

CLIENT: **DASSO USA**
6060 Boat Rock BLVD. SW Suite 800
Atlanta, GA 30336

Test Report No: RJ7820P-3rev1

Revision Date: May 11, 2022

SUBJECT: dassoXTR Classic Espresso and dassoXTR Epic Cognac rainscreen bamboo composite lap siding of the following sizes:

1. 1" x 6"
2. 1" x 7"

SAMPLING DETAIL: Test samples were witnessed at the location of manufacture in Xiandai Zhuchanye Yuanqu, Gaobu Town, Zixi Country, Fuzhou City, Jiangxi Province China by QAI personnel Fey Han on July 31, 2020. QAI confirmed the products sampled for testing were representative of normally manufactured product in accordance with ICC-ES AC85 Section 3.1.

DATE OF RECEIPT: Sample was received at QAI Rancho Cucamonga, CA facility on September 20, 2020 in good condition.

TESTING PERIOD: January 15 2021 through May 31, 2021.

AUTHORIZATION: QAI Proposal 20JL09182r2 dated September 18, 2020 signed by Avery Chua, CEO on September 29, 2020.

TEST PROCEDURE: Testing in accordance with ICC-ES staff email revised test plan dated August 7, 2020 by Richard Wang, to limited testing from the following methods:

- ICC-ES AC321 *Acceptance Criteria for Treated-Engineered-Wood Siding* approved 2019 (ICC-ES AC321).

TEST RESULTS: Based on the evaluation of dassoXTR Classic Espresso and Epic Cognac rainscreen cladding products of 1" x 6" and 1" x 7" exposure, the noted products were found to meet the requirements as set forth in the sections evaluated from ICC-ES AC321, with an allowable wind pressure resistance as outlined in Summary of Requirements and Results section, when installed in accordance with this report.

Prepared By



Larry Burmer
Lab Manager Physical Testing

**Signed for and on behalf of
QAI Laboratories Inc.**

Matt Lansdowne
Director of Engineering

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SUMMARY OF REQUIREMENTS AND RESULTS

Property	Test Method	Test Requirement	Test Results				Section
			Classic Espresso		Epic Cognac		
Water Absorption	ASTM C1185 Section 9	Report Value	5.6%		2.6%		2.1
Concentrated Loads, wet and dry	ICC-ES AC321 Section 3.2.1	DRY and WET Residual Deflection: ≤ 0.200" Ave Residual Indentation ≤ 0.200" Ultimate Load: ≥ 200 lbf	Dry 0.007 0.000 1,106	Wet 0.009 0.000 1,094	Dry 0.003 0.000 1,738	Wet 0.005 0.000 1,619	2.2
Impact Loads, soft and hard body wet and dry	ICC-ES AC321 Section 3.2.2	SOFT BODY DRY and WET Max Residual Deflection: ≤ 0.200" Min Ultimate Load: ≥ 45 lbf	Dry 0.006 ≥ 45	Wet 0.008 ≥ 45	Dry 0.003 ≥ 45	Wet 0.004 ≥ 45	2.3
		HARD BODY WET AND DRY Ave Residual Deflection: ≤ 0.040" Ultimate Load: ≥ 8 lbf	Dry 0.001 ≥ 8	Wet 0.002 ≥ 8	Dry 0.002 ≥ 8	Wet 0.002 ≥ 8	
Thickness Expansion (Edge Swell)	ICC-ES AC321 Section 3.3.1	≤ 25% after 28 days	1.5		2.0		2.4
Full-scale Stability (Buckling)	ICC-ES AC321 Section 3.3.2	5% exclusion limit across supports ≤ 0.20 inches	< 0.20 inches		< 0.20 inches		2.5
Mold Resistance	ICC-ES AC321 Section 3.5.2	Shall comply with Section 6.2.5.1(b) of PS2	Complies as Mold Attack Resistant				2.6
Dimensional Tolerances and Squareness	ICC-ES AC321 Section 3.6	≤ 1/8" per 16 ft length to straight	Complies		Complies		2.7
Moisture Content	ICC-ES AC321 Section 3.7	≤ 16% oven dry weight	< 16%		< 16%		2.8
Surface Burning Characteristics ¹	ASTM E84	FSI ≤ 200	FSI: 25 SDI: 25		FSI: 25 SDI: 10		2.9
Transverse Wind Load Resistance	ASTM E330 Procedure B	Report as Allowable = Ultimate _{AVE} /FS3	± 69 psf		± 67 psf		2.10

1.0 PRODUCT DESCRIPTION

dassoXTR Rainscreen is a composite bamboo cladding material for use in Type VB construction. The product is composed of a phenolic resin blended with bamboo including proprietary additives, to create a composite bamboo plank, that is profiled to create the final exterior cladding product.

dassoXTR is available in 2 product options, Classic Espresso and Epic Cognac. These products are of different formulation but are of identical geometries.

dassoXTR products are profiled to include a shiplap to allow overlapping of panels to create the exterior facade. The shiplap integrates with the manufacturer's provided Eisen Rainclad hidden clip accessory, for attachment of the dassoXTR exterior cladding product to the underlying wall structure.

dassoXTR is intended for installation with the proprietary hidden clip system, with the system being compatible for installation to furring strips, or direct to sheathing, where the fasteners are required to penetrate into the underlying wood studs. Direct attachment (face fastening) of the dassoXTR rainscreen system is not recommended by the manufacturer and was not included in the scope of testing conducted by QAI.

dassoXTR Rainclad Classic Espresso and Epic Cognac claddings are available in 1" x 6" and 1" x 7" product exposures. Both exposure options use the same hidden clip attachment system.

Drawings of dassoXTR Classic Espresso and Epic Cognac 1" x 6" and 1" x 7" products can be found in Appendix C of this report.

Installation instructions for dassoXTR Classic Espresso and Epic Cognac 1" x 6" and 1" x 7" products can be found in Appendix D of this report.

2.0 TEST METHODS AND RESULTS:

2.1 WATER ABSORPTION

Test Procedure:

Testing was conducted in accordance with section 9 of ASTM C1185 for evaluation of water absorption.

Samples of size 4" x 4" were cut from randomly selected 1" x 6" and 1" x 7" Classic Espresso and Epic Cognac products. The prepared samples were conditioned to constant weight in a ventilated oven maintained at 194°F ± 4°F, following which the samples placed in a desiccator-type cabinet and allowed to cool to room temperature. After each specimen was weighed and recorded as dry weight.

The samples were then submerged for 48 hours ± 8 hours in clean water maintained at 73°F ± 7°F after which, the samples were removed and wiped with a damp cloth to remove excess water. The saturated samples were then reweighed and recorded.

The water absorption or each sample was then calculated in accordance with ASTM C1185 Section 9.

Test Requirements:

Per ICC-ES email dated August 7, 2020: No Requirements noted. Values are reported.

Test Results:

Classic Espresso Water Absorption Determined per Section 9 of ASTM C1185:

Specimen No.	Dry Weight (grams)	Wet Weight (grams)	Water Absorption (%)
1	539.27	569.51	5.6
2	540.84	571.07	5.6
3	537.33	566.97	5.5
		AVERAGE	5.6

Epic Cognac Water Absorption Determined per Section 9 of ASTM C1185:

Specimen No.	Dry Weight (grams)	Wet Weight (grams)	Water Absorption (%)
1	626.68	641.43	2.4
2	588.82	607.14	3.1
3	629.88	643.91	2.2
		AVERAGE	2.6

CONCLUSIONS:

dassoXTR Classic Espresso was found to have a water absorption of 5.6% when evaluated to Section 9 of ASTM C1185.

dassoXTR Epic Cognac was found to have a water absorption of 2.6% when evaluated to Section 9 of ASTM C1185.

2.2 CONCENTRATED LOADS

Test Procedure:

Concentrated Load testing was conducted in accordance with section 4.1 of ICC-ES AC321.

Six decks of each dassoXTR Classic Espresso and Epic Cognac (for a total of 12 decks) composed of 1" x 7" profile products were constructed of randomly selected pieces, with decks of being of minimum 3 lap siding boards measuring 48" spanning 24" joist spacings.

3 decks of each dassoXTR product were subjected to the wet exposure criteria outlined in Section 6.3.2 of ASTM E661 and 3 decks of each dassoXTR product were conditioned to the dry exposure criteria outlined in Section 6.3.1 of ASTM E331 prior to concentrated load testing.

Following exposure, each deck measured to determine the rest deflection. Following a concentrated load was applied at midspan between supports along an outer span with a 1-inch-diameter loading disk was applied at 0.04 inches/min until a load of 100 lbf was achieved, following which the load was released. After 1 minute rest, the indentation and deformation were recorded.

The test deck was then loaded at a rate of 0.2 inches/min until ultimate load was reached for each test assembly.

Test Requirements:

Per ICC-ES AC321 Table 1 for both wet and dry conditions:

After Application of 100 lbf Load		Ultimate Load (lbs)
Residual Deflection: ≤ 0.200	Average Residual Indentation: ≤ 0.040	≥ 200

Test Results:

Classic Espresso Concentrated Load Testing per ICC-ES AC321 Results:

DRY EXPOSURE						
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Deflection (in.)	Average Residual Indentation (in.)	Ultimate Load (lbf)
Dry-1	0.715	5.400	24	0.008	0.001	1,138
Dry-2	0.715	5.400	24	0.006	0.000	1,036
Dry-3	0.715	5.400	24	0.008	0.000	1,145
Average	0.715	5.400		0.007	0.000	1,106
WET EXPOSURE (7 DAY WATER SPRAY)						
Wet-1	0.715	5.400	24	0.010	0.000	1,063
Wet-2	0.715	5.400	24	0.008	0.001	1,102
Wet-3	0.715	5.400	24	0.009	0.000	1,116
Average	0.715	5.400		0.009	0.000	1,094

Epic Cognac Concentrated Load Testing per ICC-ES AC321 Results:

DRY EXPOSURE						
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Deflection (in.)	Average Residual Indentation (in.)	Ultimate Load (lbf)
Dry-1	0.718	5.400	24	0.004	0.000	1,795
Dry-2	0.718	5.400	24	0.003	0.000	1,688
Dry-3	0.718	5.400	24	0.003	0.000	1,732
Average	0.718	5.400		0.003	0.000	1,738
WET EXPOSURE (7 Day Water Spray)						
Wet-1	0.718	5.400	24	0.005	0.000	1,744
Wet-2	0.718	5.400	24	0.005	0.000	1,672
Wet-3	0.718	5.400	24	0.004	0.001	1,440
Average	0.718	5.400		0.005	0.000	1,619

CONCLUSIONS:

dassoXTR Classic Espresso was found to have an average residual deflection of 0.007", an average residual indentation of 0.000" and achieved an average ultimate load of 1,106 lbf and meets the requirements of Table 1 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Classic Espresso was found to have an average residual deflection of 0.009", an average residual indentation of 0.000" and achieved an average ultimate load of 1,094 lbf and meets the requirements of Table 1 of ICC-ES AC321 after wet exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual deflection of 0.003", an average residual indentation of 0.000" and achieved an average ultimate load of 1,738 lbf and meets the requirements of Table 1 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual deflection of 0.005", an average residual indentation of 0.000" and achieved an average ultimate load of 1,619 lbf and meets the requirements of Table 1 of ICC-ES AC321 after wet exposure per ASTM E661.

2.3 IMPACT LOADS

2.3.1 Soft Body Impact Loads

Test Procedure:

Soft body impact load testing was conducted in accordance with section 4.2 of ICC-ES AC321.

Six decks of each dassoXTR Classic Espresso and Epic Cognac (for a total of 12 decks) composed of 1" x 7" profile products were constructed of randomly selected pieces, with decks of being of minimum 3 lap siding boards measuring 48" spanning 24" joist spacings.

3 decks of each dassoXTR product were subjected to the wet exposure criteria outlined in Section 6.3.2 of ASTM E661 and 3 decks of each dassoXTR product were conditioned to the dry exposure criteria outlined in Section 6.3.1 of ASTM E331 prior to soft body impact load testing.

Following exposure, each deck measured to determine the rest deflection at the location of impact load. Following a 30 lbs soft body impact test was applied at the test location starting at 6 inches, after which the residual deflection was measured relative to the framing members. Following measurement the soft body impact was continued at 6 inch drop increments with residual deflection measured after each soft body bag drop, until specimen failure occurred, or 18 inches drop height was reached.

Soft body impacts were conducted on an outside panel at mid-width of a the lap-siding member mid-length between length of the specimen between framing members.

Test Requirements:

Per ICC-ES AC321 Table 2 for both wet and dry conditions:

Maximum Residual Deflection After Application of Impact Load	Ultimate Load (lbf)
Residual Deflection: ≤ 0.200	≥ 45

Test Results:

Classic Espresso Soft Body Impact Testing per ICC-ES AC321 Results:

DRY EXPOSURE					
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Deflection After 12 Inch Drop (in.)	Ultimate Load (lbf)
Dry-1	0.715	5.400	24	0.005	45*
Dry-2	0.715	5.400	24	0.006	45*
Dry-3	0.715	5.400	24	0.007	45*
Average	0.715	5.400		0.006	≥ 45
WET EXPOSURE (7 DAY WATER SPRAY)					
Wet-1	0.715	5.400	24	0.008	45*
Wet-2	0.715	5.400	24	0.007	45*
Wet-3	0.715	5.400	24	0.008	45*
Average	0.715	5.400		0.008	≥ 45

Epic Cognac Soft Body Impact Testing per ICC-ES AC321 Results:

DRY EXPOSURE					
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Deflection After 12 Inch Drop (in.)	Ultimate Load (lbf)
Dry-1	0.715	5.400	24	0.003	45*
Dry-2	0.715	5.400	24	0.003	45*
Dry-3	0.715	5.400	24	0.002	45*
Average	0.715	5.400		0.003	≥ 45
WET EXPOSURE (7 DAY WATER SPRAY)					
Wet-1	0.715	5.400	24	0.003	45*
Wet-2	0.715	5.400	24	0.004	45*
Wet-3	0.715	5.400	24	0.004	45*
Average	0.715	5.400		0.004	≥ 45

*After 18-inch drop, no damage or failure of products were found, as such, product is noted as > 45 lbf.

