

Fire Resistance Testing

Prepared for:

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CONFIDENTIAL

Report: Chilt/RF13217/AR1

A fire resistance test performed on a loadbearing compressed straw wall system

Test conducted in accordance with BSEN 1365-1: 1999 and BSEN 1363-1: 2012

Test date: 25th October 2013

Page 1 of 22



The details of the sponsor of test report Chilt/RF13217 are held on file by Chiltern International Fire Ltd. This report is additional to that issued as Chilt/RF13217 and dated 22 November 2013. The original report shall remain valid and is not replaced by the additional report.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. This document is confidential and remains the property of Chiltern International Fire Ltd. The legal validity of this report can only be claimed on the presentation of the complete report.



BM TRADA – the new name for Chiltern International Fire Ltd

From July 1st 2013, Chiltern International Fire Ltd commenced trading under the name of its parent company BM TRADA and at the same time adopted a brand new visual identity.

Historically, the group has delivered its services through a number of individual companies: BM TRADA Certification Ltd, TRADA Technology Ltd, Chiltern International Fire Ltd (including Chiltern Dynamics) and a network of international offices. Both BM TRADA Group and these individual companies will now trade under the same name - BM TRADA - and adopt the new visual identity.

To coincide with this change, our Technical Reports, Test Reports, Products Assessments, company stationery and marketing collateral have been re-designed to carry the new branding and visual identity.

The validity of all documents previously issued by the individual companies including certificates, test reports and product assessments is unaffected by this change and a letter to this effect will be available to download from our website www.bmtradagroup.com.

About BM TRADA.

With origins dating back to 1934, we have a deep history and services which are highly valued by our customers. We offer independent certification, testing, inspection, training and technical services around the world. In all these areas we continue to use industry-leading experts in their chosen fields to develop and deliver services – an ethos that has been at the heart of our approach since we began.

A recent review of our businesses and customers revealed that the individual identities sometimes make communications confusing, and that in an already complex business area, clarity and simplicity in communications is rare, but valued. It also revealed that a single identity and combined offer would help us strengthen our appeal.

With this in mind, we brought the companies together under the name BM TRADA and took the opportunity to create a fresh new visual identity.

We have modernised our image and combined our strengths. However, our values, our people and the integrity of our services remain the same. I hope you will welcome these changes and the improvements they will bring.



Jon Osborn
Chief Operating Officer

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1 Introduction

The wall system was constructed on site at BM TRADA by the client during October 2013. BM TRADA subsequently installed the wall into a refractory lined steel restraint frame.

2 Specimen verification

From the exposed face in:

- 1No layer of nominally 20-30mm thick clay plaster coat
- Slip coat (clay and water) spray applied into straw to nominally 30-50mm depth
- Hessian fixed over the straw/timber junctions with a 150mm overlap
- Head and base plates comprising 120mm / 95mm high x 45mm wide softwood timber, clad with lids and base of 18mm thick Smart Ply OSB, with sections of 120mm / 95mm x 45mm softwood timber used to house the loadbearing posts within the wall, centrally to the restraint frame, off-centre by 40mm within the straw bale wall itself. The voids in the plates were filled with Ø4-10mm Leca® expanded blown clay aggregate insulation
- 4No. vertical loadbearing softwood timber posts 95mm wide x 95mm deep, fitted nominally 840mm apart.
- 7No. courses of compressed straw bales between head and base plates and around loadbearing posts. The straw was orientated horizontally with the open ends to the wall faces

The component parts of the specimen were identified and, where appropriate, moisture content readings and board weights were measured on either the original specimen, or, samples provided by the sponsor.

3 Description of specimen

The specimen measured 2625mm high x 3000mm wide x nominally 410mm thick.

4 Method of installation

The wall specimen was installed directly into the restraint frame fitted so the posts within the wall were central to the steel spreader beam and hydraulic jacks. The gaps between the specimen and the restraint frame were filled with mineral wool, nominal density 27kg/m³, to prevent flames coming around the edge of the specimen and also to allow free movement of the wall specimen.

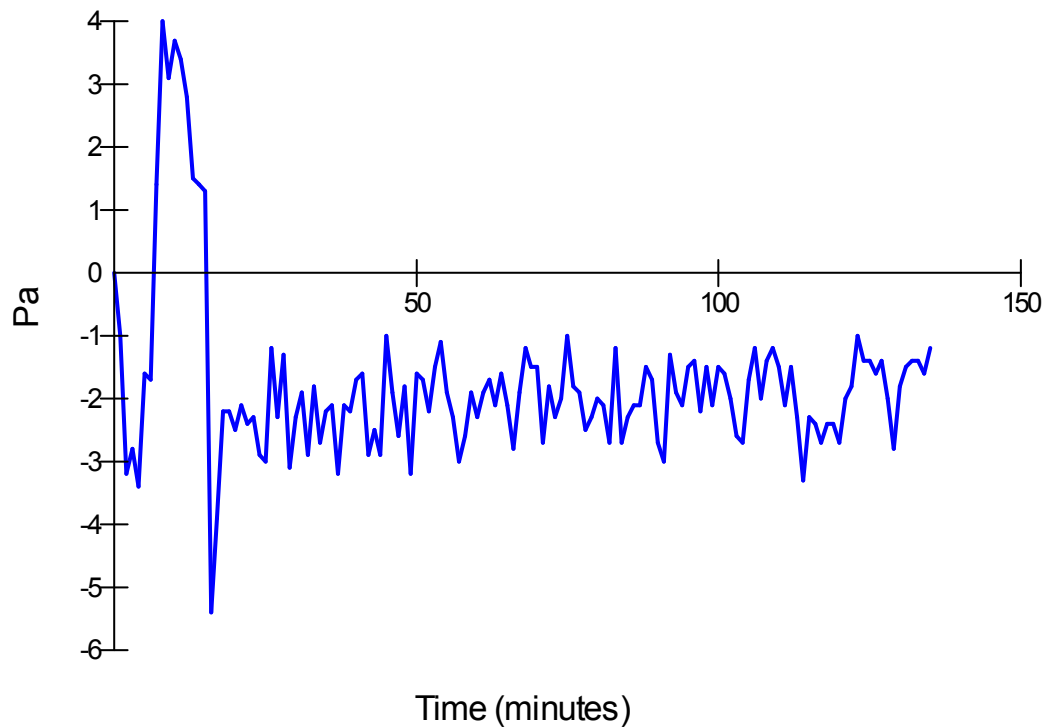
5 Test conditions

5.1 Ambient temperature

The ambient temperature of the test area at commencement of test was 20°C. The ambient temperatures recorded for the duration of the test were recorded and have been tabulated in Appendix 2.

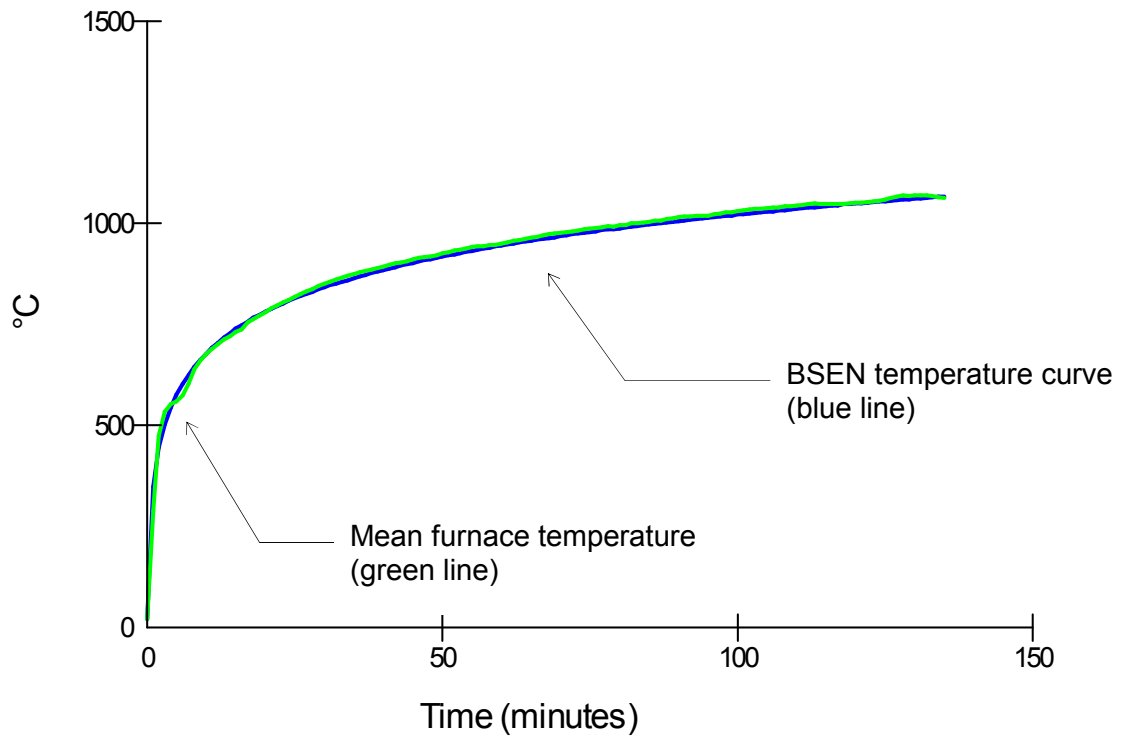
5.2 Pressure readings

After the first 5 minutes of the test, the furnace pressure was maintained at -2.5 ± 5 Pa and after 10 minutes was maintained at -2.5 ± 3 Pa with respect to atmosphere, at the notional floor level which equates to a recorded reading of 18.75 Pa at the head of the wall. The pressures recorded have been tabulated in Appendix 2 and are shown graphically below:



5.3 Furnace temperature

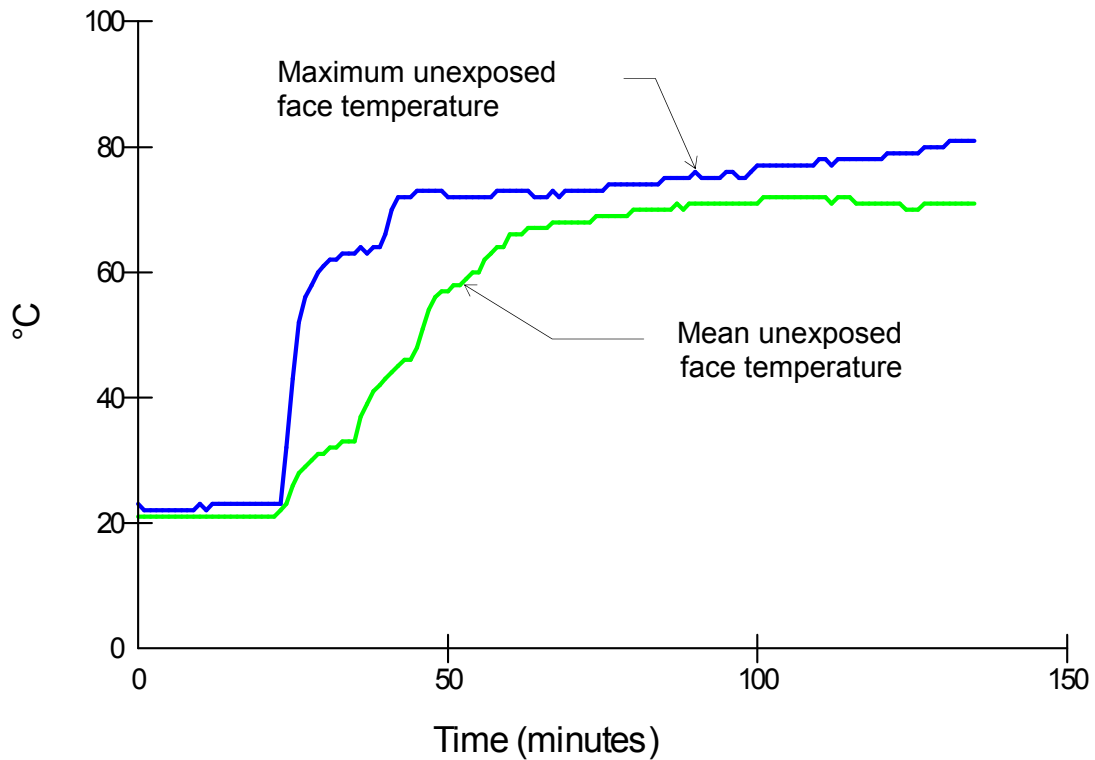
The furnace was controlled to follow the temperature/time relationship specified in BSEN 1363-1: 2012 as closely as possible, using the average of nine plate thermocouples suitably distributed within the furnace. The temperatures recorded have been tabulated in Appendix 2 and are shown graphically below:



