

-:ID:- 120009:- Document Name:- Test Report for 5041

NATA ACCREDITED LABORATORY
Accreditation No: 20267, Site No: 24133
Accredited Laboratory Testing Procedures
conforming to
AS ISO/IEC 17025:2018
AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7



Providing results in line with
NCC 2022 Volume Two

Document Name:- Test Report for 5041

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Release Date:- Wed Sep 04 08:26:58 2024

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1 of 8

Approved Signatory  Luigi Cantoni
Print/Display Date:- 08:27:00 4 September 2024

Test Results Summary:

Specimen being Tested:

Hinged Security Door

Identifying Make or Model:

ClearShield UltraStrength Hinged Door, Mounted in Extended Sub frame into non-rebated, Hard Timber door frame

Infill Material Details:

SS08 - 0.8mm Powder coated Stainless Steel

Overall Size: 2050 mm Vertical by 820 mm Horizontal

Summary of Results of Test:

Test Item	Performance Item	AS 5039 – Tests	PASS/FAIL
AS 5039.3 Section 3	AS 5039.1 Section 4.2	Dynamic Impact Test	PASS 200J
AS 5039.3 Section 4	AS 5039.1 Section 4.3	Jemmy Test	PASS

Tested Specimen is Suitable for:

Security Screen Doors used in Residential Structures

Tested Perforated Mesh Specimen is Suitable for:

Security Screen Doors/Windows used in Residential Structures

NOTES:

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- This report is to be reproduced in full unless permission has been provided in writing for an approved extract from the testing authority.
- All results and conclusions are for the specific specimen provided and any extrapolation by the client or any other individuals to other items should conform to all relevant Australian Standards that may be applicable.
- The contents of the report are confidential to the client and the testing laboratory and may not be disclosed to a third party without the permission of either the client or the testing laboratory.


Approved Signatory
Luigi Cantoni

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Specimen being Tested Details:

Short Description: ClearShield Hinged Security Door

Long Description: ClearShield UltraStrength Hinged Door, Mounted in Extended Subframe into non-rebated, Hard Timber door frame.

Specimen Dimensions (Actual Size): 2050 mm Vertical x 820 mm Horizontal

Infill Type: Type 1 - Medium Aperture Infill
Type 2 - Large Aperture Infill
Type 3 - Small Aperture Infill

Infill Material Details: Type 3 Perforated Stainless Steel 0.8mm Thickness 2.0mm Hole 3.0mm Spacing, prior to powder coating

Category Of Security Item A/B/C/D

Category B

DRAWINGS and IDENTIFICATION DETAILS (supplied by Sponsor):

Separate PDF document supplied called: **120009-Drawing**

Preparation For Testing:

AS 5039.3:2023 Sec 1-5, 7 Clause (2.4) has been complied with to provide the test specimen size and nature.

AS 5039.3:2023 Sec 1-5, 7 Clause (2.5) the test application as required in this clause has been complied with.

AS 5039.3:2023 Sec 1-5, 7 Clause (2.6) the test sequence has been followed in accordance with this section.

AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 Appendix A (informative) Test sequence flow charts has been followed for those tests performed.

IMPACT TESTS – to be recorded in conjunction with AS 5039.3 Section 3.5

Impact Force 100J / 200J

TEST J	1 mm	2 mm	3 mm	4 mm	5 mm	250 mm +/-25 600 mm +/-25	PASS/ FAIL	OBSERVATIONS
5 IMPACTS 100J / 200J	38	47	51	52	55	Y	PASS 200J	

REMARKS:

LOCK AND HINGE LEVER TEST

LOCATION	mm Start	mm End	PASS/ FAIL	OBSERVATIONS
CENTRE LOCK	4	6	PASS	
BOTTOM LOCK	6	8	PASS	
TOP LOCK	4	7	PASS	
CENTRE OTHER	3	5	PASS	
BOTTOM OTHER	4	8	PASS	
TOP OTHER	4	6	PASS	

REMARKS:

