02 June 2020

WINTECH
TESTING & CERTIFICATION
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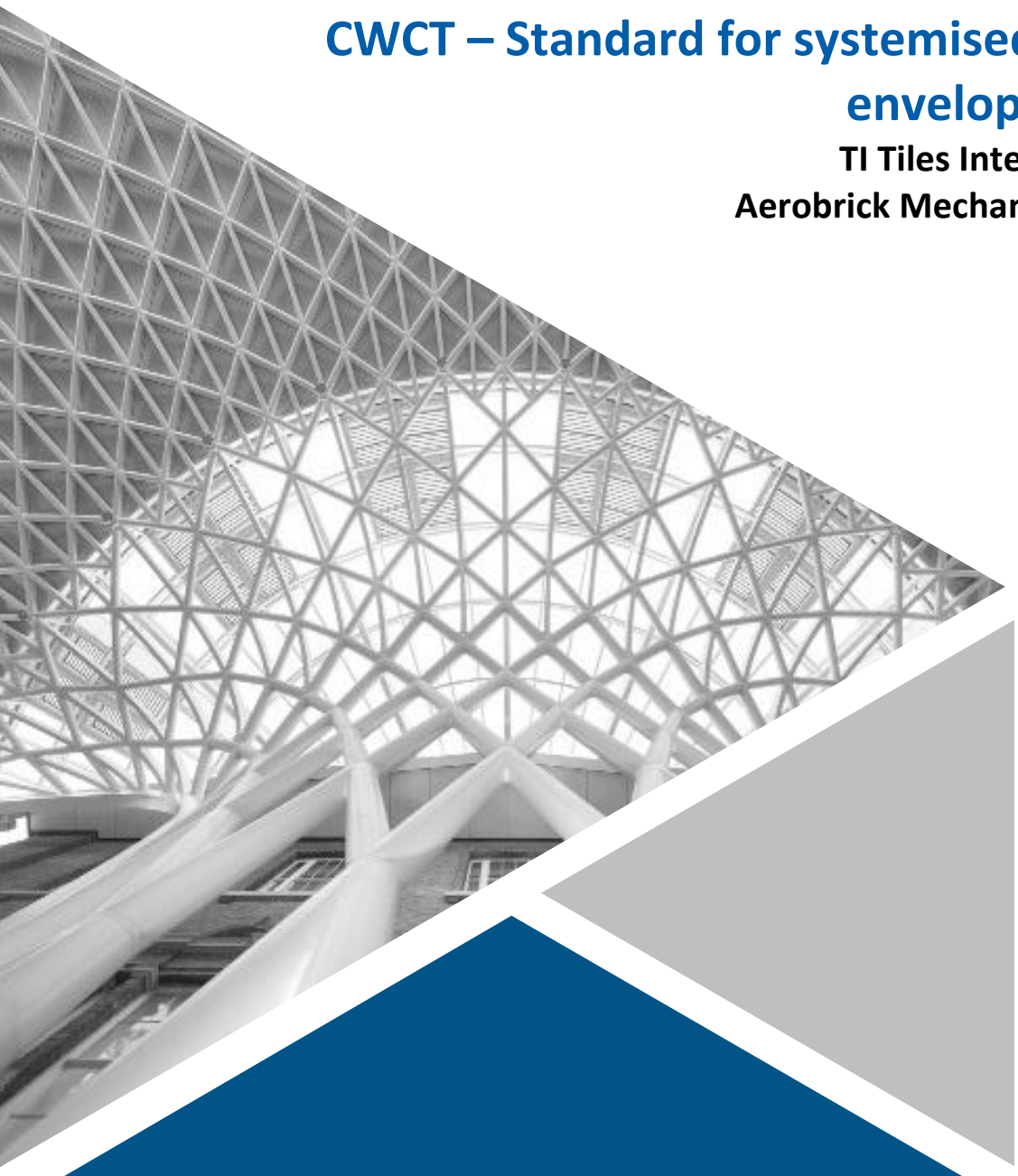
UKAS TESTING
2223

Technical Report – R20556-Rev 2
CWCT – Standard for systemised building envelopes – 2005

TI Tiles International Ltd
Aerobrick Mechanical Brickslip



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Contents

Rev 2 (Revised Report) – this report has been amended as shown in Section 10 and it replaces previous report No. R20556 dated 20th May 2020.

1. Introduction

This report describes tests carried in order to determine the weather tightness of the sample with respect to water penetration, wind and impact resistance on sample supplied as follow:

Test Details	
Customer:	TI Tiles International Ltd Westview House Devro Campus Glasgow G69 0JE
Product Tested:	Aerobrick – Mechanical Brickslip
Date of Test:	13th and 14th November 2019 11th, 13th and 20th December 2019 14th, 16th, 23rd and 24th January 2020
Test Conducted at:	Wintech Engineering Limited Halesfield 2 Telford Shropshire TF7 4QH
Test Conducted by:	R Cadwallader- Senior Laboratory Technician K Alden- Senior Laboratory Assistant D Reynolds – Engineering Technician
Test Supervised by:	M Cox – Engineering Leader
Test Witnessed by:	C Scannell – TI Tiles International Ltd A Cochrane - TI Tiles International Ltd

Report Authorisation	
Report Compiled by:	D Price – Senior Engineering Associate
Authorised by:	M Wass – Engineering Manager

Wintech Engineering Ltd is accredited by the United Kingdom Accreditation Service as UKAS Testing Laboratory No. 2223.

2. Summary of Results

2.1 The test methods

The test methods were in accordance with the following standards:

CWCT Standard Test Methods for Building Envelopes - December 2005	
Air Leakage (Infiltration & Exfiltration)	CWCT Section 5
Water Penetration – Dynamic Aero Engine	CWCT Section 7
Water Penetration – Hose	CWCT Section 9
Wind Resistance – Serviceability	CWCT Section 11
Wind Resistance – Safety	CWCT Section 12
Impact – Retention to Performance & Safety to Persons	CWCT TN 76

2.2 Summary of Results

The following summarises the results of testing carried out, in accordance with the relevant testing and classification standards.

The performance of the sample tested has been assessed against the criteria described in below standards. The test will be conducted in accordance with the Standard and the pass/fail decision is defined by the Standard. Measurement of Uncertainty will not be accounted for in the decision rule.

Test Type	Peak Test Pressure	Result	Date of Test
Test 1 - Air Leakage – Infiltration	600 Pa	Pass	13.11.19
Test 2 - Air Leakage – Exfiltration	100 Pa	N/A	13.11.19
Test 3 - Water Penetration – Dynamic Aero Engine	600 Pa	Pass	14.11.19
Test 4 - Wind Resistance – Serviceability – Backing Wall	2400 Pa	Pass	14.11.19
Test 5 - Repeat Air Leakage – Infiltration	600 Pa	Pass	14.11.19
Test 6 - Repeat Air Leakage – Exfiltration	100 Pa	N/A	14.11.19
Test 7 – Repeat Water Penetration – Dynamic Aero Engine	600 Pa	Pass	14.11.19
Test 8 - Water Penetration – Hose	-	Pass	14.11.19
Test 9 - Wind Resistance – Serviceability – Cavity	2400 Pa	Pass	20.12.19
Test 10 - Wind Resistance – Safety – Backing Wall	3600 Pa	Pass	14.01.20 16.01.20
Test 11 - Wind Resistance – Safety – Cavity	3600 Pa	Pass	16.01.20 23.01.20
Test 12 - Impact Resistance – Retention of Performance	Cat B	Class 4	11.12.19 13.12.19 24.01.20
Test 13 - Impact Resistance – Safety to Persons	Cat B	Moderate Risk	11.12.19 13.12.19 24.01.19
Dismantle, Inspect & Report	**Sample Passed**		

More comprehensive details are reported in Section 6.

These results are valid only for the conditions under which the test was conducted.

All measurement devices, instruments and other relevant equipment were calibrated and traceable to National Standards.

3. Description of Test Sample

The description of the test sample in this section has been supplied by the customer and has not been verified by Wintech Engineering Limited.

See Section 7 for test sample drawings as supplied by TI Tiles International.

Product Description

Full product name:	Aerobrick
Product type:	Mechanical BrickSlip
Product description:	Lightweight Mechanical Brickslip Cladding
Manufactured by:	TI Tiles International

Support Framing and bracketry

Material:	Aluminium
Finish:	Mill
Vertical rail Ref:	MFT-L 60x40 1,8 6m
Horizontal rail Ref:	35mm deep tophat
Fixing method (rail to backing wall):	Through Fix
Fixing Ref:	S-MD53S 5,5x32
Fixing method (rail to bracket):	Through Fix
Fixing Ref:	S-AD01S 5,5x19
Max Span between vertical rails:	600mm
Max Span between horizontal rails:	675mm
Brackets ref:	MFT-MFI M 45

Brick slips:

Material:	Clay
Material ref (source, spec):	Aerobrik
Finish:	Fired
Thickness:	20mm
Reinforcing:	n/a
Max height of panel:	65mm
Max width of panel:	400mm
Max size of panel by area (m2):	
Fixing method:	Tray or Cassette
Bracket/clip ref:	Incorporate in fixing Tray/Cassette
Screws/fixings ref:	S-MD01PS 5,5 x 22

Interface Details (Backwall to window/door inserts)

Window interface detail:	D09 – Rev.2
Door interface detail:	n/a

Backing Wall

Structural support type:	Metsec
Insulation type:	N/a
Insulation thickness:	n/a
Airtight membrane:	FSM-0.75 x 200 x 20

Watertight membrane:	FSM-0.75 x 200 x 20
Particle board detail:	12mm Weatherkem Fibre Cement Board
Sealants and tapes:	FSM Adhesive
Fixings ref:	S-DD01z 3,5x32

Sample Dimensions

Test sample size:	5m x 8m

Drawings

Drawing/s must be provides covering the below; -Full drawing of sample including front elevation -Cross Sections (Panels/Rails Etc.) -Hardware Locations -Fixings -Drainage Points Note: drawings are required to show all relevant dimensions.	As detailed in Section 7
Test sample size:	5m x 8m – As detailed in Section 7

Confirmation

Please confirm that the samples provided for testing are representative of standard production?	Confirmed

Sample during testing

Photograph No. 1

Photograph No. 2

4. Test Arrangement

4.1 Test Chamber

A specimen, supplied for testing in accordance with CWCT requirements, was mounted on to a rigid test chamber constructed from steel, timber and plywood sheeting.

The pressure within the chamber was controlled by means of a centrifugal fan and a system of ducting and valves. The static pressure difference between the outside and inside of the chamber was measured by means of a differential pressure transmitter.

4.2 Instrumentation

4.2.1 Static Pressure

A differential pressure transmitter capable of measuring rapid changes in pressure to an accuracy within 2%, was used to measure the pressure differential across the sample.

4.2.2 Air Flow

A laminar flow element, mounted in the air system ducting, was used along with differential pressure transducers to measure the airflow required to obtain pressures within the test chamber and has the capability of measuring airflow through the sample to an accuracy within 2%.

4.2.3 Water Flow

An in-line flowmeter, mounted in the spray frame water supply system, was used to measure water flow to the test sample to an accuracy of ± 5%.

4.2.4 Deflection

Digital linear measurement devices with an accuracy of +/- 0.1 mm were used to measure deflection of principle framing members.

4.2.5 Temperature & Humidity

A digital data logger capable of measuring temperature with an accuracy of ± 1°C and humidity with an accuracy of ± 5 %Rh was used.

4.2.5 Barometric Pressure

A digital barometer capable of measuring barometric pressure with an accuracy of ± 1 kPa was used.

4.2.6 General

Electronic instrument measurements were scanned by a computer-controlled data logger, which processed and recorded the results.

4.3 Pressure Generation

4.3.1 Static Air Pressure

The air supply system comprised of a centrifugal fan assembly and associated ducting and control valves and was used to create both positive and negative static pressure differentials. The fan provided a constant airflow at the required pressure and period required for the tests.

Note: References are made to both positive and negative pressures in this document, it should be noted that in these instances, positive pressure is when pressure on the weather face of the sample is greater than that on the inside face and vice versa.

4.3.2 Dynamic Aero Engine

A wind generator was mounted adjacent to the external face of the test sample and used to create positive pressure differential during dynamic testing.

4.4 Water Spray System

4.4.1 Spray frame arrangement

A water spray system was used which comprised of nozzles spaced on a uniform grid, not more than 700 mm apart and mounted approximately 400 mm from the face of the sample. The nozzles provided a full cone pattern, as per the requirements outlined by CWCT. The system delivered water uniformly to the entire surface of the test sample at a rate of not less than 3.4 lt/m^2/min.

4.4.2 Hose arrangement

The water was applied using a brass nozzle which produced a solid cone of water droplets with a nominal spread of 30°. The nozzle was provided with a control valve and a pressure gauge between the valve and the nozzle. The water flow to the nozzle was adjusted to produce 22 $\pm$ 2 litre/min when the water pressure at the nozzle inlet was 220 $\pm$ 20kPa

4.5 Impactors

4.5.1 Soft (S1) Body Impactor

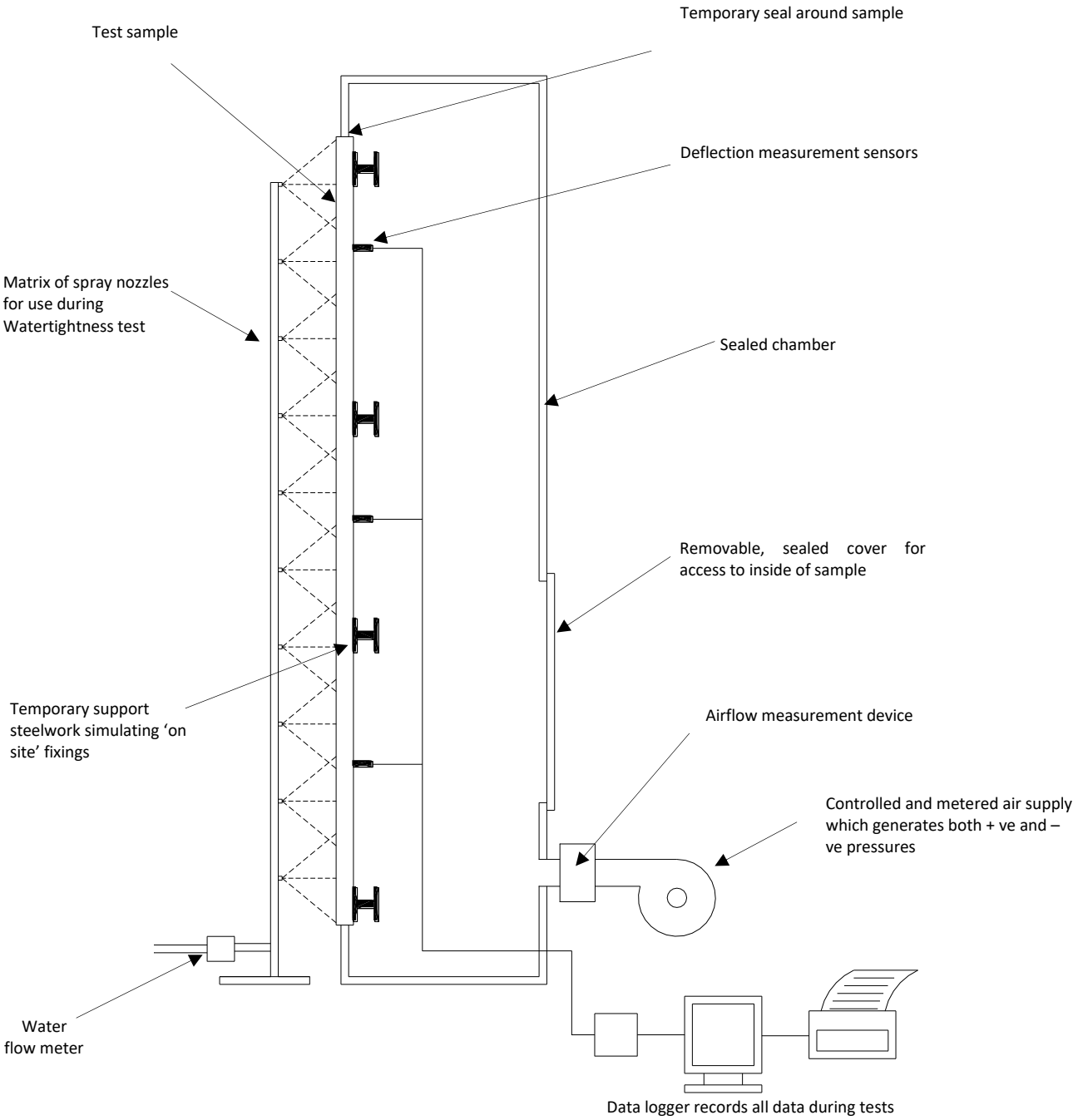
A spherical/conical, glass bead filled impactor with a mass of 50 Kg, as required in CWCT TN76

4.5.2 Hard (H2) Body Impactor

A steel ball with a diameter of 62.5 mm and a mass of 1.135 Kg, was released from the height, calculated to result in the required impact energies and allowed to fall under gravity until it impacted the designated test zone of the sample.

Figure 1 – Test arrangement

General Arrangement of a Typical Test Assembly



5. Test Procedures

5.1 Sequence of Testing

Test 1 - Air Leakage – Infiltration
Test 2 - Air Leakage – Exfiltration
Test 3 - Water Penetration – Dynamic Aero Engine
Test 4 - Wind Resistance – Serviceability – Backing Wall
Test 5 - Repeat Air Leakage – Infiltration
Test 6 - Repeat Air Leakage – Exfiltration
Test 7 Repeat Water Penetration – Dynamic Aero Engine
Test 8 - Water Penetration – Hose
Test 9 - Wind Resistance – Serviceability – Cavity
Test 10 - Wind Resistance – Safety – Backing Wall
Test 11 - Wind Resistance – Safety – Cavity
Test 12 - Impact Resistance – Retention of Performance
Test 13 - Impact Resistance – Safety to Persons

5.2 Air Permeability - Infiltration

Three (3) preparatory pulses of 660 Pa (110% of peak test pressure) positive pressure were applied to the test sample. An airtight seal comprising of plastic sheeting and adhesive tape was then attached to the face of the test sample.

Leakage through the test chamber and joints between the chamber and test sample was determined by measuring the air flow at the following positive pressures; 50, 100, 150, 200, 250, 300, 450 and 600 Pa each step being held for at least 10 seconds.

Although not required by CWCT Section 5, an additional air pressure step of 250 Pa has been added during the air leakage tests to satisfy the requirements of EN 12153:2000.

Test results for the sample were determined by repeating the above sequence with the sample unsealed. The difference between the readings being the air leakage through the sample.

A check for concentrated air leakage was conducted following the above sequence.

5.3 Air Permeability - Exfiltration

Three (3) preparatory pulses of 500 Pa negative pressure were applied to the test sample. An airtight seal comprising of plastic sheeting and adhesive tape was then attached to the face of the test sample.

Leakage through the test chamber and joints between the chamber and test sample was determined by measuring the air flow at the following positive pressure; 50 and 100 Pa, which was held for at least 10 seconds.

Test results for the sample were determined by repeating the above sequence with the sample unsealed. The difference between the readings being the air leakage through the sample.