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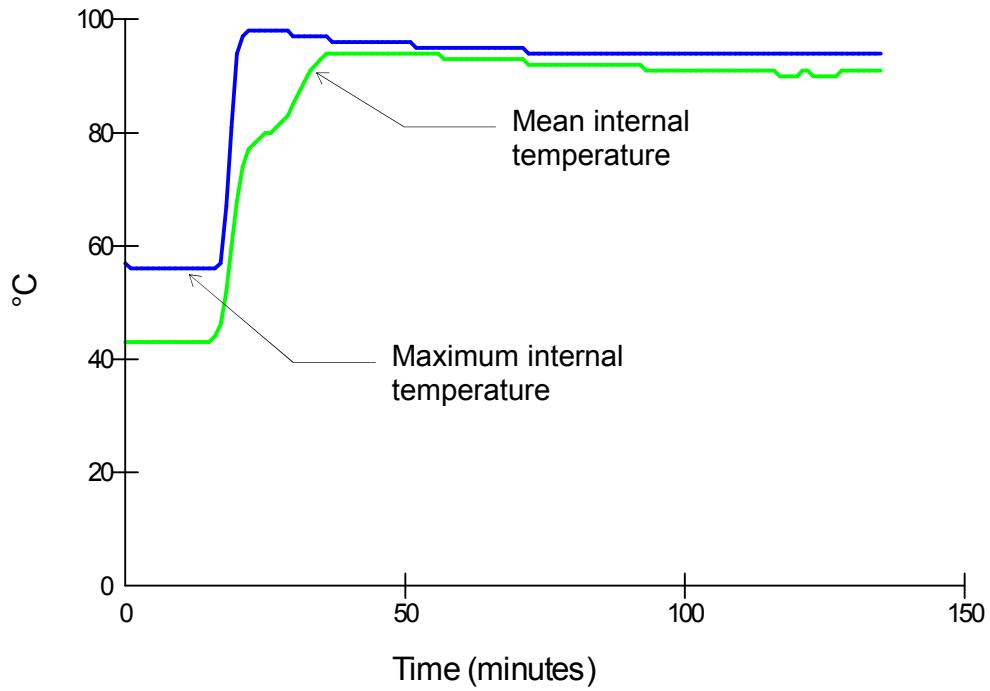
5.4 Unexposed face temperatures

The temperature of the unexposed face was monitored by means of five thermocouples measuring the average temperature and three thermocouples measuring the maximum temperature. (See Figure 4 of Appendix 1 for thermocouple locations). The temperatures recorded have been tabulated in Appendix 2 and are shown graphically below:



5.5 Internal temperatures

The internal temperature was monitored by means of five thermocouples positioned between 200 - 300mm in from the unexposed face. (See figure 4 of Appendix 1 for thermocouple locations). The temperatures recorded have been tabulated in Appendix 2 and are shown graphically below:



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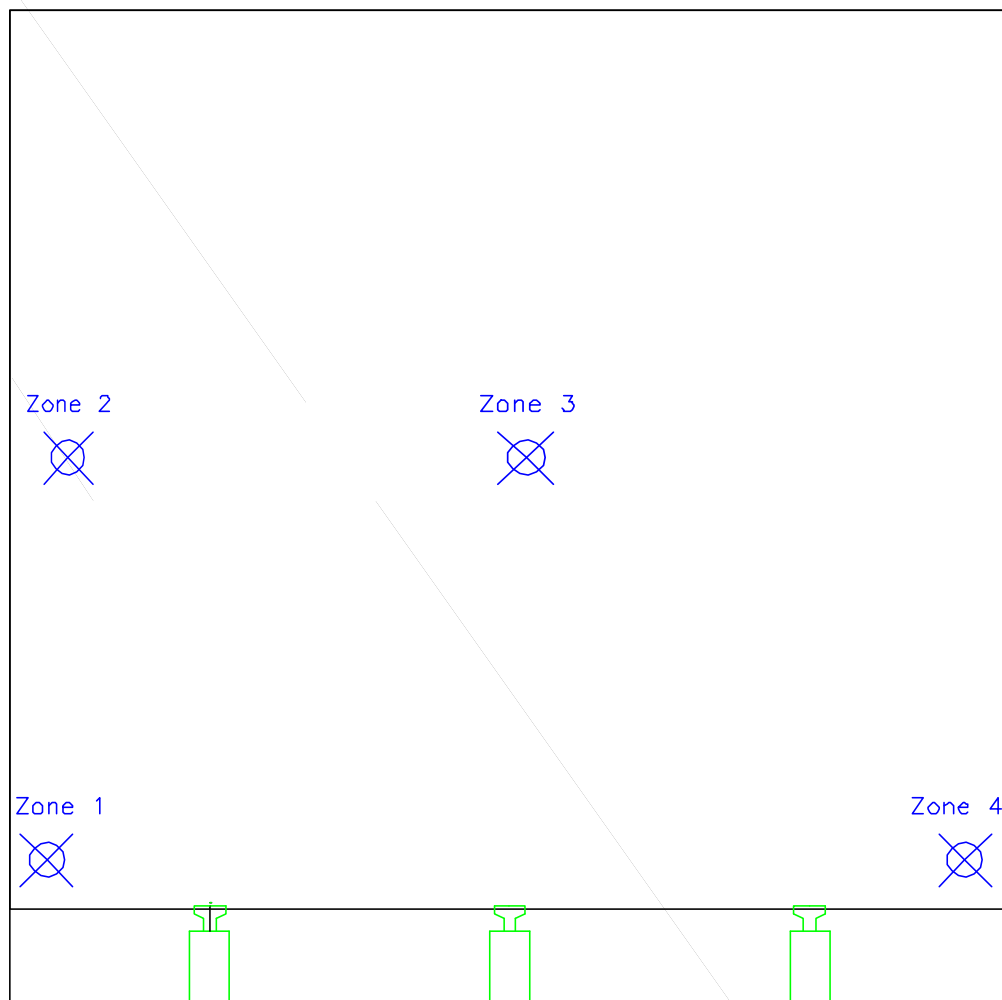
5.6 Loading conditions and deflection

The specimen was loaded from below using 3No hydraulic jacks located at 600mm, 1500mm and 2400mm from the right of the specimen. The load was transferred to the specimen using a steel/timber spreader beam. The specimen was loaded along the centre line to the equivalent of 21.075kN per loadbearing post (equivalent to 84.3kN total imposed load) in accordance with the client’s request. The specimen was loaded 15 minutes before the test commenced. The load was applied constantly and consistently throughout the test.

Deflection

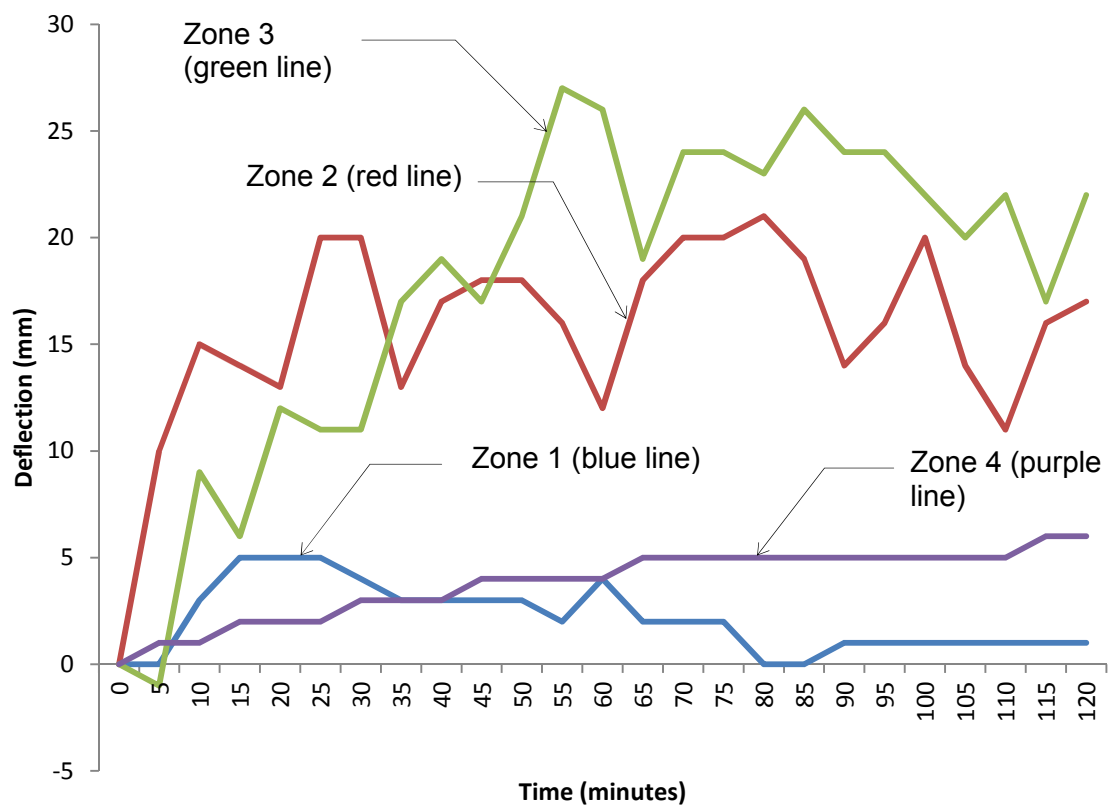
The vertical deflection was measured at the bottom of the free edges on both sides (zones 1 and 4). Horizontal movement was measured at mid height in the centre of the wall (zone 3) and at mid height on the left side free edge (zone 2). The readings have been tabulated and are shown graphically below.

A positive horizontal measurement represents distortion in towards the furnace.
 A negative horizontal measurement represents distortion away from the furnace.
 A positive vertical measurement represents upwards movement of the specimen.



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| Time (minutes) | Zone 1 (mm) | Zone 2 (mm) | Zone 3 (mm) | Zone 4 (mm) |
|----------------|-------------|-------------|-------------|-------------|
| 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 10 | -1 | 1 |
| 10 | 3 | 15 | 9 | 1 |
| 15 | 5 | 14 | 6 | 2 |
| 20 | 5 | 13 | 12 | 2 |
| 25 | 5 | 20 | 11 | 2 |
| 30 | 4 | 20 | 11 | 3 |
| 35 | 3 | 13 | 17 | 3 |
| 40 | 3 | 17 | 19 | 3 |
| 45 | 3 | 18 | 17 | 4 |
| 50 | 3 | 18 | 21 | 4 |
| 55 | 2 | 16 | 27 | 4 |
| 60 | 4 | 12 | 26 | 4 |
| 65 | 2 | 18 | 19 | 5 |
| 70 | 2 | 20 | 24 | 5 |
| 75 | 2 | 20 | 24 | 5 |
| 80 | 0 | 21 | 23 | 5 |
| 85 | 0 | 19 | 26 | 5 |
| 90 | 1 | 14 | 24 | 5 |
| 95 | 1 | 16 | 24 | 5 |
| 100 | 1 | 20 | 22 | 5 |
| 105 | 1 | 14 | 20 | 5 |
| 110 | 1 | 11 | 22 | 5 |
| 115 | 1 | 16 | 17 | 6 |
| 120 | 1 | 17 | 22 | 6 |



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6 Observations

All observations relate to the unexposed face unless stated otherwise.

Time (minutes)

| | |
|--------|---|
| 00.00 | Test started. |
| 09.57 | Dark patches have appeared on the exposed face of the specimen. |
| 12.18 | The exposed face of the wall is glowing orange. Pieces of straw in the plastering are glowing, but the plaster is retaining its integrity with no cracks. |
| 19.09 | There is discolouration to the bottom right hand corner of the exposed face. Additional dark patches are appearing. |
| 25.00 | Steam is issuing from the unexposed face. |
| 30.36 | Steam is still issuing from the unexposed face, due to moisture being released from the straw. |
| 35.10 | Steam is condensing on the frame work and distortion pads of the wall. |
| 41.09 | There is an increase of steam issuing from the unexposed face. |
| 70.00 | Smoke is issuing from the head of the wall, one third in from the right side. |
| 78.35 | There is a horizontal crack at the head of the exposed face. This is opposite the location from which smoke is issuing from the unexposed face. |
| 85.17 | More cracks are appearing on the top left hand corner of the wall's exposed face. The horizontal crack does not run the length of the specimen. No plaster has fallen away. |
| 87.25 | Smoke continues issuing from the unexposed face. |
| 94.34 | There is discolouration at the head of the unexposed face where smoke is issuing. Smoke is issuing between the OSB and the main frame's cross piece. |
| 97.39 | Smoke is issuing from the top right hand corner between the cross piece and bottom piece of OSB. |
| 104.29 | There is cracking to the bottom right hand corner of the exposed face plaster. |
| 107.13 | There is further discolouration of the unexposed face of the specimen. |
| 120.00 | Approximately one third in from the left side of the unexposed face, smoke is issuing from the head of the specimen. |

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- 135.13 Test terminated, due to safety concerns with regards to the hydraulic ram protection panel. No recorded integrity or insulation failure from the specimen.