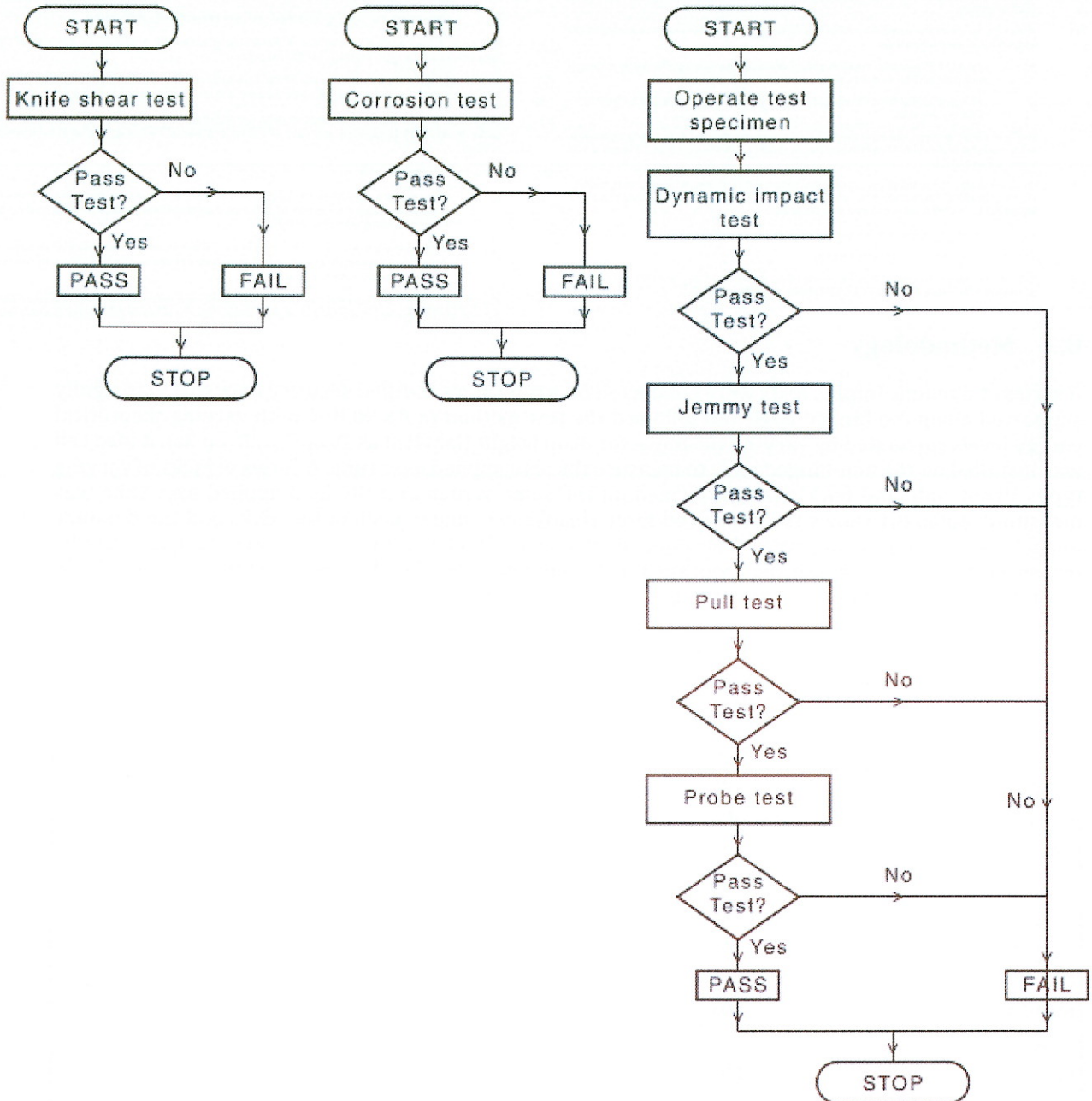
Approved Signatory
Luigi Cantoni

Flow Chart for Test

The flow chart extracted from AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 should be followed as this prescribes the order of tests.

The Corrosion test is not performed by this laboratory.

If a fail point is encountered while performing any tests and the sponsor requests further tests these cannot be certified as any results obtained will be incomplete/invalid. Specimen performance guidance may be obtained by continuing the tests but these are for information only and can never be used in a report.