CONCLUSIONS:

dassoXTR Classic Espresso was found to have an average residual deflection of 0.006”and met 45 lbf soft body impact and meets the requirements of Table 2 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Classic Espresso was found to have an average residual deflection of 0.008”and met 45 lbf soft body impact and meets the requirements of Table 2 of ICC-ES AC321 after wet exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual deflection of 0.003”and met 45 lbf soft body impact and meets the requirements of Table 2 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual deflection of 0.004”and met 45 lbf soft body impact and meets the requirements of Table 2 of ICC-ES AC321 after wet exposure per ASTM E661.

2.3.2 Hard Body Impact Loads

Test Procedure:

Hard body impact load testing was conducted in accordance with section 4.3 of ICC-ES AC321.

Six decks of each dassoXTR Classic Espresso and Epic Cognac (for a total of 12 decks) composed of 1” x 7” profile products were constructed of randomly selected pieces, with decks of being of minimum 3 lap siding boards measuring 48” spanning 24” joist spacings.

3 decks of each dassoXTR product were subjected to the wet exposure criteria outlined in Section 6.3.2 of ASTM E661 and 3 decks of each dassoXTR product were conditioned to the dry exposure criteria outlined in Section 6.3.1 of ASTM E331 prior to hard body impact load testing.

Following exposure, each deck measured to determine the rest deflection at the location of impact load. Following a hard body impact steel ball of 2-3/8 inches diameter of 2 lbf weight was dropped at the test location starting at 6 inches, after which the residual deflection was measured relative to the framing members. Following residual deflection measurement the hard body impact was continued at 6 inch drop increments with residual deflection measured after each hard body drop, until specimen failure occurred, or 48 inches drop height was reached.

Hard body impacts were conducted on an outside panel at mid-width of a the lap-siding member mid-length between length of the specimen between framing members.

Test Requirements:

Per ICC-ES AC321 Table 2 for both wet and dry conditions:

Average Residual Indentation After Application of Impact Load	Ultimate Load (lbf)
Residual Indentation: ≤ 0.040	≥ 8

Test Results:

Classic Espresso Soft Body Impact Testing per ICC-ES AC321 Results:

DRY EXPOSURE					
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Indentation After 24 Inch Drop (in.)	Ultimate Load (lbf)
Dry-1	0.715	5.400	24	0.001	8*
Dry-2	0.715	5.400	24	0.002	8*
Dry-3	0.715	5.400	24	0.001	8*
Average	0.715	5.400		0.001	≥ 8
WET EXPOSURE (7 DAY WATER SPRAY)					
Wet-1	0.715	5.400	24	0.002	8*
Wet-2	0.715	5.400	24	0.002	8*
Wet-3	0.715	5.400	24	0.001	8*
Average	0.715	5.400		0.002	≥ 8

Epic Cognac Soft Body Impact Testing per ICC-ES AC321 Results:

DRY EXPOSURE					
Specimen No.	Average Thickness (in)	Average Width (in)	Test Span (in)	Residual Indentation After 24 Inch Drop (in.)	Ultimate Load (lbf)
Dry-1	0.715	5.400	24	0.002	8*
Dry-2	0.715	5.400	24	0.002	8*
Dry-3	0.715	5.400	24	0.002	8*
Average	0.715	5.400		0.002	≥ 8
WET EXPOSURE (7 DAY WATER SPRAY)					
Wet-1	0.715	5.400	24	0.002	8*
Wet-2	0.715	5.400	24	0.003	8*
Wet-3	0.715	5.400	24	0.002	8*
Average	0.715	5.400		0.002	≥ 8

*After 48-inch drop, no damage or failure of products were found, as such, product is noted as > 8 lbf.

CONCLUSIONS:

dassoXTR Classic Espresso was found to have an average residual indentation of 0.001”and met 8 lbf hard body impact and meets the requirements of Table 2 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Classic Espresso was found to have an average residual indentation of 0.002”and met 8 lbf hard body impact and meets the requirements of Table 2 of ICC-ES AC321 after wet exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual indentation of 0.002”and met 8 lbf hard body impact and meets the requirements of Table 2 of ICC-ES AC321 after dry exposure per ASTM E661.

dassoXTR Epic Cognac was found to have an average residual indentation of 0.002”and met 8 lbf hard body impact and meets the requirements of Table 2 of ICC-ES AC321 after wet exposure per ASTM E661.

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2.4 THICKNESS EXPANSION (EDGE SWELL) AFTER WETTING ON ONE SIDE

Test Procedure:

Thickness expansion (edge swell) was tested in accordance with Section 4.8 of ICC-ES AC321.

10 48-inch specimens were cut from a minimum of 5 lap siding for each product type. Once edge was cut and left exposed, the longitudinal edges were kept intact with the manufacturer's treatment. Prior to testing, each specimen was measured to obtain a baseline thickness. The specimens were subjected to a water-spray system, having a uniform grid, was placed at a uniform distance from the test specimen and delivered water uniformly against the exterior of the test specimen at a minimum rate of 1 gal/ft² per hour for 21 consecutive days.

Test Requirements:

Per ICC-ES AC321: Minimum 8 specimens Shall Exhibit Thickness Swell ≤ 25% after wetting.

Test Results:

Classic Espresso Measurements for Thickness Expansion

SAMPLE	BEFORE WATER APPLICATION THICKNESS					POST WATER APPLICATION THICKNESS				
	Top	Bottom	Left	Right	Average	Top	Bottom	Left	Right	Average
1	0.712	0.713	0.713	0.716	0.713	0.716	0.723	0.730	0.725	0.724
2	0.713	0.716	0.721	0.713	0.716	0.718	0.722	0.725	0.733	0.724
3	0.712	0.718	0.716	0.719	0.716	0.721	0.731	0.733	0.731	0.729
4	0.718	0.713	0.720	0.719	0.717	0.720	0.724	0.726	0.720	0.722
5	0.718	0.714	0.715	0.717	0.716	0.723	0.729	0.735	0.727	0.728
6	0.715	0.719	0.718	0.721	0.718	0.720	0.730	0.737	0.729	0.729
7	0.715	0.718	0.719	0.726	0.719	0.721	0.727	0.745	0.725	0.729
8	0.709	0.717	0.712	0.722	0.715	0.717	0.729	0.739	0.728	0.728
9	0.713	0.717	0.718	0.729	0.719	0.719	0.729	0.738	0.727	0.728
10	0.709	0.704	0.709	0.717	0.710	0.721	0.727	0.733	0.724	0.726
Average	-	-	-	-	0.716	-	-	-	-	0.727
St Dev.	-	-	-	-	0.003	-	-	-	-	0.003
COV	-	-	-	-	0.4%	-	-	-	-	0.4%

Epic Cognac Measurements for Thickness Expansion

SAMPLE	BEFORE WATER APPLICATION THICKNESS					POST WATER APPLICATION THICKNESS				
	Top	Bottom	Left	Right	Average	Top	Bottom	Left	Right	Average
1	0.717	0.719	0.719	0.712	0.716	0.726	0.738	0.733	0.726	0.730
2	0.719	0.718	0.720	0.714	0.717	0.726	0.729	0.733	0.725	0.728
3	0.717	0.717	0.715	0.720	0.717	0.720	0.724	0.735	0.737	0.729
4	0.716	0.718	0.713	0.723	0.717	0.718	0.737	0.733	0.726	0.728
5	0.714	0.719	0.715	0.724	0.718	0.733	0.741	0.734	0.733	0.735
6	0.718	0.719	0.716	0.721	0.718	0.725	0.736	0.738	0.734	0.733
7	0.716	0.719	0.715	0.719	0.717	0.718	0.729	0.735	0.738	0.730
8	0.715	0.717	0.718	0.720	0.718	0.727	0.727	0.736	0.734	0.731
9	0.716	0.719	0.717	0.727	0.720	0.733	0.744	0.750	0.735	0.740
10	0.720	0.721	0.714	0.722	0.719	0.732	0.731	0.734	0.735	0.733
Average	-	-	-	-	0.718	-	-	-	-	0.732
St Dev.	-	-	-	-	0.001	-	-	-	-	0.004
COV	-	-	-	-	0.1%	-	-	-	-	0.5%

Summary of Thickness Expansion (Edge Swell) After Wetting One Side

SAMPLE	CLASSIC ESPRESSO		Epic Cognac	
	AVERAGE SWELL (inches)	THICKNESS SWELL (%)	AVERAGE SWELL (inches)	THICKNESS SWELL (%)
1	0.011	1.5%	0.014	2.0%
2	0.008	1.2%	0.011	1.5%
3	0.013	1.8%	0.012	1.6%
4	0.005	0.7%	0.011	1.5%
5	0.012	1.7%	0.017	2.4%
6	0.011	1.5%	0.015	2.1%
7	0.010	1.4%	0.013	1.8%
8	0.013	1.8%	0.013	1.9%
9	0.009	1.3%	0.020	2.8%
10	0.017	2.3%	0.014	1.9%
Average	0.011	1.5%	0.014	2.0%
Standard Deviation	0.003	0.4%	0.003	0.4%
Coefficient of Variation	28.9%	29.2%	21.1%	21.0%

CONCLUSIONS:

dassoXTR Classic Espresso was found to have thickness expansion (edge swell) of 1.5% and has met ICC-ES AC321.

dassoXTR Epic Cognac was found to have thickness expansion (edge swell) of 2.0% and has met ICC-ES AC321.

2.5 BUCKLING PERFORMANCE MEASURED ON A LARGE-SCALE WALL

Test Procedure:

Buckling performance measured on a full-scale wall assembly was conducted in accordance with Section 4.9 of ICC-ES AC321.

One test assembly of 8 feet height x 12 feet width was constructed for each dassoXTR 1" x 7" product type, for a total of two walls. The walls were constructed of 2 in. by 4 in. No. 2 or better Hem-Fir lumber with vertical studs spaced at 24 in. on center. The samples were attached to the wall in 2 ft, 4 ft, and 6 ft segments in the layout shown in Figure 1 and spanned a total of 15 courses. For specimens that needed to be cut to length, ANCHORSEAL CLASSIC was used to seal the cut edge. Eisen 1/4 in. Air-gap RainClad Batten Clips with One Hole (item number ASD-RC1B-W-100) and #10 x 3 in. stainless steel screws were used to secure the samples to the wall at each vertical stud.

The constructed test specimen layout is shown in Figure 1 below.

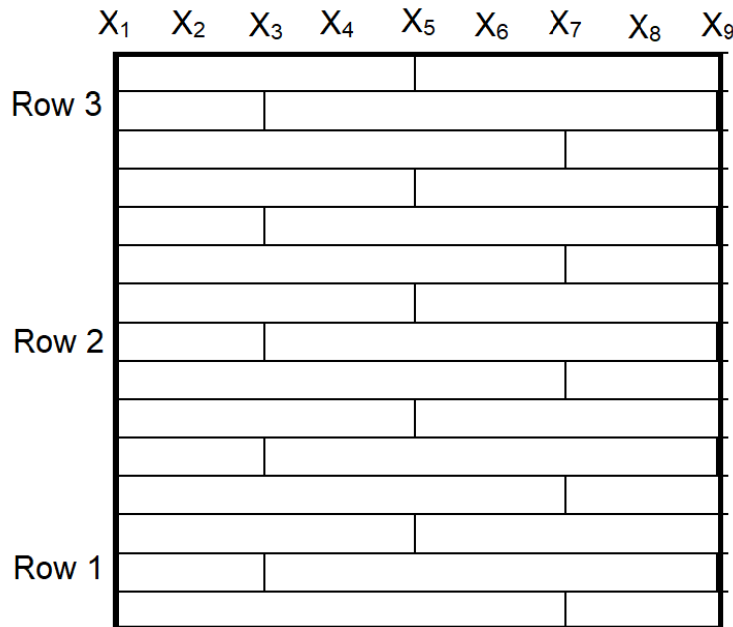


Figure 1 – Test Specimen Layout

Measurements were taken at 9 locations across 3 rows of lap siding (X1-X9 locations).

After construction, a water-spray system, having a uniform grid, was placed at a uniform distance from the test specimen and delivered water uniformly against the exterior of the test specimen at a minimum rate of 1 gal/ft² per hour for 21 consecutive days.

After water exposure, measurements were taken again at the noted 9 locations (X1-X9) across 3 rows of lap siding.

The buckling between supports was determined as movement between studs of the lap siding after water exposure.

Test Requirements:

Per ICC-ES AC321: 5% Exclusion Limit Buckling Distortions Across Supports < 0.20 inch.

As the 5% exclusion limit is defined as the limit in which all combinations of species and combinations properties are present. As there are no species combinations under consideration for dassoXTR products, the 5% exclusion limit is noted as the limit under which 95% of the test population resulted.

Requirements are 95% < 0.20 inches.

Test Results:

Results of Full-Scale stability testing of dassoXTR Epic Cognac and Classic Espresso lap siding products are outlined below:

dassoXTR Classic Espresso Full-Scale Stability Measurements										
		X1	X2	X3	X4	X5	X6	X7	X8	X9
Before	Row 1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Before	Row 2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Before	Row 3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
After	Row 1	1.532	1.625	1.585	1.658	1.529	1.681	1.521	1.651	1.533
After	Row 2	1.541	1.688	1.591	1.647	1.541	1.671	1.517	1.660	1.543
After	Row 3	1.559	1.625	1.581	1.664	1.553	1.609	1.519	1.649	1.568
Change	Row 1	0.032	0.125	0.085	0.158	0.029	0.181	0.021	0.151	0.033
	Row 2	0.041	0.188	0.091	0.147	0.041	0.171	0.017	0.160	0.043
	Row 3	0.059	0.125	0.081	0.164	0.053	0.109	0.019	0.149	0.068
Center Buckling	Row 1		0.0665		0.101		0.156		0.124	
	Row 2		0.122		0.081		0.142		0.130	
	Row 3		0.055		0.097		0.073		0.1055	

Maximum: 0.156 inches
Average: 0.104 inches
Standard Deviation: 0.031 inches
95% Limit: 0.17 inches < 0.20 inches

dassoXTR Epic Cognac Full-Scale Stability Measurements										
		X1	X2	X3	X4	X5	X6	X7	X8	X9
Before	Row 1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Before	Row 2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Before	Row 3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
After	Row 1	1.551	1.633	1.592	1.663	1.536	1.688	1.528	1.659	1.542
After	Row 2	1.560	1.678	1.596	1.653	1.549	1.677	1.531	1.667	1.552
After	Row 3	1.568	1.634	1.59	1.672	1.558	1.613	1.54	1.653	1.579
Change	Row 1	0.051	0.133	0.092	0.163	0.036	0.188	0.028	0.159	0.042
	Row 2	0.060	0.178	0.096	0.153	0.049	0.177	0.031	0.167	0.052
	Row 3	0.068	0.134	0.090	0.172	0.058	0.113	0.040	0.153	0.079
Center Buckling	Row 1		0.0615		0.099		0.156		0.124	
	Row 2		0.100		0.0805		0.137		0.1255	
	Row 3		0.055		0.098		0.064		0.0935	

Maximum: 0.156 inches
Average: 0.100 inches
Standard Deviation: 0.031 inches
95% Population: 0.16 inches < 0.20 inches

CONCLUSIONS:

The noted dassoXTR full-scale stability testing was

dassoXTR Classic Espresso was found to have an average buckling between supports of 0.10" with a maximum buckling between supports measured at 0.156" and standard deviation of 0.03". At 95% confidence (5% exclusion limit for 1 species combination) full-scale buckling of 0.17 inches meets < 0.20" limit and has met the requirements of ICC-ES AC321.

dassoXTR Epic Cognac was found to have an average buckling between supports of 0.10" with a maximum buckling between supports measured at 0.156" and standard deviation of 0.03". At 95% confidence (5% exclusion limit for 1 species combination) full-scale buckling of 0.16 inches meets < 0.20" limit inches and has met the requirements of ICC-ES AC321.