Post test photograph showing exposed face after removal from the furnace



Post test observations:

- When the specimen was removed from the furnace, approximately 4 minutes after the termination of the test, the plastering was still in place on the exposed face of the specimen.
- The plastering remained intact for a period of 30 minutes until the specimen wall was removed from the restraint frame.

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- When the straw bale core of the specimen was removed, the loadbearing posts were discoloured, but were not visibly charred. See photograph below.
- The char depth of the straw bales was nominally 50mm.



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7 Expression of results


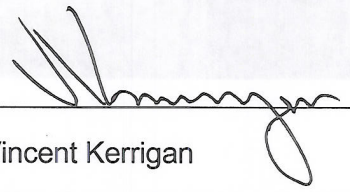
| | |
|------------------------|--|
| Integrity | |
| Cotton pad | 135 (one hundred and thirty five) minutes* |
| Continuous flaming | 135 (one hundred and thirty five) minutes* |
| Gap gauges | 135 (one hundred and thirty five) minutes* |
| Insulation | |
| Average set | 135 (one hundred and thirty five) minutes* |
| Standard set (maximum) | 135 (one hundred and thirty five) minutes* |

* No failure of the test criteria had occurred at termination of the test at 135 minutes

8 Limitations

The results only relate to the behaviour of the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential fire performance of the element in use nor do they reflect the actual behaviour in fires.

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. CIFL will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

| | | |
|-----------------------|---|---|
| Signature: |  |  |
| Name: | Robert Axe | Vincent Kerrigan |
| Title: | Lead Technical Officer | Technical Manager |
| Date of issue: | 21-03-2014 | 21-03-2014 |

9 Field of direct application of test results

The results of the test are directly applicable to similar constructions where one or more of the changes listed in BSEN 1365-1: 1999, Clause 13, are made and the construction continues to comply with that appropriate design code for its stiffness and stability. Other changes are not permitted by the document.

A copy of the field of direct application is available from CIFL upon request.

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10 Description of construction

(Refers to Appendix 1 - figures 1 to 4)

Internal framework

| | Description | Dimensions (mm) | % moisture | Key to figures |
|----------------------|---|---|------------|----------------|
| Head and base plates | Smart Ply OSB | 18 thick x 410 wide | 8.6 | 1 |
| | European redwood softwood timber rails – base plate | 45 thick x 95 high | 13.1 | 2 |
| | European redwood softwood timber rails – head plate | 45 thick x 120 high | 13.1 | 3 |
| Insulation | Leca® expanded blown clay aggregate | Ø4 - 10mm, fitted filling the voids in the head and base plates | - | 4 |
| Load bearing posts | 4No. softwood post fitted 95mm from the wall ends and 135mm from the exposed face of the wall, nominally 840mm apart | 95 wide x 95 thick | 15.8 | 5 |
| Core | 7No. courses of compressed straw bales. (between 112kg/m ³ and 120kg/m ³ nominal density) straw lain horizontally with ends at the wall faces | 350mm high x 410mm wide (40mm shaved off exposed face of 450mm wide bale) x 1000mm long (nominal uncompressed size) | 10 | 6 |

Plaster

| | Description | Dimensions (mm) | Key to figures |
|--------------------------------------|---|---|----------------|
| Exposed face | Outer layer 1 No. layer clay plaster (1:3:1 *clay / sand/ short chopped straw) | 20-30 thick nominally | 7 |
| | Inner layer Clay slip (*clay and water mixed to milk like consistency) applied in spray form | Spray applied over straw surface to a nominal depth of 30-50mm* | 8 |
| Over straw – top/sole plate junction | Hessian – ‘tack’ fixed to top and sole plates with 20mm long galvanised clout nails | 150mm overlap at timber/straw junctions | 9 |

* The clay slip and body coat consisted of 90% Womersley’s manufactured clay product mixed with 10% Dewsbury milled clay, supplied by Hanson UK. The Womersley clay plaster was 1 part Huddersfield grey clay to 5 parts sand (2.5 parts Nosterfield sand and 3.5 parts Leighton Buzzard sand). Hansons milled clay was 80% Dewsbury blue and brown shale clay to 20% crushed sandstone. (details supplied by client, not verified by the laboratory)

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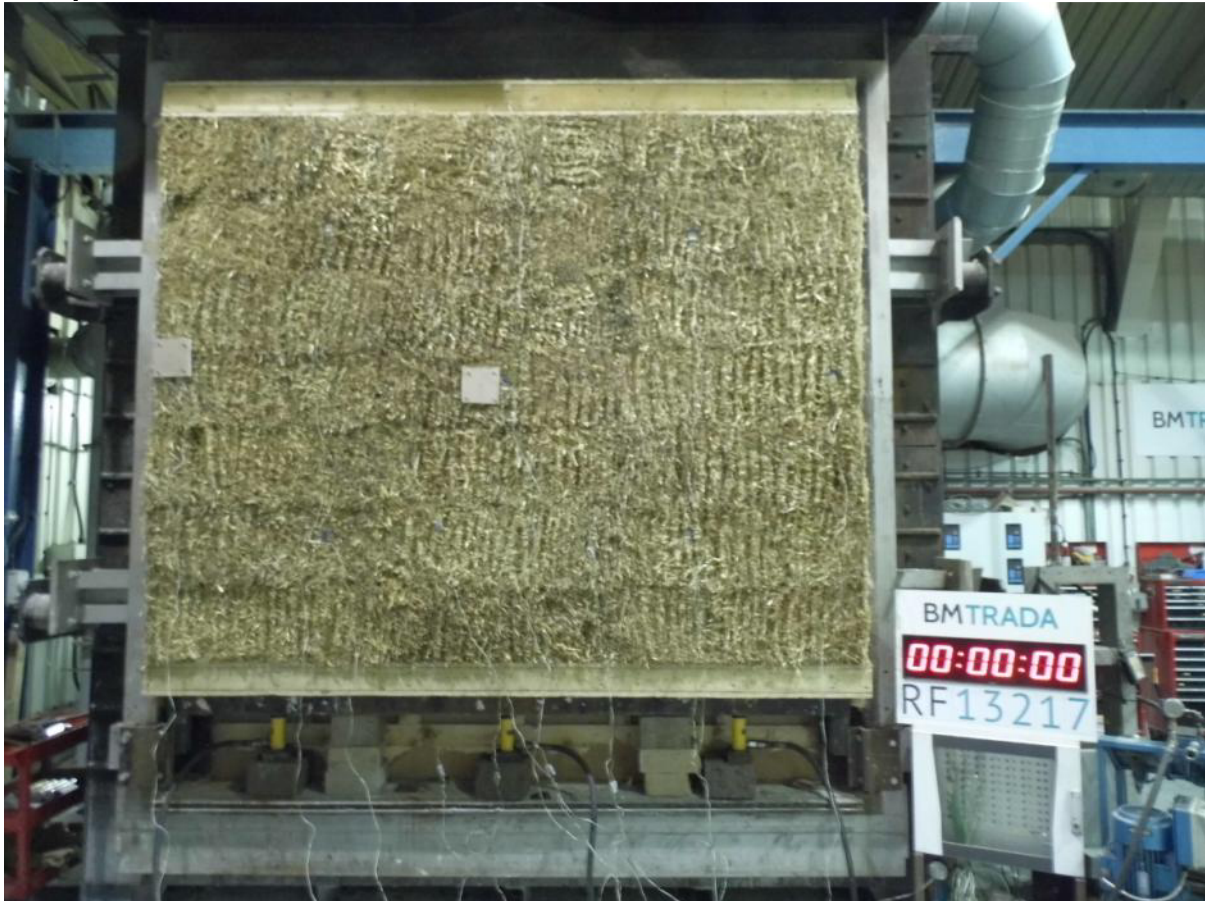
11 Photographs

Exposed face of specimen prior to test



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Unexposed face at start of test