Methods Followed for the Tests

(Summary of Standards AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7):

AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 – Section 3 Dynamic impact test

3.5 Test procedure

The impact test shall be carried out as follows:

- (a) Attach the test specimen to the support frame in such a way that the frame connection is not weakened in any way by the test and the attachment devices do not impede the path of the deflecting infill. The test specimen shall be positioned so that the impactor strikes the outside face of the security door or window screen on the side where a lock is fitted. If no lock is fitted, either side may be impacted, see positions A and B in [Figure 3.5](#).
- (b) Check and, if necessary, adjust the mass of the impactor to within the prescribed limits.
- (c) Attach the impactor to the suspension cable and suspend it at the point of attachment on the test frame so that the face of the impactor rests on the face of the infill and the suspension cable is vertical.
- (d) Adjust the length of the suspension cable and turnbuckle so that the centre of gravity of the impactor is aligned with a point —
 - (i) 600 mm ± 25 mm from the bottom edge of the test specimen or the centre of the test specimen, whichever is less; and
 - (ii) 250 mm ± 25 mm from the edge of the test specimen (see [Figure 3.5](#)) for each type of door or window.

For Type 2 infill material, the impactor shall directly impact upon a chord as close as possible to this range of dimensions. The pendulum length should remain in the range 1 850 mm ± 100 mm, see [Figure 3.3.1](#).
- (e) Using the bridle, swing the impactor away from the infill until the centre of gravity mark is the drop height distance (calculated using [Equation 3.4](#) or [3.5](#)) above the impact plane, see [Figure 3.3.1](#). The following requirements shall be met:
 - (i) The line of swing shall be perpendicular to the plane of the infill.
 - (ii) The suspension cable shall be taut.
- (f) Release the impactor without jerking or impeding its swing in any way; the impactor is prevented from hitting the door or window screen after the rebound.
- (g) Examine the security door or window screen and record any observed damage, such as cracks, gaps or breakage, in the test report.
- (h) Record the impact deformation for each strike of the impact bag in the test report.
- (i) Repeat Steps (e) to (h) four more times to give a total of five impacts to achieve the required impact security level.

The security door or window screen being tested shall remain within the screen door or window framing after being subjected to an impact energy of —

 - (i) five impacts of 100 J and remain within the screen door or window framing to achieve a Security Level 100 (SL100); or
 - (ii) five impacts of 200 J to achieve a Security Level 200 (SL200) rating.
- (j) Record any deformation or fracture of the test specimen infill material and the size of the largest hole in the infill material in the test report.
- (k) Record any deformation or fracture of the test specimen infill material to framing section interface and the size of the largest hole formed at that interface in the test report.
- (l) For a Type 1 infill material, attempt to pass a probe of (65 mm × 25 mm × 15 mm) ± 0.5 mm (refer to AS 5039.1) through any part of the infill material including the infill to framing section.
- (m) For a Type 2 infill material —
 - (i) if the supplied aperture size is greater than 300 mm in either direction, attempt to pass a rigid spherical probe of 125 mm diameter through any opening in the test specimen using a force of 250 Nm; or
 - (ii) if the supplied aperture size is less than 300 mm in both directions, attempt to pass a rigid spherical probe of 213 mm diameter through any opening in the test specimen using a force of 250 Nm.
- (n) For a Type 3 infill material, after performing the impact test, if the standard attachments used for pull testing can be affixed to the security screen door or window, proceed to the pull test.

B.2 Methodology

A series of dynamic impact tests were conducted on a typical mesh-filled security door that was rigidly supported along the hinged edge and followed the test method in AS 5039.3 with varying theoretical energy levels calculated by varying the impactor drop height (labelled as Drop 1 to Drop 3a). A load cell was installed on the non-hinged edge to measure the load applied over time. A series of kicks of varying types (front, side and back) was performed on the same screen and the load applied over time was measured. [Table B.1](#) shows the measured force (load) over time of each of the kicks and the dynamic impact tests using an impactor. The equivalent energy level has been calculated by equating the measured force over time to the theoretical calculated energy. The observed damage between drops and kicks were nominally identical for equivalent energy levels.

Table B.1 — Summary of physical tests

Description	Measured force over time (Ns)	Theoretical calculated energy (J)	Equivalent energy level (J)
Drop 1	88	100	
Drop 1a	85	100	
Drop 2	101	150	
Drop 2a	103	150	
Drop 3	116	200	
Drop 3a	118	200	
Kick 1	124	–	220
Kick 1a	103	–	150
Kick 1b	72	–	50
Kick 1c	156	–	320
Kick 2	70	–	45
Kick 3	106	–	160

**AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 –
Section 4 Jemmy test**

4.4.1 Attack on security door and window screens

4.4.1.1 Attack upon locking points and hinges

The test procedure shall be applied at all locking points and hinge points.