2.6 MOLD RESISTANCE

Test Procedure:

Mold resistance of dassoXTR phenolic based Classic Espresso and Epic Cognac lap siding was evaluated in accordance with Section 3.5.2 of ICC-ES AC321, referencing Section 7.14 and 6.2.5.1(b) of specification PS2 Performance Standard for Wood-Based Structural-Use Panels.

Test Requirements:

Per Section 6.2.5.1(b) of PS2:

Average load after exposure < Control Sample Average - 1.8 times control standard deviation.

Test Results:

Per Section 5.3.4.1 Adhesive Mold Resistance per PS2-10. Phenolic and isocyanate-based adhesives have demonstrated resistance to attack from mold and are considered to meet mold requirements.

dassoXTR Classic Espresso and Epic Cognac products are of phenolic composition, and are considered resistant to attack from mold.

CONCLUSIONS:

dassoXTR Classic Espresso is phenolic based in composition, and considered resistant to mold attack, meeting Section 3.5.2 of ICC-ES AC321

dassoXTR Epic Cognac is phenolic based in composition, and considered resistant to mold attack, meeting Section 3.5.2 of ICC-ES AC321

2.7 DIMENSIONAL TOLERANCES AND SQUARENESS

Test Procedure:

Dimensional tolerances and squareness were determined for dassoXTR Classic Espresso and dassoXTR Epic Cognac exterior cladding products in accordance with Section 3.6 of ICC-ES AC321.

3 samples of 72 inch length were randomly selected of nominal 6 inch, and 7 inch exposure products for both Classic Espresso and Epic Cognac. For each sample selected, length, width, thickness and squareness were measured by QAI for comparison to specifications provided by Dasso USA.

Test Requirements:

Per Section 3.6 of ICC-ES AC321:

SPECIFIED DIMENSION	MINIMUM	MAXIMUM
Length / Width	-0 inch	+1/8 inch
Thickness	-1/32 inch	+1/32 inch
Squareness	-	1/64 inch / ft length
Straightness	-	1/8 inch / 16 ft

Test Results:

dassoXTR Classic Espresso Dimensions and Squareness (inches)								
Board No.	Specified Length (in)	Measured Length (in)	Specified Width (in)	Measured Width (in)	Specified Thickness (in)	Measured Thickness (in)	Squareness (D1 / D2)	Straightness (in)
1	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.005
2	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.004
3	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.005
1	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.004
2	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.004
3	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.006
dassoXTR Epic Cognac Dimensions and Squareness (inches)								
Board No.	Specified Length (in)	Measured Length (in)	Specified Width (in)	Measured Width (in)	Specified Thickness (in)	Measured Thickness (in)	Squareness (D1 / D2)	Straightness (in)
1	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.005
2	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.005
3	72	72	5 ³ / ₈	5 ³ / ₈	³ / ₄	³ / ₄	72 ¹ / ₂ / 72 ¹ / ₂	< 0.004
1	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.005
2	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.006
3	72	72	7	7	³ / ₄	³ / ₄	72 ⁵ / ₈ / 72 ⁵ / ₈	< 0.004

CONCLUSIONS:

dassoXTR Classic Espresso met dimensional tolerances and squareness requirements of ICC-ES AC321.

dassoXTR Epic Cognac met dimensional tolerances and squareness requirements of ICC-ES AC321.

2.8 MOISTURE CONTENT

Test Procedure:

Moisture content for dassoXTR Classic Espresso and dassoXTR Epic Cognac exterior cladding products was determined in accordance with Section 3.7 of ICC-ES AC321 following section 7.11 of specification PS2 Performance Standard for Wood-Based Structural-Use Panels.

20 samples of 6 inch length form nominal 6 inch exposure, and 7 inch exposure products were prepared by QAI staff for dassoXTR Classic Espresso and dassoXTR Epic Cognac products.

The samples were conditioned at 73°F ± 2°F temperature and 50% ± 5% relative humidity until constant weight was reached. Following, an initial weight was taken for each sample and recorded.

The samples were placed in a drying oven maintained at 217°F ± 4°F until constant weight was achieved (determined where weight change < 0.2% between readings).

The moisture content was then calculated as

$$M_c = (W_w - W_d) / W_d \times 100$$

Where: M_c = Moisture Content
 W_w = Initial weight.
 W_d = Dry oven weight.

Test Requirements:

Per Section 3.7 of ICC-ES AC321:

$$M_c \leq 16\%$$

Test Results:

#	Classic Espresso 6 Inch			Classic Espresso 7 Inch			Epic Cognac 6 Inch			Epic Cognac 7 Inch		
	W _w (g)	W _d (g)	M _c (g)	W _w (g)	W _d (g)	M _c (g)	W _w (g)	W _d (g)	M _c (g)	W _w (g)	W _d (g)	M _c (g)
1	365.61	355.69	2.79%	595.56	585.31	1.75%	394.99	388.31	1.72%	671.44	662.01	1.42%
2	403.41	392.57	2.76%	603.79	593.06	1.81%	411.73	405.23	1.60%	666.44	657.24	1.40%
3	394.32	383.93	2.71%	600.14	589.57	1.79%	384.32	378.04	1.66%	665.34	655.26	1.54%
4	393.96	382.97	2.87%	605.56	594.90	1.79%	414.46	407.85	1.62%	631.96	622.17	1.57%
5	402.50	391.83	2.72%	604.49	594.01	1.76%	398.05	391.50	1.67%	638.52	628.90	1.53%
6	404.73	394.14	2.69%	596.51	586.03	1.79%	413.68	407.09	1.62%	639.13	629.97	1.45%
7	397.09	386.53	2.73%	595.25	584.72	1.80%	405.90	399.13	1.70%	653.40	644.03	1.45%
8	378.13	367.41	2.92%	597.75	587.20	1.80%	418.42	411.80	1.61%	636.70	627.32	1.50%
9	401.80	391.04	2.75%	611.19	600.77	1.73%	410.86	404.38	1.60%	615.95	607.27	1.43%
10	375.46	364.40	3.04%	576.68	566.38	1.82%	417.21	410.52	1.63%	642.43	633.13	1.47%
11	367.61	356.89	3.00%	596.76	586.11	1.82%	396.89	390.30	1.69%	670.55	660.98	1.45%
12	401.41	390.57	2.78%	602.69	592.06	1.80%	409.11	402.48	1.65%	661.23	651.47	1.50%
13	395.32	384.93	2.70%	603.14	592.52	1.79%	388.22	382.03	1.62%	662.84	653.16	1.48%
14	393.16	382.57	2.77%	605.56	594.81	1.81%	411.55	404.66	1.70%	635.75	626.35	1.50%
15	400.50	389.83	2.74%	602.59	592.35	1.73%	400.07	393.66	1.63%	639.66	630.47	1.46%
16	402.73	392.04	2.73%	598.42	588.22	1.73%	412.67	405.67	1.73%	641.65	632.46	1.45%
17	396.09	385.23	2.82%	596.75	586.35	1.77%	401.87	395.02	1.73%	651.88	642.55	1.45%
18	379.43	369.00	2.83%	599.54	589.26	1.74%	415.32	408.44	1.68%	638.67	629.85	1.40%
19	400.80	390.01	2.77%	610.88	600.37	1.75%	408.56	401.75	1.70%	614.33	605.68	1.43%
20	377.56	367.08	2.85%	579.18	568.88	1.81%	413.61	406.84	1.66%	639.66	630.12	1.51%
Average			2.80%			1.78%			1.66%			1.47%

CONCLUSIONS:

dassoXTR Classic Espresso was found to have a moisture content of < 16% and has met ICC-ES AC321.

dassoXTR Epic Cognac met dimensional tolerances and squareness requirements of ICC-ES AC321.

2.9 SURFACE BURNING CHARACTERISTICS

dassoXTR Classic Espresso and Epic Cognac deck board products of 2” thickness were evaluated to ASTM E84-18 to determine surface burning characteristics. Testing was conducted on the noted 2” product thickness option, as this was considered of higher fuel load with results to apply to the thinner 1” product thickness options of dassoXTR.

dassoXTR Classic Espresso deck boards are of identical formulation as dassoXTR Classic Espresso exterior cladding. As such, the results described below apply to the Classic Espresso rainscreen bamboo exterior cladding products.

dassoXTR Epic Cognac deck boards are of identical formulation as dassoXTR Epic Cognac exterior cladding. As such, the results described below apply to the Epic Cognac rainscreen bamboo exterior cladding products.

Test Requirements

Products evaluated are to have a flame spread index of < 200 evaluated to ASTM E84.

Test Results

dassoXTR Classic Espresso and Epic Cognac products surface burning characteristics are outlined below.

PRODUCT	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
Classic Espresso	25	25
Epic Cognac	25	10

For further details of Classic Espresso ASTM E84-18 testing, see QAI test report RJ7637F-1brev1 revised May 11, 2022 found in Appendix B of this report.

For further details of Epic Cognac ASTM E84-18 testing, see QAI test report RJ7637F-1arev1 revised May 11, 2022 found in Appendix A of this report.

CONCLUSIONS:

dassoXTR Classic Espresso was found to have a flame spread index of 25 and smoke developed index of 26 when evaluated to ASTM E84-18.

dassoXTR Epic Cognac was found to have a flame spread index of 25 and smoke developed index of 10 when evaluated to ASTM E84-18.

2.10 TRANSVERSE LOAD RESISTANCE

Testing for transverse load resistance was conducted following ASTM E330 by Fenestration Testing Laboratories, Inc. (A QAI Company), an accredited third-party testing lab for evaluation of fenestration products including testing to ASTM E330 (IAS TL-948).

dassoXTR products outlined in this report are supplied with a proprietary Tiger Claw hidden clip system and fasteners outlined below:

PRODUCT	FASTENING	INSTALLATION DESCRIPTION
1" x 6" Classic Espresso	1 dassoXTR rainscreen hidden clip (part ASD-RC1S-W-100) every 16" on center, attached with one #10 2" length pan head screw.	2" x 6" SYP lumber spaced at 16" on center spacing. 1 dassoXTR rainscreen hidden clip (part ASD-RC1S-W) anchored through the sheathing into wood studs with #10 2" length pan head screw. Screw penetrates into the underlying stud through the 5/8" thickness exterior plywood sheathing with approximately 1-5/8" penetration of the fastener into the stud.
1" x 7" Classic Espresso		
1" x 6" Epic Cognac		
1" x 7" Epic Cognac		

Testing was conducted on the 1" x 7" profile products, as these products were considered to have the greatest tributary area to fastener connection, and thus represent the weaker product for load resistance and as such were selected by QAI for evaluation.

Test walls of 4' x 8' size were constructed of Southern Yellow Pine Grade 2 2" x 4" studs spaced 16" on center with a single top and bottom plate. The top and bottom plate were anchored to studs with two 10d nails at each stud end. 5/8" pine plywood exterior grade plywood was installed over the studs with 10d nails spaced at 8" on center. dassoXTR hidden clips were installed at each stud location with #10 2" length pan head screws, with the screws penetrating through the sheathing into the underlying stud. Installation details can be found in Appendix D of this report.

Testing was conducted in the positive, and negative direction to establish the direction of lowest transverse load resistance. Following, 2 additional tests were conducted in the determined weakest transverse load direction.

The allowable load was determined as the average ultimate load with a factor of safety of 3 applied.

Test Requirements:

Report transverse load resistance = ultimate load with a factor of safety of 3.0 applied.

Test Results:

	Classic Espresso 1" x 7"		Epic Cognac 1" x 7"	
	Positive (psf)	Negative (psf)	Positive (psf)	Negative (psf)
Test 1	≥ 280 psf	208	≥ 280 psf	201
Test 2		203		203
Test 3		208		195
Average		206		200
Allowable		69 psf		67 psf

Note 1: QAI has stated nominal pressure resistance based on rounding to nearest multiple of 10 given large factor of safety applied to test results and given the low variation in failure loads.

Addition details for testing of dassoXTR Classic Espresso and Epic Cognac cladding products can be found in FTL test report 20-2258 dated May 7, 2021.

APPENDIX A – Surface Burning Characteristics Report RJ7637F-1arev1 dated 05/11/2022 for Epic Cognac by QAI Laboratories



8385 White Oak Avenue
Rancho Cucamonga, CA 91730
909.483.0250 ph. | 909.483.0336 fx.

CLIENT: **DASSO USA**
6060 Boat Rock Blvd. SW, Suite 800
Atlanta, GA 30336

Test Report Number :	RJ7637F-1a rev1	Revision Date:	May 11, 2022
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SAMPLE ID: The client identified the following test material as:
dassoXTR Epic Cognac composite bamboo decking material of 2" (51 mm) thickness.

SAMPLING DETAIL: Test Samples were witnessed at the location of manufacture in Xiandal Z huchanye Yuanqu, Gaobu Town, Zixi Country, Fuzhou City, Jianxi Province China by QAI personnel FEY Han on July 31, 2020. Samples were confirmed to be representative of normally manufactured product.

DATE OF RECEIPT: Samples were received at QAI facilities on: 9/12/2020.

TESTING PERIOD: November 2, 2020.

AUTHORIZATION: Testing was authorized by DASSO USA for proposal 20JL05211R3 dated May 29, 2020. signed May 29, 2020.

TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM E84 - 18b "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1..