5.4 Water Penetration – Dynamic Aero Engine

Water was sprayed on to the sample as described in section 4.4.1.

The sample was subjected to airflow from the wind generator, as described in 4.3.2, which achieved average deflections equal to those produced at a static pressure differential of 600 Pa and these conditions were met for the specified 15 minutes.

The interior face of the sample was continuously monitored for water ingress throughout the test.

5.4.1 Water Penetration – Hose

Working from the exterior, the window pod interface detail between the window and SFS backing wall was wetted from the bottom up, progressing from the lowest horizontal joint then the intersecting vertical joints.

Water was applied to the sample for 5 mins per 1.5 m length of joint, as described in section 4.4.2.

Throughout the water penetration testing, and for 30 minutes following the cessation of spraying, the internal face of the sample was examined for water penetration. The emergence of any water on the inside face would be recorded, and the location and extent of any leakage noted on a drawing of the test specimen.

5.5 Wind Resistance

5.5.1 Wind Resistance - Serviceability

Three (3) preparatory pulses of 1200 Pa (50% of design wind load) positive pressure were applied to the test sample. Upon returning to 0 Pa, any opening parts of the test specimen were opened and closed five (5) times, secured in the closed position. All deflection sensors were then zeroed.

The sample was then subjected to positive pressure stages of 600, 1200, 1800 and 2400 Pa (25%, 50%, 75% and 100% of design wind load) and held at each step for 15 seconds (± 5 secs).

The deformation status of the sample was recorded at each step at characteristic points as stated in the standard, following which the pressure was reduced to 0 Pa and any residual deformations recorded within 1 hour of the test.

The above test sequence was then repeated, including preparation pulses, at a negative pressure differential.

Following each of the above tests, the sample was inspected for permanent deformation or damage.

Note: Due to the design of the sample being permeable, it was necessary to apply a coating of Triflex Cryl Primer 276 as detailed in Section 7 over the entire face of the sample in order to allow the above test to be conducted.

5.5.2 Wind Resistance - Safety

Three preparatory positive air pressure pulses of 1200 Pa (50% of design wind load) positive pressure were applied to the test sample, and the deflection sensors were zeroed.

The sample was subjected to a positive pressure pulse of 3600 Pa (2400 Pa x 150%). The pressure was applied as rapidly as possible but in not less than 1 second and was maintained for 15 seconds (± 5 secs).

Following this pressure pulse and upon returning to zero (0) pressure, residual deformations were recorded and any change in the condition of the specimen was noted.

After the above sequence, a visual inspection was conducted, any moving parts were operated and any damage or functional defects noted.

The above test sequence was then repeated, including preparation pulses, at a negative pressure differential. The deflection sensors were zeroed following the preparation pulses.

Following each of the above tests, the sample was inspected for any permanent deformation or damage.

Note: Due to the design of the sample being permeable, it was necessary to apply a coating of Triflex Cryl Primer 276 as detailed in Section 7 over the entire face of the sample in order to allow the above test to be conducted.

5.6 Impact Resistance

5.6.1 Impact Test Procedure – Retention of performance – CWCT TN 76

The test sample was tested using a drop height which corresponded with the required performance level.

The Impactors, as described in section 4.5.1 and 4.5.2, were suspended on a wire/Nylon cord and allowed to swing freely, without initial velocity, in a pendulum motion until they hit the sample normal to its face. Only one impact was performed at any single position during the hard body impacting and three times at each position during the soft body impacting.

Tests were conducted at the required impact energies as shown in section 6.3.1 and 6.3.2 to the selected impact points.

Drop heights were set to an accuracy of ± 10 mm.

5.6.2 Impact Test Procedure – Safety to persons – CWCT TN 76

The test sample was tested using a drop height which corresponded with the required performance level.

The Impactors, as described in section 4.5.1 and 4.5.2 were suspended on a wire/Nylon cord and allowed to swing freely, without initial velocity, in a pendulum motion until they hit the sample normal to its face. Only one impact was performed at any single position.

Tests were conducted at the required impact energies as shown in section 6.3.3 and 6.3.4 to the selected impact points and the impactors were not allowed to strike the sample more than once.

Drop heights were set to an accuracy of ± 10 mm.

6. Test Results

6.1 Air Leakage

Permissible air infiltration rate as CWCT standard test methods for building envelopes – Section 5:
Fixed Element = 1.5 m3/hr/m2

The permissible air infiltration rate at intermediate test pressures was determined as specified by CWCT standard test methods for building envelopes – Section 5.

Air permeability measured at maximum test pressure in the 2nd test should not increase by more than 0.3 $m^3/hr/m^2$ for fixed glazing above those recorded in the 1st test, as required in CWCT standard for systemised building envelopes: section 3 & BS EN 13116: 2001.

6.2 Air Permeability - Classification

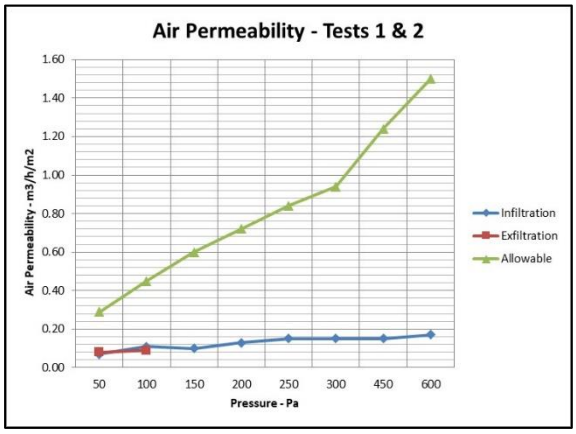
Calculated area of test sample 46.01 m^2

6.2.1 Tests 1 & 2 - Fixed Element

Pressure Differential Pa	Maximum Air Permeability Rate – Infiltration $m^3/hr/m^2$		Maximum Air Permeability Rate – Exfiltration $m^3/hr/m^2$	
	Test No. 1		Test No. 2	
	Ambient ° C	4.0	Ambient ° C	4.0
50	0.07		0.08	
100	0.11		0.09	
150	0.10			
200	0.13			
250	0.15			
300	0.15			
450	0.15			
600	0.17			

Note: The standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%, for the above measurements is ± 5.33 % of the reading

Graph 1 –Air Permeability - Area



6.2.2 Tests 5 & 6 - Repeat Air Permeability

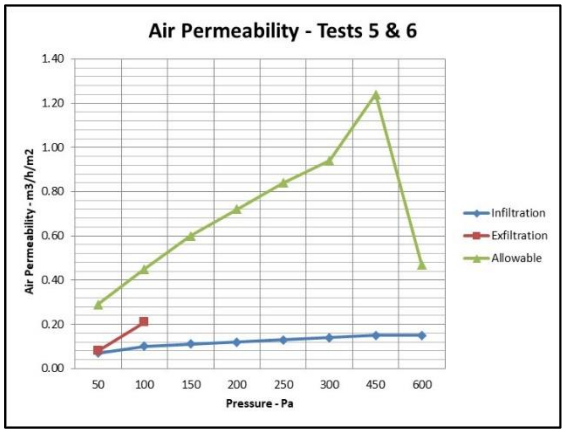
6.2.3 Fixed Element

Pressure Differential Pa	Maximum Air Permeability Rate – Infiltration $m^3/hr/m^2$		Maximum Air Permeability Rate – Exfiltration $m^3/hr/m^2$	
	Test No. 5		Test No. 6	
	Ambient ° C	5.3	Ambient ° C	5.3
50	0.07		0.08	
100	0.10		0.21	
150	0.11			
200	0.12			
250	0.13			
300	0.14			
450	0.15			
600	0.15			

No areas of concentrated leakage were found during testing.

Note: The standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%, for the above measurements is ± 5.33 % of the reading

Graph 2 –Air Permeability - Area



6.3 Watertightness Testing

6.3.1 Test 3 - Water Penetration – Dynamic Aero Engine

Temperatures (°C)	**Water**	8.8
	Ambient	5.7

Time Tested - Minutes	15
Water Collected - Litres	No water collected following the test

Observations

The sample was subjected to testing as described in section 5.2.1, for a period of not less than 15 minutes, during which no water leakage was observed through the sample. The water was also collected by means of a drainage system at the bottom of the sample, which was then weighed at the end of the test.

6.3.2 Test 7 - Repeat Water Penetration – Dynamic Aero Engine

Temperatures (°C)	**Water**	8.7
	Ambient	5.3

Time Tested - Minutes	15
Water Collected - Litres	No water collected following the test

Observations

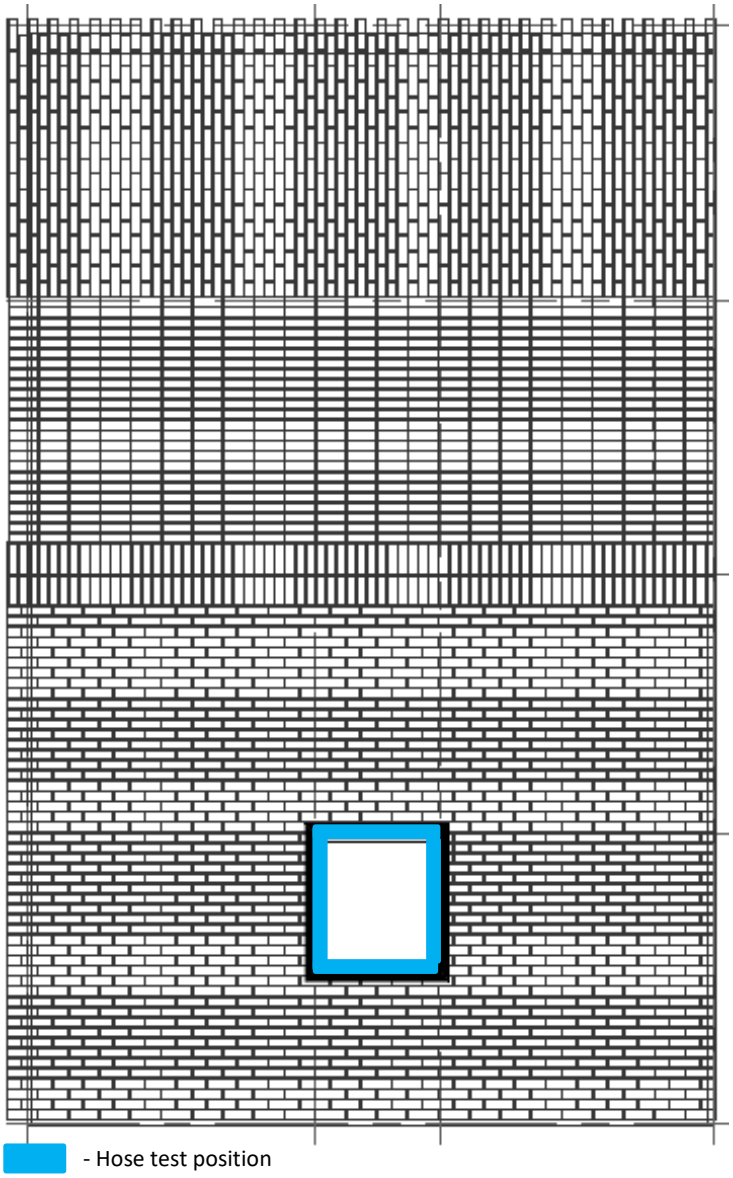
The sample was subjected to testing as described in section 5.2.1, for a period of not less than 15 minutes, during which no water leakage was observed through the sample. The water was also collected by means of a drainage system at the bottom of the sample, which was then weighed at the end of the test.

6.3.3 Test 8 – Water Penetration – Hose

The sample was subjected to hose testing, as described in section 5.2.2. During the test, and for 30 minutes following the cessation of spraying, the sample was monitored for water ingress and none was found.

Figure 2

Hose Test Areas



- Hose test position

View from Outside
Not to Scale

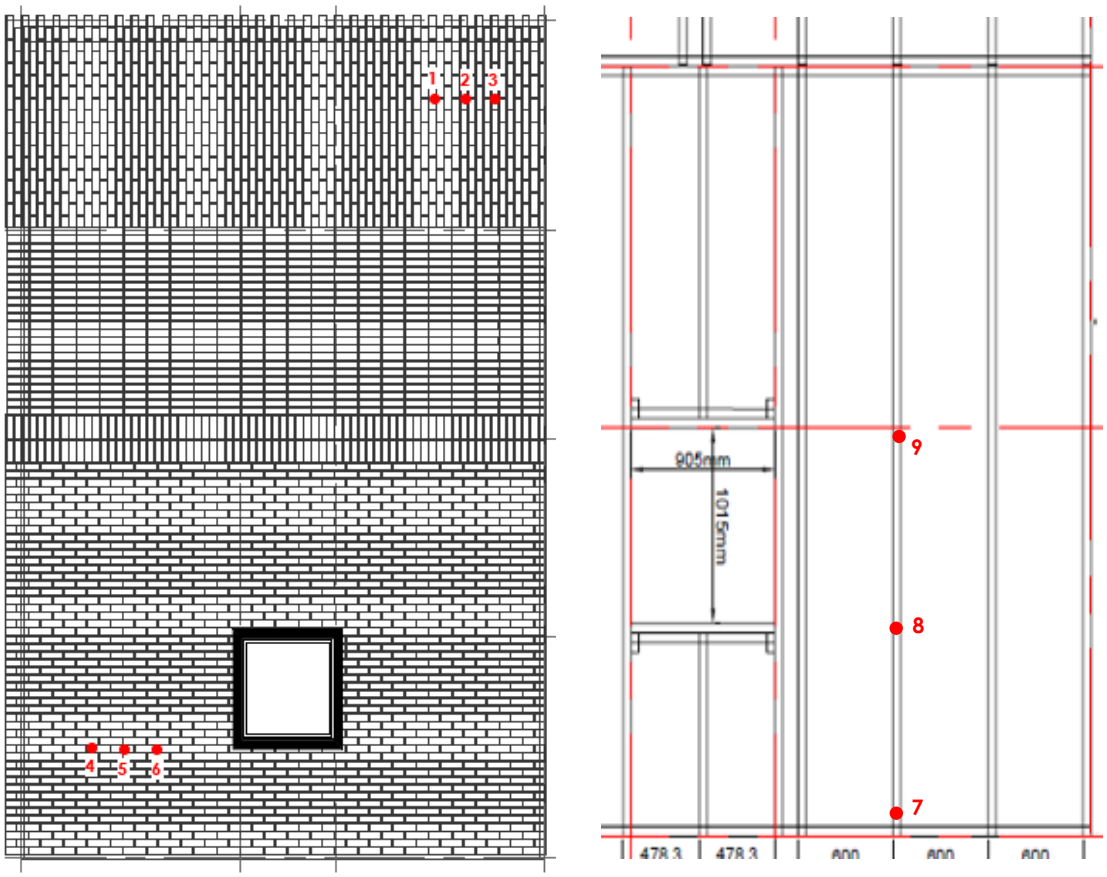
6.4 Wind Resistance

Probe Group Identification	Calculation of deflection
Group A comprised of probes 1, 2 & 3	= Probe 2 – ((Probe 1 + Probe 3)/2)
Group B comprised of probes 4, 5 & 6	= Probe 5 – ((Probe 4 + Probe 6)/2)
Group C comprised of probes 7, 8 & 9	= Probe 8 – ((Probe 7 + Probe 9)/2)

An inspection carried out following tests 4, 9, 10 and 11, after both positive and negative pressure testing, showed no evidence of any permanent deformation or damage to the test sample.

Figure 3

Positions of Deflection Measurement Probes



- Deflection probe positions

View from Outside
Not to Scale

6.4.1 Tests 4 & 9 - Wind Resistance, Serviceability

Test Date	14.11.19	20.12.19
Temperatures (°C)	5.6	5.6

Measured Length of Framing Member (mm)		**Allowable Deflection**	
		Ratio	**Calculated (mm)**
Group A	600	L/360 or 3mm	1.7
Group B	600	L/360 or 3mm	1.7
Group C	3630	L/360 or 10mm	10.0

Frontal deflection shall recover by either 95%, or 1mm, whichever the greater.

6.4.1.1 Wind Resistance, Serviceability - Positive Pressure

Positive Pressure Pa	**Results**		
	Group A	**Group B**	**Group C**
0	0.0	0.0	0.0
600	0.1	0.0	0.7
1200	0.2	0.1	1.7
1800	0.3	0.1	2.8
2400	0.4	0.7	3.7
Residuals Immediately following test	0.0	0.0	0.2

6.4.1.2 Wind Resistance, Serviceability - Negative Pressure

Negative Pressure Pa	**Results**		
	Group A	**Group B**	**Group C**
0	0.0	0.0	0.0
600	0.1	0.0	0.9
1200	0.2	0.2	2.0
1800	0.4	0.2	3.3
2400	0.6	0.4	4.8
Residuals Immediately following test	0.3	0.1	0.3

6.4.2 Tests 5 & 6 - Wind Resistance, Safety

Test Date	14.01.20	16.01.20	16.01.20	23.01.20
Temperatures (°C)	6.4	7.4	7.3	7.3

Measured Length of Framing Member (mm)		**Allowable Residual Deformation**	
		Ratio	**Calculated (mm)**
Group A	600	L/500	1.2
Group B	600	L/500	1.2
Group C	3630	L/500	7.3

6.4.2.1 Wind Resistance, Safety - Positive Pressure

Positive Pressure Pa	Results		
	Group A	Group B	Group C
0	0.0	0.0	0.0
3600	0.0	0.4	6.5
Residuals Immediately following test	0.1	0.0	1.2

6.4.2.2 Wind Resistance, Safety - Negative Pressure

Negative Pressure Pa	Results		
	Group A	Group B	Group C
0	0.0	0.0	0.0
3600	0.1	0.5	6.8
Residuals Immediately following test	0.0	0.2	0.7

Note: The standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%, for the above measurements is ± 2.4 % of the reading

6.5 Impacting

6.5.1 Test 12 – Impact – Retention of performance (Soft Body S1)

Test Date	11.12.19
Ambient Temperatures (°C)	3.9
Humidity (%RH)	80

Impact Category	Cat B
Impact Energy	120 Nm
Class Achieved	Class 1

Zone 1 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
1	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
2	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
3	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
4	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
5	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
6	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
7	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
8	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
9	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
10	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
11	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
12	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
13	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

14	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
15	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
16	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
17	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
18	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
19	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
20	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
21	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
22	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
23	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
24	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

Zone 2 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
25	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
26	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
27	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
28	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
29	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
30	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
31	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
32	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

Zone 3 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
33	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
34	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
35	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
36	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
37	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
38	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
39	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
40	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
41	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
42	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
43	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
44	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
45	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
46	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
47	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
48	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
49	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
50	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
51	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

52	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
53	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
54	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
55	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
56	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

Zone 4 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
57	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
58	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
59	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
60	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
61	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
62	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
63	Cat B	Soft Body (S1)	120	245	No Damage	Class 1
64	Cat B	Soft Body (S1)	120	245	No Damage	Class 1

Photograph No. 3

Showing Soft Body (S1) impact of 120Nm.

During the above test, no damage was observed.

Photograph No. 4

Showing Soft Body (S1) impact of 120Nm.

