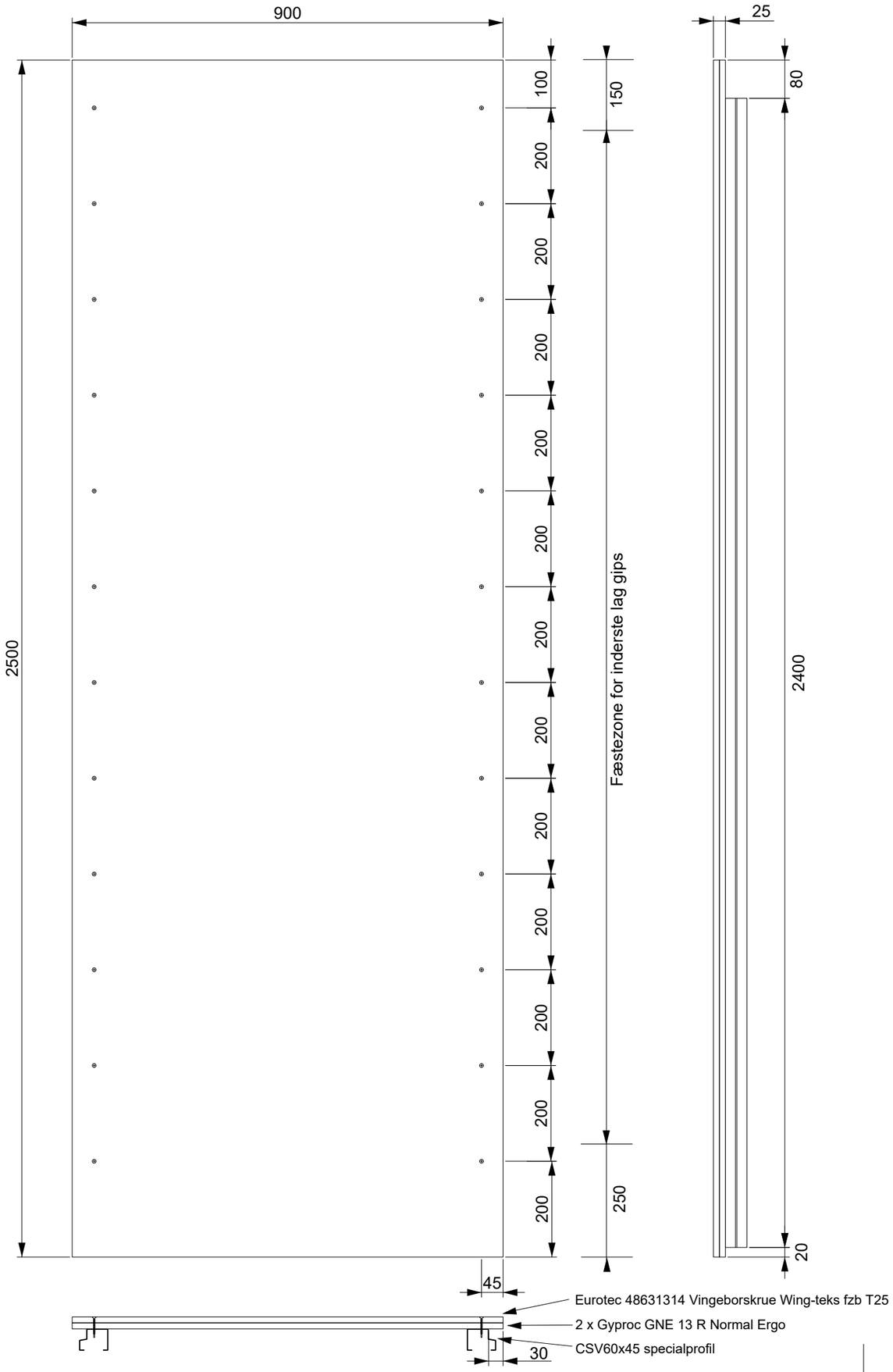


# K01_H5_N03

Cirkulær skillevæg, (CSV)

## VÆGMODUL, Præfabrikation

- Vægmodul 900x2500 mm
  - CSV60x45 specialprofil, 1,25mm galv. stål. korrosionklasse C2, længde 2400mm
  - 2 x Gyproc GNE 13 R Normal Ergo - gipskartonplade, 12,5mm med ret kant
  - Gipsskruer med borespids: Eurotec 48631314 Vingeborskrue Wing-teks fzb T25. Planforsænket. Sættes 200mm fra vægmodulets nederste kant og opad per 200mm