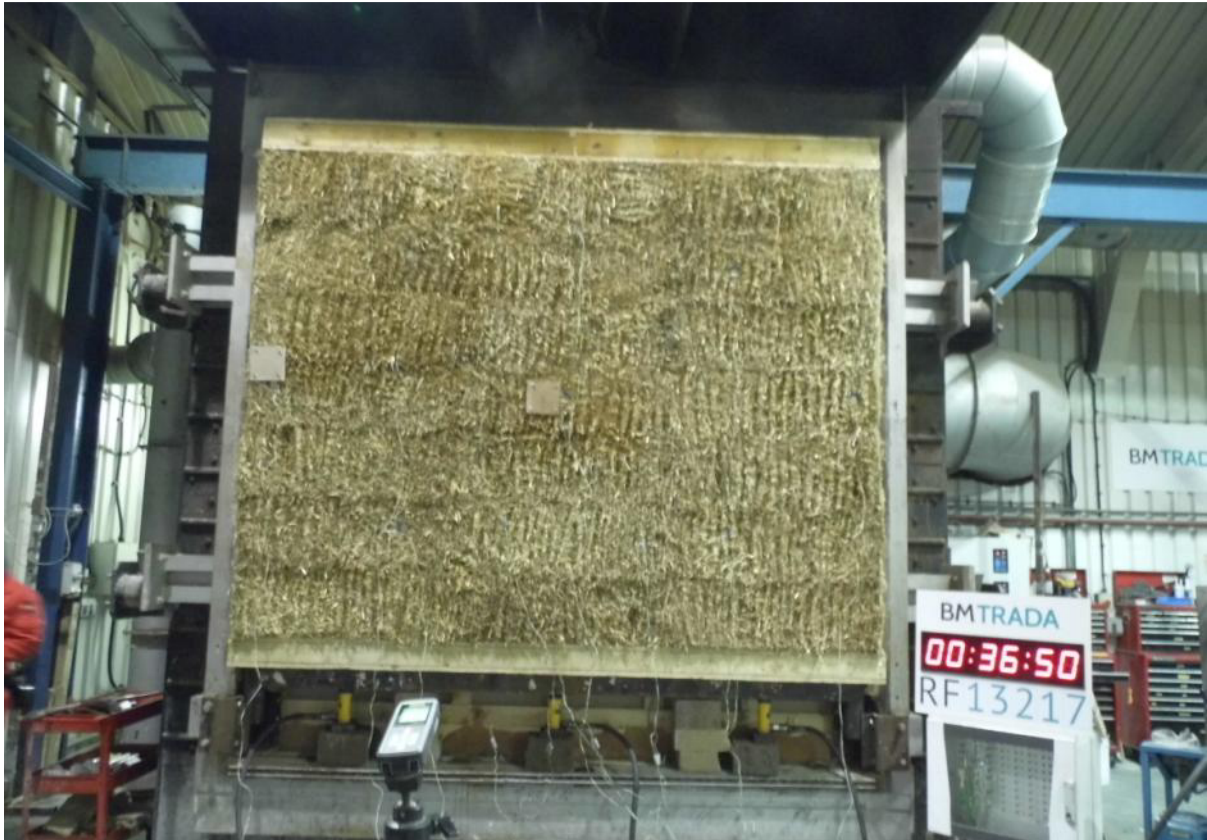


After 15 minutes



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After 36 minutes

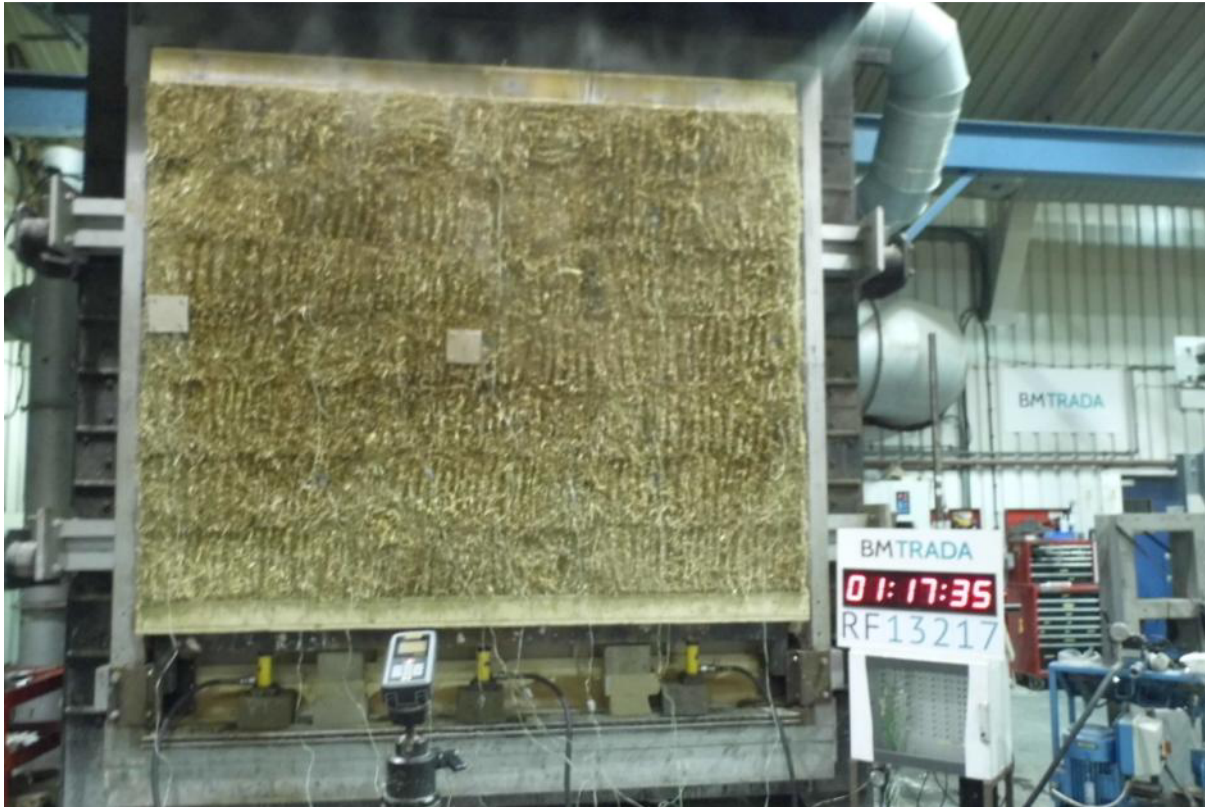


After 45 minutes



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After 77 minutes



After 90 minutes



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After 120 minutes

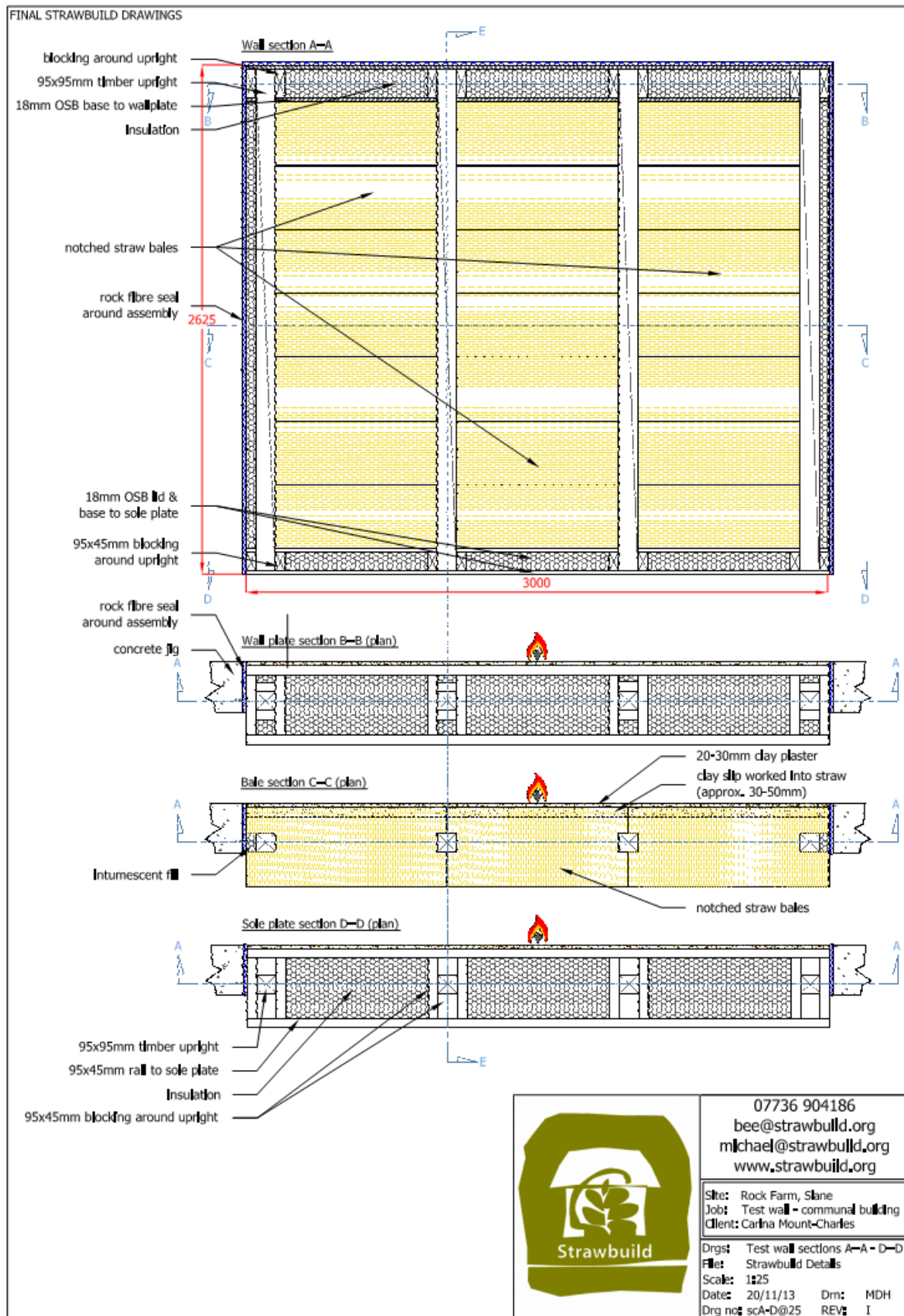


After 132 minutes



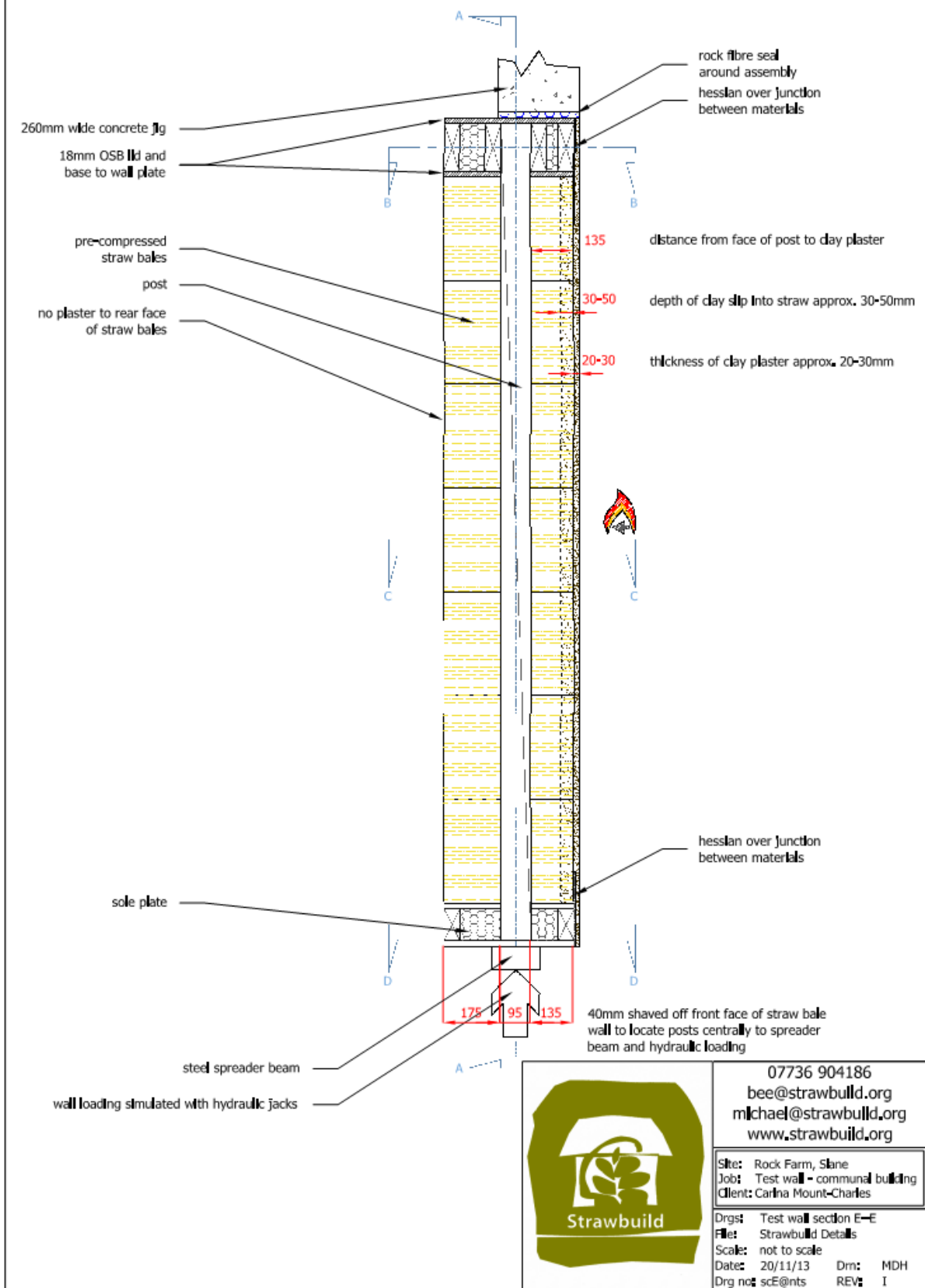
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Appendix 1 – Clients drawings and figures 1 – 4



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FINAL STRAWBUILD DRAWINGS

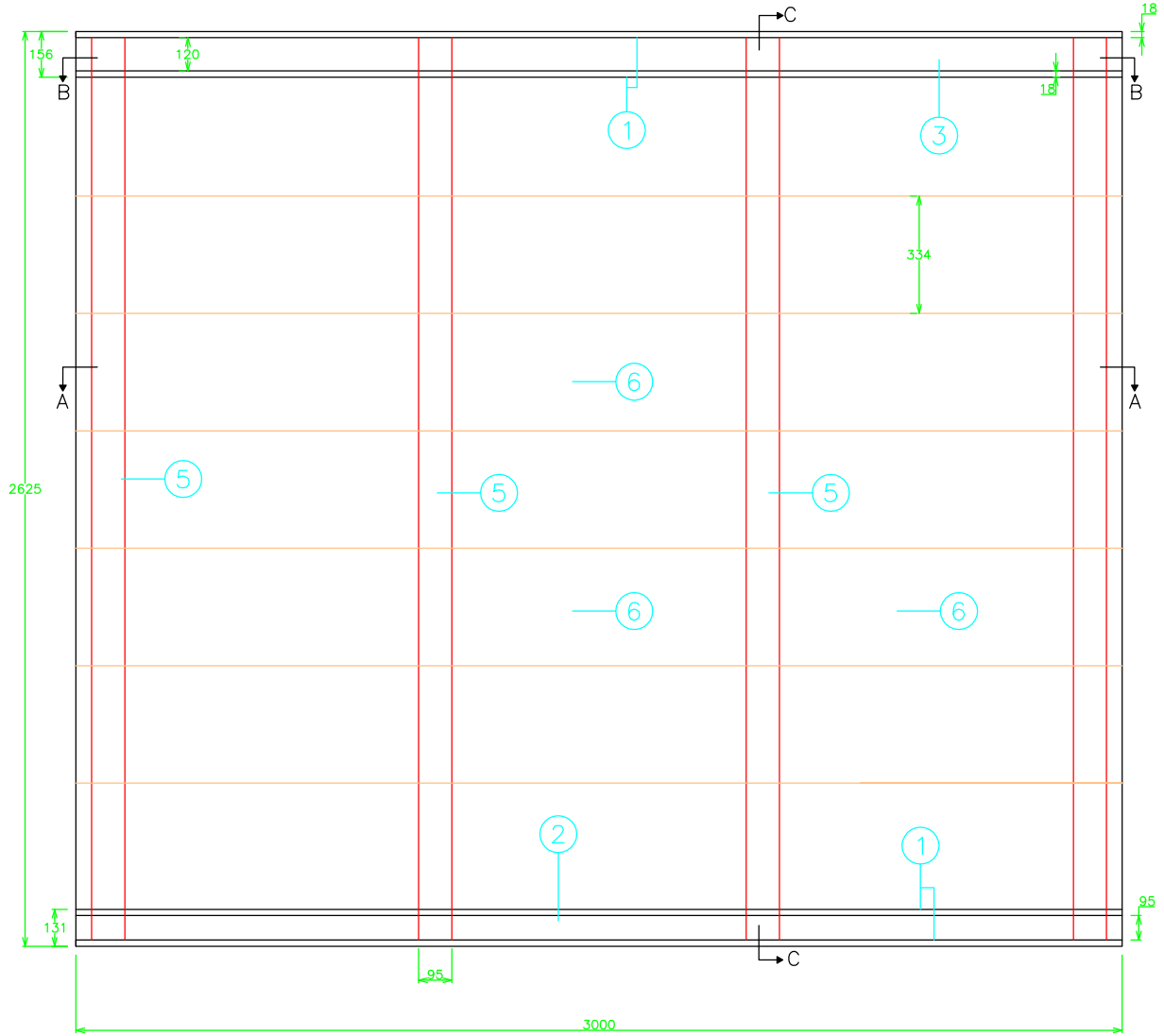


07736 904186
 bee@strawbuild.org
 michael@strawbuild.org
 www.strawbuild.org

Site: Rock Farm, Slane
 Job: Test wall - communal building
 Client: Carina Mount-Charles