TEST RESULTS:	<u>Flame Spread</u>	<u>Smoke Developed</u>
	25	10

CONCLUSION: When tested in accordance to ASTM E84-18b the tested material resulted in a Class 'A'. Detailed test results are presented in the subsequent pages of this report

Prepared By

Brian Ortega
Fire Lab Manager

Signed for and on behalf of
QAI Laboratories, Inc.

Jason Friedrich
Engineering Manager

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SCOPE: This fire-test-response standard is used for the comparative surface burning behavior of building materials is applicable to exposed surfaces such as walls, ceilings and others. The test is conducted with the specimen in the ceiling position with the surface to be evaluated exposed face down to the ignition source. The material, product, or assembly shall be capable of being mounted in the test position during the test. Thus, the specimen shall either be self-supporting by its own structural quality, held in place by added supports along the test surface, or secured from the back side. The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

USE: The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.

PROCEDURE: A brief overview of the method is as follows: The test specimen, a material between 20 and 24 inches in width by 24 feet +/- 12 inches in length is loaded onto the water cooled ledge of the fire test chamber when tested to ASTM E84 or CAN/ULC-S102. If tested to CAN/ULC-S102.2 the specimen is tested on the chamber floor. The inside dimensions are 17 3/4 inches +/- 1/4" wide by 12 inches +/- 1/2" deep by 25 feet long. The fire test chamber is a rectangular horizontal duct with a removable lid. The sides and base of the chamber are lined with an insulated firebrick with pressure tight observation windows down one side for a technician to observe flame progression during the duration of the 10-minute test period. The chamber lid is lowered into test position with non combustible concrete board placed between the specimen and chamber lid. A draft of 240 feet per minute which is maintained inside the test chamber throughout the test period by the means of an electronic fan afterburner and an electronically controlled damper door system located downstream of the test chamber in the exhaust ducting. The test is started when the test flame is ignited at the front of the test chamber. An electronic photocell system located in the exhaust system downstream from the test chamber is used to plot the smoke developed for use in calculating the smoke developed index while a technician plots the flame spread distance used in determining the flame spread index. The test is run for the 10 minute duration in accordance to the method.

(See Diagrams in the Appendix of this report.)

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PREPARATION AND CONDITIONING:
#N/A

MOUNTING METHOD:
#N/A

ASTM E84 TEST RESULTS:

CLIENT NAME:	DASSO USA	TEST DATE: November 2, 2020.
SAMPLE ID:	dassoXTR Epic Cognac composite bamboo decking material of 2" (51 mm) thickness.	
SAMPLE IGNITION:	01:07	Minutes / Seconds
MAX FLAME FRONT:	8.1	Feet
TIME TO MAXIMUM SPREAD:	09:25	Minutes / Seconds
TEST DURATION:	10:00	Minutes / Seconds
SUMMARY:	FLAME SPREAD:	25 <i>27 Unrounded</i>
	SMOKE DEVELOPED:	10 <i>12 Unrounded</i>

OBSERVATIONS:

A Maximum Flamefront of 8.1 feet was observed at 09:25. The Test was terminated at 10:00.

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SUMMARY OF ASTM E84 / UL 723 RESULTS:

Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5.
Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

<u>NFPA CLASS¹</u>	<u>IBC CLASS²</u>	<u>FLAME SPREAD</u>	<u>SMOKE DEVELOPED</u>
A	A	0 through 25	Less than or equal to 450
B	B	26 through 75	Less than or equal to 450
C	C	76 through 200	Less than or equal to 450

BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code"
2. International Building Code, Chapter 8, Interior Finishes, Section 803.

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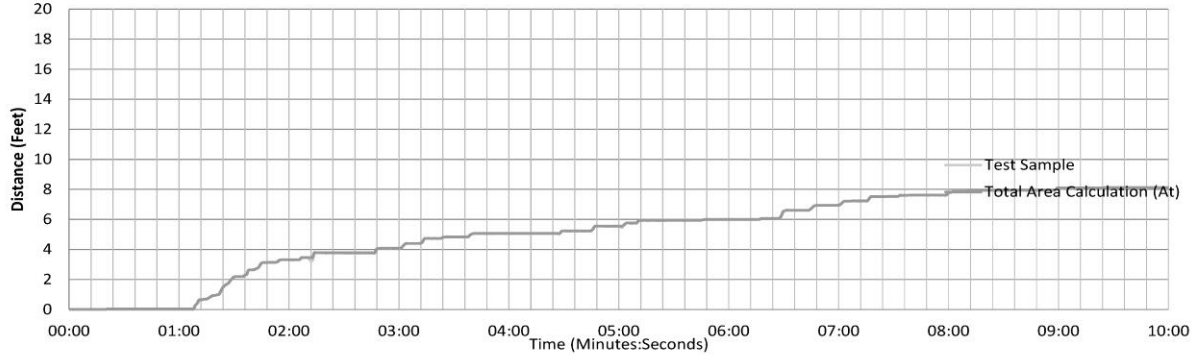
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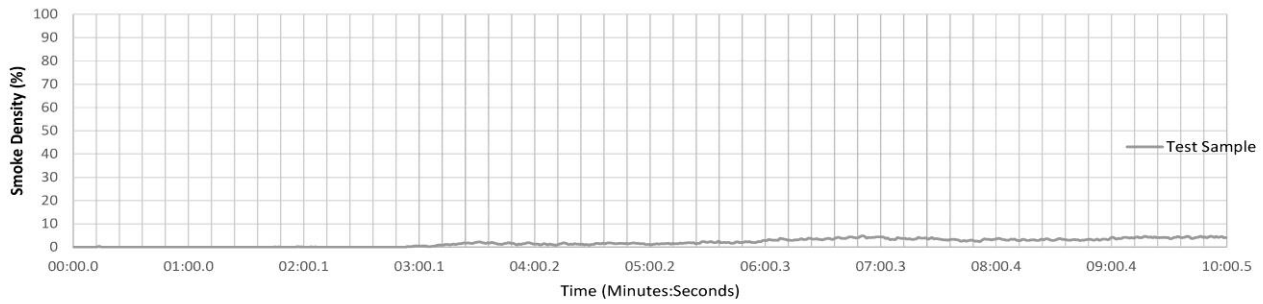
RJ7637F-1a rev1-DASSO USA-dassoXTR Epic Cognac - E84-05112022
Date: 5/11/2022
Page 5 of 7

RESULTS CONTINUED:

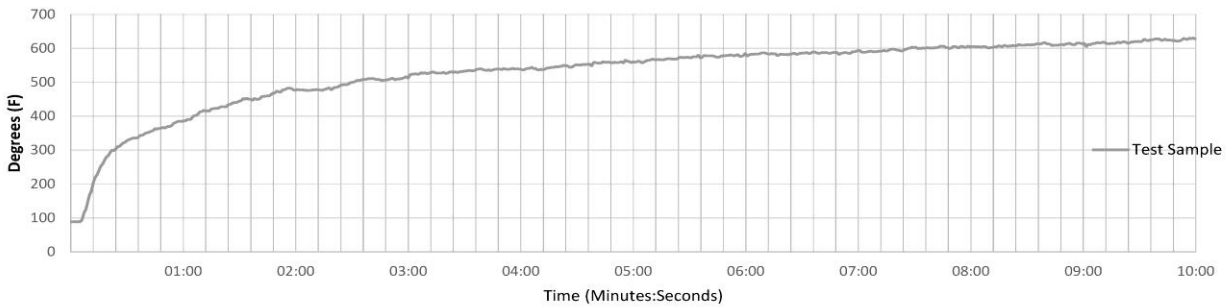
Flame Spread



Smoke Readings



Temperature



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RJ7637F-1a rev1-DASSO USA-dassoXTR Epic Cognac - E84-05112022

Date: 5/11/2022

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APPENDIX

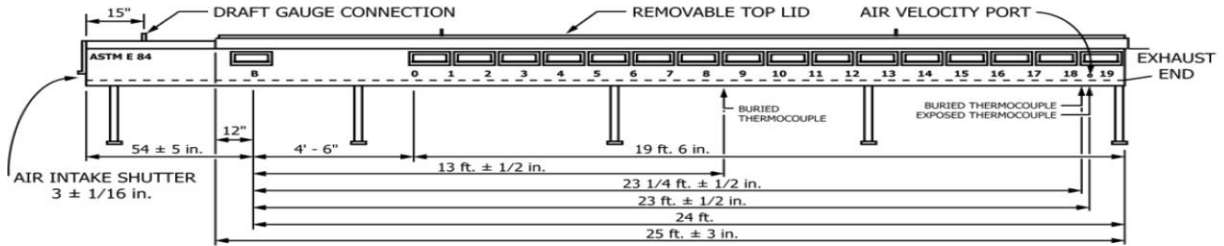


Diagram 1. Test Chamber side view showing critical dimensions.

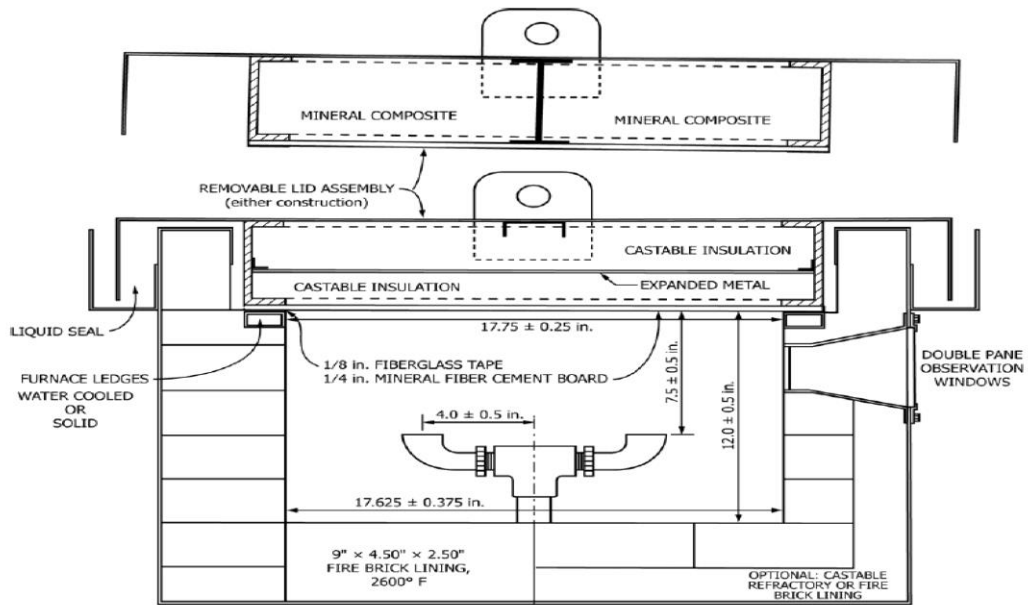


Diagram 2. Test Chamber looking down chamber showing critical dimensions.

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REVISION HISTORY

07/15/2021: Report published.
05/02/2022: Update to include sample thickness, correct report client sample name (dassoXTR) on report.

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<<<END OF TEST REPORT>>>

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APPENDIX B – Surface Burning Characteristics Report RJ7637F-1brev1 dated 05/11/2022 for Classic Espresso by QAI Laboratories



8385 White Oak Avenue
Rancho Cucamonga, CA 91730
909.483.0250 ph. | 909.483.0336 fx.

CLIENT: **Dasso USA**
6060 Boat Rock Blvd. SW, Suite 800
Atlanta, GA 30336

Test Report Number :	RJ7637F-1b rev1	Date:	May 11, 2022
-----------------------------	------------------------	--------------	---------------------

SAMPLE ID: The client identified the following test material as:
dassoXTR Classic Espresso composite bamboo decking material of 2" (51 mm) thickness.

SAMPLING DETAIL: Test Samples were witnessed at the location of manufacture in Xiandal Z huchanye Yuanqu, Gaobu Town, Zixi Country, Fuzhou City, Jianxi Province China by QAI personnel FEY Han on July 31, 2020. Samples were confirmed to be representative of normally manufactured product.

DATE OF RECEIPT: Samples were received at QAI facilities on: 9/12/2020.

TESTING PERIOD: November 2, 2020.

AUTHORIZATION: Testing was authorized by DASSO USA for proposal 20JL05211R3 dated May 29, 2020. signed May 29, 2020.

TEST REQUESTED: Perform standard flame spread and smoke density developed classification tests on the sample supplied by the Client in accordance with ASTM E84 - 18b "Standard Method of Test for Surface Burning Characteristics of Building Materials". The foregoing test procedure is comparable to UL 723, ANSI/NFPA No. 255, and UBC No. 8-1..

TEST RESULTS:	<u>Flame Spread</u>	<u>Smoke Developed</u>
	25	25

CONCLUSION: When tested in accordance to ASTM E84-18b the tested material resulted in a Class 'A'. Detailed test results are presented in the subsequent pages of this report

Prepared By

Brian Ortega
Fire Lab Manager

**Signed for and on behalf of
QAI Laboratories, Inc.**

Jason Friedrich
Engineering Manager

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SCOPE: This fire-test-response standard is used for the comparative surface burning behavior of building materials is applicable to exposed surfaces such as walls, ceilings and others. The test is conducted with the specimen in the ceiling position with the surface to be evaluated exposed face down to the ignition source. The material, product, or assembly shall be capable of being mounted in the test position during the test. Thus, the specimen shall either be self-supporting by its own structural quality, held in place by added supports along the test surface, or secured from the back side. The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.

USE: The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.

PROCEDURE: A brief overview of the method is as follows: The test specimen, a material between 20 and 24 inches in width by 24 feet +/- 12 inches in length is loaded onto the water cooled ledge of the fire test chamber when tested to ASTM E84 or CAN/ULC-S102. If tested to CAN/ULC-S102.2 the specimen is tested on the chamber floor. The inside dimensions are 17 3/4 inches +/- 1/4" wide by 12 inches +/- 1/2" deep by 25 feet long. The fire test chamber is a rectangular horizontal duct with a removable lid. The sides and base of the chamber are lined with an insulated firebrick with pressure tight observation windows down one side for a technician to observe flame progression during the duration of the 10-minute test period. The chamber lid is lowered into test position with non combustible concrete board placed between the specimen and chamber lid. A draft of 240 feet per minute which is maintained inside the test chamber throughout the test period by the means of an electronic fan afterburner and an electronically controlled damper door system located downstream of the test chamber in the exhaust ducting. The test is started when the test flame is ignited at the front of the test chamber. An electronic photocell system located in the exhaust system downstream from the test chamber is used to plot the smoke developed for use in calculating the smoke developed index while a technician plots the flame spread distance used in determining the flame spread index. The test is run for the 10 minute duration in accordance to the method.