DBI
PGA12220A

| REVISION: | DATO: | EMNE: | | UDFØRT AF: |
|---|---|---|---|---|
| SAG: | **Cirkulær skillevæg (CSV)** | | TEGN NR.: | **K01_H5_N03** |
| SAGSNR.: | 303250 | | DATO: | 07-07-2023 |
| PROJEKT: | Cirkulær skillevæg (CSV) | | INITIALER: | JMG |
| EMNE: | **Fuldskalabrandtest, DBI** | | KS: | CBO |
| | | | MÅL: | 1:10 |
| | | | FORMAT: | 420 x 297 |


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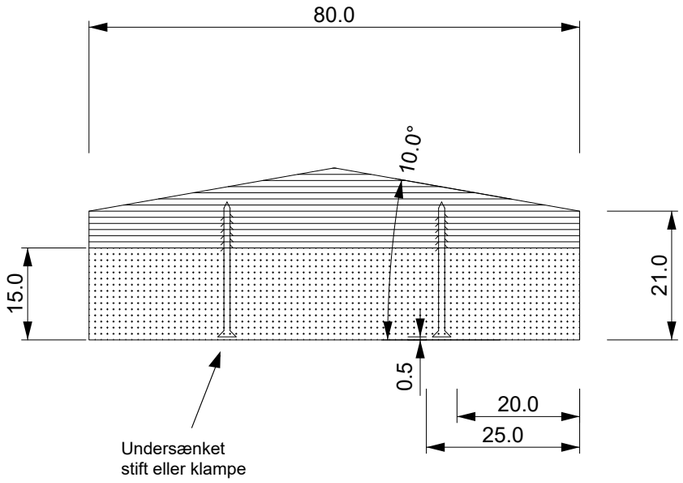
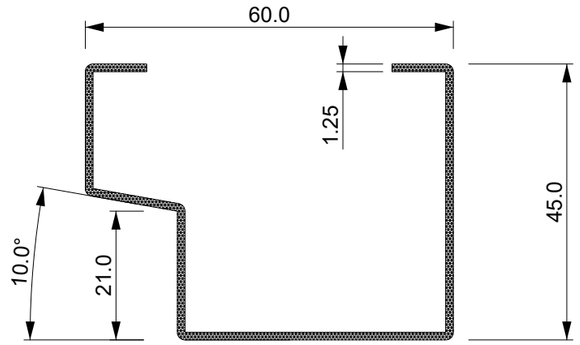
# K01_H5_N04

Cirkulær skillevæg, (CSV)