During the above test, no damage was observed.

Photograph No. 5

Showing Soft Body (S1) impact of 120Nm.

During the above test, no damage was observed.

6.5.2 Test 12 – Impact – Retention of performance (Hard Body H2)

Test Date	11.12.19	13.12.19	24.01.20
Ambient Temperatures (°C)	3.9	6.8	6
Humidity (%RH)	80	79	90

Impact Category	Cat B
Impact Energy	10 Nm
Class Achieved	Class 4

Zone 1 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
1	Cat B	Hard Body (H2)	10	898	No damage	Class 1
2	Cat B	Hard Body (H2)	10	898	No damage	Class 1
3	Cat B	Hard Body (H2)	10	898	Cracked mortar + Hairline crack	Class 2
4	Cat B	Hard Body (H2)	10	898	Cracked mortar + Hairline crack	Class 2
5	Cat B	Hard Body (H2)	10	898	Cracked mortar	Class 2
6	Cat B	Hard Body (H2)	10	898	hairline crack in corner	Class 2
7	Cat B	Hard Body (H2)	10	898	Cracked mortar + hairline crack across slip - 0.68g	Class 2
8	Cat B	Hard Body (H2)	10	898	Cracked mortar + hairline crack across slip	Class 2
9	Cat B	Hard Body (H2)	10	898	No damage	Class 1
10	Cat B	Hard Body (H2)	10	898	Damage to adjacent bricks worsened	Class 2
11	Cat B	Hard Body (H2)	10	898	No damage	Class 1
12	Cat B	Hard Body (H2)	10	898	No damage	Class 1
13	Cat B	Hard Body (H2)	10	898	Cracks in slip and pieces fell away - 4.91g	Class 3
14	Cat B	Hard Body (H2)	10	898	No damage	Class 1
15	Cat B	Hard Body (H2)	10	898	Piece fell away from impact ref 6 + slight crack in slip - 1.9g	Class 2
16	Cat B	Hard Body (H2)	10	898	No damage	Class 1
17	Cat B	Hard Body (H2)	10	898	No damage	Class 1
18	Cat B	Hard Body (H2)	10	898	No damage	Class 1
19	Cat B	Hard Body (H2)	10	898	Chip from slip and some mortar fell away - 1.1g	Class 2
20	Cat B	Hard Body (H2)	10	898	Mortar cracked and slight crack in adjacent brick	Class 2
21	Cat B	Hard Body (H2)	10	898	No damage	Class 1
22	Cat B	Hard Body (H2)	10	898	Piece fell away from impact ref 18 - 22.56g	Class 3
23	Cat B	Hard Body (H2)	10	898	Mortar cracked and slip cracked	Class 2
24	Cat B	Hard Body (H2)	10	898	Corner cracked and fell away - 70.43g	Class 4

Zone 2 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
25	Cat B	Hard Body (H2)	10	898	Chip from mitred corner - 8.32g	Class 1
26	Cat B	Hard Body (H2)	10	898	Chip from mitred corner - 9.48g	Class 1
27	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent	Class 2
28	Cat B	Hard Body (H2)	10	898	Broke corner away - 52.81 g	Class 2
29	Cat B	Hard Body (H2)	10	898	Chipped corner - 3.87g	Class 2
30	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent -0.23g	Class 2
31	Cat B	Hard Body (H2)	10	898	As above - 2.36g	Class 2
32	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent on return, safely retained	Class 2
33	Cat B	Hard Body (H2)	10	898	Cracked edge of slip, safely retained	Class 1

Zone 3 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
34	Cat B	Hard Body (H2)	10	898	No damage	Class 1
35	Cat B	Hard Body (H2)	10	898	Mortar fell away - 3.05 g	Class 2
36	Cat B	Hard Body (H2)	10	898	Crack on impact point	Class 3
37	Cat B	Hard Body (H2)	10	898	Small pieces cracked off - 1.94g	Class 3
38	Cat B	Hard Body (H2)	10	898	Crack on impact point - 0.71 g	Class 3
39	Cat B	Hard Body (H2)	10	898	No damage	Class 1
40	Cat B	Hard Body (H2)	10	898	Cracked in 2 locations nothing fell off	Class 3
41	Cat B	Hard Body (H2)	10	898	Crack on impact point	Class 3
42	Cat B	Hard Body (H2)	10	898	Crack on impact point	Class 3
43	Cat B	Hard Body (H2)	10	898	Piece fell from surface - 0.55 g	Class 3
44	Cat B	Hard Body (H2)	10	898	Cracked into pieces one fell off - 2.01 g	Class 3
45	Cat B	Hard Body (H2)	10	898	Cracked close to impact point across slip	Class 3

46	Cat B	Hard Body (H2)	10	898	No damage	Class 1
47	Cat B	Hard Body (H2)	10	898	retained -cracked into two pieces	Class 3
48	Cat B	Hard Body (H2)	10	898	No damage	Class 1
49	Cat B	Hard Body (H2)	10	898	Cracked across slip broke into pieces at impact point, weighing - 1.47 g	Class 3
50	Cat B	Hard Body (H2)	10	898	Cracked across slip and pieces fell away. weighing - 1.49 g	Class 3
51	Cat B	Hard Body (H2)	10	898	Cracked near impact point, weighing - 0.12 g	Class 3
52	Cat B	Hard Body (H2)	10	898	Cracked both sides of slip	Class 3
53	Cat B	Hard Body (H2)	10	898	No damage	Class 1
54	Cat B	Hard Body (H2)	10	898	Cracked across slip - mortar fell away, weighing 1.24g	Class 3
55	Cat B	Hard Body (H2)	10	898	Cracked into pieces and some fell away, weighing 2.25g	Class 3
56	Cat B	Hard Body (H2)	10	898	No damage	Class 1

Note: The hard body impacting to zone 4 was not required due to the brick slip not being mitred which was replicated across the top section of the sample.

Photograph No. 6

Showing damage caused following Hard Body (H2) impact of 10 Nm.

During the above test, the mortar cracked resulting in a Class 2

Photograph No. 7

Showing damage caused following Hard Body (H2) impact of 10 Nm.

During the above test, the brick cracked, and pieces fell off weighing 4.91g, resulting in a Class 3

Photograph No. 8

Showing damage caused following Hard Body (H2) impact of 10 Nm.

During the above test, the brick cracked, and pieces fell off weighing 70.43g, resulting in a Class 4

6.5.3 Test 13 - Impact – Safety to Persons (Soft Body S1)

Test Date	11.12.19
Ambient Temperatures (°C)	3.9
Humidity (%RH)	80

Impact Category	Cat B
Impact Energy	500 Nm
Risk Category	Low Risk

Zone 1 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
1	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
2	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
3	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
4	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
5	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
6	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
7	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
8	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
9	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
10	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
11	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
12	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
13	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
14	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
15	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
16	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
17	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
18	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
19	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
20	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
21	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
22	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
23	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
24	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk

Zone 2 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
25	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
26	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
27	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
28	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
29	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
30	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
31	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk
32	Cat B	Soft Body (S1)	500	1020	No Damage	Neg Risk

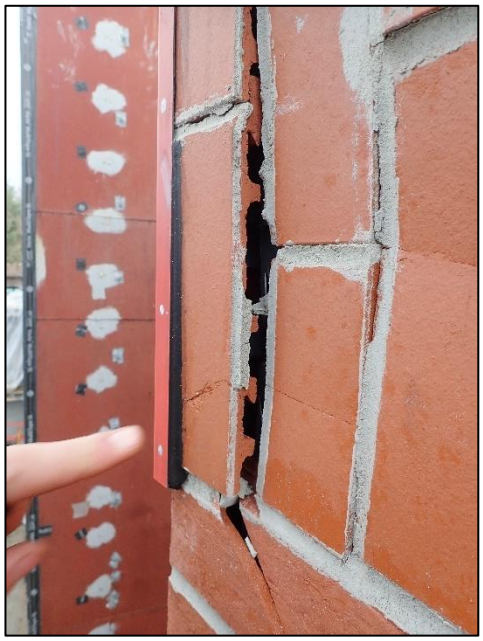
Zone 3 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
33	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
34	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
35	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
36	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
37	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
38	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
39	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
40	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
41	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
42	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
43	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk

44	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
45	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
46	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
47	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
48	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
49	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
50	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
51	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
52	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
53	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
54	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk
55	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk

56	Cat B	Soft Body (S1)	500	1020	A number of slips cracked, mortar joints cracked, brick work permanently pushed in approx. 20mm	Low Risk

Zone 4 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
57	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
58	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
59	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
60	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
61	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
62	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
63	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk
64	Cat B	Soft Body (S1)	500	1020	Brick slips and mortar cracked, wall deformed, pieces, safely retained	Low Risk

Photograph No. 9



Showing damage caused following Soft Body (S1) impact of 500 Nm.

During the above test, the brick slip and mortar cracked, and the support wall deformed, resulting in a Low Risk

Photograph No. 10

Showing Soft Body (S1) impact of 500 Nm.

During the above test, no damage was observed.

6.5.4 Test 13 – Impact – Safety to Persons (Hard Body H2)

Test Date	11.12.19	13.12.19	24.01.20
Ambient Temperatures (°C)	3.9	6.8	6
Humidity (%RH)	80	79	90

Impact Category	Cat B
Impact Energy	10 Nm
Risk Category	Moderate Risk

Zone 1 Impact Area						
Impact Reference	Test Category	Impactor Type	Impact Energy (Nm)	Drop Height (mm)	Observations	Result
1	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
2	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
3	Cat B	Hard Body (H2)	10	898	Cracked mortar + Hairline crack	Neg Risk
4	Cat B	Hard Body (H2)	10	898	Cracked mortar + Hairline crack	Neg Risk
5	Cat B	Hard Body (H2)	10	898	Cracked mortar	Neg Risk
6	Cat B	Hard Body (H2)	10	898	hairline crack in corner	Neg Risk
7	Cat B	Hard Body (H2)	10	898	Cracked mortar + hairline crack across slip - 0.68g	Neg Risk
8	Cat B	Hard Body (H2)	10	898	Cracked mortar + hairline crack across slip	Neg Risk
9	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
10	Cat B	Hard Body (H2)	10	898	Damage to adjacent bricks worsened	Neg Risk
11	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
12	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
13	Cat B	Hard Body (H2)	10	898	Cracks in slip and pieces fell away - 4.91g	Low Risk
14	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
15	Cat B	Hard Body (H2)	10	898	Piece fell away from impact ref 6 + slight crack in slip - 1.9g	Low Risk
16	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
17	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
18	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
19	Cat B	Hard Body (H2)	10	898	Chip from slip and some mortar fell away - 1.1g	Neg Risk

20	Cat B	Hard Body (H2)	10	898	Mortar cracked and slight crack in adjacent brick	Neg Risk
21	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
22	Cat B	Hard Body (H2)	10	898	Piece fell away from impact ref 18 - 22.56g	Low Risk
23	Cat B	Hard Body (H2)	10	898	Mortar cracked and slip cracked	Neg Risk
24	Cat B	Hard Body (H2)	10	898	Corner cracked and fell away - 70.43g	Moderate Risk

Zone 2 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
25	Cat B	Hard Body (H2)	10	898	Chip from mitred corner - 8.32g	Low Risk
26	Cat B	Hard Body (H2)	10	898	Chip from mitred corner - 9.48g	Low Risk
27	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent	Low Risk
28	Cat B	Hard Body (H2)	10	898	Broke corner away - 52.81 g	Moderate Risk
29	Cat B	Hard Body (H2)	10	898	Chipped corner - 3.87g	Low Risk
30	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent -0.23g	Low Risk
31	Cat B	Hard Body (H2)	10	898	As above - 2.36g	Low Risk
32	Cat B	Hard Body (H2)	10	898	Cracked slip and adjacent on return, safely retained	Low Risk
33	Cat B	Hard Body (H2)	10	898	Cracked edge of slip, safely retained	Low Risk

Zone 3 Impact Area						
Impact Reference	**Test Category**	**Impactor Type**	**Impact Energy (Nm)**	**Drop Height (mm)**	**Observations**	**Result**
34	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
35	Cat B	Hard Body (H2)	10	898	mortar fell away - 3.05 g	Low Risk
36	Cat B	Hard Body (H2)	10	898	Crack on impact point	Neg Risk
37	Cat B	Hard Body (H2)	10	898	Small pieces cracked off - 1.94g	Low Risk
38	Cat B	Hard Body (H2)	10	898	Crack on impact point - 0.71 g	Low Risk
39	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk

40	Cat B	Hard Body (H2)	10	898	Cracked in 2 locations nothing fell off	Neg Risk
41	Cat B	Hard Body (H2)	10	898	Crack on impact point	Neg Risk
42	Cat B	Hard Body (H2)	10	898	Crack on impact point	Neg Risk
43	Cat B	Hard Body (H2)	10	898	Piece fell from surface - 0.55 g	Neg Risk
44	Cat B	Hard Body (H2)	10	898	Cracked into pieces one fell off - 2.01 g	Low Risk
45	Cat B	Hard Body (H2)	10	898	Cracked close to impact point across slip	Low Risk
46	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
47	Cat B	Hard Body (H2)	10	898	Retained -cracked into two pieces	Neg Risk
48	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
49	Cat B	Hard Body (H2)	10	898	Cracked across slip broke into pieces at impact point, weighing - 1.47 g	Low Risk
50	Cat B	Hard Body (H2)	10	898	Cracked across slip and pieces fell away. weighing - 1.49 g	Low Risk
51	Cat B	Hard Body (H2)	10	898	Cracked near impact point, weighing - 0.12 g	Low Risk
52	Cat B	Hard Body (H2)	10	898	cracked both sides of slip	Neg Risk
53	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk
54	Cat B	Hard Body (H2)	10	898	Cracked across slip - mortar fell away, weighing 1.24g	Low Risk
55	Cat B	Hard Body (H2)	10	898	Cracked into pieces and some fell away, weighing 2.25g	Low Risk
56	Cat B	Hard Body (H2)	10	898	No damage	Neg Risk

Note: The hard body impacting to zone 4 was not required due to the brick slip not being mitred which was replicated across the top section of the sample.

Photograph No. 11

Showing damage caused following Hard Body (H2) impact of 10 Nm.

During the above test, the brick cracked, and pieces fell off weighing 70.43g, resulting in a Moderate Risk

Photograph No. 12

Showing damage caused following Hard Body (H2) impact of 10 Nm.

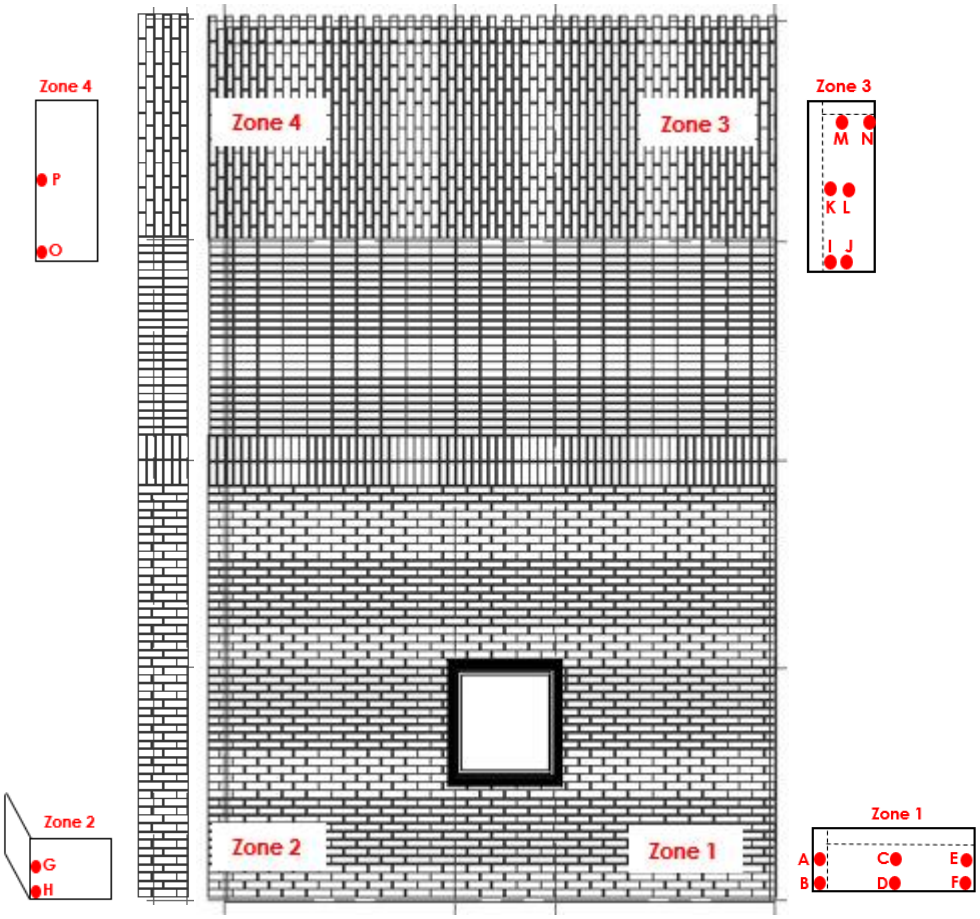
During the above test, the brick cracked, and pieces fell off weighing 4.91g, resulting in a Low Risk

Photograph No. 13

Showing damage caused following Hard Body (H2) impact of 10 Nm.