(See Diagrams in the Appendix of this report.)

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PREPARATION AND CONDITIONING:
#N/A

MOUNTING METHOD:
#N/A

ASTM E84 TEST RESULTS:

CLIENT NAME:	Dasso USA	TEST DATE: November 2, 2020.
SAMPLE ID:	dassoXTR Classic Espresso composite bamboo decking material of 2" (51 mm) thickness.	
SAMPLE IGNITION:	00:00	Minutes / Seconds
MAX FLAME FRONT:	9.1	Feet
TIME TO MAXIMUM SPREAD:	08:56	Minutes / Seconds
TEST DURATION:	10:00	Minutes / Seconds
SUMMARY:	FLAME SPREAD:	25 <i>26 Unrounded</i>
	SMOKE DEVELOPED:	25 <i>23 Unrounded</i>

OBSERVATIONS:

A Maximum Flamefront of 9.1 feet was observed at 08:56. The Test was terminated at 10:00.

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SUMMARY OF ASTM E84 / UL 723 RESULTS:

Because of the possible variations in reproducibility, the results are adjusted to the nearest figure divisible by 5.
Smoke Density values over 200 are rounded to the nearest figure divisible by 50.

In order to obtain the Flame Spread Classification, the above results should be compared to the following table:

<u>NFPA CLASS¹</u>	<u>IBC CLASS²</u>	<u>FLAME SPREAD</u>	<u>SMOKE DEVELOPED</u>
A	A	0 through 25	Less than or equal to 450
B	B	26 through 75	Less than or equal to 450
C	C	76 through 200	Less than or equal to 450

BUILDING CODES CITED:

1. National Fire Protection Association, ANSI/NFPA No. 101, "Life Safety Code"
2. International Building Code, Chapter 8, Interior Finishes, Section 803.

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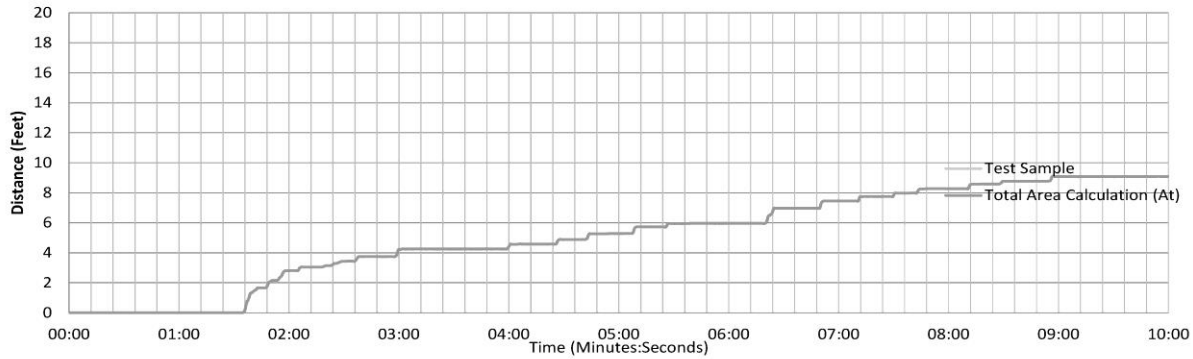
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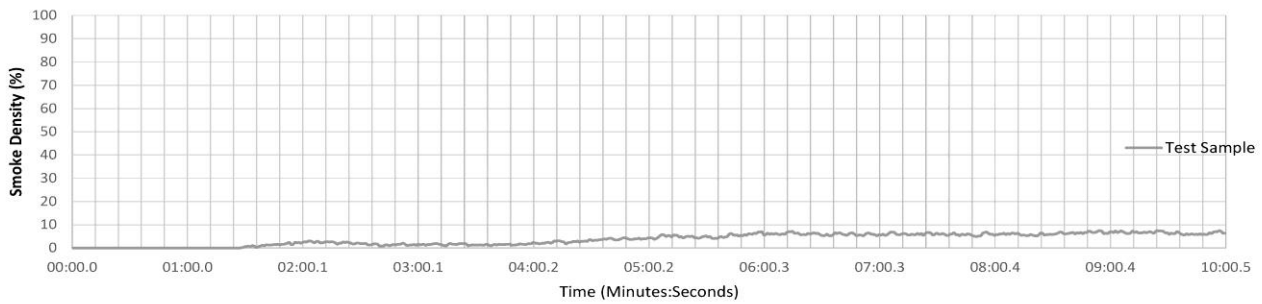
RJ7637F-1b rev1-DASSO USA-dassoXTR - Classic Espresso - E84-05112022
Date: 5/11/2022
Page 5 of 7

RESULTS CONTINUED:

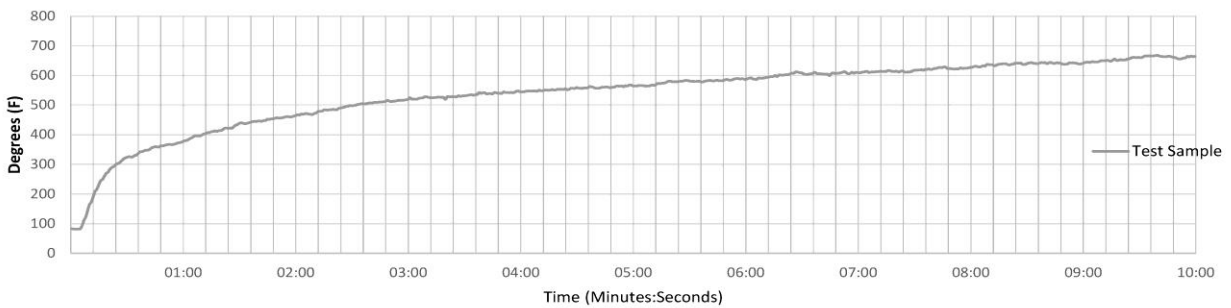
Flame Spread



Smoke Readings



Temperature



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RJ7637F-1b rev1-DASSO USA-dassoXTR - Classic Espresso - E84-05112022

Date: 5/11/2022

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APPENDIX

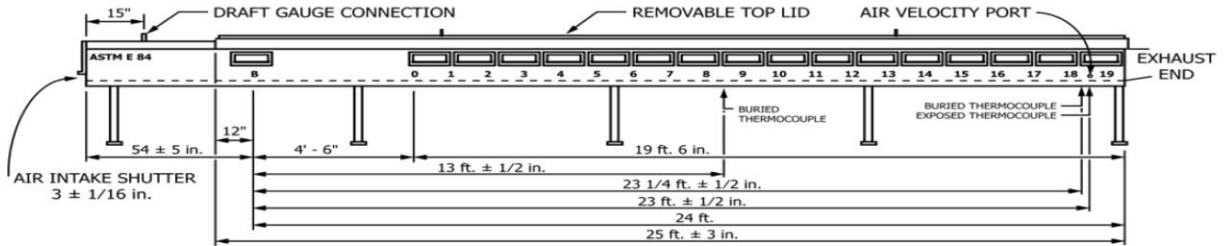


Diagram 1. Test Chamber side view showing critical dimensions.

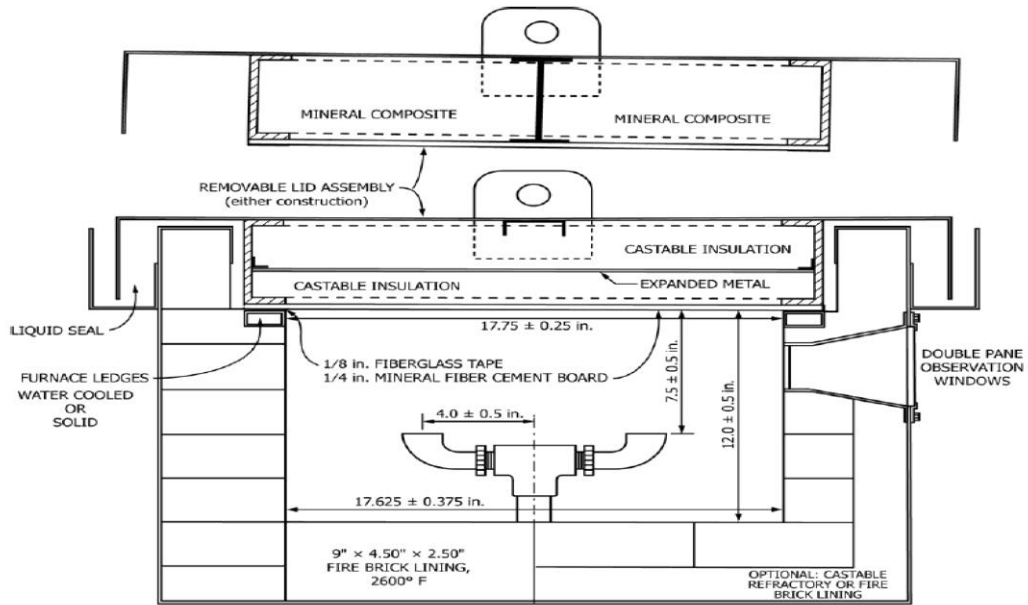


Diagram 2. Test Chamber looking down chamber showing critical dimensions.

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RJ7637F-1b rev1-DASSO USA-dassoXTR - Classic Espresso - E84-05112022

Date: 5/11/2022

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REVISION HISTORY

07/15/2021: Report published.
05/02/2022: Update to include sample thickness, correct report client sample name (dassoXTR) on report, update to project / report number to correct to RJ7637F-1b