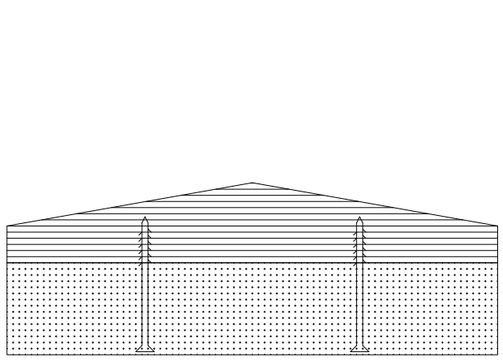
## KOMPONENTER, Præfabrikation

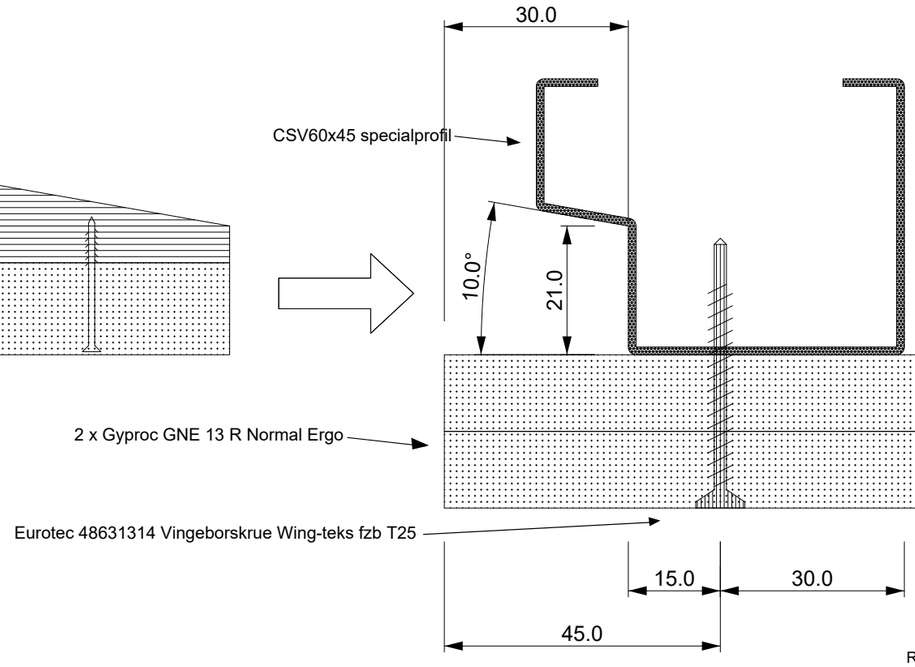



- FER (tv.)
  - Krydsfinér, struefast: _____ (udfyldes)
  - 1 x 15.4mm Gyproc, GFE 15 Protect - gipsplade 15.4mm med brandegenskab
  - Stifter / klamper med hager_____ (udfyldes). Undersænket for tæt samling. Sættes per 500mm.

- CSV60x45 specialprofil, stolpe (th.)
  - Bukket op efter tegning på CNC-anlæg . 1,25mm galv. stål. korrosionklasse C2.
  - Længde 2400mm






- Vægmodul 900x2500 mm
  - CSV60x45 specialprofil, 1,25mm galv. stål. korrosionklasse C2
  - 2 x Gyproc GNE 13 R Normal Ergo - gipskartonplade, 12,5mm med ret kant
  - Gipsskruer med borespids:_____ (udfyldes). Planforsænket. Sættes 200mm fra vægmodulets nederste kant og opad per 200mm.

## TEST, Præfabrikation kvalitetssikring

Vægmoduler + Løse Fer skal kunne presses tæt sammen i vilkårlig rækkefølge. Dvs. de er ensartede og giver tætte lodrette tørre samlinger.

DBI
PGA12220A

| REVISION: | DATO: | EMNE: | | UDFØRT AF: |
|---|---|---|---|---|
| SAG: | **Cirkulær skillevæg (CSV)** | | TEGN NR.: | **K01_H5_N04** |
| SAGSNR.: | 303250 | | DATO: | 07-07-2023 |
| PROJEKT: | Cirkulær skillevæg (CSV) | | INITIALER: | JMG |
| EMNE: | **Fuldskalabrandtest, DBI** | | KS: | CBO |
| | | | MÅL: | 1:1 |
| | | | FORMAT: | 420 x 297 |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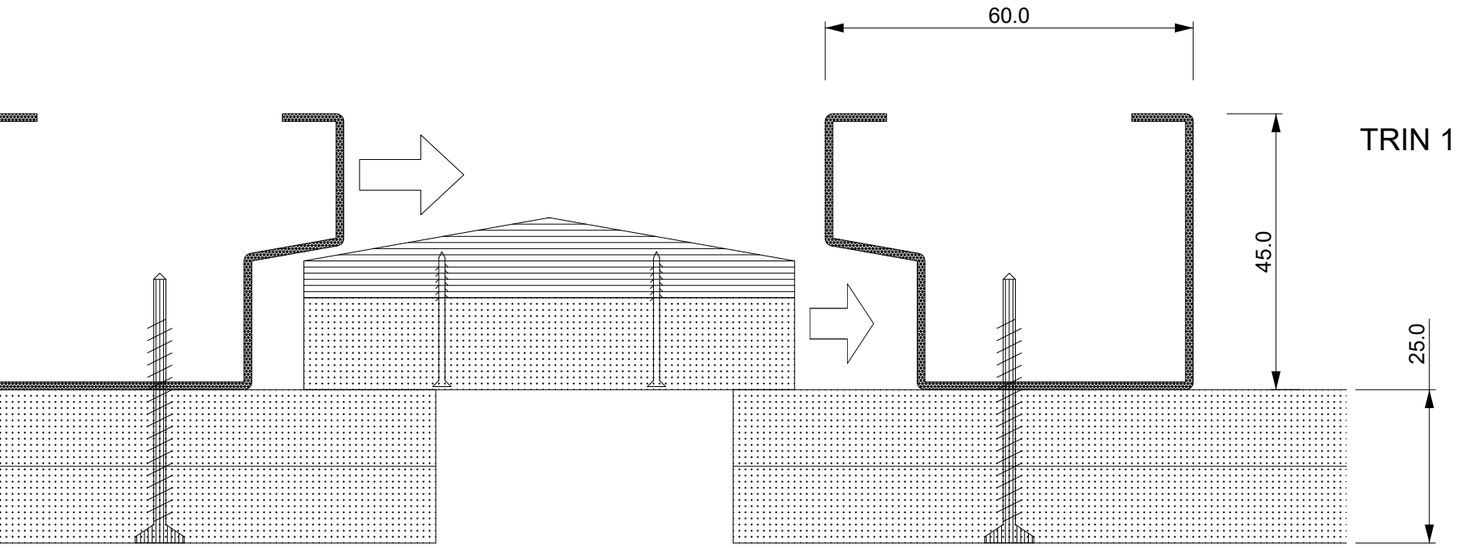
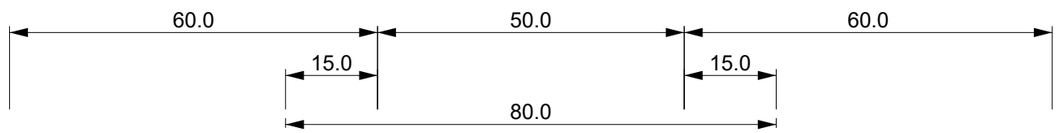
**K01_H5_N05**