(a) The lever shall be manually inserted with a force of approximately 100 N. If insertion is not possible, this shall be recorded in the test report.

The tip of the lever shall be applied within 50 mm of the centre of a locking point and within 25 mm of a hinge, see [Figures 4.4.1.1 and 4.4.1.2\(B\)](#). If the lever cannot be applied within 50 mm of a locking point or 25 mm of a hinge, the tip of the lever shall be applied as close as possible to the locking point or hinge and the distance from the lock or hinge recorded in the test report.

The tip of the lever shall be inserted either between —

- (i) the screen frame and the test frame, or
- (ii) the screen sash and screen frame, or
- (iii) the screen frame and any adaptors which are fixed to the test frame.

The tip of the lever shall be inserted to the full depth of the gap or as deep as possible, see [Figure 4.3\(E\)](#). If the necessary depth cannot be achieved within three minutes, the test shall be continued at the insertion depth obtained.

(b) A hold force of approximately 700 N shall be applied to the lever using the test apparatus.

While performing this test, the lever shall be secured and restrained to prevent axial displacement of the lever from the test frame.

NOTE The intention is to stop the lever from slipping out of the door frame during testing.

(c) The lever shall then be subjected to a force that will result in a maximum torque of 450 Nm being applied to the lever about the axis of rotation for the full movement arc of the lever, see [Figure 4.3\(B\)](#)

If the lever is displaced during the test, Steps (a) to (c) shall be repeated. If the lever displaces again, the next scheduled test shall be carried out.

NOTE If in seeking to apply the specified torque the full torque value has not been achieved after the lever has been rotated through 90° from the normal to the door, this will not constitute a failure of the test provided that the requirements of this clause are met.

The load shall be applied for 20 s after the maximum load or displacement is reached.

If the torque value cannot be met, this shall be recorded in the test report.

Similar procedures for “Anti-Jemmy Strips”, “Hinge attack”, Attack on Sliding Security Screen Doors” and “Attack on Security Window Grilles”. See the remainder of Section 4 for full details.

LABORATORY SPECIFICATION:

Maximum Pressure – 10 000 Pa Positive and Negative depending on specimen size and leakage.

Maximum Size (outside of mounting frame) – 2820 mm high x 5750 mm wide.

Specimen shall have its outer surface facing towards the air/water etc. source. Positive Pressure shall be pushing against that surface (outdoor towards indoor) and Negative Pressure shall be suction onto that surface (pushing indoor towards outdoor). Specimen chambers may need to be reversed (by turning around) where very large specimens requiring very high positive pressures are requested thus Positive and Negative would be relative to specimen orientation.

NOTES and REFERENCES:

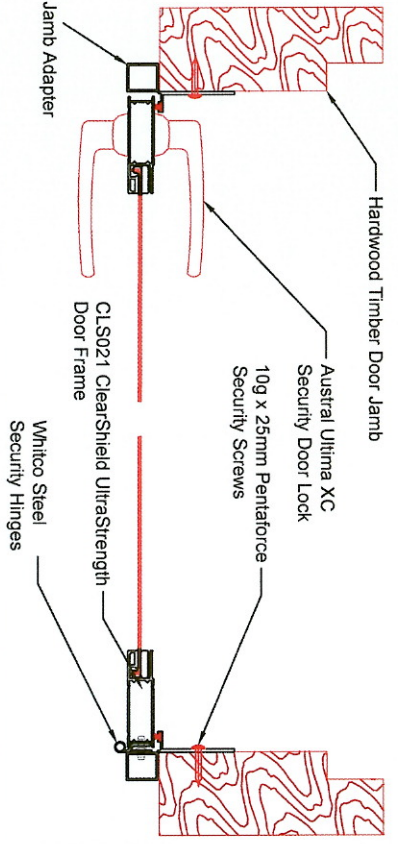
- NATA the National Association of Testing Authorities which has its headquarters at 7 Leeds Street, Rhodes NSW 2138 with an office located at 2A Brodie Hall Drive, Bentley WA 6102. The association was formed in 1947 to govern testing laboratory standards of practice within Australia and to maintain the integrity of test reporting issued by members.
- All Australia Standards are as laid down by Standards Australia which has its headquarters at Level 10, The Exchange Centre 20 Bridge Street, Sydney NSW 2000.
- This testing laboratory has been accredited by NATA for mechanical testing in conformance with AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 and operates under its regulations.
- This test report certifies the performance of the specimen submitted to this NATA accredited testing laboratory #20267 located at Address:- 21 Wellard St Bibra Lake WA 6163. This laboratory’s accreditation at any time can be checked using the NATA web site and is operated by approved technicians.
- The tests carried out are only those as stated and results as given. Any other tests performed and information derived is not part of this report and are not included in this report.
- The tests carried out may consist of all or part of the tests specified in AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 and results established by NCC 2022 Volume Two, AS 2047:2014 Amd 2:2017, AS 5039.1:2023 AS 5039.3:2023 Sec 1-5, 7 or AS 1288:2021
- This report, its results and conclusions are provided in good faith. The testing laboratory accepts no responsibility for any loss or damage occurring from the use of this information.
- The Approved Signatory is an employee approved by this laboratory as a signatory of these endorsed test results.
- All results and conclusions are for the specific specimen provided and any extrapolation by the client or any other individuals to other items should conform to all relevant Australian Standards that may be applicable.
- The measurement results in this report are traceable to the International System of Units (SI) through NATA Accredited Calibration Laboratories and certificates issued for the measuring devices used.
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LABORATORY TOLERANCES AND CERTAINTIES:

Item	Requirement	Achieved*	Date	Certainty*	Certainty with P/T
Displacement Measuring Device	+/-0.25 mm	+/-0.20mm	26 Aug 24	99.90%	99.90%
Pressure Measuring Device	+/-2% test pressure	1.9%	9 Aug 24	99.90%	99.90%
Force Measuring Device	+/-2N and +/-5N	0.2N/0.9%	15 Aug 23	99.50%	99.50%
Low Volume Airflow Meter	5% airflow	1.0% airflow	18 Oct 23	95.00%	95.00%
Water Volume Flow Rate	+/-10% Catch Box OK	0.8% measuring	21 Nov 23	95.00%	95.00%
Pressure Plate 125mm	+0.0mm -0.5mm	-0.27	10 Jul 17	95.00%	95.00%
Rigid Sphere 125mm	Smooth Surface	-0.16	10 Jul 17	95.00%	95.00%
Long Force Test Object 125mm	+0.0mm -0.5mm 150mm – 200mm	-0.20	20 Sep 17	95.00%	95.00%

* Worse device value if many
 Worse of Calibration/Internal

A
Plan
Detail



TECHINCAL DETAILS

SPECIMEN DESCRIPTION

ClearShield UltraStrength Hinged Door, Mounted in Extended Subframe into non-rebated, Hard Timber door frame.

SPECIMEN SIZE

Timber Door Frame = 2100x940
ClearShield Door Size = 2050x820

Lock Position = 1200 To Centre of Lock (From Bottom Edge of Door)

COMPONENTRY

- CLS021 - UltraStrength Door Frame
- 19120 - UltraStrength Insulator
- CLS035 - Extended Subframe
- HD16 - Slave Kit suit Austral Ultima XC Lock
- Hinges - Whitico Steel Security Hinges
- 19130 - UltraStrength Co-Ex Bead
- SS08 - 0.8mm Powdercoated Stainless Steel
- Austral Ultima XC - Main Lock
- Austral 5 Pin C4 Cylinder (Double)

FIXINGS

- Door Frame to Hinges = 6-4 Stainless Countersunk Rivets
- Hinges to CLS035 = 10-16x16 CL2 Flathead SDS Screws (Galv)
- CLS035 to Timber Jamb = 10g x 25mm Pentaforce Security Screws
- Corner Rivets (4 Per Corner) = 6-4 Stainless Dome Rivets