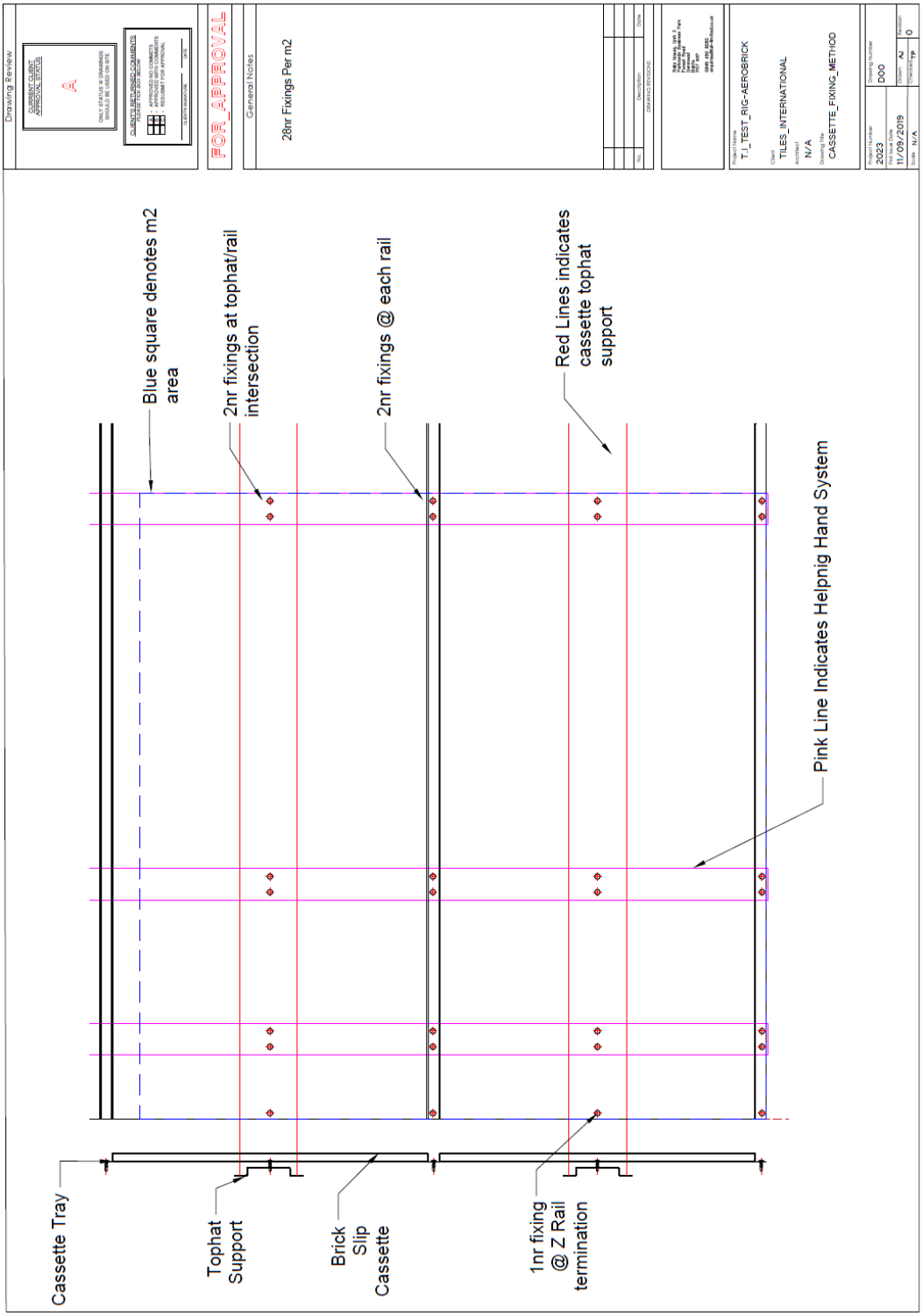
Following the above test, on a different area, a piece fell off impact area reference 18 weighing 22.56g, resulting in a Low Risk

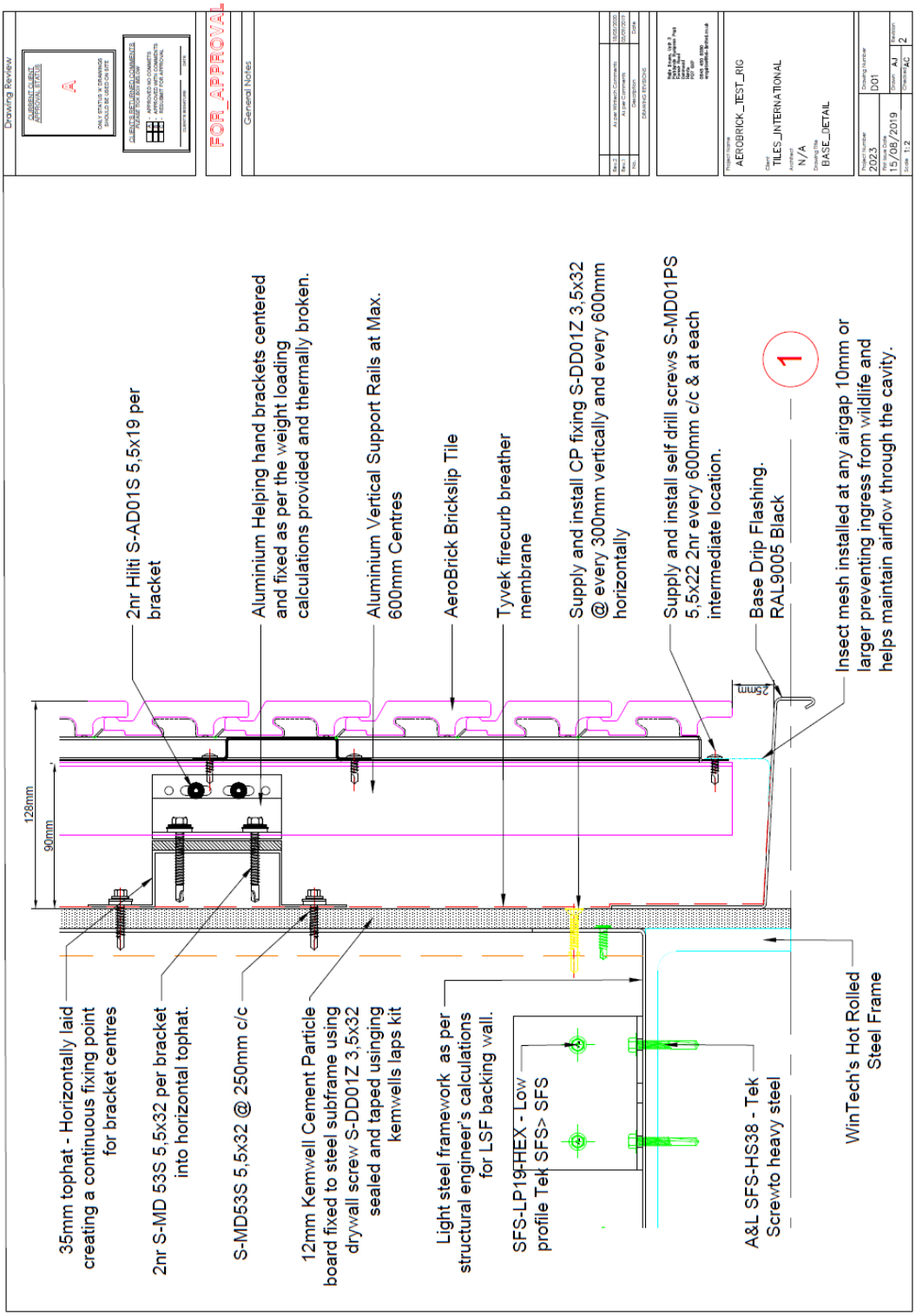
6.5.5 Impact Locations

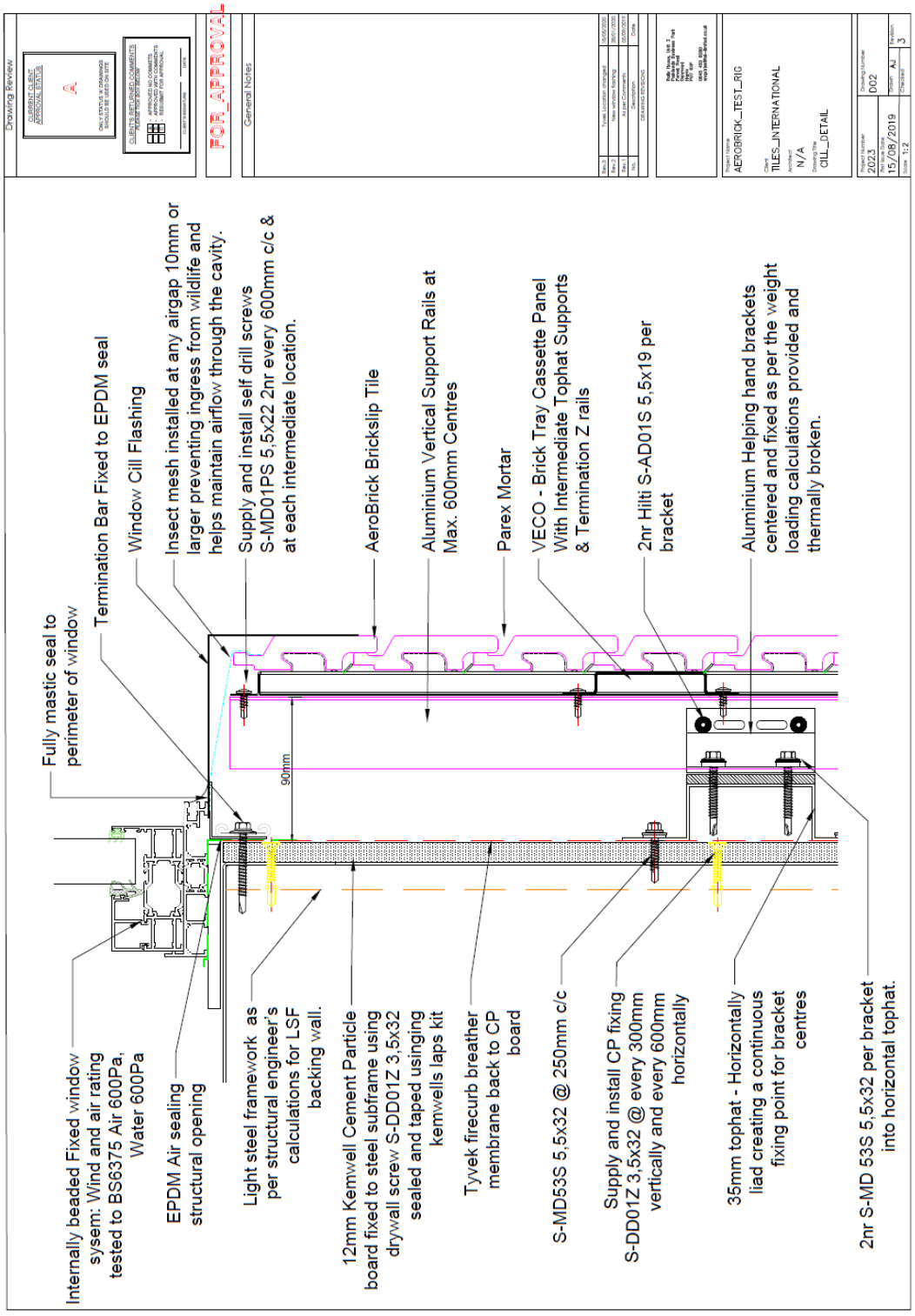


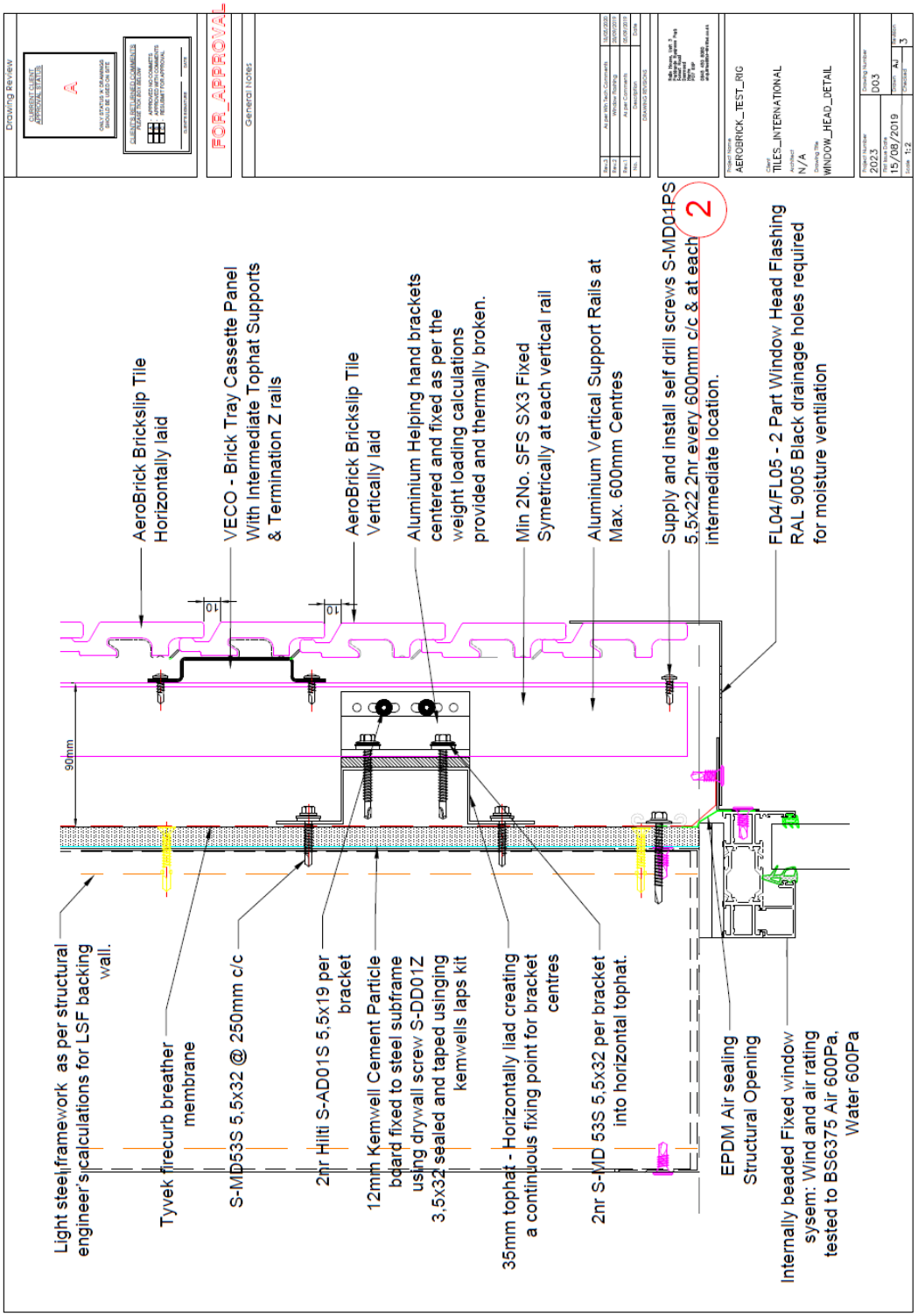
Impact Location	Description
A	Mortar centre edge
B	Mortar corner
C	Centre
D	Bottom edge middle
E	Non mortar edge centre
F	Non mortar edge corner
G	Mitre edge centre
H	Mitre edge bottom
I	Mortar edge bottom corner
J	Centre bottom
K	Mortar edge centre
L	Centre
M	Top edge centre
N	Non mortar top corner
O	Corner detail bottom corner
P	Corner detail edge centre