Cirkulær skillevæg, (CSV)



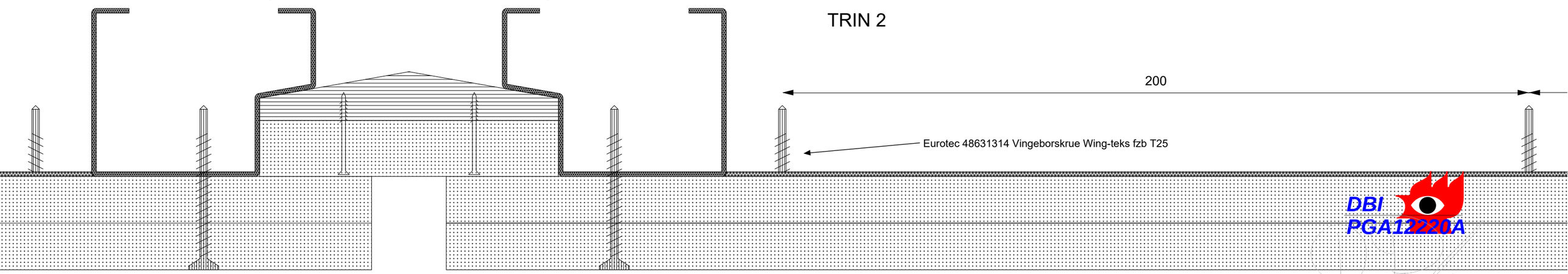

TRIN 1




## SAMLING, in-situ

Trin 1
Vægmodul justeret til lodret med kiler.
Vægmodul + Fer + Vægmodul presset tæt sammen.

Trin 2
Vægmodul fastgøres i top og bund med gipsskruer med borespids Eurotec 48631314 Vingeborskrue Wing-teks fzb T25.
Planforsænket. sættes 90mm inde fra vægmodulets lodrette kant og derefter med max. 200mm afstand.




TRIN 2

Brandpåvirkning
fra denne side

DBI
PGA12220A

| REVISION: | DATO: | EMNE: | | UDFØRT AF: |
|---|---|---|---|---|
| SAG: | **Cirkulær skillevæg (CSV)** | | TEGN NR.: | **K01_H5_N05** |
| SAGSNR.: | 303250 | | DATO: | 07-07-2023 |
| PROJEKT: | Cirkulær skillevæg (CSV) | | INITIALER: | JMG |
| EMNE: | **Fuldskalebrandtest, DBI** | | KS: | CBO |
| | | | MÅL: | 1:1 |
| | | | FORMAT: | 420 x 297 |


ARKITEKT: ERIK arkitekter A/S TLF: 2942 0532 MAIL: kbh@erik.dk
Flæsketorvet 75 / DK-1711 København V WEB: www.erik.dk