Drgs: Test wall section E-E
 File: Strawbuild Details
 Scale: not to scale
 Date: 20/11/13 Dwn: MDH
 Drg no: scE@nts REV: I

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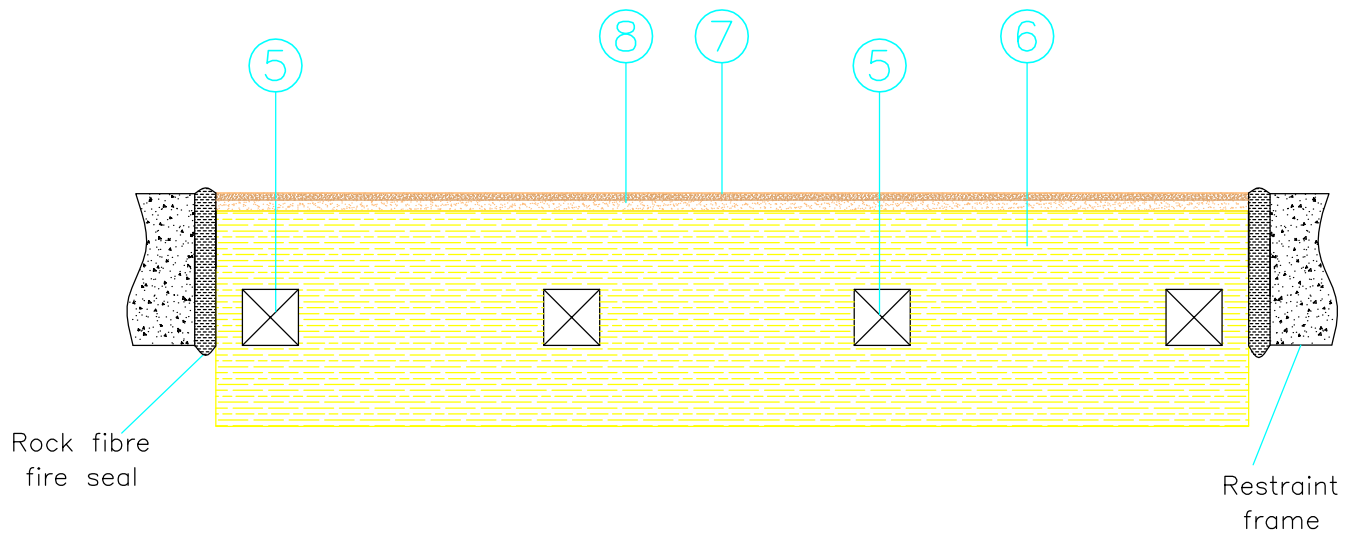
Title
 Unexposed face front elevation
 showing loadbearing post positions
 (All dimensions in mm)

| | | |
|------------------------------|-----------------|--------------|
| Date Drawn 31/10/13 | Drawn By ARD | Scale NTS |
| Project No. Chilt/RF13217 | | Appendix 1 |



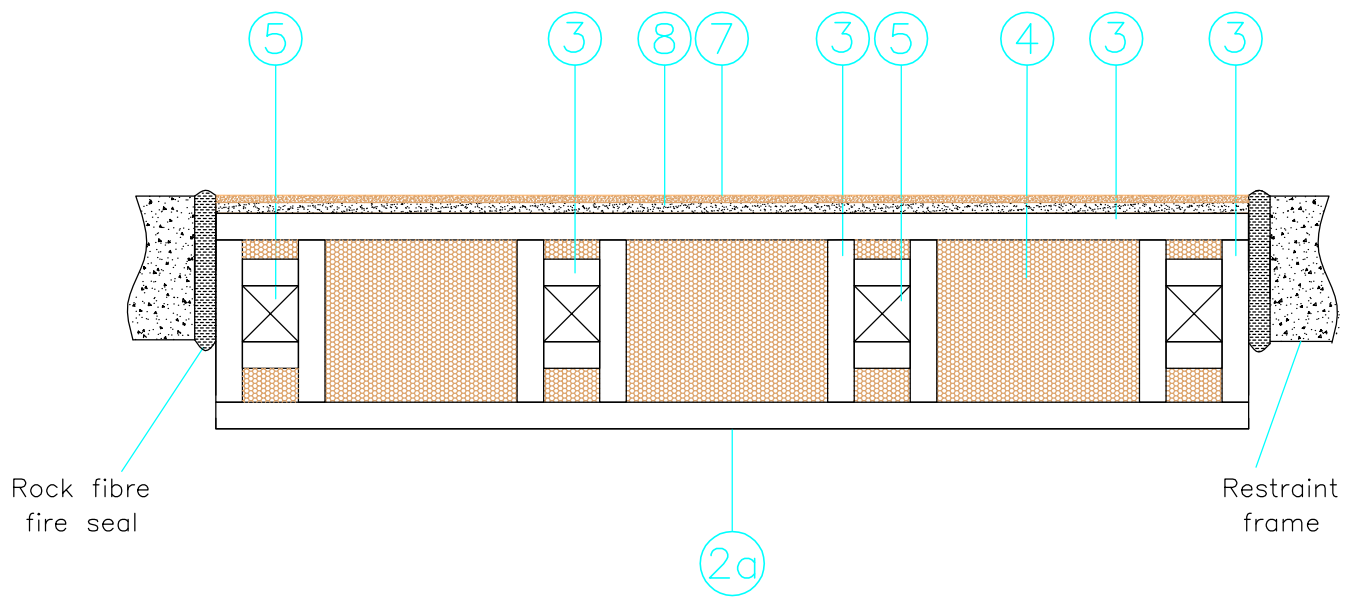
Fire side

Section A-A



Fire side

Section B-B



BMTRADA

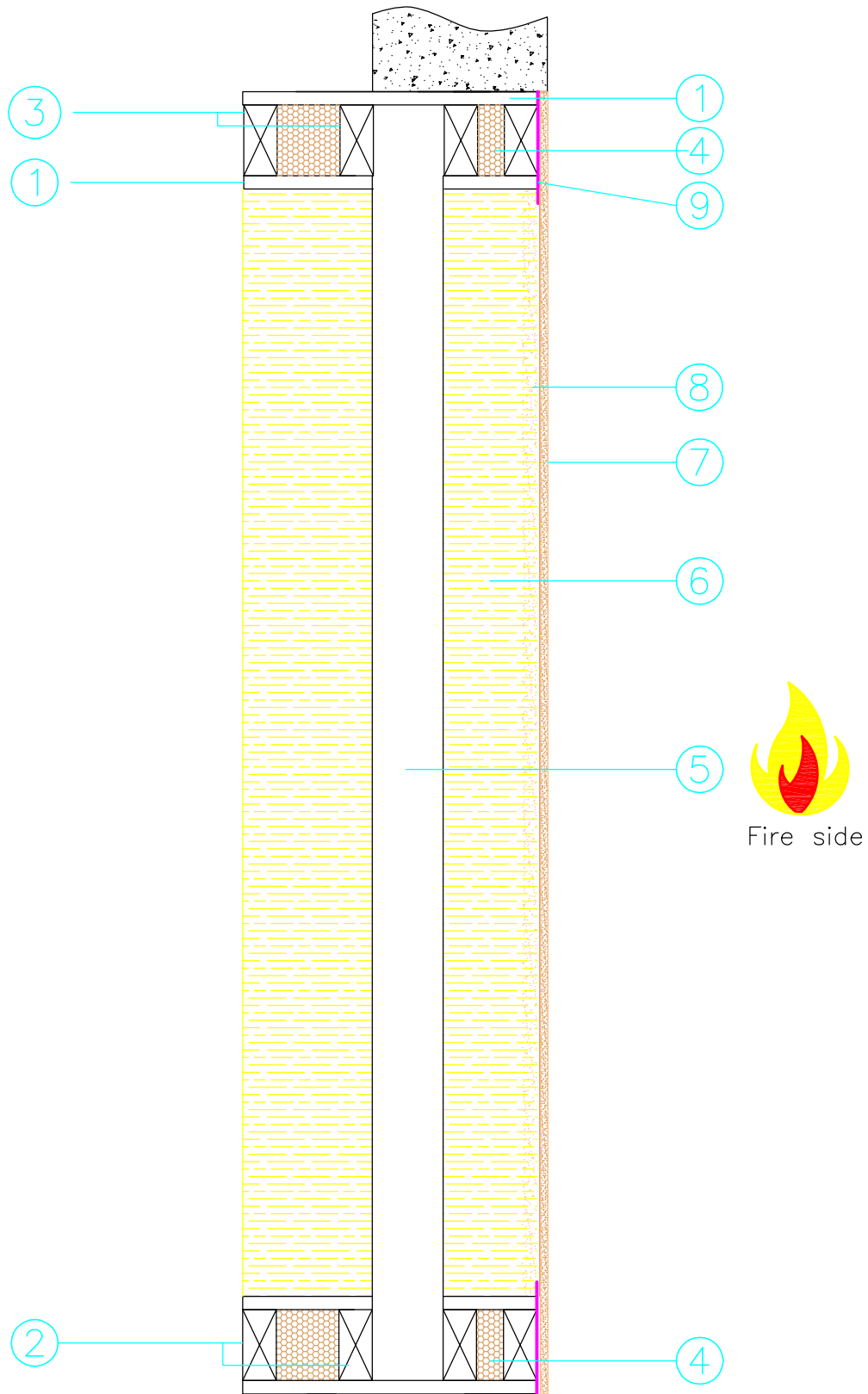
Chiltern House, Stocking Lane, Hughenden Valley
High Wycombe, Buckinghamshire, HP14 4ND, UK.
Tel: +44 (0)1494 569800 Fax: +44 (0)1494 564895

Title Horizontal cross section

(All dimensions in mm)

| | | |
|------------------------------|-----------------|--------------|
| Date Drawn 31/10/13 | Drawn By ARD | Scale NTS |
| Project No. Chilt/RF13217 | | Appendix 1 |

Section C-C



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 Tel: +44 (0)1494 569800 Fax: +44 (0)1494 564895

Title Horizontal and vertical cross sections
 (All dimensions in mm)

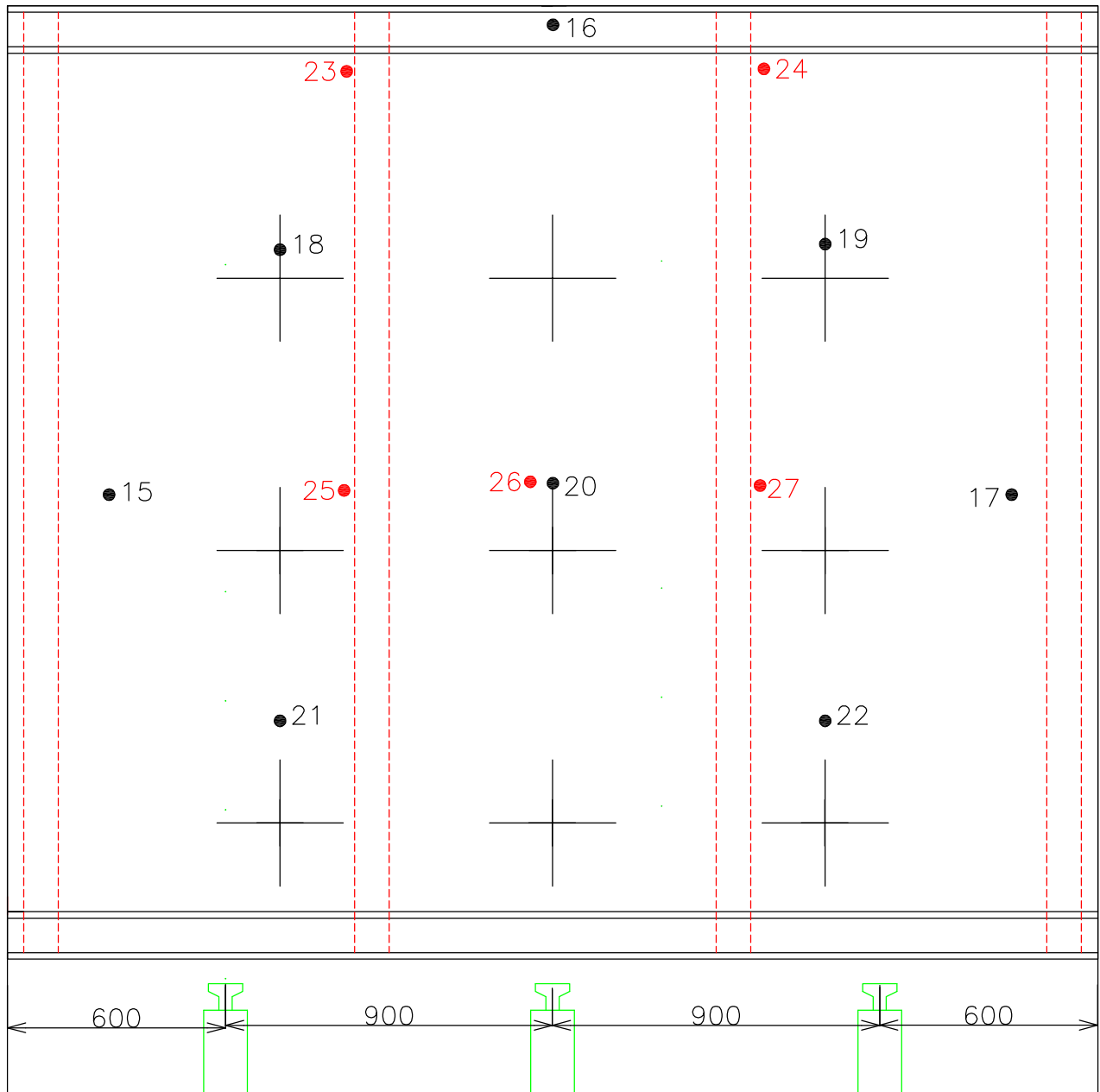
Date Drawn 31/10/13

Drawn By ARD

Scale NTS

Project No. Chilt/RF13217

Appendix 1



- ⊕ : Furnace Thermocouples
- : Unexposed Face Thermocouples
- : Internal Thermocouples