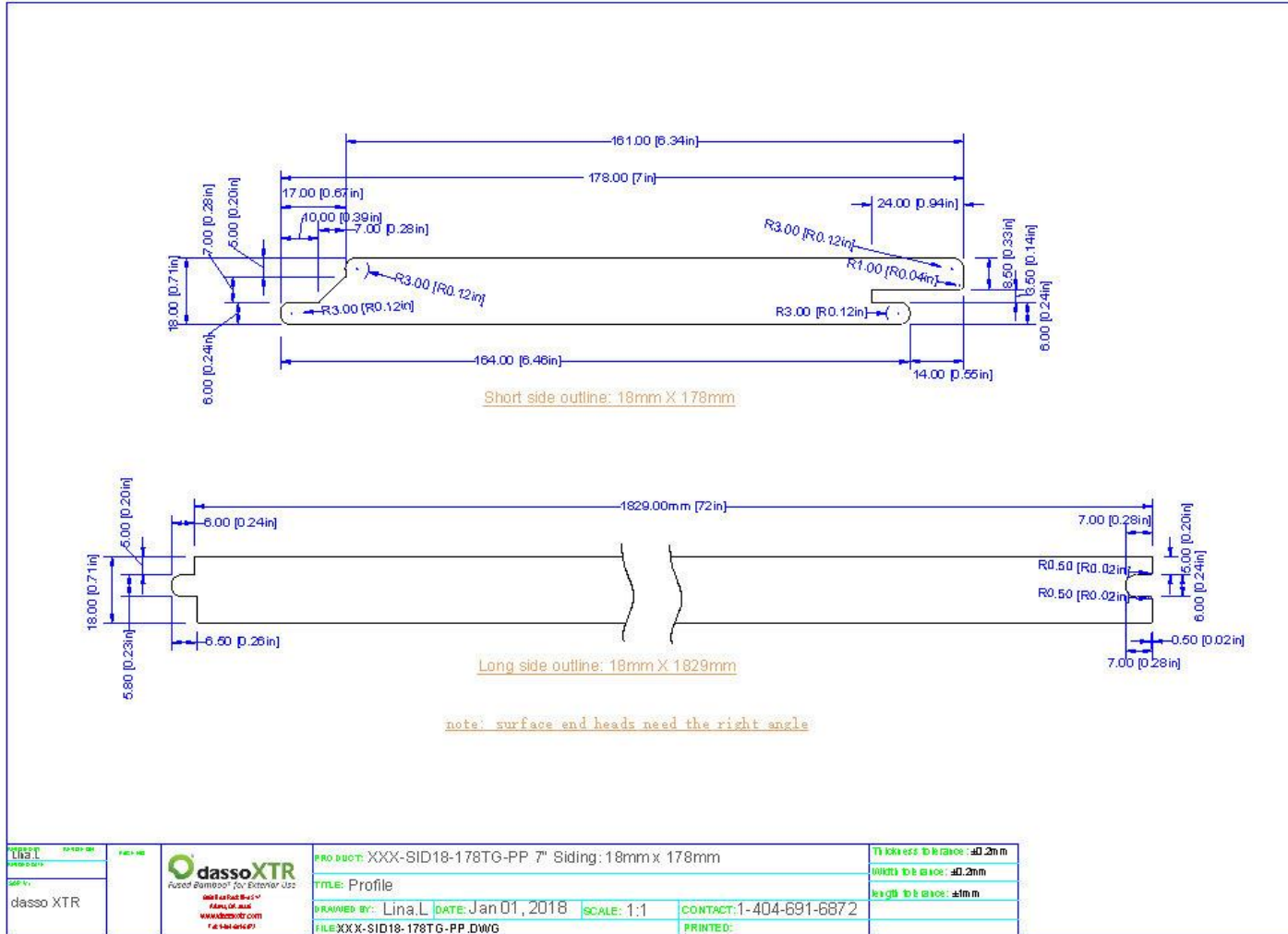
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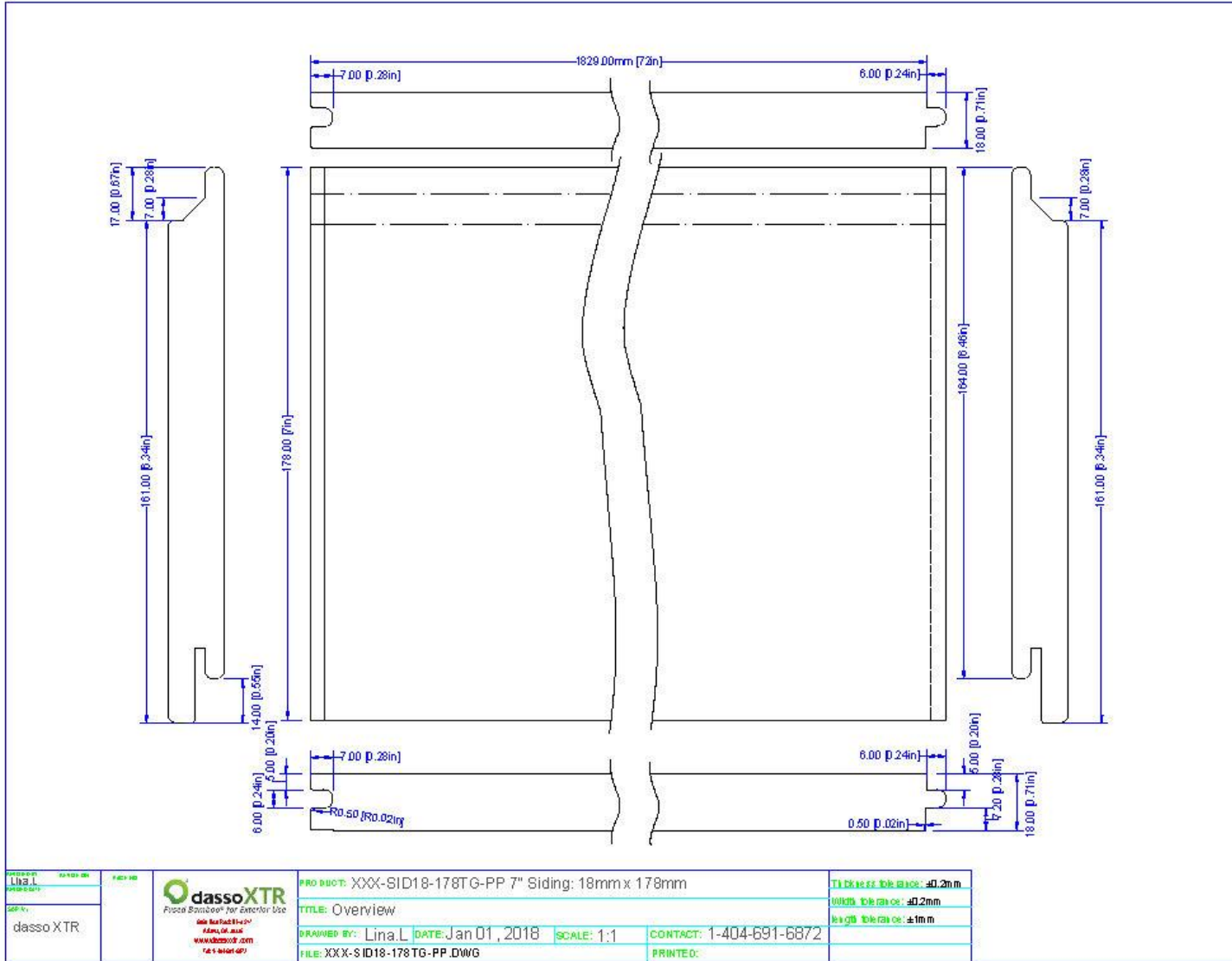
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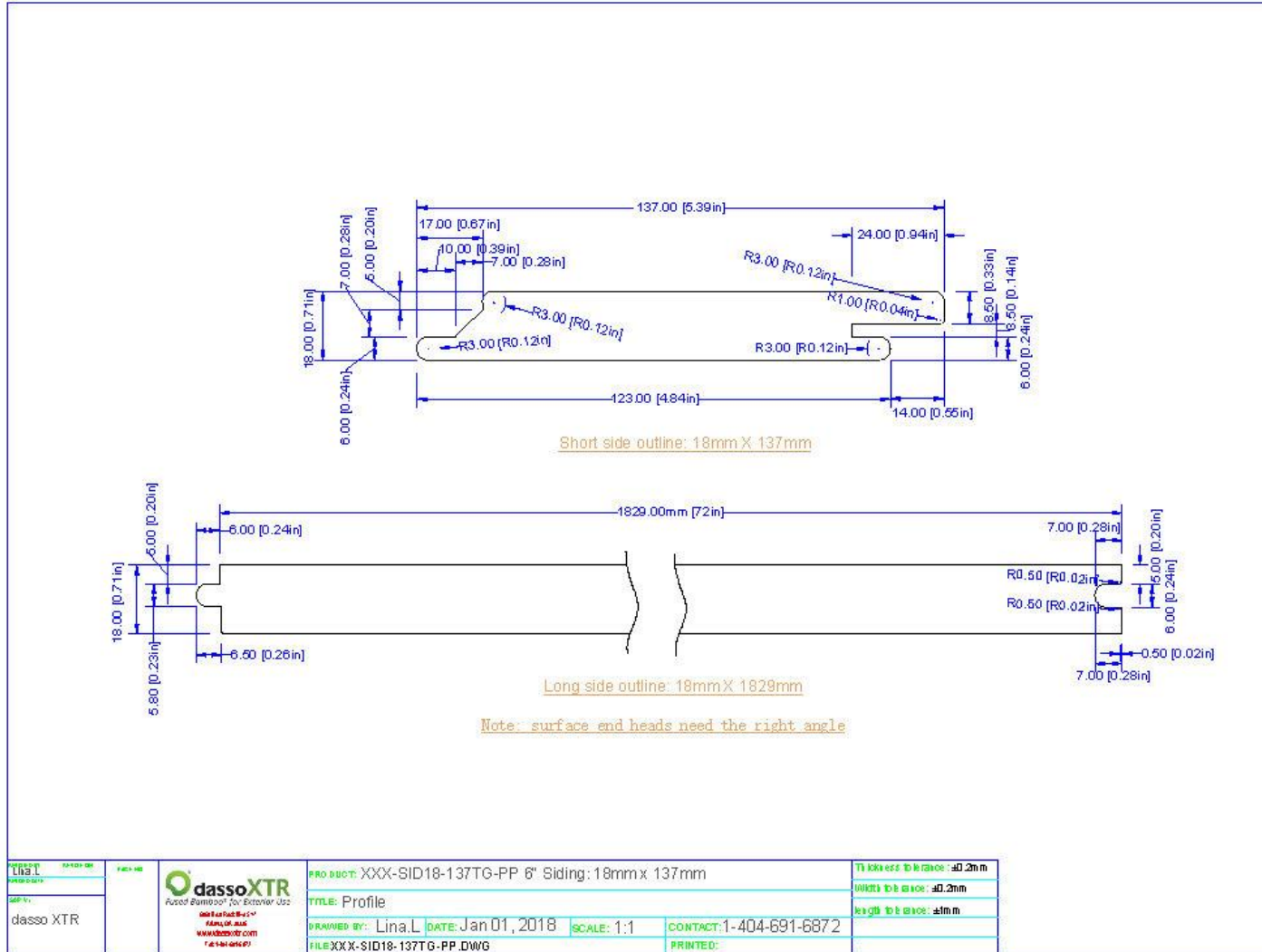
APPENDIX C – Product and Accessory Specifications

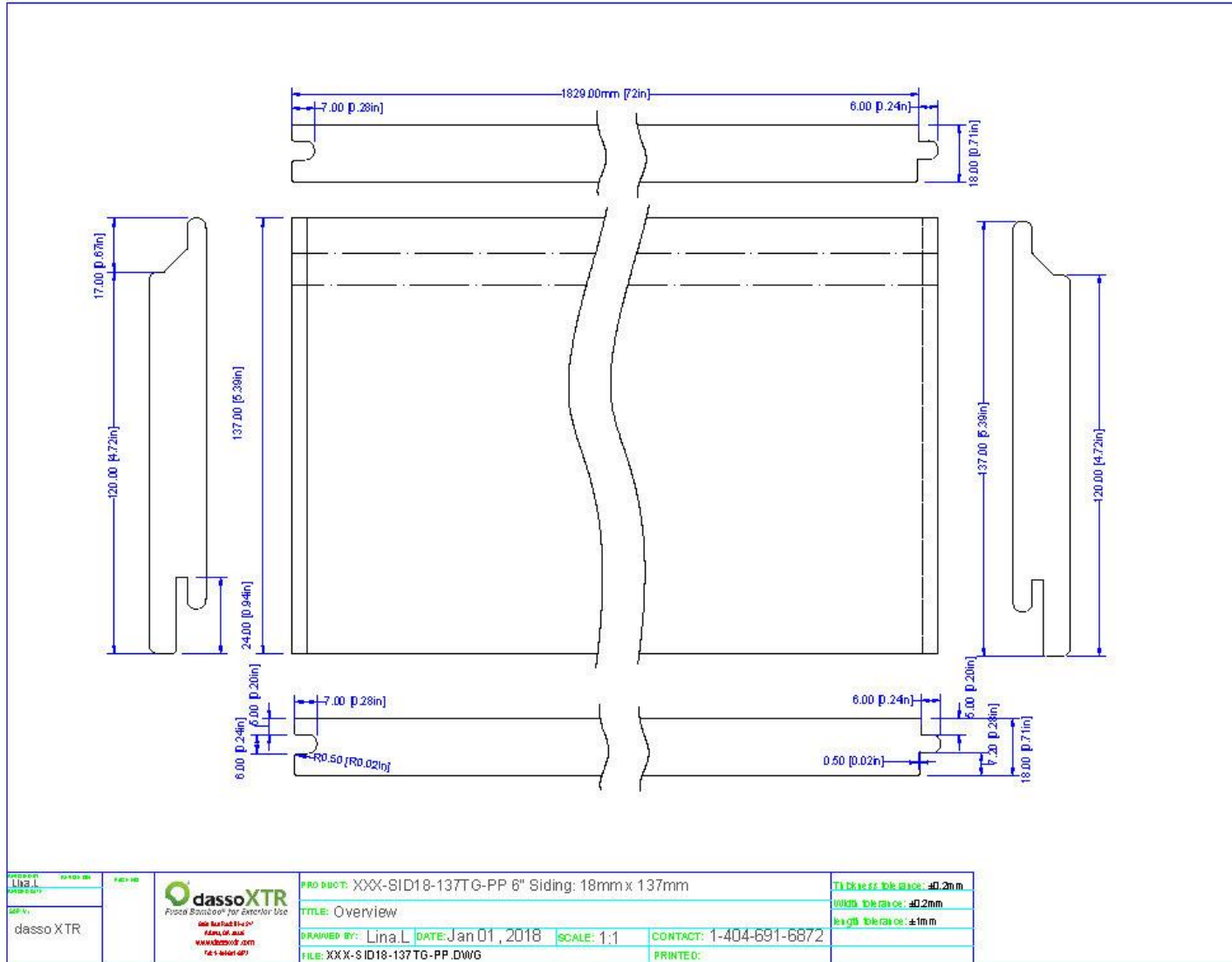


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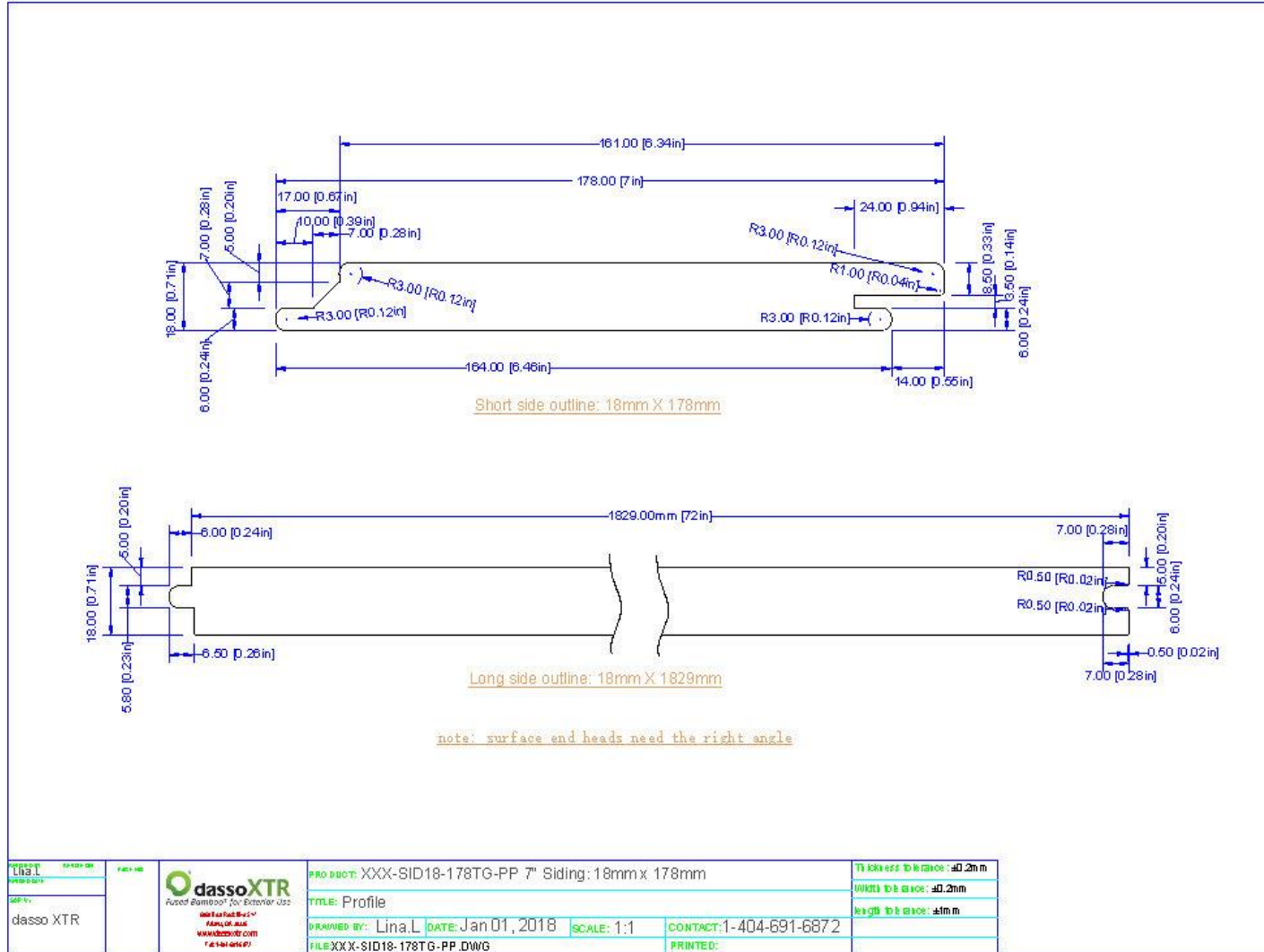