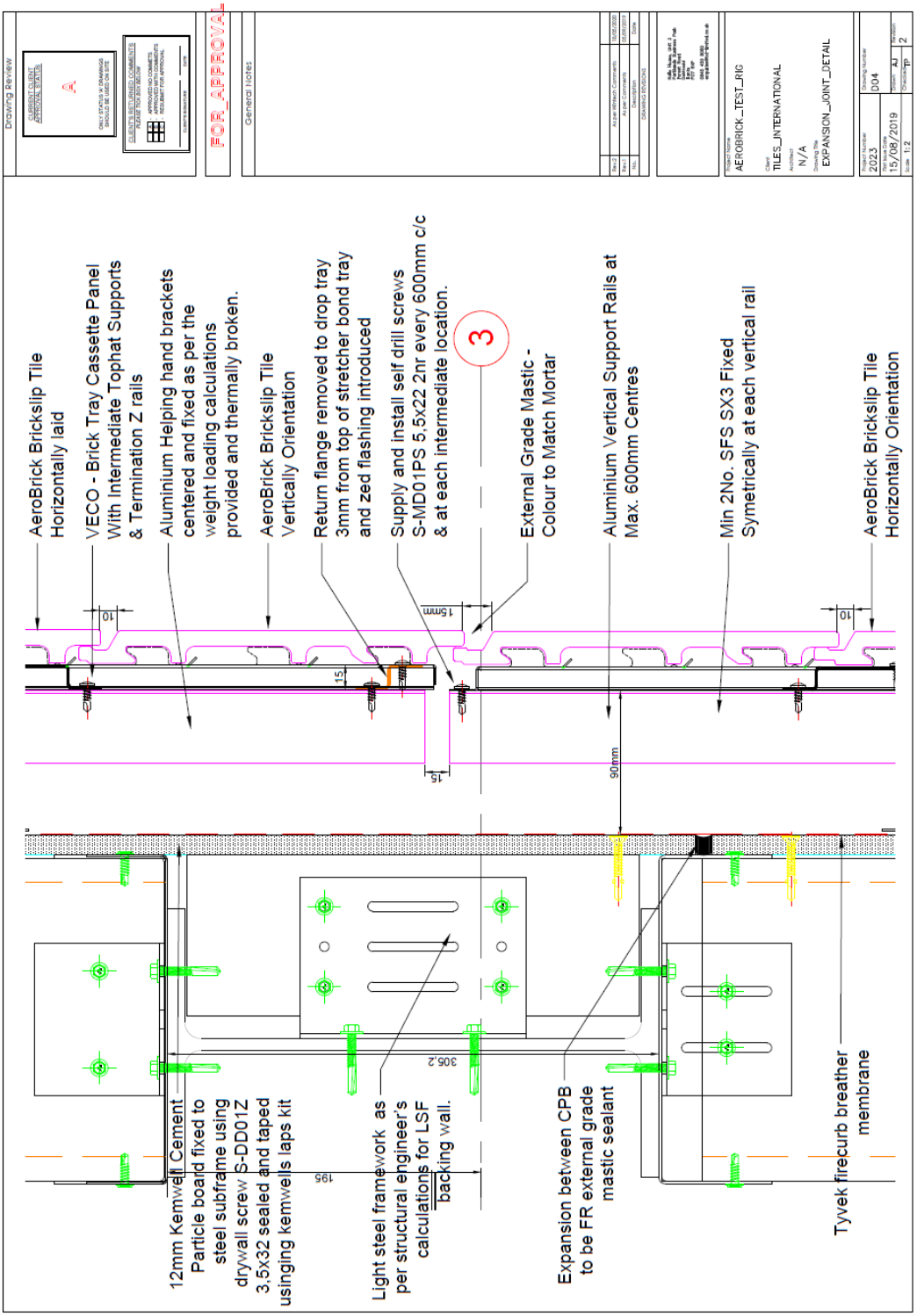
7. System Drawings

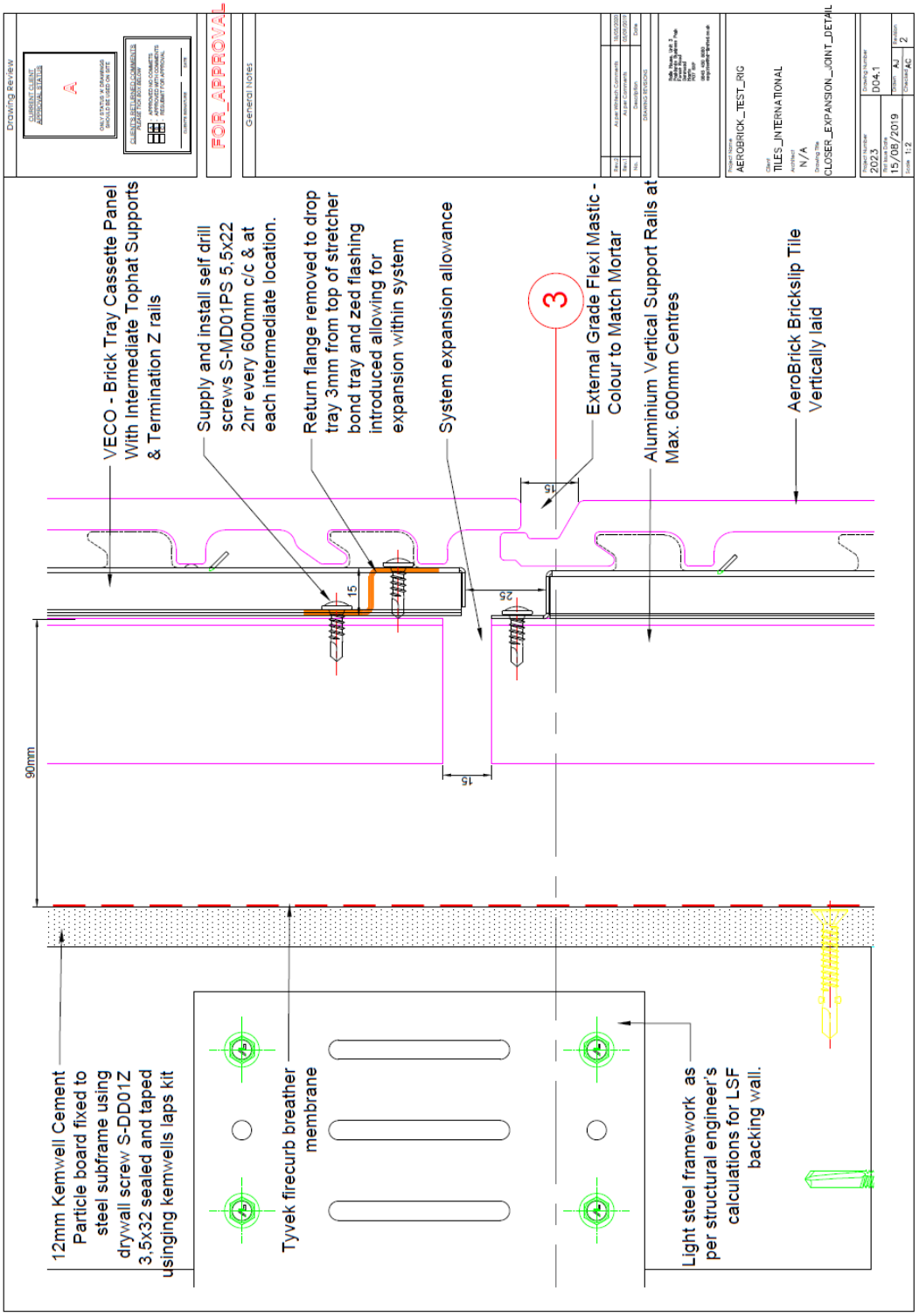


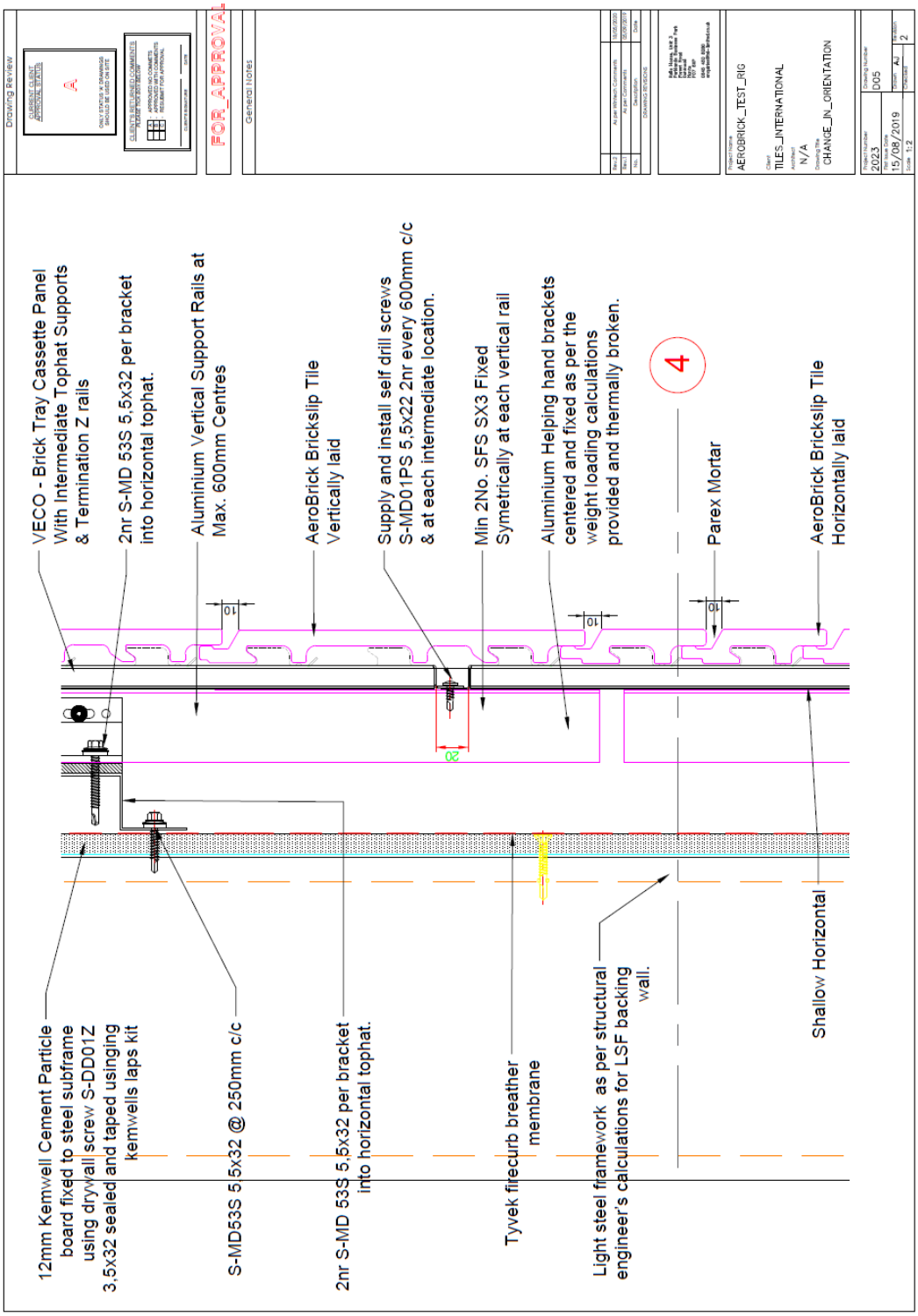

Drawing Review
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
BASE_DETAIL
2023
15/08/2019
D01
1:2
128mm
90mm
25mm
1
2nr Hilti S-AD01S 5,5x19 per bracket
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Aluminium Vertical Support Rails at Max. 600mm Centres
AeroBrick Brickslip Tile
Tyvek firecurb breather membrane
Supply and install CP fixing S-DD01Z 3,5x32 @ every 300mm vertically and every 600mm horizontally
Supply and install self drill screws S-MD01PS 5,5x22 2nr every 600mm c/c & at each intermediate location.
Base Drip Flashing. RAL9005 Black
Insect mesh installed at any airgap 10mm or larger preventing ingress from wildlife and helps maintain airflow through the cavity.
35mm tophat - Horizontally laid creating a continuous fixing point for bracket centres
2nr S-MD 53S 5,5x32 per bracket into horizontal tophat.
S-MD53S 5,5x32 @ 250mm c/c
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3,5x32 sealed and taped usinging kemwells laps kit
Light steel framework as per structural engineer's calculations for LSF backing wall.
SFS-LP19-HEX - Low profile Tek SFS> SFS
A&L SFS-HS38 - Tek Screwto heavy steel
WinTech's Hot Rolled Steel Frame

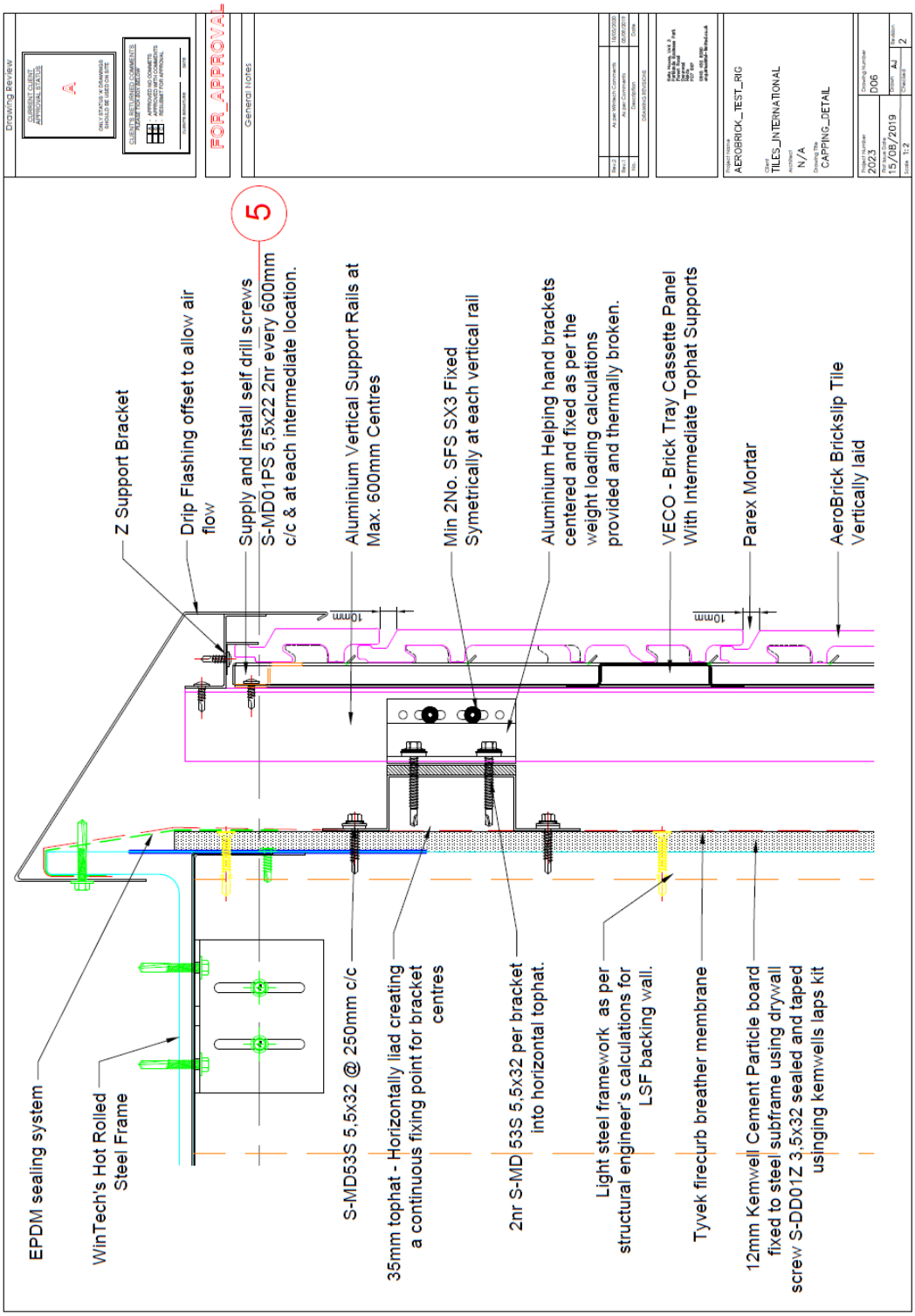

Drawing Review
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
CILL_DETAIL
15/08/2019
Fully mastic seal to perimeter of window
Termination Bar Fixed to EPDM seal
Window Cill Flashing
Insect mesh installed at any airgap 10mm or larger preventing ingress from wildlife and helps maintain airflow through the cavity.
Supply and install self drill screws S-MD01PS 5,5x22 2nr every 600mm c/c & at each intermediate location.
AeroBrick Brickslip Tile
Aluminium Vertical Support Rails at Max. 600mm Centres
Parex Mortar
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports & Termination Z rails
2nr Hilti S-AD01S 5,5x19 per bracket
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
90mm
Internally beaded Fixed window sysem: Wind and air rating tested to BS6375 Air 600Pa, Water 600Pa
EPDM Air sealing structural opening
Light steel framework as per structural engineer's calculations for LSF backing wall.
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3,5x32 sealed and taped usinging kemwells laps kit
Tyvek firecurb breather membrane back to CP board
S-MD53S 5,5x32 @ 250mm c/c
Supply and install CP fixing S-DD01Z 3,5x32 @ every 300mm vertically and every 600mm horizontally
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr S-MD 53S 5,5x32 per bracket into horizontal tophat.

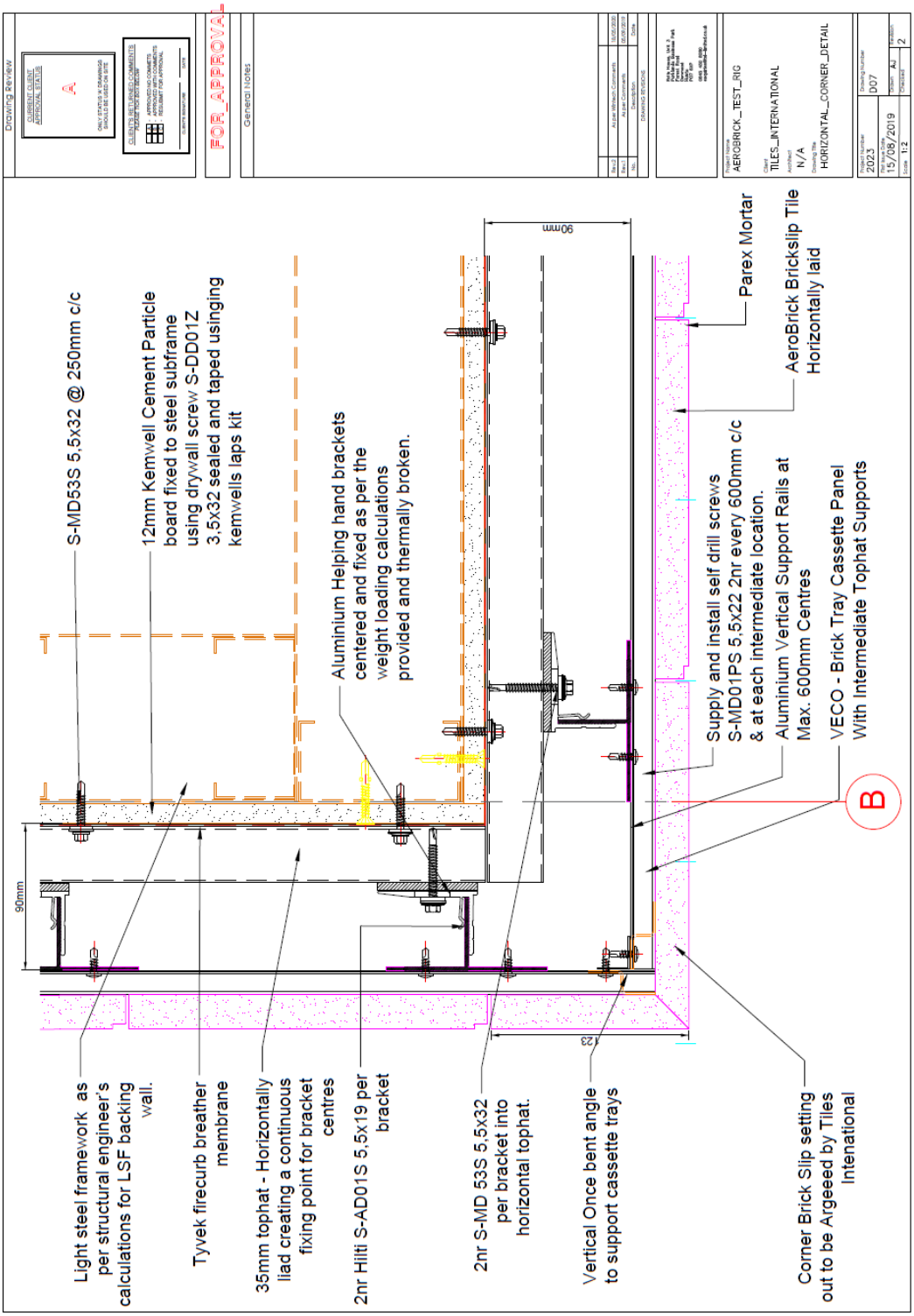

Drawing Review
FOR_APPROVAL
General Notes
AeroBrick Brickslip Tile
Horizontally laid
VECO - Brick Tray Cassette Panel
With Intermediate Tophat Supports
& Termination Z rails
AeroBrick Brickslip Tile
Vertically laid
Aluminium Helping hand brackets
centered and fixed as per the
weight loading calculations
provided and thermally broken.
Min 2No. SFS SX3 Fixed
Symetrically at each vertical rail
Aluminium Vertical Support Rails at
Max. 600mm Centres
Supply and install self drill screws S-MD01PS
5.5x22 2nr every 600mm c/c & at each
intermediate location.
2
FL04/FL05 - 2 Part Window Head Flashing
RAL 9005 Black drainage holes required
for moisture ventilation
90mm
10
10
Light steel framework as per structural
engineer's calculations for LSF backing
wall.
Tyvek firecurb breather
membrane
S-MD53S 5.5x32 @ 250mm c/c
2nr Hilti S-AD01S 5.5x19 per
bracket
12mm Kemwell Cement Particle
board fixed to steel subframe
using drywall screw S-DD01Z
3.5x32 sealed and taped usinging
Kemwells laps kit
35mm tophat - Horizontally liad creating
a continuous fixing point for bracket
centres
2nr S-MD 53S 5.5x32 per bracket
into horizontal tophat.
EPDM Air sealing
Structural Opening
Internally beaded Fixed window
sysem: Wind and air rating
tested to BS6375 Air 600Pa,
Water 600Pa
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
WINDOW_HEAD_DETAIL
2023
15/08/2019
1:2
003
3