Viewed From Unexposed Face



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Title Unexposed face and internal
 Thermocouple positions
 (All dimensions in mm)

| | | |
|------------------------------|-----------------|--------------|
| Date Drawn 31/10/13 | Drawn By ARD | Scale NTS |
| Project No. Chilt/RF13217 | | Appendix 1 |

Appendix 2 - raw test data (9 pages)

(see figure 4 of appendix 1 for channel locations)

Furnace thermocouples

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 0 | 0 | 35 | 36 | 35 | 42 | 41 | 41 | 44 | 45 | 45 | 20 | 21 | 24 | 22 | 23 | 22 | 22 | 21 | 21 |
| 1 | -1 | 211 | 320 | 269 | 228 | 289 | 248 | 393 | 246 | 323 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 2 | -3.2 | 498 | 509 | 448 | 437 | 478 | 449 | 511 | 470 | 493 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 3 | -2.8 | 595 | 565 | 492 | 523 | 546 | 519 | 546 | 534 | 549 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 4 | -3.4 | 621 | 576 | 508 | 553 | 563 | 544 | 554 | 554 | 569 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 5 | -1.6 | 619 | 580 | 520 | 564 | 570 | 552 | 562 | 562 | 576 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 6 | -1.7 | 628 | 593 | 541 | 577 | 584 | 570 | 569 | 575 | 590 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 7 | 1.4 | 657 | 633 | 570 | 606 | 617 | 599 | 602 | 603 | 617 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 8 | 4 | 691 | 679 | 598 | 637 | 646 | 641 | 627 | 636 | 644 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 9 | 2.1 | 716 | 704 | 624 | 662 | 665 | 663 | 646 | 660 | 665 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 10 | 2.7 | 732 | 720 | 635 | 680 | 684 | 685 | 662 | 676 | 681 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 11 | 3.4 | 746 | 730 | 652 | 691 | 692 | 696 | 673 | 689 | 694 | 20 | 20 | 23 | 21 | 22 | 22 | 22 | 20 | 21 |
| 12 | 3.8 | 759 | 743 | 665 | 703 | 706 | 707 | 684 | 700 | 702 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 13 | 1.5 | 770 | 752 | 676 | 714 | 716 | 720 | 697 | 709 | 712 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 14 | 1.4 | 781 | 761 | 691 | 723 | 727 | 727 | 701 | 719 | 722 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 15 | 1.3 | 789 | 772 | 697 | 734 | 736 | 740 | 713 | 728 | 729 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 16 | -1.4 | 795 | 780 | 706 | 742 | 745 | 745 | 721 | 734 | 735 | 20 | 20 | 23 | 22 | 23 | 22 | 22 | 20 | 21 |
| 17 | -3.9 | 818 | 799 | 721 | 755 | 760 | 758 | 737 | 750 | 752 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 18 | -2.2 | 828 | 809 | 729 | 767 | 773 | 773 | 745 | 761 | 760 | 20 | 20 | 24 | 21 | 23 | 22 | 22 | 20 | 21 |
| 19 | -2.2 | 837 | 815 | 744 | 775 | 780 | 782 | 752 | 767 | 768 | 20 | 20 | 24 | 21 | 23 | 22 | 22 | 20 | 21 |

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 20 | -2.5 | 845 | 824 | 752 | 783 | 786 | 789 | 762 | 776 | 775 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 21 | -2.1 | 854 | 834 | 762 | 792 | 796 | 801 | 770 | 785 | 782 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 22 | -2.4 | 859 | 841 | 774 | 800 | 804 | 808 | 777 | 791 | 787 | 20 | 20 | 23 | 21 | 23 | 22 | 22 | 20 | 21 |
| 23 | -2.3 | 868 | 848 | 779 | 807 | 811 | 812 | 786 | 801 | 799 | 20 | 20 | 23 | 21 | 23 | 23 | 23 | 20 | 21 |
| 24 | -2.9 | 874 | 855 | 788 | 812 | 817 | 820 | 792 | 805 | 804 | 20 | 20 | 23 | 21 | 23 | 22 | 32 | 20 | 21 |
| 25 | -3 | 881 | 862 | 791 | 820 | 826 | 829 | 799 | 813 | 813 | 20 | 20 | 24 | 21 | 24 | 23 | 43 | 20 | 21 |
| 26 | -1.2 | 888 | 870 | 805 | 826 | 830 | 833 | 806 | 818 | 817 | 20 | 20 | 24 | 21 | 27 | 23 | 52 | 20 | 21 |
| 27 | -2.3 | 896 | 876 | 815 | 833 | 838 | 840 | 812 | 825 | 823 | 20 | 20 | 24 | 21 | 29 | 23 | 56 | 20 | 21 |
| 28 | -1.3 | 901 | 881 | 817 | 840 | 844 | 847 | 818 | 831 | 830 | 20 | 21 | 25 | 22 | 32 | 23 | 58 | 20 | 21 |
| 29 | -3.1 | 905 | 887 | 825 | 845 | 851 | 855 | 826 | 837 | 837 | 20 | 20 | 25 | 21 | 33 | 23 | 60 | 20 | 21 |
| 30 | -2.3 | 913 | 891 | 827 | 851 | 857 | 862 | 831 | 844 | 842 | 20 | 21 | 28 | 21 | 34 | 23 | 61 | 20 | 21 |
| 31 | -1.9 | 917 | 896 | 839 | 857 | 862 | 865 | 835 | 850 | 847 | 20 | 21 | 35 | 22 | 36 | 23 | 62 | 20 | 21 |
| 32 | -2.9 | 923 | 904 | 839 | 862 | 866 | 871 | 842 | 855 | 851 | 20 | 21 | 41 | 22 | 37 | 23 | 62 | 20 | 21 |
| 33 | -1.8 | 927 | 907 | 851 | 866 | 872 | 876 | 846 | 860 | 857 | 20 | 23 | 45 | 22 | 38 | 23 | 63 | 20 | 21 |
| 34 | -2.7 | 929 | 912 | 855 | 872 | 876 | 879 | 854 | 864 | 863 | 20 | 26 | 45 | 21 | 38 | 23 | 63 | 20 | 21 |
| 35 | -2.2 | 935 | 914 | 855 | 876 | 882 | 885 | 856 | 868 | 865 | 20 | 30 | 48 | 21 | 39 | 26 | 63 | 20 | 21 |
| 36 | -2.1 | 939 | 920 | 858 | 880 | 885 | 891 | 862 | 872 | 868 | 20 | 32 | 49 | 22 | 41 | 39 | 64 | 20 | 21 |
| 37 | -3.2 | 939 | 920 | 870 | 884 | 890 | 891 | 861 | 876 | 874 | 20 | 34 | 49 | 22 | 42 | 53 | 63 | 20 | 21 |
| 38 | -2.1 | 946 | 928 | 867 | 887 | 892 | 898 | 867 | 879 | 874 | 20 | 36 | 49 | 22 | 43 | 60 | 64 | 20 | 21 |
| 39 | -2.2 | 948 | 930 | 869 | 889 | 895 | 897 | 871 | 883 | 880 | 20 | 37 | 51 | 22 | 45 | 64 | 64 | 20 | 21 |
| 40 | -1.7 | 952 | 933 | 876 | 895 | 900 | 903 | 874 | 887 | 881 | 20 | 38 | 51 | 23 | 46 | 66 | 64 | 20 | 21 |
| 41 | -1.6 | 955 | 937 | 883 | 899 | 904 | 911 | 878 | 889 | 884 | 20 | 38 | 51 | 23 | 48 | 70 | 65 | 20 | 21 |
| 42 | -2.9 | 959 | 941 | 883 | 902 | 908 | 912 | 883 | 893 | 890 | 20 | 39 | 52 | 24 | 50 | 72 | 65 | 21 | 21 |
| 43 | -2.5 | 960 | 942 | 886 | 904 | 909 | 915 | 884 | 896 | 891 | 20 | 40 | 52 | 25 | 52 | 72 | 65 | 21 | 21 |
| 44 | -2.9 | 964 | 947 | 888 | 909 | 915 | 920 | 889 | 899 | 894 | 20 | 41 | 52 | 28 | 53 | 72 | 65 | 22 | 21 |
| 45 | -1 | 965 | 949 | 894 | 912 | 916 | 923 | 893 | 903 | 899 | 20 | 42 | 52 | 32 | 55 | 73 | 66 | 25 | 21 |

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 46 | -1.9 | 971 | 951 | 895 | 917 | 922 | 927 | 898 | 908 | 901 | 20 | 43 | 52 | 38 | 58 | 73 | 66 | 37 | 21 |
| 47 | -2.6 | 972 | 954 | 894 | 919 | 923 | 929 | 900 | 910 | 905 | 20 | 44 | 52 | 44 | 60 | 73 | 66 | 52 | 21 |
| 48 | -1.8 | 975 | 956 | 900 | 920 | 925 | 930 | 904 | 913 | 910 | 20 | 46 | 53 | 49 | 61 | 73 | 67 | 59 | 21 |
| 49 | -3.2 | 975 | 958 | 907 | 924 | 928 | 933 | 904 | 916 | 908 | 20 | 47 | 52 | 52 | 62 | 73 | 67 | 63 | 21 |
| 50 | -1.6 | 980 | 963 | 913 | 927 | 932 | 937 | 909 | 918 | 911 | 20 | 49 | 51 | 53 | 63 | 72 | 67 | 65 | 22 |
| 51 | -1.7 | 982 | 966 | 913 | 929 | 934 | 940 | 913 | 923 | 917 | 20 | 50 | 51 | 55 | 63 | 72 | 67 | 66 | 22 |
| 52 | -2.2 | 985 | 968 | 915 | 934 | 938 | 945 | 918 | 927 | 921 | 20 | 51 | 51 | 56 | 64 | 72 | 68 | 67 | 23 |
| 53 | -1.5 | 990 | 972 | 920 | 936 | 941 | 946 | 917 | 928 | 920 | 20 | 51 | 52 | 58 | 64 | 72 | 68 | 68 | 25 |
| 54 | -1.1 | 992 | 976 | 921 | 940 | 944 | 949 | 922 | 932 | 926 | 20 | 52 | 51 | 59 | 64 | 72 | 69 | 69 | 27 |
| 55 | -1.9 | 994 | 978 | 925 | 943 | 948 | 953 | 926 | 934 | 929 | 20 | 53 | 51 | 60 | 64 | 72 | 69 | 69 | 30 |
| 56 | -2.3 | 992 | 977 | 927 | 945 | 948 | 955 | 927 | 936 | 929 | 20 | 54 | 52 | 61 | 64 | 72 | 69 | 70 | 35 |
| 57 | -3 | 993 | 977 | 926 | 945 | 949 | 954 | 931 | 938 | 931 | 20 | 54 | 51 | 63 | 64 | 72 | 70 | 70 | 40 |
| 58 | -2.6 | 996 | 980 | 930 | 947 | 951 | 956 | 932 | 941 | 933 | 20 | 54 | 51 | 64 | 65 | 73 | 70 | 70 | 44 |
| 59 | -1.9 | 998 | 981 | 928 | 949 | 954 | 958 | 933 | 942 | 936 | 20 | 55 | 51 | 64 | 64 | 73 | 70 | 70 | 47 |
| 60 | -2.3 | 1000 | 984 | 933 | 954 | 957 | 960 | 936 | 945 | 939 | 20 | 56 | 51 | 64 | 65 | 73 | 71 | 71 | 50 |
| 61 | -1.9 | 1002 | 987 | 939 | 955 | 960 | 965 | 940 | 947 | 940 | 20 | 56 | 52 | 65 | 65 | 73 | 70 | 71 | 53 |
| 62 | -1.7 | 1005 | 990 | 944 | 958 | 962 | 968 | 943 | 949 | 943 | 20 | 56 | 51 | 65 | 65 | 73 | 70 | 71 | 55 |
| 63 | -2.1 | 1007 | 992 | 942 | 960 | 964 | 969 | 944 | 953 | 947 | 20 | 56 | 51 | 66 | 65 | 73 | 70 | 71 | 57 |
| 64 | -1.6 | 1010 | 995 | 948 | 964 | 967 | 973 | 947 | 955 | 948 | 20 | 57 | 51 | 65 | 65 | 72 | 70 | 71 | 58 |
| 65 | -2.1 | 1013 | 998 | 953 | 966 | 969 | 974 | 950 | 959 | 952 | 20 | 57 | 50 | 65 | 64 | 72 | 70 | 72 | 59 |
| 66 | -2.8 | 1015 | 1000 | 954 | 968 | 972 | 976 | 953 | 961 | 955 | 20 | 57 | 50 | 66 | 65 | 72 | 70 | 72 | 59 |
| 67 | -1.9 | 1017 | 1003 | 957 | 971 | 975 | 981 | 956 | 963 | 957 | 20 | 58 | 50 | 66 | 65 | 73 | 70 | 72 | 60 |
| 68 | -1.2 | 1021 | 1006 | 955 | 975 | 979 | 985 | 959 | 966 | 959 | 20 | 58 | 50 | 66 | 65 | 72 | 70 | 72 | 61 |
| 69 | -1.5 | 1022 | 1008 | 961 | 977 | 980 | 984 | 961 | 970 | 963 | 20 | 58 | 51 | 67 | 65 | 73 | 71 | 72 | 61 |
| 70 | -1.5 | 1023 | 1008 | 966 | 978 | 982 | 987 | 963 | 971 | 962 | 20 | 58 | 51 | 66 | 65 | 73 | 71 | 73 | 62 |
| 71 | -2.7 | 1022 | 1009 | 964 | 979 | 982 | 989 | 965 | 973 | 966 | 20 | 58 | 50 | 66 | 65 | 73 | 71 | 73 | 62 |