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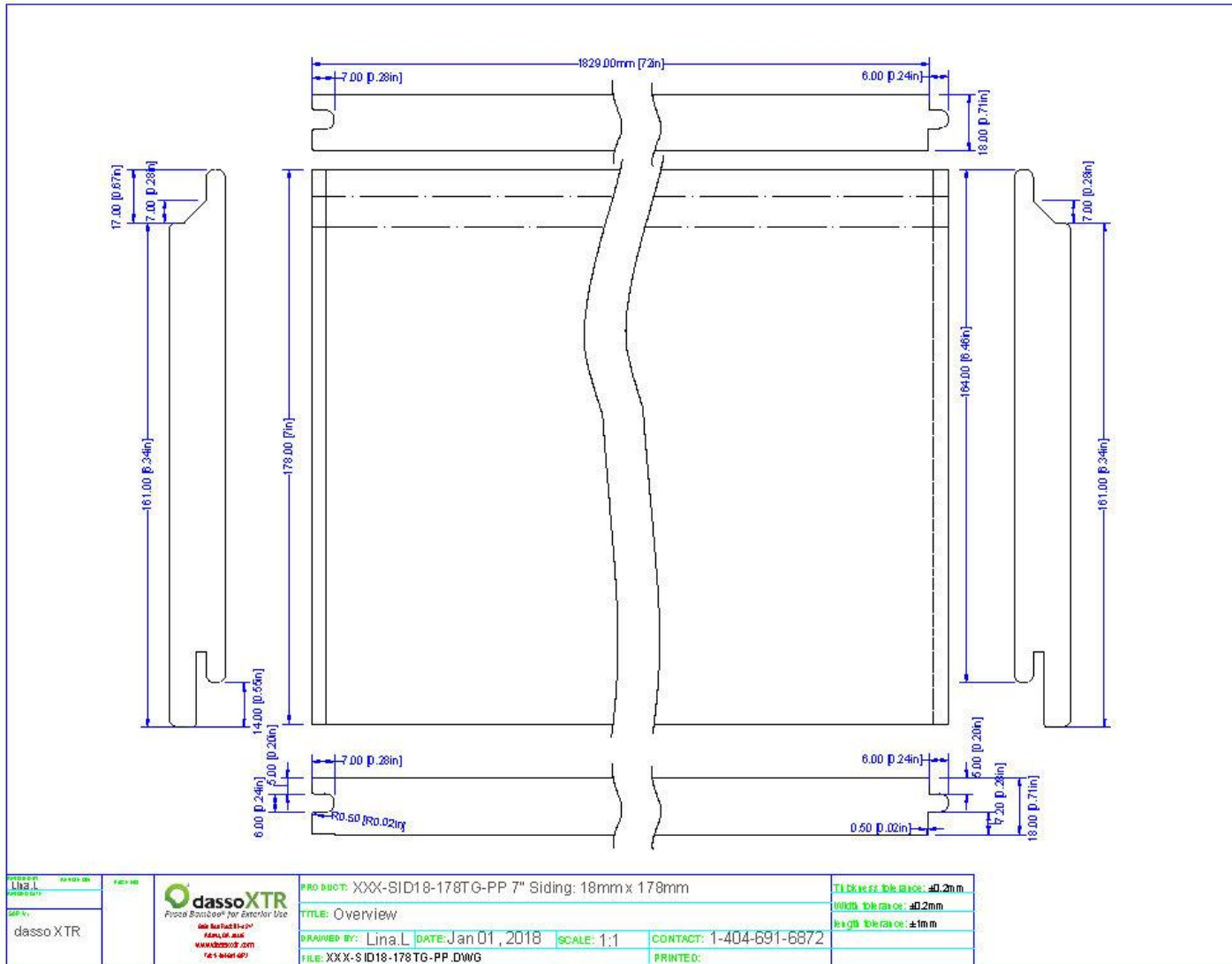




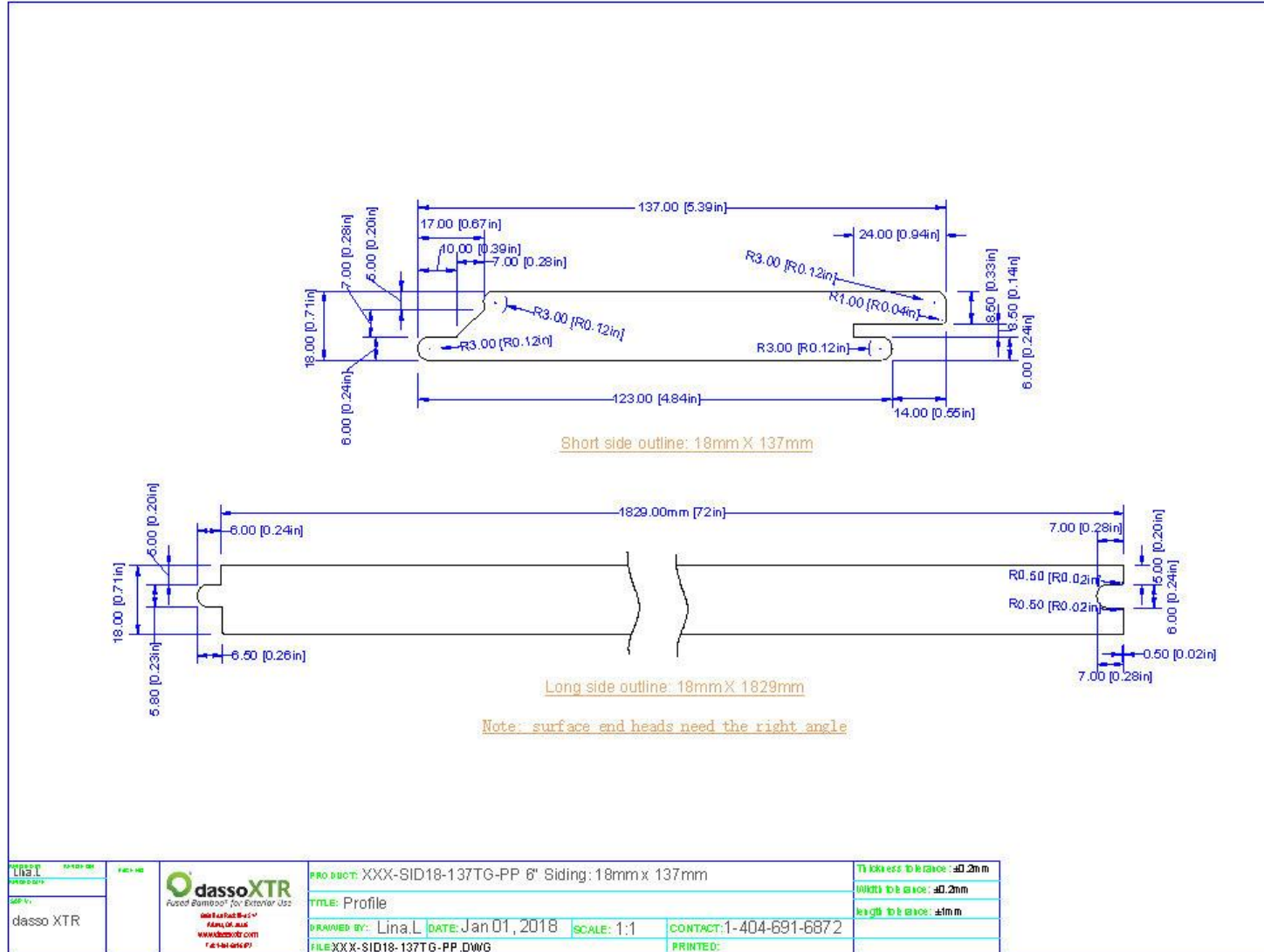
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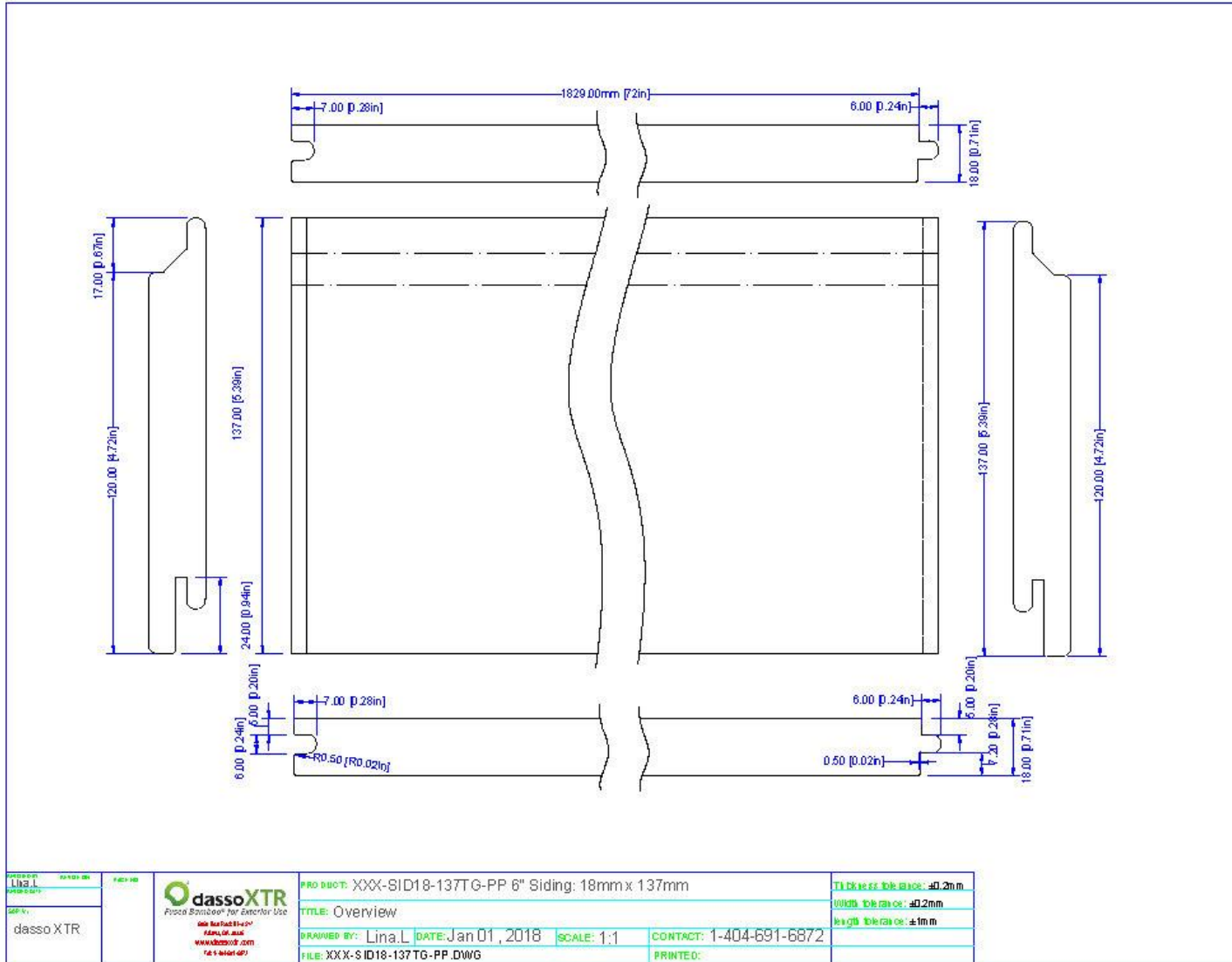
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Eisen 3/4" Air-gap RainClad Siding Sheathing Clip with One (1) Hole - 100 Unit

Item #: ASD-RC1S-W-100

- **PRODUCT DESCRIPTION:** Eisen 3/4" Air-gap RainClad Siding Sheathing Clip with One (1) holes to use with or without FasTrac.

Product Info

PRODUCT DESCRIPTION Eisen 3/4" Air-gap RainClad Siding Sheathing Clip with One (1) holes to use with or without FasTrac.

APPLICATION Fastener use to attach RainClad Siding Planks to shear wall. The clips provide 3/4" of air gap between shear wall to the back of RainClad Siding Planks. For high wind territory, please use sheathing fastener with two (2) screws.

PRODUCT SIZE H3/4" x W3/4" x L1-5/8" (H15mm x W19mm x L42mm)

COMMENTS 1. Use fastener with two screws for high wind area and for siding that is above three (3) stories high (35 feet or higher). 2. The decision whether to use a batten or sheathing fastener depends on your city code.

CORROSION INFORMATION Material: Aluminum 6063

Packaging

PACKAGE DIMENSION H2-1/2" x W8" x L12" (H60mm x W170mm x L225mm)

PACKAGE WEIGHT 2.75 lbs

COUNT PER BOX 100

COUNT IN PACKAGE 100 unit of sheathing clips only

UNIT/PACKAGE Each

Coverage

SQ FEET COVERAGE PER PACKAGE 60 Sq.ft on 16" OC - 6" Planks

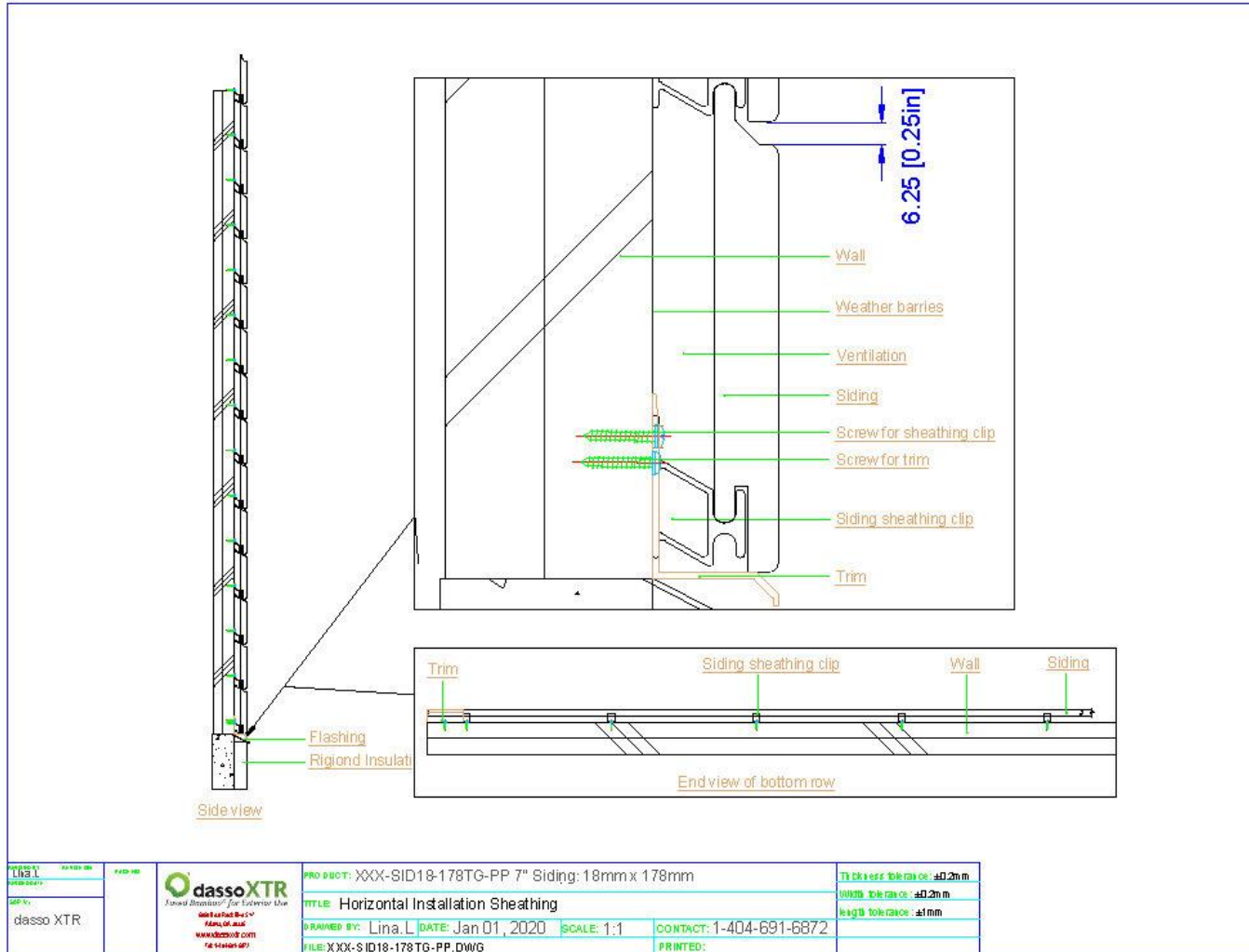
COVERAGE ASSUMPTIONS 130 linear feet with 16" OC