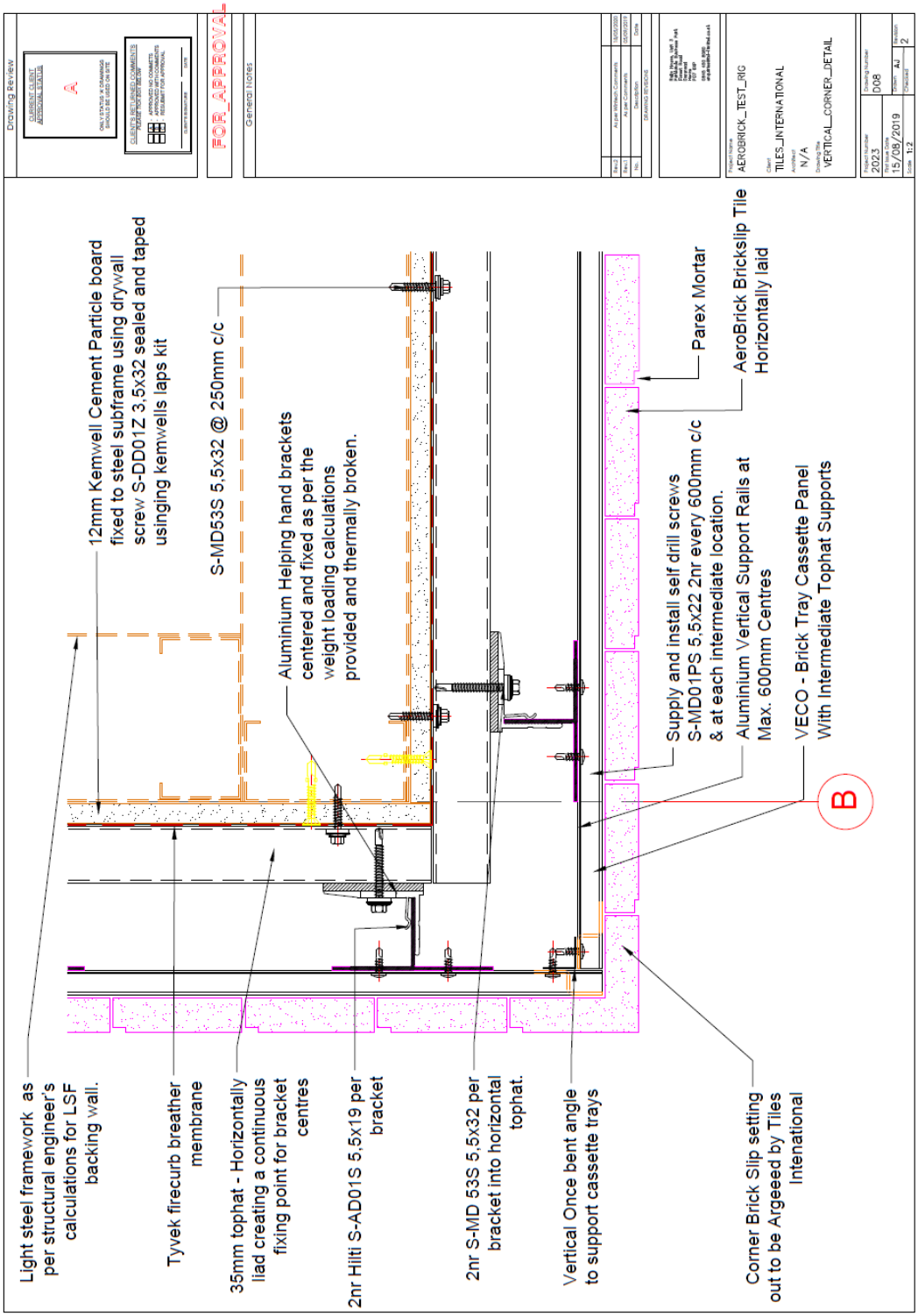

Drawing Review
FOR APPROVAL
General Notes
AeroBrick Brickslip Tile Horizontally laid
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports & Termination Z rails
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
AeroBrick Brickslip Tile Vertically Orientation
Return flange removed to drop tray 3mm from top of stretcher bond tray and zed flashing introduced
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
3
External Grade Mastic - Colour to Match Mortar
Aluminium Vertical Support Rails at Max. 600mm Centres
Min 2No. SFS SX3 Fixed Symetrically at each vertical rail
AeroBrick Brickslip Tile Horizontally Orientation
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
EXPANSION_JOINT_DETAIL
2023
D04
15/08/2019
1:2
15mm
90mm
305.2
195
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
Light steel framework as per structural engineer's calculations for LSF backing wall.
Expansion between CPB to be FR external grade mastic sealant
Tyvek firecurb breather membrane

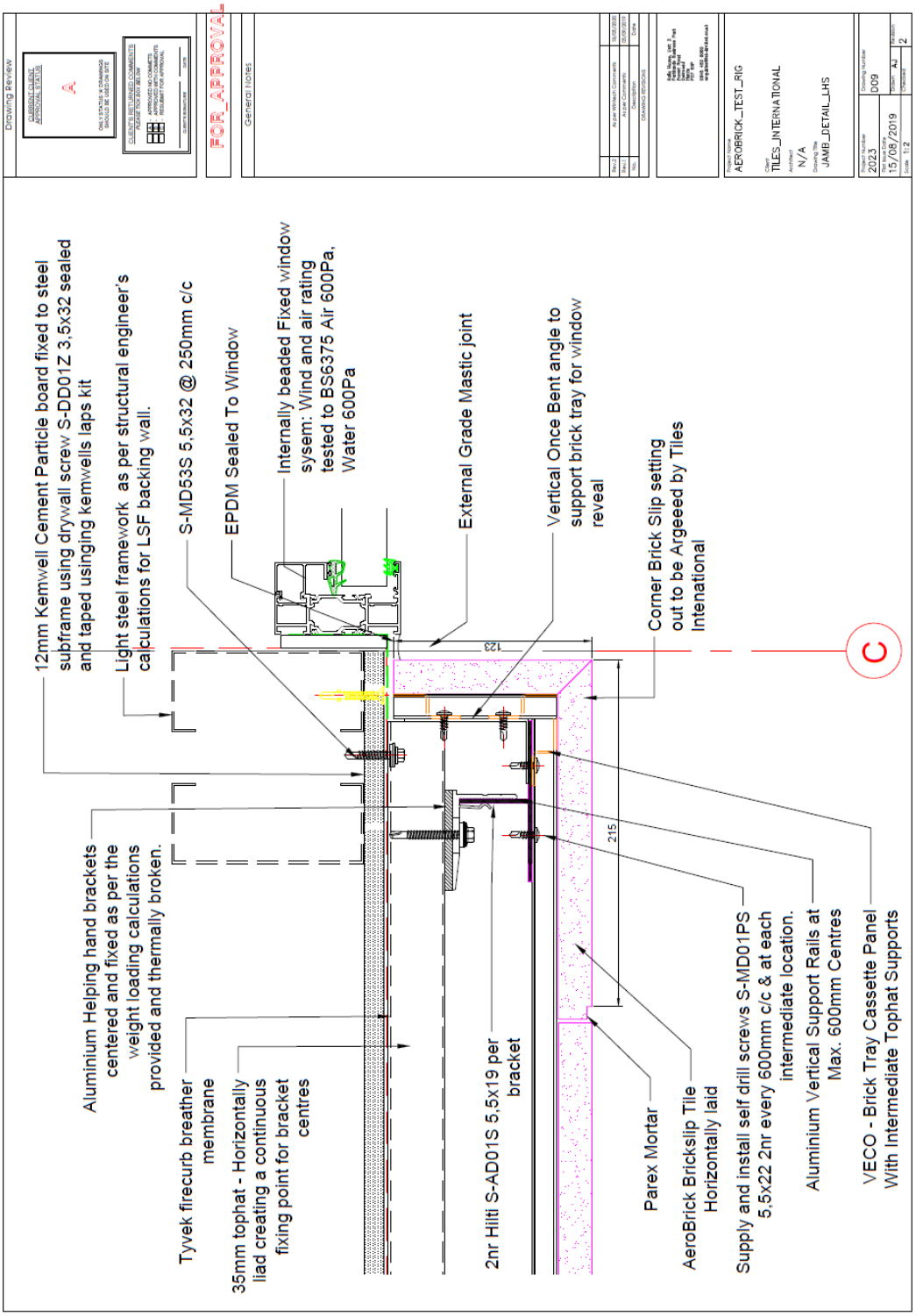

Drawing Review
A
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
CLOSER_EXPANSION_JOINT_DETAIL
2023
D04:1
15/08/2019
1:2
AJ
AC
2
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports & Termination Z rails
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
Return flange removed to drop tray 3mm from top of stretcher bond tray and zed flashing introduced allowing for expansion within system
System expansion allowance
3
External Grade Flexi Mastic - Colour to Match Mortar
Aluminium Vertical Support Rails at Max. 600mm Centres
AeroBrick Brickslip Tile Vertically laid
90mm
15
25
15
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
Tyvek firecurb breather membrane
Light steel framework as per structural engineer's calculations for LSF backing wall.

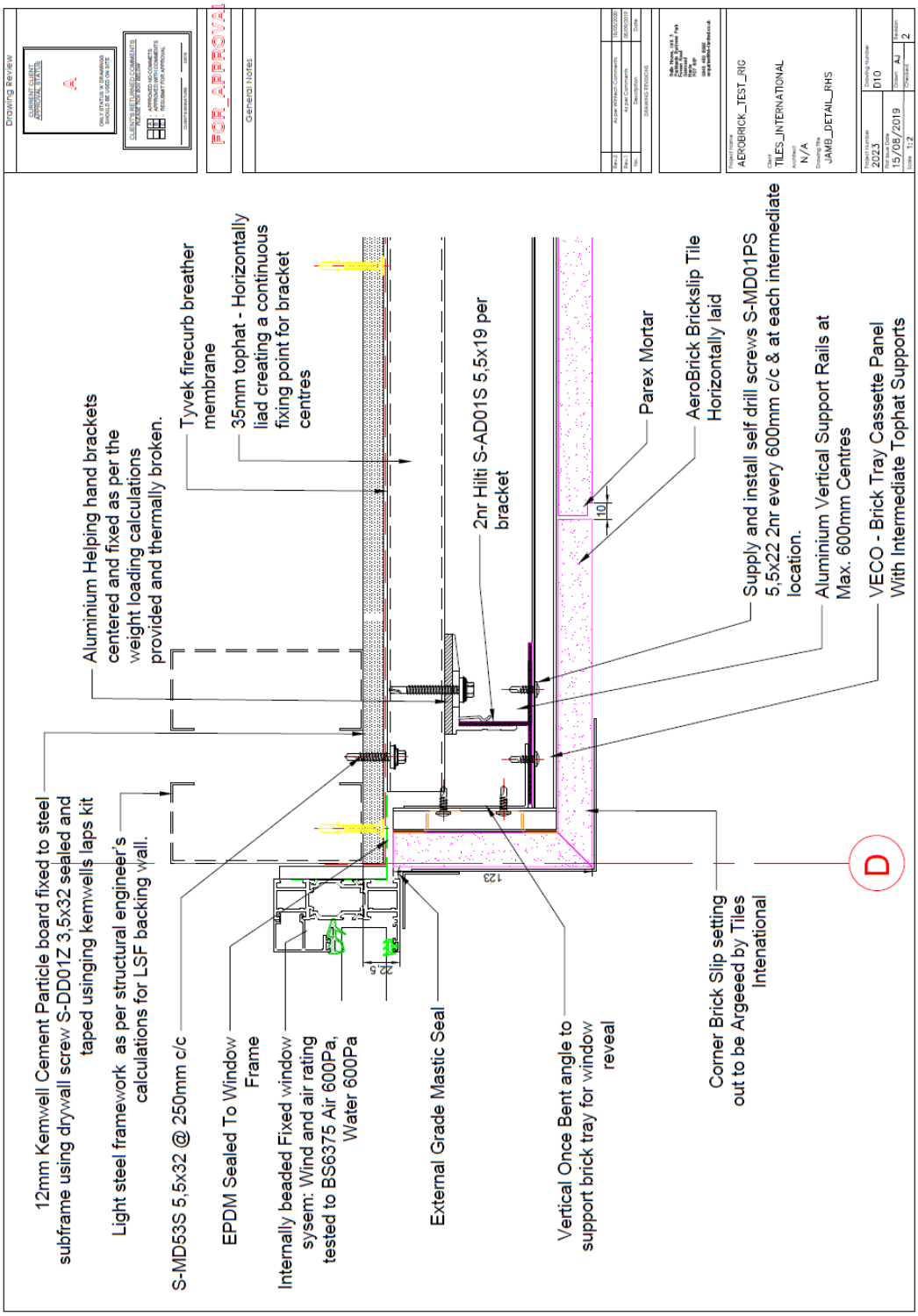

Drawing Review
A
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
CHANGE_IN_ORIENTATION
2023
D05
15/08/2019
Scale 1:2
VECO - Brick Tray Cassette Panel
With Intermediate Tophat Supports
& Termination Z rails
2nr S-MD 53S 5.5x32 per bracket
into horizontal tophat.
Aluminium Vertical Support Rails at
Max. 600mm Centres
AeroBrick Brickslip Tile
Vertically laid
Supply and install self drill screws
S-MD01PS 5.5x22 2nr every 600mm c/c
& at each intermediate location.
Min 2No. SFS SX3 Fixed
Symetrically at each vertical rail
Aluminium Helping hand brackets
centered and fixed as per the
weight loading calculations
provided and thermally broken.
4
Parex Mortar
AeroBrick Brickslip Tile
Horizontally laid
10
10
10
20
12mm Kemwell Cement Particle
board fixed to steel subframe
using drywall screw S-DD01Z
3.5x32 sealed and taped usinging
kemwells laps kit
S-MD53S 5.5x32 @ 250mm c/c
2nr S-MD 53S 5.5x32 per bracket
into horizontal tophat.
Tyvek firecurb breather
membrane
Light steel framework as per structural
engineer's calculations for LSF backing
wall.
Shallow Horizontal

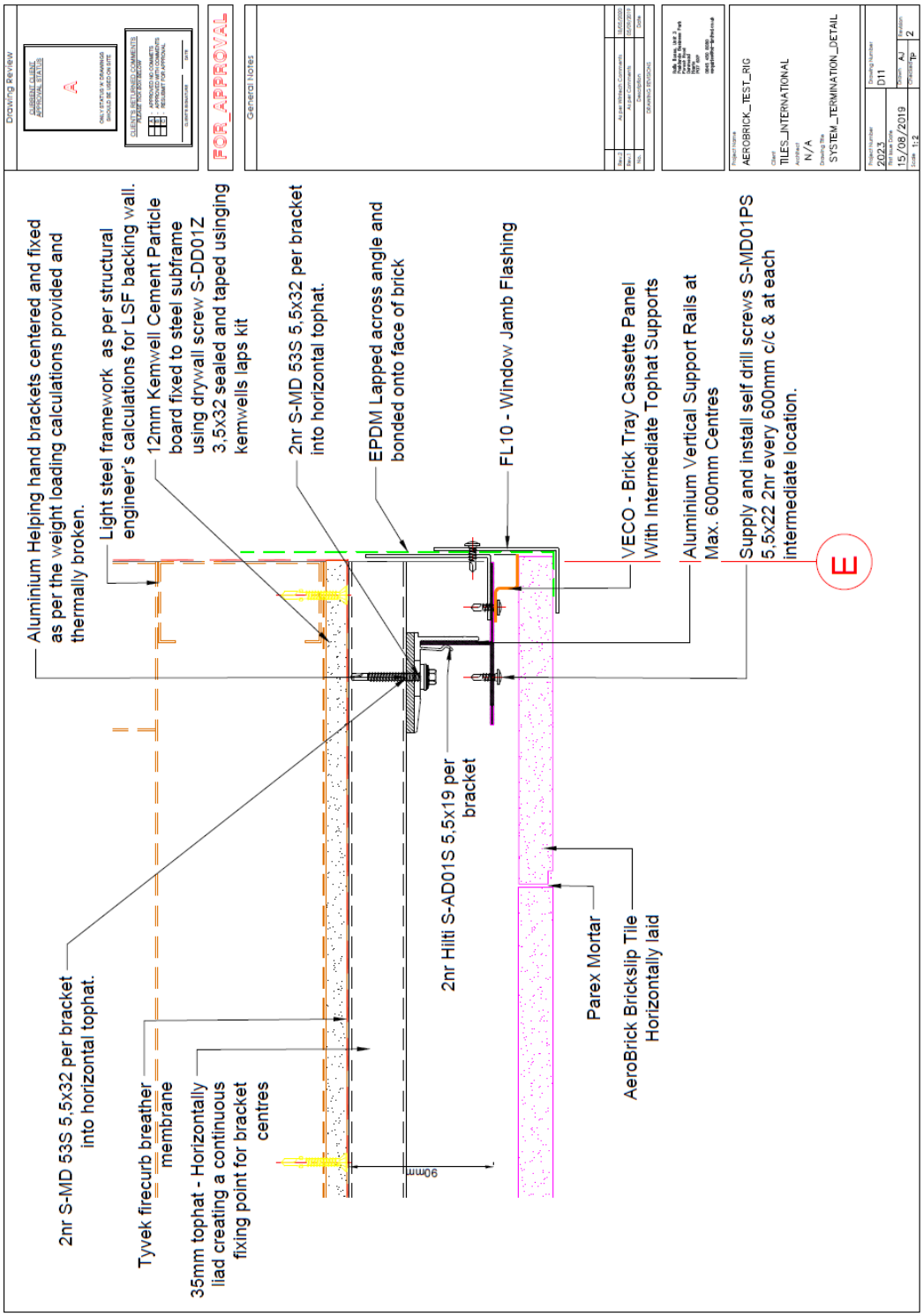

Drawing Review
FOR_APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
CAPPING_DETAIL
2023
D06
15/08/2019
1:2
5
Z Support Bracket
Drip Flashing offset to allow air flow
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
Aluminium Vertical Support Rails at Max. 600mm Centres
Min 2No. SFS SX3 Fixed Symetrically at each vertical rail
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
Parex Mortar
AeroBrick Brickslip Tile Vertically laid
10mm
10mm
EPDM sealing system
WinTech's Hot Rolled Steel Frame
S-MD53S 5.5x32 @ 250mm c/c
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr S-MD 53S 5.5x32 per bracket into horizontal tophat.
Light steel framework as per structural engineer's calculations for LSF backing wall.
Tyvek firecurb breather membrane
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit

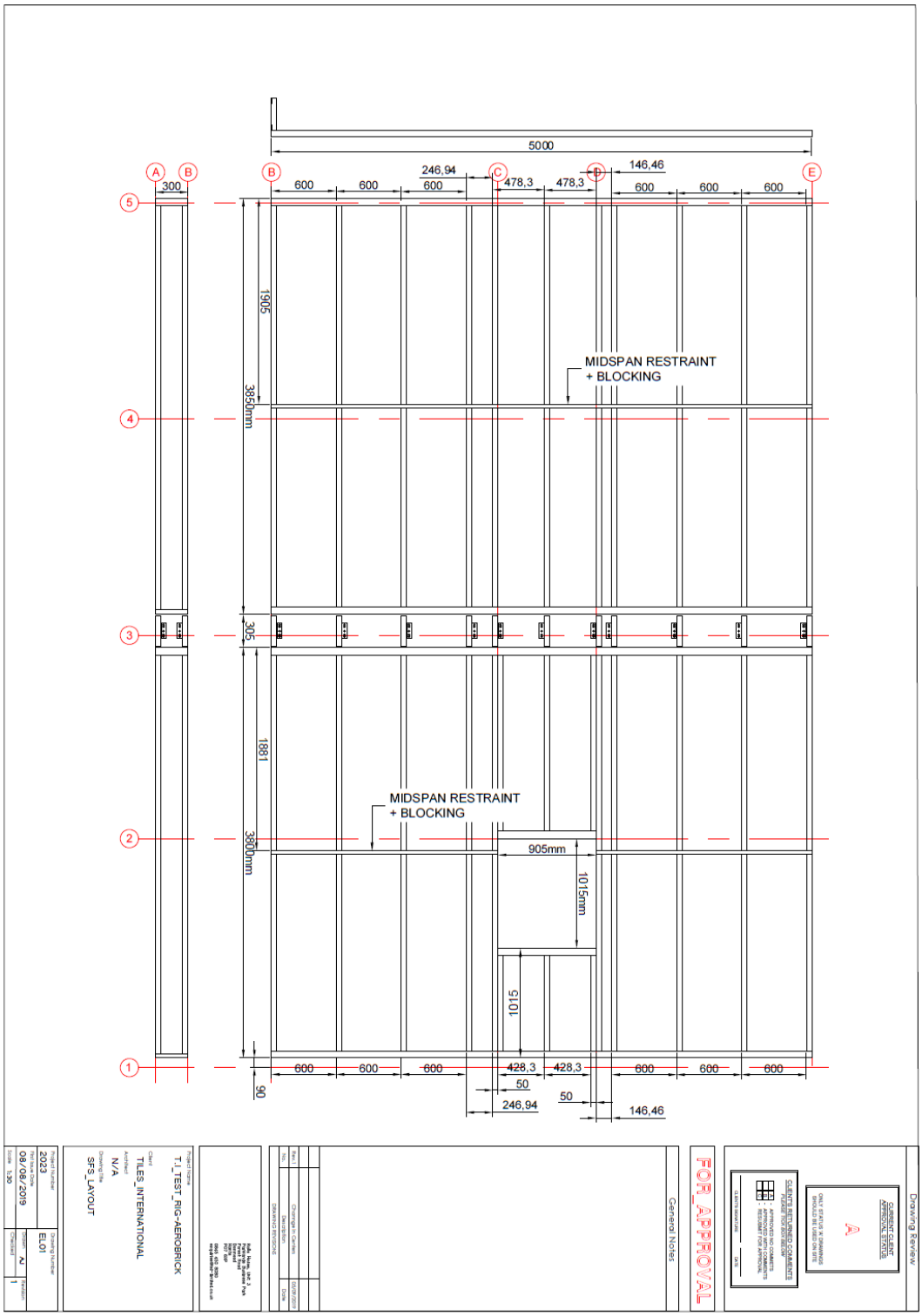

Drawing Review
A
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
HORIZONTAL_CORNER_DETAIL
2023
D07
15/08/2019
1:2
S-MD53S 5.5x32 @ 250mm c/c
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Parex Mortar
AeroBrick Brickslip Tile Horizontally laid
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
Aluminium Vertical Support Rails at Max. 600mm Centres
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
90mm
90mm
123
B
Light steel framework as per structural engineer's calculations for LSF backing wall.
Tyvek firecurb breather membrane
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr Hilti S-AD01S 5.5x19 per bracket
2nr S-MD 53S 5.5x32 per bracket into horizontal tophat.
Vertical Once bent angle to support cassette trays
Corner Brick Slip setting out to be Argeeed by Tiles Intenational

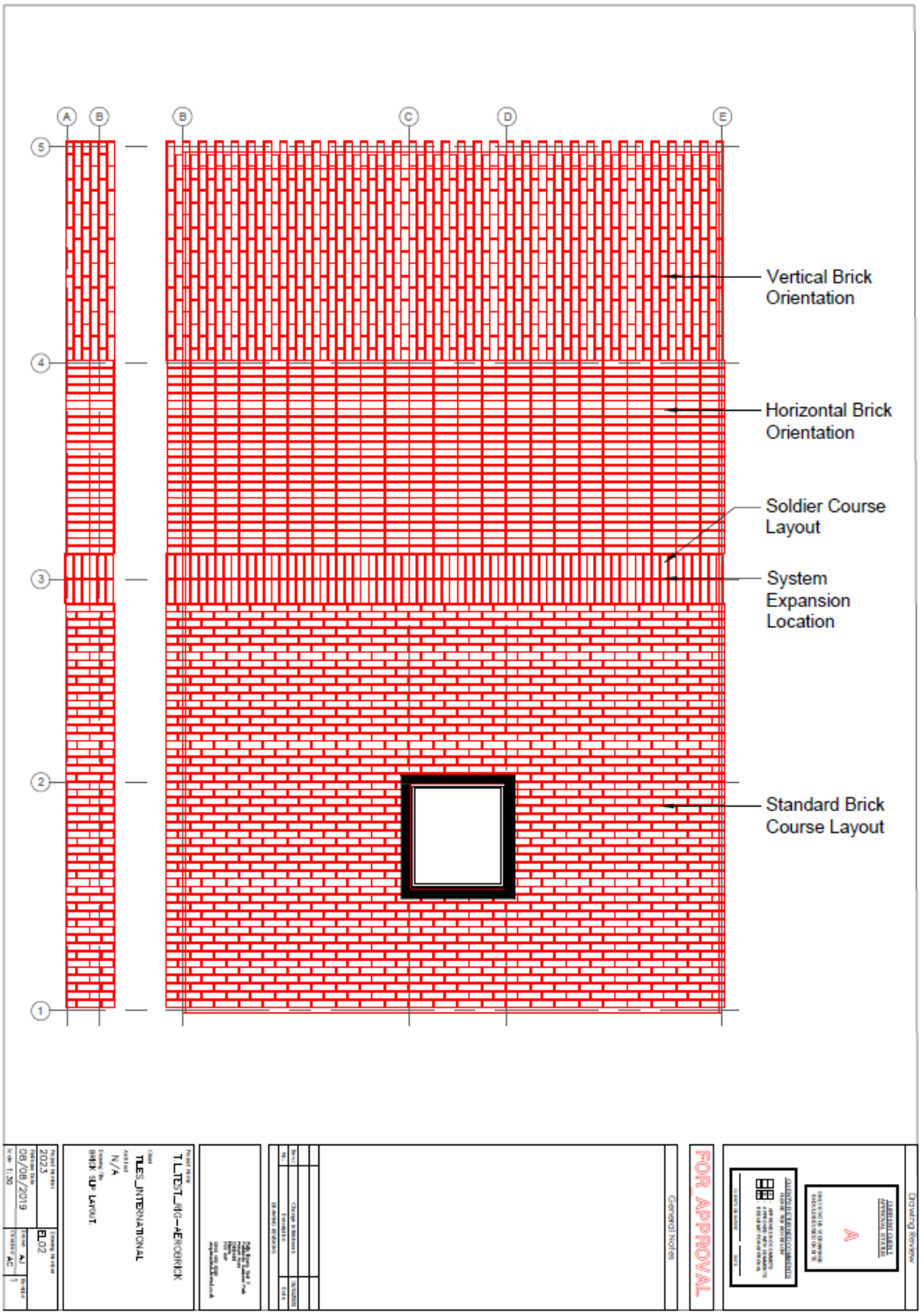

Drawing Review
A
FOR_APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
VERTICAL_CORNER_DETAIL
2023
08
15/08/2019
1:2
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3,5x32 sealed and taped usinging kemwells laps kit
S-MD53S 5,5x32 @ 250mm c/c
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Parex Mortar
AeroBrick Brickslip Tile Horizontally laid
Supply and install self drill screws S-MD01PS 5,5x22 2nr every 600mm c/c & at each intermediate location.
Aluminium Vertical Support Rails at Max. 600mm Centres
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
B
Light steel framework as per structural engineer's calculations for LSF backing wall.
Tyvek firecurb breather membrane
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr Hilti S-AD01S 5,5x19 per bracket
2nr S-MD 53S 5,5x32 per bracket into horizontal tophat.
Vertical Once bent angle to support cassette trays
Corner Brick Slip setting out to be Argeeed by Tiles Intenational

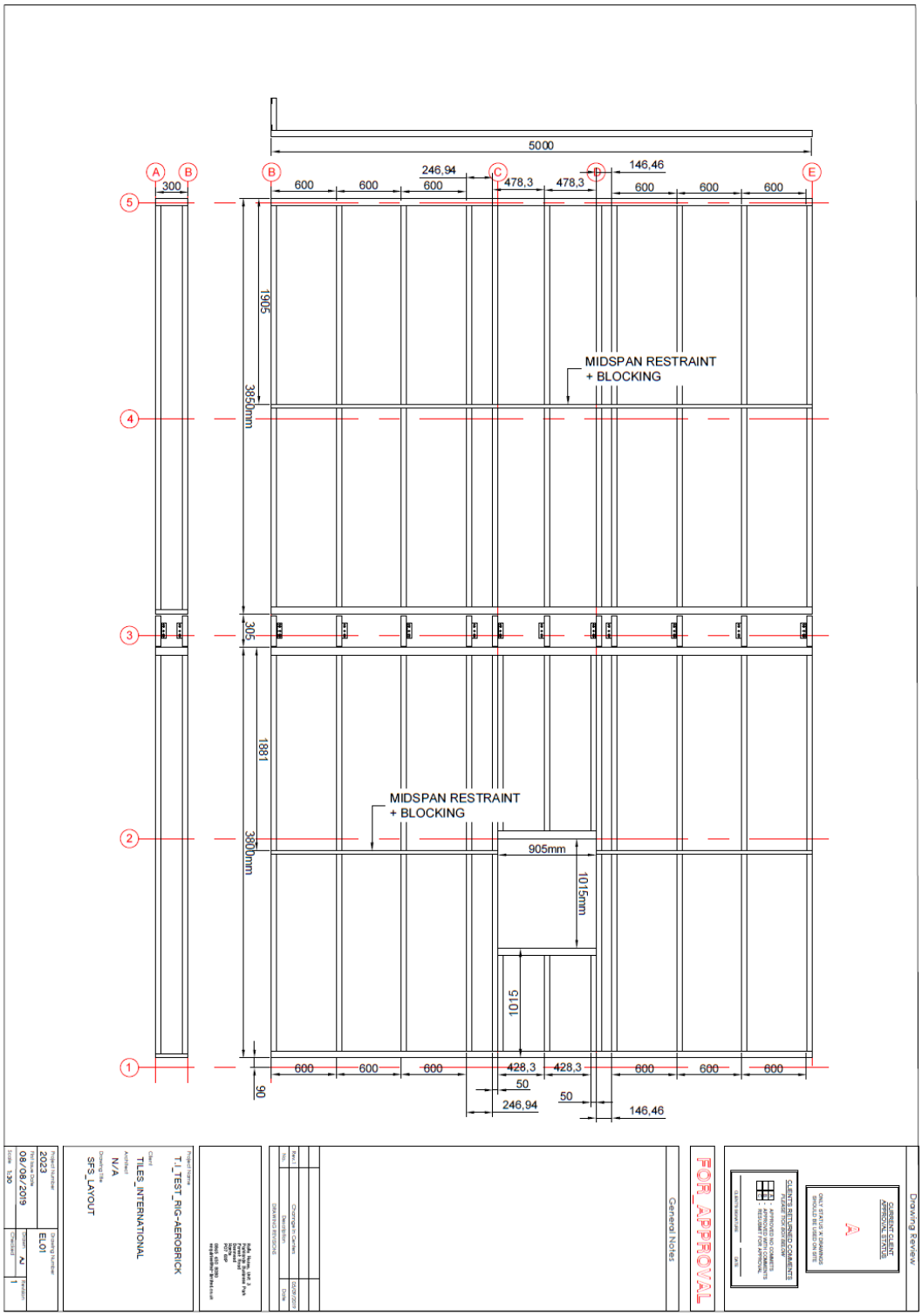

Drawing Review
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
JAMB_DETAIL_LHS
2023
D09
15/08/2019
1:2
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
Light steel framework as per structural engineer's calculations for LSF backing wall.
S-MD53S 5.5x32 @ 250mm c/c
EPDM Sealed To Window
Internally beaded Fixed window sysem: Wind and air rating tested to BS6375 Air 600Pa, Water 600Pa
External Grade Mastic joint
Vertical Once Bent angle to support brick tray for window reveal
Corner Brick Slip setting out to be Argeeed by Tiles Intenational
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Tyvek firecurb breather membrane
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr Hilti S-AD01S 5.5x19 per bracket
Parex Mortar
AeroBrick Brickslip Tile Horizontally laid
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
Aluminium Vertical Support Rails at Max. 600mm Centres
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
123
215
C

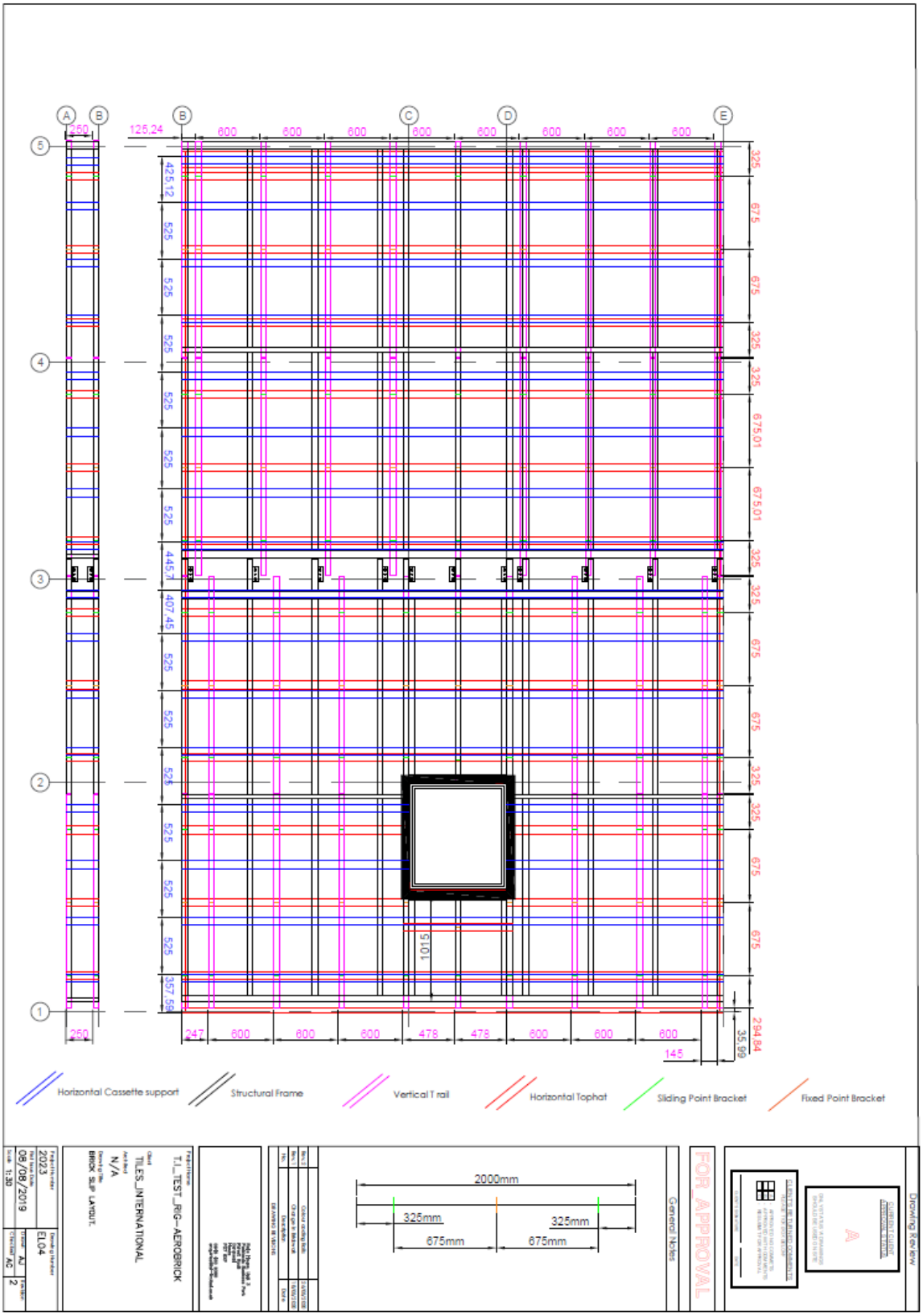

Drawing Review
FOR APPROVAL
General Notes
Drawing Name
AEROBRICK_TEST_RIG
Client
TILES_INTERNATIONAL
Job No.
N/A
Drawing Number
JAMB_DETAIL_RHS
Project Number
2023
Drawing Number
D10
Issue Date
15/08/2019
Scale
1:2
Drawn
AJ
Checked
Revision
2
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
Light steel framework as per structural engineer's calculations for LSF backing wall.
S-MD53S 5.5x32 @ 250mm c/c
EPDM Sealed To Window Frame
Internally beaded Fixed window sysem: Wind and air rating tested to BS6375 Air 600Pa, Water 600Pa
External Grade Mastic Seal
Vertical Once Bent angle to support brick tray for window reveal
Corner Brick Slip setting out to be Argeeed by Tiles Intenational
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Tyvek firecurb breather membrane
35mm tophat - Horizontally liad creating a continuous fixing point for bracket centres
2nr Hilti S-AD01S 5.5x19 per bracket
Parex Mortar
AeroBrick Brickslip Tile Horizontally laid
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
Aluminium Vertical Support Rails at Max. 600mm Centres
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
D
123
22.5
10


Drawing Review
A
FOR APPROVAL
General Notes
AEROBRICK_TEST_RIG
TILES_INTERNATIONAL
N/A
SYSTEM_TERMINATION_DETAIL
2023
D11
15/08/2019
1:2
2
Aluminium Helping hand brackets centered and fixed as per the weight loading calculations provided and thermally broken.
Light steel framework as per structural engineer's calculations for LSF backing wall.
12mm Kemwell Cement Particle board fixed to steel subframe using drywall screw S-DD01Z 3.5x32 sealed and taped usinging kemwells laps kit
2nr S-MD 53S 5.5x32 per bracket into horizontal tophat.
EPDM Lapped across angle and bonded onto face of brick
FL10 - Window Jamb Flashing
VECO - Brick Tray Cassette Panel With Intermediate Tophat Supports
Aluminium Vertical Support Rails at Max. 600mm Centres
Supply and install self drill screws S-MD01PS 5.5x22 2nr every 600mm c/c & at each intermediate location.
E
2nr S-MD 53S 5.5x32 per bracket into horizontal tophat.
Tyvek firecurb breather membrane
35mm tophat - Horizontally laid creating a continuous fixing point for bracket centres
90mm
2nr Hilti S-AD01S 5.5x19 per bracket
Parex Mortar
AeroBrick Brickslip Tile Horizontally laid


5000
300
600
600
246,94
600
478,3
478,3
146,46
600
600
600
1905
385mm
MIDSPAN RESTRAINT
+ BLOCKING
305
1881
MIDSPAN RESTRAINT
+ BLOCKING
380mm
905mm
1015mm
1015
428,3
428,3
50
50
246,94
146,46
90
A
B
C
D
E
1
2
3
4
5
TI_TEST_RIG-AEROBRICK
TILES_INTERNATIONAL
N/A
SFS_LAYOUT
08/08/2019
2023
EL01
AJ
1
General Notes
FOR_APPROVAL
Drawing Review


A
B
B
C
D
E
5
4
3
2
1
Vertical Brick Orientation
Horizontal Brick Orientation
Soldier Course Layout
System Expansion Location
Standard Brick Course Layout
FOR APPROVAL


5000
300
600
600
600
246,94
478,3
478,3
146,46
600
600
600
1905
3850mm
MIDSPAN RESTRAINT
+ BLOCKING
305
1881
MIDSPAN RESTRAINT
+ BLOCKING
3800mm
905mm
1015mm
1015
600
600
600
428,3
428,3
600
600
600
50
50
246,94
146,46
90
A
B
B
C
D
E
1
2
3
4
5
T.I_TEST_RIG-AEROBRICK
TILES_INTERNATIONAL
N/A
SPS_LAYOUT
2223
ELO1
08/08/2019
1:30
A2
1
General Notes
FOR_APPROVAL
Drawing Review


A
B
C
D
E
1
2
3
4
5
250
125.24
600
425.12
525
445.8
407.45
357.58
247
478
510
675
325
675.01
35.99
284.84
145
Horizontal Cassette support
Structural Frame
Vertical T rail
Horizontal Tophat
Sliding Point Bracket
Fixed Point Bracket
T.I._TEST_RIG--AEROBRICK
TILES_INTERNATIONAL
N/A
BRICK SLIP LAYOUT.
08/08/2019
1:30
2023
EL04
AJ
AC
2
2000mm
325mm
675mm
General Notes
FOR APPROVAL
Drawing Review

Product data sheet

Triflex Cryl Primer 276

Use

Primer for cementitious and other substrates.