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 72 | -1.8 | 1023 | 1010 | 968 | 982 | 985 | 991 | 967 | 973 | 968 | 20 | 58 | 51 | 66 | 65 | 73 | 71 | 73 | 62 |
| 73 | -2.3 | 1025 | 1012 | 970 | 983 | 987 | 991 | 969 | 976 | 970 | 20 | 59 | 51 | 67 | 65 | 73 | 71 | 73 | 62 |
| 74 | -2 | 1029 | 1015 | 971 | 987 | 991 | 996 | 971 | 979 | 972 | 20 | 59 | 50 | 67 | 66 | 73 | 71 | 73 | 63 |
| 75 | -1 | 1029 | 1017 | 973 | 988 | 991 | 995 | 974 | 982 | 976 | 20 | 59 | 50 | 67 | 65 | 73 | 71 | 73 | 63 |
| 76 | -1.8 | 1033 | 1019 | 973 | 991 | 995 | 1001 | 977 | 984 | 977 | 20 | 60 | 50 | 68 | 66 | 73 | 72 | 74 | 63 |
| 77 | -1.9 | 1034 | 1021 | 978 | 993 | 996 | 1001 | 979 | 985 | 978 | 20 | 60 | 51 | 68 | 65 | 74 | 72 | 74 | 63 |
| 78 | -2.5 | 1036 | 1024 | 983 | 996 | 998 | 1004 | 981 | 989 | 982 | 20 | 60 | 51 | 68 | 66 | 74 | 72 | 74 | 63 |
| 79 | -2.3 | 1035 | 1022 | 976 | 996 | 998 | 1002 | 981 | 988 | 981 | 20 | 60 | 50 | 68 | 65 | 74 | 72 | 74 | 63 |
| 80 | -2 | 1037 | 1024 | 979 | 997 | 1002 | 1006 | 986 | 991 | 984 | 20 | 60 | 50 | 68 | 66 | 74 | 73 | 74 | 64 |
| 81 | -2.1 | 1037 | 1025 | 981 | 999 | 1002 | 1006 | 984 | 992 | 985 | 20 | 61 | 50 | 68 | 66 | 74 | 73 | 74 | 64 |
| 82 | -2.7 | 1040 | 1029 | 988 | 1001 | 1004 | 1007 | 989 | 994 | 990 | 20 | 61 | 50 | 68 | 66 | 74 | 73 | 74 | 64 |
| 83 | -1.2 | 1042 | 1030 | 985 | 1002 | 1005 | 1009 | 990 | 996 | 989 | 20 | 61 | 50 | 68 | 66 | 74 | 73 | 74 | 64 |
| 84 | -2.7 | 1044 | 1032 | 989 | 1005 | 1009 | 1013 | 993 | 998 | 991 | 20 | 61 | 51 | 67 | 66 | 74 | 73 | 74 | 64 |
| 85 | -2.3 | 1046 | 1033 | 990 | 1006 | 1010 | 1014 | 992 | 999 | 991 | 20 | 61 | 51 | 69 | 66 | 75 | 74 | 75 | 64 |
| 86 | -2.1 | 1047 | 1036 | 993 | 1009 | 1012 | 1014 | 996 | 1003 | 996 | 20 | 62 | 51 | 69 | 66 | 75 | 74 | 74 | 64 |
| 87 | -2.1 | 1050 | 1038 | 990 | 1011 | 1014 | 1016 | 996 | 1004 | 998 | 20 | 62 | 51 | 69 | 67 | 75 | 74 | 75 | 64 |
| 88 | -1.5 | 1051 | 1040 | 995 | 1013 | 1016 | 1018 | 1001 | 1007 | 1001 | 20 | 62 | 50 | 68 | 66 | 75 | 74 | 75 | 64 |
| 89 | -1.7 | 1053 | 1042 | 1000 | 1015 | 1018 | 1022 | 1001 | 1007 | 1000 | 20 | 62 | 50 | 69 | 67 | 75 | 75 | 75 | 64 |
| 90 | -2.7 | 1056 | 1045 | 1002 | 1018 | 1021 | 1025 | 1005 | 1012 | 1004 | 20 | 62 | 51 | 69 | 67 | 76 | 75 | 75 | 64 |
| 91 | -3 | 1057 | 1046 | 1004 | 1019 | 1022 | 1026 | 1006 | 1013 | 1005 | 20 | 63 | 51 | 69 | 67 | 75 | 75 | 75 | 64 |
| 92 | -1.3 | 1058 | 1047 | 1003 | 1019 | 1022 | 1024 | 1008 | 1013 | 1007 | 20 | 63 | 51 | 69 | 67 | 75 | 75 | 75 | 65 |
| 93 | -1.9 | 1057 | 1047 | 1005 | 1021 | 1023 | 1027 | 1010 | 1014 | 1008 | 20 | 63 | 50 | 68 | 67 | 75 | 75 | 75 | 65 |
| 94 | -2.1 | 1060 | 1047 | 1006 | 1023 | 1025 | 1029 | 1011 | 1017 | 1009 | 20 | 64 | 51 | 68 | 67 | 75 | 75 | 75 | 65 |
| 95 | -1.5 | 1059 | 1046 | 1007 | 1023 | 1025 | 1028 | 1010 | 1017 | 1009 | 20 | 64 | 51 | 68 | 67 | 76 | 76 | 75 | 65 |
| 96 | -1.4 | 1063 | 1048 | 1006 | 1026 | 1028 | 1031 | 1013 | 1020 | 1012 | 20 | 64 | 51 | 68 | 67 | 76 | 75 | 75 | 65 |
| 97 | -2.2 | 1066 | 1051 | 1011 | 1027 | 1029 | 1031 | 1015 | 1022 | 1014 | 20 | 65 | 50 | 67 | 67 | 75 | 74 | 75 | 65 |

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 98 | -1.5 | 1064 | 1054 | 1011 | 1030 | 1032 | 1035 | 1019 | 1023 | 1016 | 20 | 65 | 50 | 68 | 67 | 75 | 74 | 75 | 65 |
| 99 | -2.1 | 1064 | 1056 | 1010 | 1032 | 1034 | 1038 | 1019 | 1025 | 1017 | 20 | 65 | 50 | 68 | 67 | 76 | 75 | 75 | 65 |
| 100 | -1.5 | 1071 | 1057 | 1014 | 1034 | 1037 | 1040 | 1023 | 1028 | 1020 | 20 | 65 | 51 | 69 | 67 | 77 | 75 | 75 | 65 |
| 101 | -1.6 | 1071 | 1058 | 1013 | 1035 | 1038 | 1042 | 1022 | 1029 | 1020 | 20 | 65 | 51 | 70 | 68 | 77 | 75 | 75 | 65 |
| 102 | -2 | 1073 | 1060 | 1019 | 1037 | 1040 | 1043 | 1027 | 1031 | 1023 | 20 | 65 | 51 | 69 | 68 | 77 | 75 | 75 | 65 |
| 103 | -2.6 | 1073 | 1062 | 1017 | 1038 | 1041 | 1045 | 1028 | 1033 | 1025 | 20 | 65 | 50 | 69 | 68 | 77 | 75 | 75 | 65 |
| 104 | -2.7 | 1072 | 1063 | 1018 | 1039 | 1042 | 1046 | 1027 | 1033 | 1026 | 20 | 65 | 51 | 68 | 68 | 77 | 75 | 75 | 65 |
| 105 | -1.7 | 1074 | 1064 | 1023 | 1040 | 1043 | 1046 | 1028 | 1034 | 1026 | 20 | 65 | 51 | 68 | 68 | 77 | 75 | 75 | 65 |
| 106 | -1.2 | 1075 | 1065 | 1022 | 1041 | 1044 | 1048 | 1030 | 1035 | 1027 | 20 | 66 | 51 | 69 | 68 | 77 | 75 | 76 | 65 |
| 107 | -2 | 1077 | 1066 | 1018 | 1044 | 1045 | 1050 | 1034 | 1038 | 1031 | 20 | 66 | 51 | 69 | 68 | 77 | 75 | 75 | 65 |
| 108 | -1.4 | 1079 | 1070 | 1022 | 1045 | 1047 | 1052 | 1035 | 1039 | 1031 | 20 | 66 | 51 | 68 | 68 | 77 | 75 | 75 | 65 |
| 109 | -1.2 | 1081 | 1071 | 1029 | 1046 | 1048 | 1050 | 1033 | 1039 | 1030 | 20 | 67 | 51 | 68 | 68 | 77 | 74 | 76 | 65 |
| 110 | -1.5 | 1084 | 1070 | 1024 | 1047 | 1049 | 1052 | 1037 | 1041 | 1033 | 20 | 66 | 51 | 69 | 68 | 78 | 74 | 76 | 65 |
| 111 | -2.1 | 1086 | 1071 | 1031 | 1049 | 1052 | 1053 | 1038 | 1042 | 1034 | 20 | 66 | 51 | 70 | 68 | 78 | 74 | 75 | 65 |
| 112 | -1.5 | 1088 | 1071 | 1032 | 1051 | 1054 | 1057 | 1040 | 1045 | 1037 | 20 | 66 | 51 | 70 | 67 | 77 | 74 | 76 | 65 |
| 113 | -2.3 | 1090 | 1071 | 1040 | 1053 | 1055 | 1058 | 1040 | 1046 | 1038 | 20 | 63 | 51 | 69 | 68 | 78 | 74 | 76 | 65 |
| 114 | -3.3 | 1087 | 1071 | 1037 | 1051 | 1052 | 1054 | 1038 | 1043 | 1038 | 20 | 63 | 51 | 69 | 68 | 78 | 74 | 76 | 65 |
| 115 | -2.3 | 1086 | 1069 | 1031 | 1050 | 1052 | 1056 | 1041 | 1044 | 1037 | 20 | 63 | 50 | 69 | 68 | 78 | 74 | 75 | 65 |
| 116 | -2.4 | 1085 | 1068 | 1028 | 1050 | 1053 | 1057 | 1039 | 1045 | 1036 | 20 | 64 | 51 | 66 | 67 | 78 | 73 | 74 | 65 |
| 117 | -2.7 | 1086 | 1070 | 1027 | 1052 | 1054 | 1058 | 1042 | 1046 | 1041 | 20 | 64 | 52 | 66 | 67 | 78 | 72 | 75 | 65 |
| 118 | -2.4 | 1083 | 1071 | 1026 | 1052 | 1055 | 1057 | 1042 | 1046 | 1039 | 20 | 63 | 51 | 65 | 67 | 78 | 72 | 74 | 64 |
| 119 | -2.4 | 1083 | 1074 | 1027 | 1054 | 1057 | 1057 | 1045 | 1047 | 1042 | 20 | 63 | 52 | 65 | 68 | 78 | 72 | 75 | 64 |
| 120 | -2.7 | 1083 | 1076 | 1026 | 1055 | 1058 | 1059 | 1044 | 1049 | 1041 | 20 | 64 | 52 | 65 | 68 | 78 | 72 | 75 | 64 |
| 121 | -2 | 1083 | 1079 | 1025 | 1056 | 1059 | 1061 | 1046 | 1050 | 1043 | 20 | 63 | 52 | 66 | 68 | 79 | 72 | 75 | 64 |
| 122 | -1.8 | 1084 | 1080 | 1028 | 1057 | 1059 | 1062 | 1047 | 1052 | 1044 | 20 | 62 | 52 | 67 | 68 | 79 | 72 | 75 | 64 |
| 123 | -1 | 1086 | 1082 | 1027 | 1059 | 1062 | 1065 | 1049 | 1054 | 1046 | 20 | 63 | 52 | 67 | 68 | 79 | 72 | 75 | 64 |