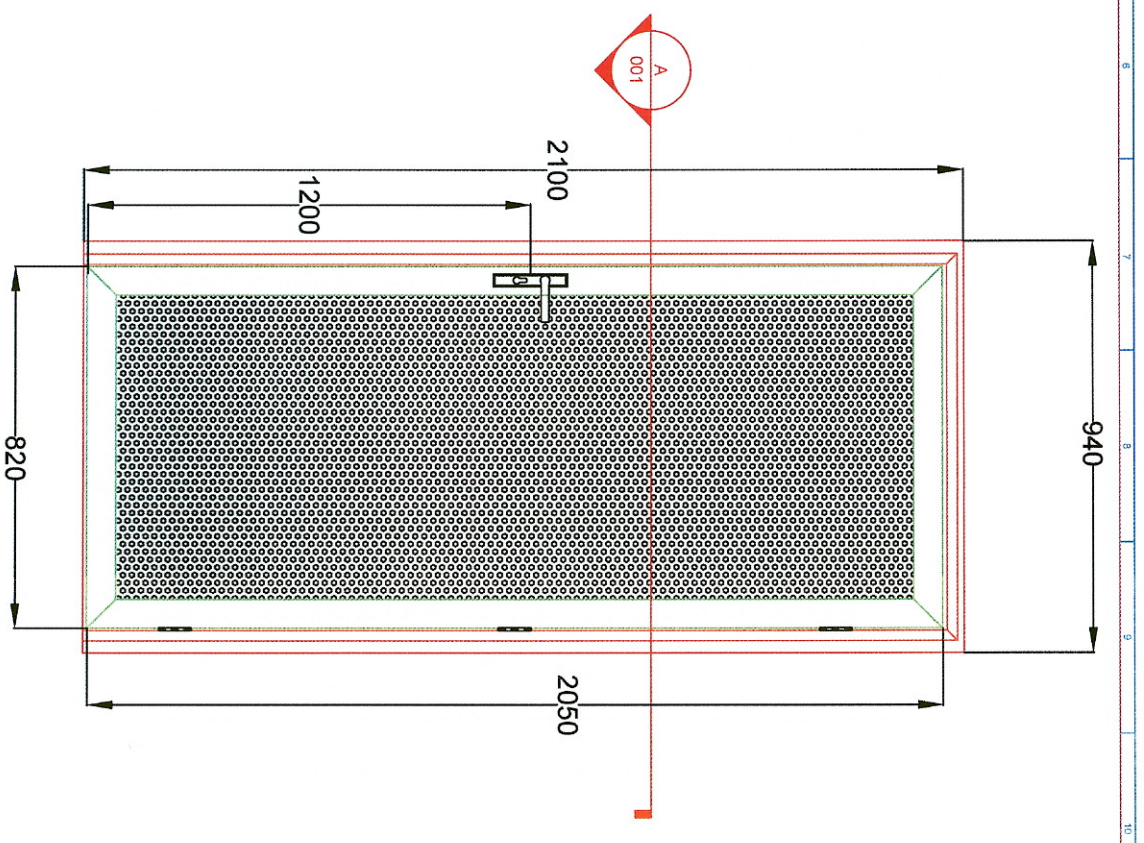
SPACINGS

- CLS035 Subframe To Frame
- Hinged Side = 1 Screw within 200mm of Top & Bottom Hinges, 6 screws total
- Lock Side = 1 Screw within 200mm of Top & Bottom Slave Lock, 6 screws total
- Head = No screws required

ClearShield AUSTRALIA

CLEARSHIELD AUSTRALIA
Head Office: 51 Weir Rd
Malaga 6090
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- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
 2. ALL FRAMES, ANGLES, TRIM AND ASSOCIATED ALUM TO BE COLOUR MATCHED.
 3. ALL DIMENSIONS PRELIMINARY UNTIL OPENING SIZE CAN BE SITE MEASURED.
 4. ALL ITEMS DRAWN AS VIEWED FROM OUTSIDE.



NO	DESCRIPTION	DATE	BY	CHECKED
1	ISSUED FOR REVISION	07/03/21		
2	ISSUED FOR REVISION	07/03/21		
3	ISSUED FOR REVISION	07/03/21		
4	ISSUED FOR REVISION	07/03/21		

PREPARED BY: [Name]
CHECKED BY: [Name]
DESIGNED BY: [Name]
PROJECT MANAGER: [Name]
ENGINEER AND INSPECTOR: [Name]

AS5039, 1 2023 TESTING
CLEARSHIELD SECURITY SCREENS
120009 HINGED SECURITY DOOR
ULTRASTRENGTH

fe 4/9/23