Properties

- Cold liquid applied
- Exceptionally fast curing
- Solvent and isocyanate free

Components

Component	Product
Resin	Triflex Cryl Primer 276
Catalyst	Triflex Catalyst

Packaging

Component	Pack size
Resin	Drum: 10.00Kg
	IBC: 910.00Kg
Catalyst	Bag: 0.10Kg
	Bag: 1.00Kg
	Box: 25.00Kg

Colour(s)

- Transparent

Application conditions

Condition	Value
Ambient and substrate temperature	0°C to +35°C
Relative atmospheric humidity	Up to 95%
Dew point	3°C above dew point

Substrate assessment / pretreatment / preparation

Ensure that the substrate is clean, dry and free from dust, laitance, grease, oil and any other contaminants and assess / pre-treat / prepare substrate in accordance with Triflex Specification.

Initial resin mixing / decanting

Drums:

1. Thoroughly mix the resin in the drum with a slow speed mixer until the resin achieves a uniform consistency;
2. If required, decant a measured weight of resin into a suitable container.

IBCs:

1. Prior to use refer to and follow guidance in Triflex Container Handbook;
2. Decant a minimum 100Kg or all remaining resin from the IBC outlet and pour into the top of the IBC;
3. Thoroughly mix the resin in the IBC using the ATEX certified mixer until the resin achieves a uniform consistency;
4. Disconnect mixer and allow a minimum 5 minutes before decanting a measured weight of resin into a suitable container. Do not decant material whilst mixer is running.

Mixing

Temperature	0°C to +5°C	+5°C to +15°C	+15°C to +35°C
Catalyst to resin %	6%	4%	2%
Catalyst per 10.00Kg drum of resin	0.60Kg	0.40Kg	0.20Kg
Catalyst per 910.00Kg IBC of resin	54.60Kg	36.40Kg	18.20Kg

1. Measure the appropriate weight of catalyst for the weight of resin and the temperature;
2. Add the catalyst to the pre-mixed / decanted resin;
3. Thoroughly mix the resin and catalyst using a slow speed mixer for a minimum 2 minutes until the catalyst has been evenly distributed and leave for a minimum of 1 minute to allow the catalyst to fully dissolve;
4. Re-mix and use the mixed material within the pot life.

Application method

Roller or squeegee followed by roller.

Pot life (at 20°C)

Approximately 15 minutes.

Note: Times will be slightly increased at lower temperatures and slightly reduced at higher temperatures.

Consumption

0.40Kg/m² minimum – refer to Triflex Specification.

Note: Consumption based on smooth, even, non-absorbent substrate.

Curing time (at 20°C)

Condition	Time
Rainproof	Approximately 25 minutes
Can be walked on / over-coated	Approximately 45 minutes
Able to withstand stress	Approximately 2 hours

Note: Times will be slightly increased at lower temperatures and slightly reduced at higher temperatures.

Interruptions during works

Unless the surface is fully aggregate filled, if work is interrupted for more than 12 hours or if soiled by rain etc., use Triflex Cleaner to clean and reactivate the transition area. Overlay after Triflex Cleaner has evaporated and a minimum 20 minutes / maximum 60 minutes after application. If the surface is aggregate filled ensure that the surface is clean, dry and free from dust, grease, oil and any other contaminants prior to overlay but do not apply Triflex Cleaner.

Tool cleaning

Clean tools with Triflex Cleaner.

Storage / shelf life

Store unopened in a cool, dry, well ventilated place above freezing, out of direct sunlight and in the original container.

Shelf life if stored correctly: minimum 6 months.

Health and safety

Refer to Safety Data Sheets.

Disposal information

Refer to Safety Data Sheets for recommended EWC waste codes.

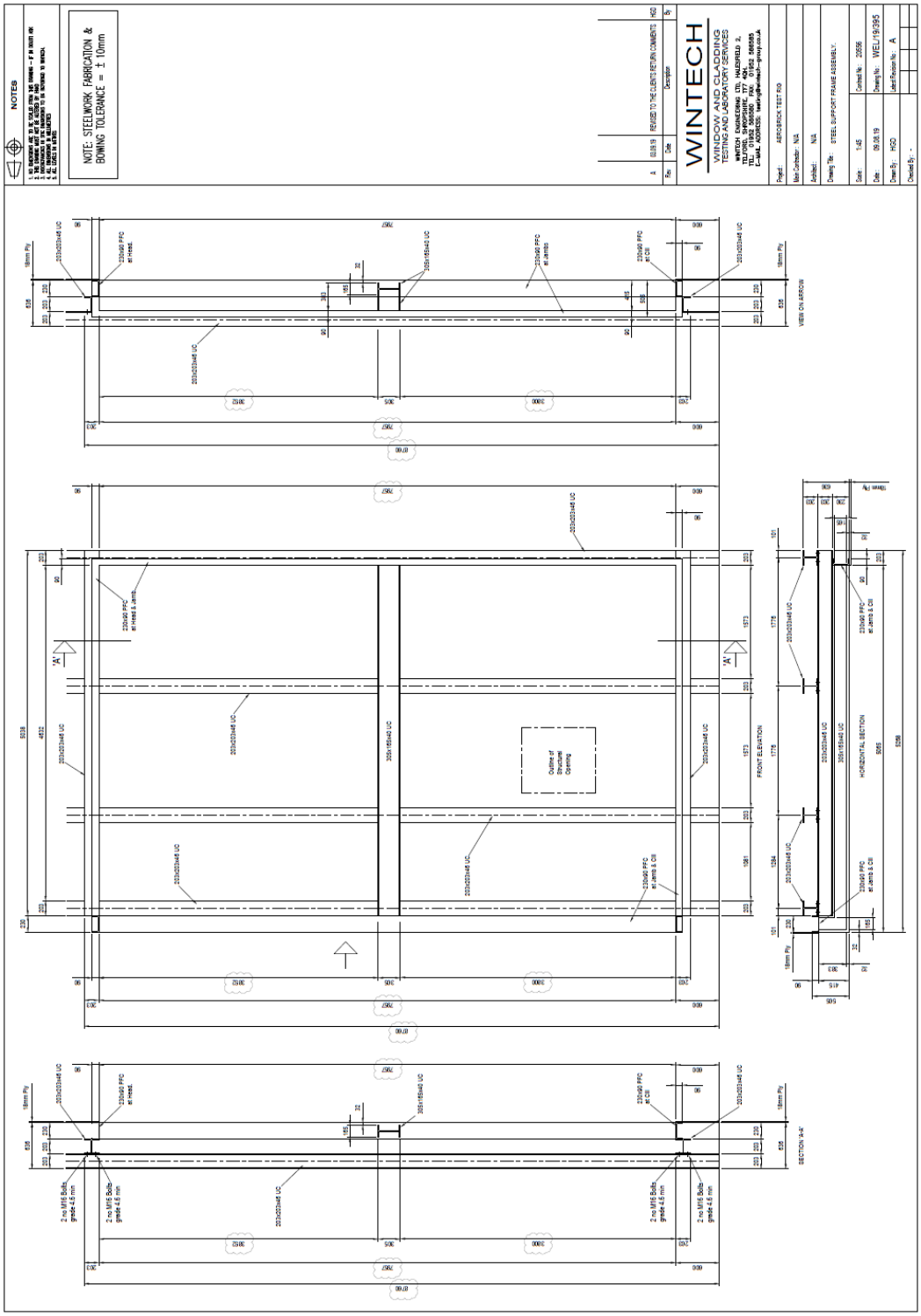
Notes

The advice we provide on the application of our products is based on extensive development work and many years of experience, and is given to the best of our knowledge. The wide variety of requirements for a building under the most diverse conditions mean that it is necessary for the contractor to test the product for suitability in each case. Triflex reserve the right to make alterations in keeping with technical developments or improvements.

Non-Triflex products must not be used with Triflex systems.

Only the most recent version of this data sheet is valid.

8. Support Steelwork Drawing



9. Dismantling

The dismantling was conducted on 27th, 28th and 29th January 2020 by representatives of TI Tiles International Ltd and was witnessed by representatives of Wintech Engineering Ltd.

There was no water evident in the system in parts designed not to be wetted, and it was found that the system fully complied with the system drawings in Section 7 provided by TI Tiles International Ltd at the time of the dismantle.

Photograph No. 14

Sample prior to dismantle

Photograph No. 15

Sample prior to dismantle

Photograph No. 16

Window pod detail

Photograph No. 17

Window pod detail

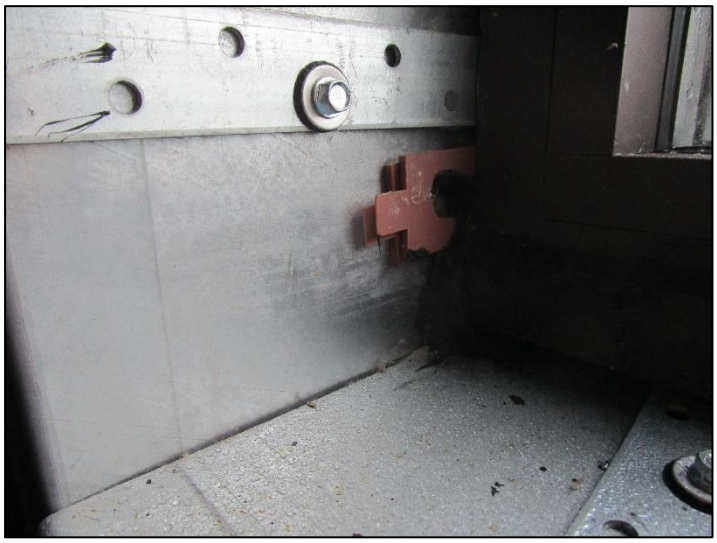
Photograph No. 18

Window pod detail

Photograph No. 19

Internal window pod detail

Photograph No. 20



Internal window pod detail

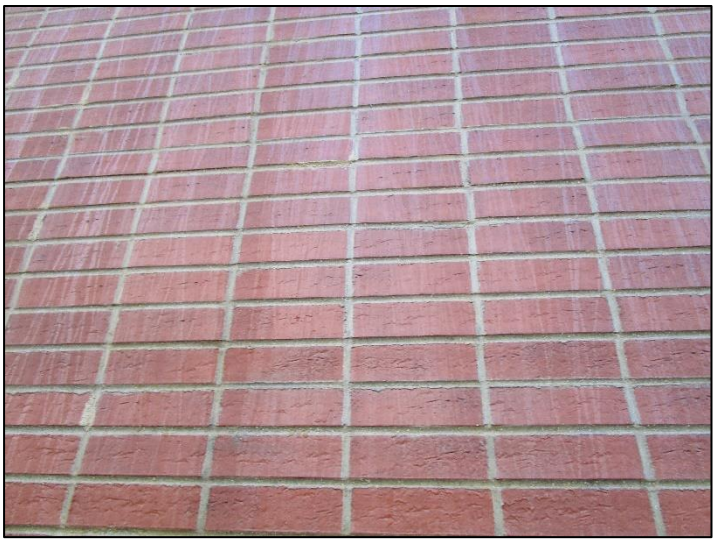
Photograph No. 21

Back section of rail and tray
as viewed from the inside

Photograph No. 22

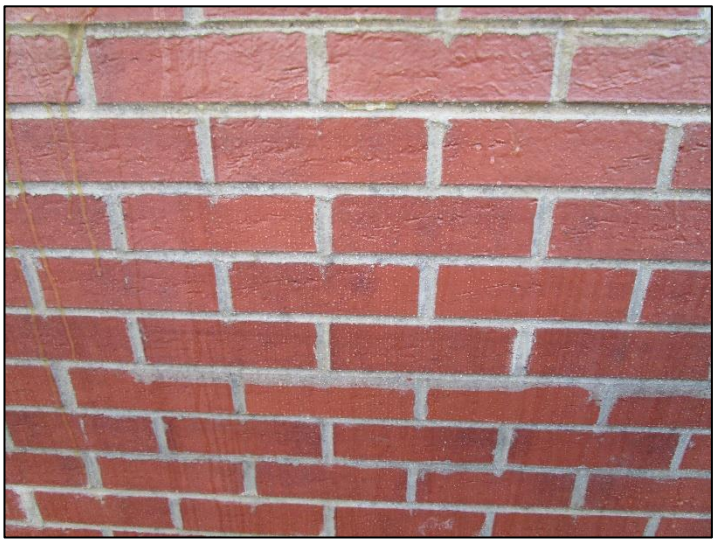
Soldier course expansion joint

Photograph No. 23



Horizontal modular layout

Photograph No. 24



Staggered horizontal joint layout

Photograph No. 25

Vertical layout

Photograph No. 26

Remedial work conducted on vertical corner detail

Photograph No. 27

Remedial work conducted on vertical expansion joint corner detail

Photograph No. 28

Brick tray layout

Photograph No. 29

Brick tray layout

Photograph No. 30

Window pod interface to brick tray layout

Photograph No. 31

Excessive sealant in corners of window pod interface

Photograph No. 32

Excessive sealant in corners of window pod interface

Photograph No. 33

External EPDM detail on window pod interface

Photograph No. 34

Sealant in corner of window pod interface

Photograph No. 35

Sealant in corner of window pod interface

Photograph No. 36

Support rail and top hat layout

Photograph No. 37

Window pod with trays removed

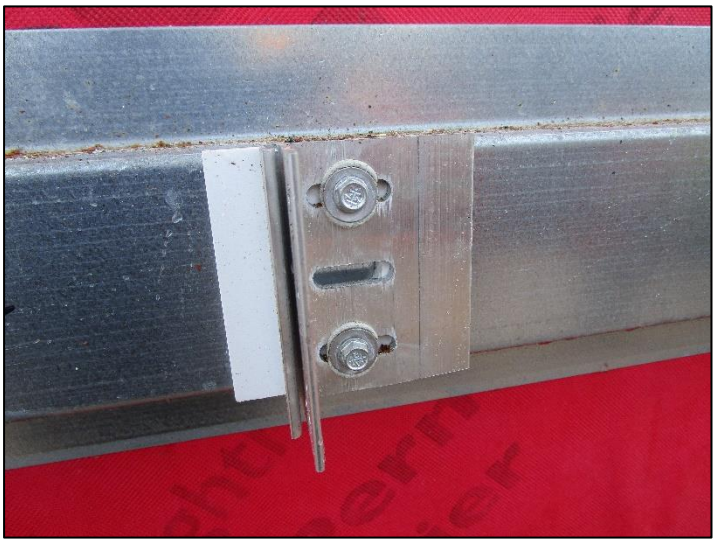
Photograph No. 38

Support rail and top hat layout

Photograph No. 39

Z flashing used

Photograph No. 40



Helping hand bracket

Photograph No. 41

Helping hand bracket

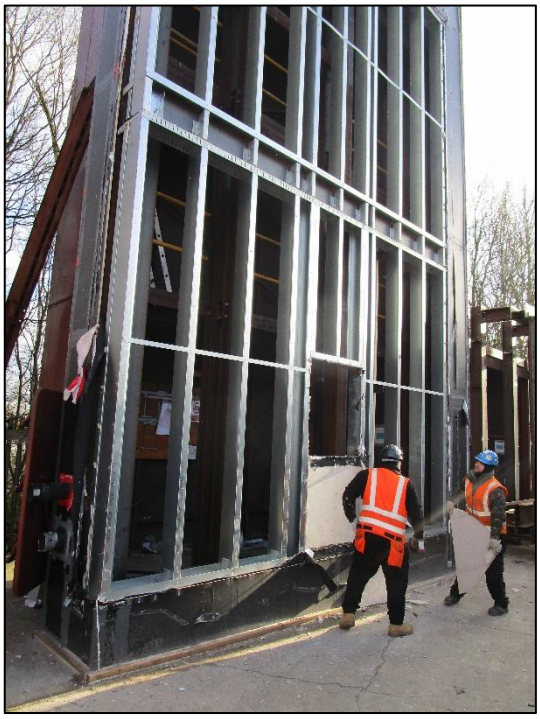
Photograph No. 42

Window pod detail

Photograph No. 43

Backing wall

Photograph No. 44



Metsec layout

Photograph No. 45

Sealant in corner of Metsec

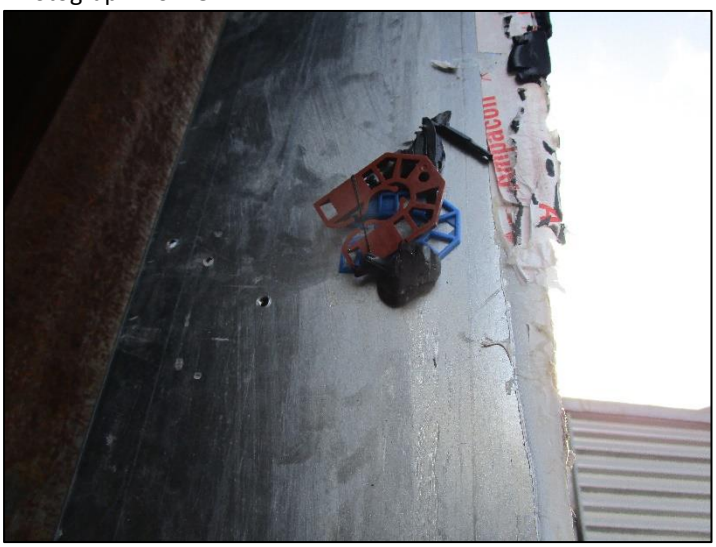
Photograph No. 46

Sealant in corner of Metsec

Photograph No. 47

Packers used on window pod interface to Metsec

Photograph No. 48



Packers used on window pod interface to Metsec

Photograph No. 49

Metsec section on underside of window pod

Photograph No. 50

Metsec section on underside of window pod

Photograph No. 51

Metsec layout

10. Amendments

Revision No.	Amendments	Date of Amendment
Rev 1	1. Sample drawing replaced in Sections 6.3.3 and 6.4 to reflect the sample as installed 2. Various drawings replaced in Section 7 to reflect the sample as built	19th May 2020
Rev 2	3. Impact location drawing added to Section 6.5.5 4. Impact tables added to Section 6.5 5. Drawing reference EL 04 Rev 2 replaced and all drawings changed back to colour	27th May 2020

----- END OF REPORT -----

WINTECH

TESTING & CERTIFICATION

Wintech Testing & Certification is an independent UKAS accredited testing laboratory and certification body. We provide a comprehensive range of services to the building and construction industries, either onsite or at our own state-of-the-art test laboratory in Telford, Shropshire, in the heart of industrial England.

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