| Time | Chan 0 | Chan 1 | Chan 2 | Chan 3 | Chan 4 | Chan 5 | Chan 6 | Chan 7 | Chan 8 | Chan 9 | Chan 11 | Chan 15 | Chan 16 | Chan 17 | Chan 18 | Chan 19 | Chan 20 | Chan 21 | Chan 22 |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| min | Pa | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C | °C |
| 124 | -1.4 | 1089 | 1083 | 1031 | 1060 | 1062 | 1065 | 1052 | 1054 | 1048 | 20 | 64 | 52 | 66 | 68 | 79 | 72 | 71 | 64 |
| 125 | -1.4 | 1091 | 1084 | 1033 | 1063 | 1066 | 1070 | 1054 | 1057 | 1050 | 20 | 65 | 51 | 65 | 68 | 79 | 71 | 70 | 64 |
| 126 | -1.6 | 1094 | 1090 | 1039 | 1066 | 1069 | 1073 | 1057 | 1060 | 1054 | 20 | 64 | 52 | 65 | 69 | 79 | 71 | 71 | 64 |
| 127 | -1.4 | 1095 | 1093 | 1041 | 1069 | 1073 | 1077 | 1060 | 1064 | 1056 | 20 | 64 | 52 | 66 | 69 | 80 | 72 | 71 | 64 |
| 128 | -2 | 1096 | 1104 | 1039 | 1072 | 1075 | 1080 | 1061 | 1065 | 1057 | 20 | 64 | 52 | 67 | 69 | 80 | 72 | 71 | 63 |
| 129 | -2.8 | 1094 | 1108 | 1042 | 1069 | 1072 | 1075 | 1061 | 1063 | 1057 | 20 | 63 | 52 | 66 | 69 | 80 | 71 | 72 | 63 |
| 130 | -1.8 | 1093 | 1110 | 1041 | 1071 | 1075 | 1077 | 1060 | 1064 | 1059 | 20 | 64 | 53 | 66 | 69 | 80 | 72 | 72 | 63 |
| 131 | -1.5 | 1100 | 1109 | 1046 | 1072 | 1075 | 1077 | 1062 | 1064 | 1060 | 20 | 64 | 53 | 66 | 69 | 81 | 72 | 71 | 63 |
| 132 | -1.4 | 1106 | 1107 | 1042 | 1071 | 1074 | 1076 | 1062 | 1064 | 1058 | 20 | 64 | 53 | 67 | 69 | 81 | 72 | 73 | 63 |
| 133 | -1.4 | 1109 | 1104 | 1043 | 1070 | 1073 | 1077 | 1061 | 1064 | 1057 | 20 | 64 | 53 | 67 | 70 | 81 | 72 | 73 | 63 |
| 134 | -1.6 | 1103 | 1099 | 1041 | 1068 | 1069 | 1070 | 1060 | 1062 | 1056 | 20 | 65 | 53 | 68 | 69 | 81 | 72 | 72 | 63 |
| 135 | -1.2 | 1105 | 1094 | 1035 | 1065 | 1068 | 1070 | 1060 | 1060 | 1053 | 20 | 64 | 53 | 67 | 70 | 81 | 71 | 73 | 63 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 0 | 57 | 32 | 41 | 47 | 45 |
| 1 | 56 | 32 | 41 | 47 | 45 |
| 2 | 56 | 32 | 41 | 47 | 45 |
| 3 | 56 | 32 | 41 | 47 | 45 |
| 4 | 56 | 32 | 41 | 47 | 45 |
| 5 | 56 | 32 | 41 | 47 | 45 |
| 6 | 56 | 33 | 41 | 47 | 45 |
| 7 | 56 | 33 | 41 | 47 | 45 |
| 8 | 56 | 33 | 41 | 47 | 45 |
| 9 | 56 | 33 | 41 | 47 | 45 |
| 10 | 56 | 33 | 41 | 47 | 45 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 11 | 56 | 33 | 41 | 47 | 45 |
| 12 | 56 | 33 | 41 | 47 | 45 |
| 13 | 56 | 33 | 41 | 47 | 45 |
| 14 | 56 | 33 | 41 | 47 | 45 |
| 15 | 56 | 33 | 41 | 48 | 45 |
| 16 | 56 | 33 | 41 | 51 | 47 |
| 17 | 57 | 33 | 41 | 65 | 53 |
| 18 | 65 | 33 | 43 | 84 | 67 |
| 19 | 81 | 33 | 49 | 92 | 80 |
| 20 | 94 | 33 | 61 | 95 | 87 |
| 21 | 97 | 33 | 75 | 95 | 91 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 22 | 98 | 33 | 84 | 95 | 93 |
| 23 | 98 | 34 | 89 | 95 | 94 |
| 24 | 98 | 34 | 92 | 95 | 94 |
| 25 | 98 | 34 | 94 | 95 | 94 |
| 26 | 98 | 34 | 95 | 95 | 94 |
| 27 | 98 | 36 | 95 | 95 | 95 |
| 28 | 98 | 39 | 96 | 95 | 95 |
| 29 | 98 | 45 | 96 | 95 | 95 |
| 30 | 97 | 53 | 96 | 95 | 94 |
| 31 | 97 | 62 | 96 | 95 | 94 |
| 32 | 97 | 70 | 96 | 95 | 94 |
| 33 | 97 | 77 | 96 | 94 | 94 |
| 34 | 97 | 83 | 96 | 94 | 94 |
| 35 | 97 | 87 | 96 | 94 | 94 |
| 36 | 97 | 90 | 96 | 94 | 94 |
| 37 | 96 | 91 | 96 | 94 | 94 |
| 38 | 96 | 92 | 96 | 94 | 94 |
| 39 | 96 | 93 | 96 | 94 | 94 |
| 40 | 96 | 93 | 96 | 94 | 94 |
| 41 | 96 | 93 | 96 | 94 | 94 |
| 42 | 96 | 93 | 96 | 94 | 94 |
| 43 | 96 | 93 | 96 | 94 | 94 |
| 44 | 96 | 93 | 96 | 94 | 94 |
| 45 | 95 | 93 | 96 | 94 | 94 |
| 46 | 95 | 93 | 96 | 94 | 94 |
| 47 | 95 | 93 | 96 | 94 | 94 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 48 | 95 | 93 | 96 | 94 | 94 |
| 49 | 95 | 93 | 96 | 94 | 94 |
| 50 | 95 | 93 | 96 | 94 | 94 |
| 51 | 95 | 93 | 96 | 94 | 94 |
| 52 | 95 | 93 | 95 | 94 | 93 |
| 53 | 95 | 93 | 95 | 94 | 93 |
| 54 | 95 | 93 | 95 | 94 | 93 |
| 55 | 95 | 93 | 95 | 94 | 93 |
| 56 | 95 | 93 | 95 | 94 | 93 |
| 57 | 94 | 93 | 95 | 94 | 93 |
| 58 | 94 | 92 | 95 | 94 | 93 |
| 59 | 94 | 92 | 95 | 94 | 93 |
| 60 | 94 | 92 | 95 | 94 | 93 |
| 61 | 94 | 92 | 95 | 94 | 93 |
| 62 | 94 | 92 | 95 | 94 | 93 |
| 63 | 94 | 92 | 95 | 94 | 93 |
| 64 | 94 | 92 | 95 | 94 | 93 |
| 65 | 94 | 92 | 95 | 94 | 93 |
| 66 | 94 | 92 | 95 | 94 | 93 |
| 67 | 94 | 92 | 95 | 94 | 93 |
| 68 | 94 | 92 | 95 | 94 | 93 |
| 69 | 94 | 92 | 95 | 93 | 93 |
| 70 | 94 | 91 | 95 | 93 | 93 |
| 71 | 94 | 91 | 95 | 93 | 93 |
| 72 | 94 | 90 | 94 | 93 | 93 |
| 73 | 94 | 90 | 94 | 93 | 93 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 74 | 94 | 90 | 94 | 93 | 93 |
| 75 | 93 | 89 | 94 | 93 | 93 |
| 76 | 93 | 89 | 94 | 93 | 93 |
| 77 | 93 | 89 | 94 | 93 | 93 |
| 78 | 93 | 89 | 94 | 93 | 93 |
| 79 | 93 | 89 | 94 | 93 | 93 |
| 80 | 93 | 89 | 94 | 93 | 93 |
| 81 | 93 | 88 | 94 | 93 | 93 |
| 82 | 93 | 88 | 94 | 93 | 93 |
| 83 | 93 | 88 | 94 | 93 | 93 |
| 84 | 93 | 88 | 94 | 93 | 93 |
| 85 | 93 | 88 | 94 | 93 | 93 |
| 86 | 93 | 88 | 94 | 93 | 93 |
| 87 | 93 | 88 | 94 | 93 | 93 |
| 88 | 93 | 88 | 94 | 93 | 93 |
| 89 | 93 | 88 | 94 | 93 | 93 |
| 90 | 93 | 88 | 94 | 93 | 93 |
| 91 | 93 | 88 | 94 | 93 | 93 |
| 92 | 93 | 88 | 94 | 93 | 93 |
| 93 | 93 | 87 | 94 | 93 | 93 |
| 94 | 93 | 87 | 94 | 93 | 93 |
| 95 | 93 | 87 | 94 | 93 | 93 |
| 96 | 93 | 87 | 94 | 93 | 92 |
| 97 | 93 | 87 | 94 | 93 | 92 |
| 98 | 92 | 87 | 94 | 93 | 92 |
| 99 | 92 | 87 | 94 | 93 | 92 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|---------|---------|---------|---------|---------|
| min | °C | °C | °C | °C | °C |
| 100 | 92 | 87 | 94 | 93 | 92 |
| 101 | 92 | 88 | 94 | 93 | 92 |
| 102 | 92 | 87 | 94 | 93 | 92 |
| 103 | 92 | 87 | 94 | 93 | 92 |
| 104 | 92 | 88 | 94 | 93 | 92 |
| 105 | 92 | 87 | 94 | 94 | 92 |
| 106 | 92 | 88 | 94 | 94 | 92 |
| 107 | 92 | 87 | 94 | 94 | 92 |
| 108 | 92 | 87 | 94 | 94 | 92 |
| 109 | 92 | 87 | 94 | 94 | 92 |
| 110 | 92 | 87 | 94 | 94 | 92 |
| 111 | 92 | 87 | 94 | 94 | 92 |
| 112 | 92 | 87 | 94 | 94 | 92 |
| 113 | 92 | 87 | 94 | 94 | 92 |
| 114 | 92 | 87 | 94 | 94 | 92 |
| 115 | 92 | 87 | 94 | 94 | 92 |
| 116 | 92 | 86 | 94 | 94 | 92 |
| 117 | 91 | 86 | 94 | 94 | 92 |
| 118 | 91 | 86 | 94 | 94 | 92 |
| 119 | 91 | 86 | 94 | 94 | 92 |
| 120 | 91 | 86 | 94 | 94 | 92 |
| 121 | 91 | 86 | 94 | 95 | 93 |
| 122 | 91 | 86 | 94 | 95 | 93 |
| 123 | 90 | 86 | 94 | 96 | 93 |
| 124 | 90 | 86 | 94 | 98 | 92 |
| 125 | 90 | 86 | 94 | 101 | 92 |

| Time | Chan 23 | Chan 24 | Chan 25 | Chan 26 | Chan 27 |
|------|------------|------------|------------|------------|------------|
| min | °C | °C | °C | °C | °C |
| 126 | 90 | 86 | 94 | 105 | 93 |
| 127 | 90 | 86 | 94 | 111 | 93 |
| 128 | 90 | 87 | 94 | 117 | 93 |
| 129 | 90 | 87 | 94 | 123 | 93 |
| 130 | 90 | 87 | 94 | 129 | 93 |
| 131 | 90 | 87 | 94 | 135 | 93 |
| 132 | 90 | 88 | 94 | 142 | 93 |
| 133 | 90 | 88 | 94 | 149 | 93 |
| 134 | 89 | 88 | 94 | 155 | 93 |
| 135 | 89 | 88 | 94 | 162 | 93 |

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