GAP OR REVEAL BTW PLANKS 0.26" (6.6mm)

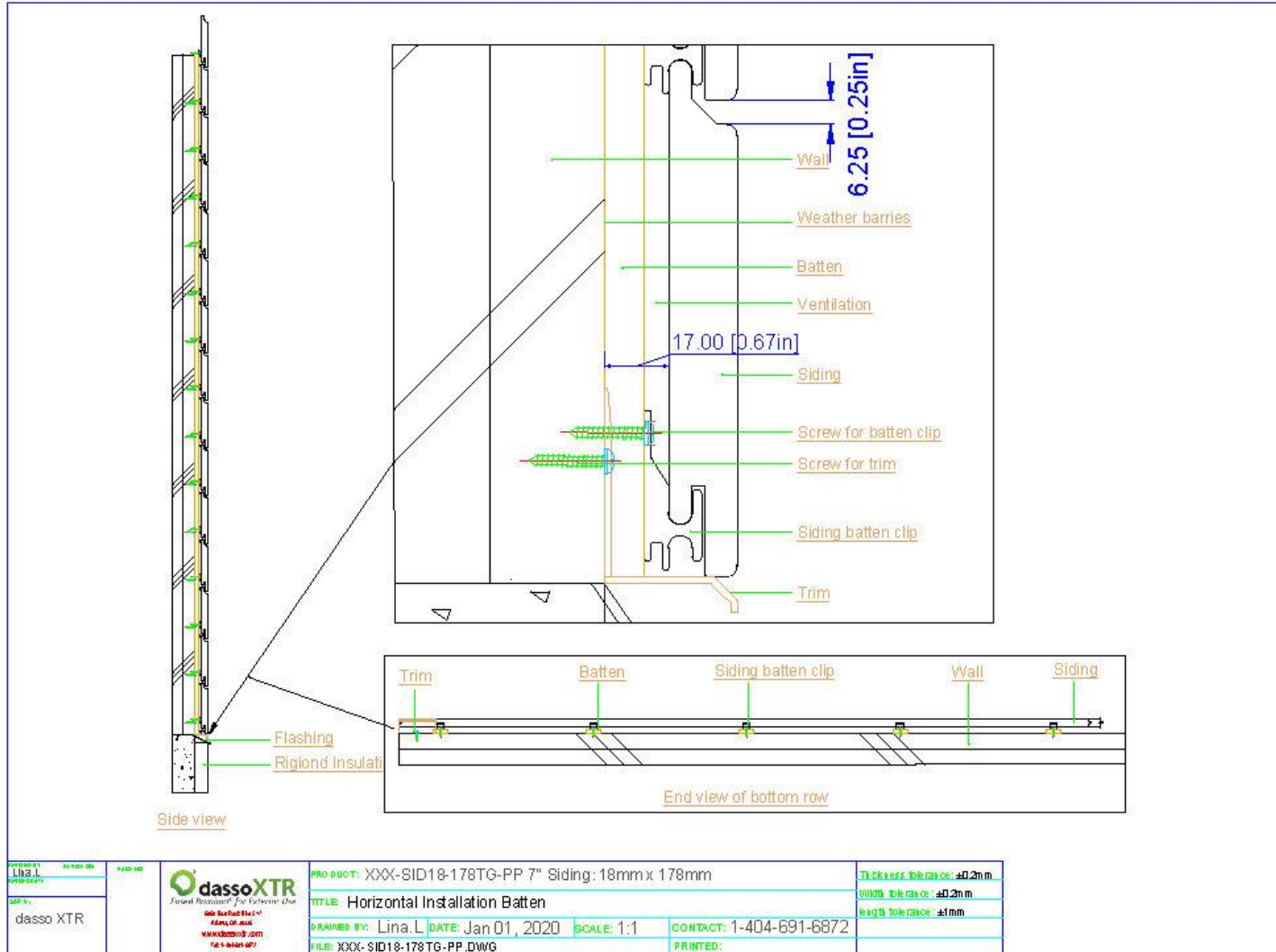
Copyright © 2019 dasso.XTR | dassoXTR.com | +1 855.774.0002 | 404.691.6872 | info@dassoXTR.com | 6060 Boat Rock Blvd SW, Suite 800, Atlanta, GA 30336

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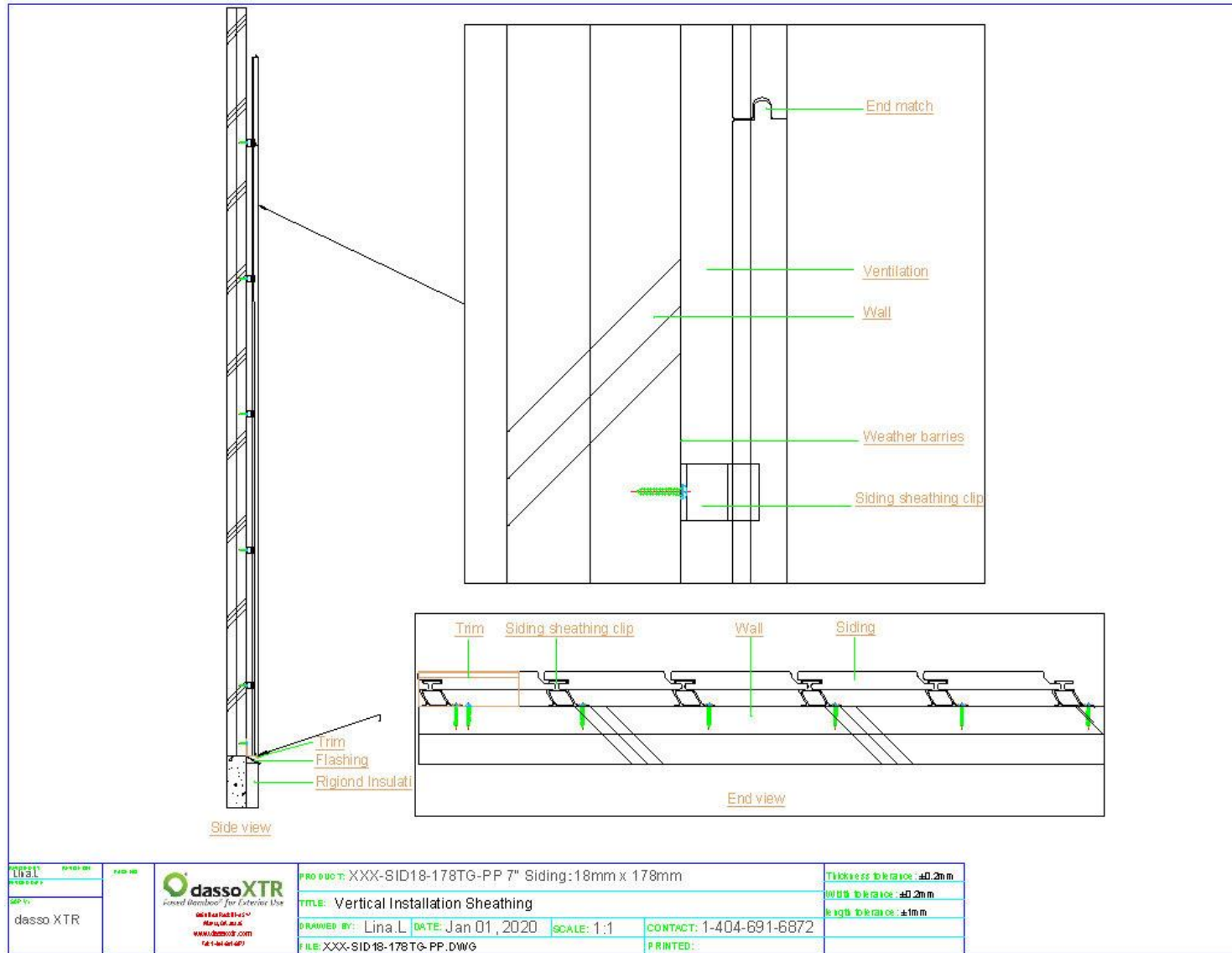
APPENDIX C – Installation Instructions



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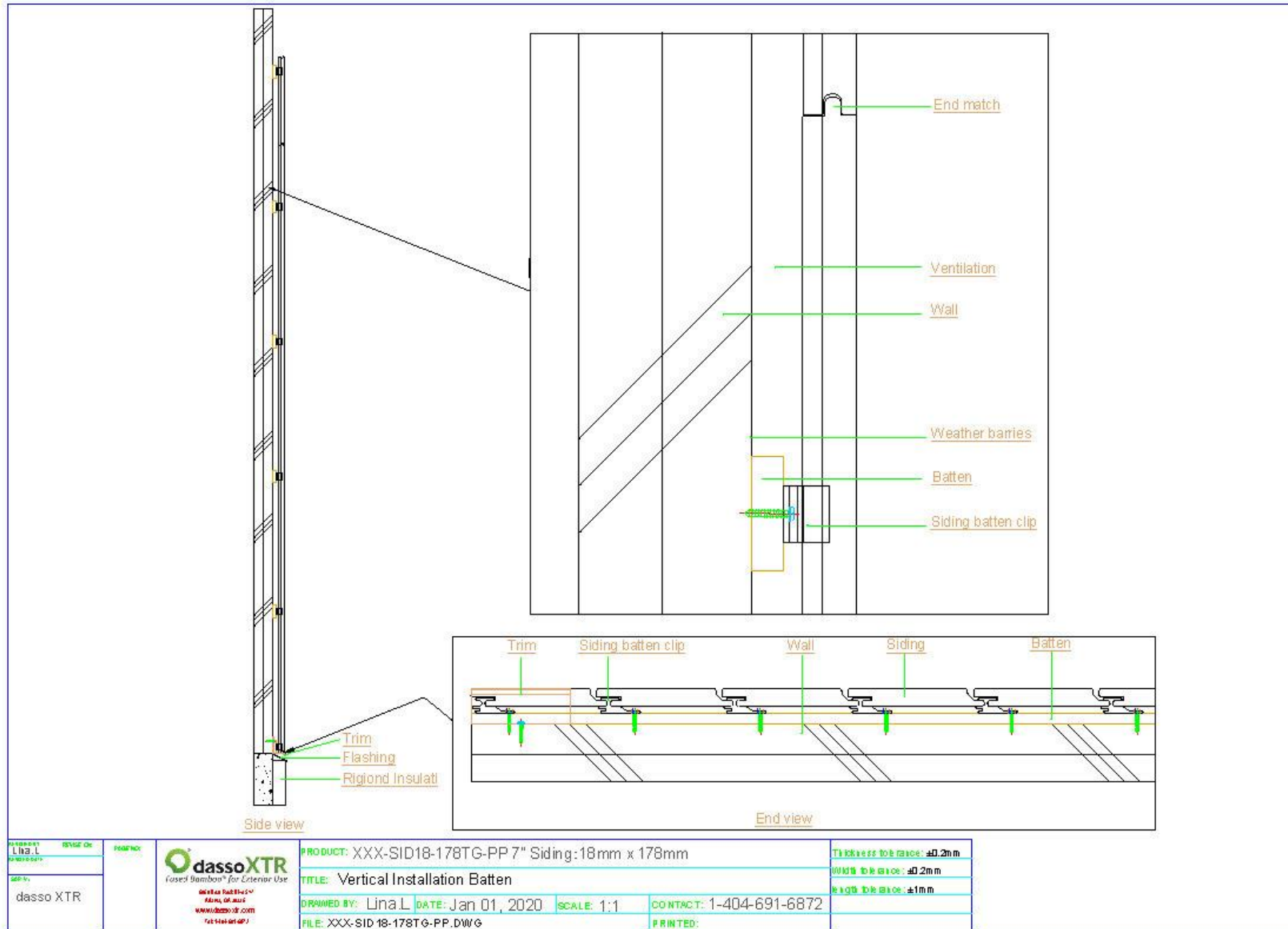


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<p>QAI LABORATORIES</p>	<p>dassoXTR Proud member of Exterior Use</p> <p>121-40-461-6872</p>	<p>PRODUCT: XXX-SID18-178TG-PP 7" Siding:18mm x 178mm</p> <p>TITLE: Vertical Installation Sheathing</p> <p>DRAWN BY: Lina.L DATE: Jan 01, 2020 SCALE: 1:1 CONTACT: 1-404-691-6872</p> <p>FILE: XXX-SID18-178TG-PP.DWG</p>	<p>Thickness tolerance: ±0.2mm</p> <p>Width tolerance: ±0.2mm</p> <p>Length tolerance: ±1mm</p>
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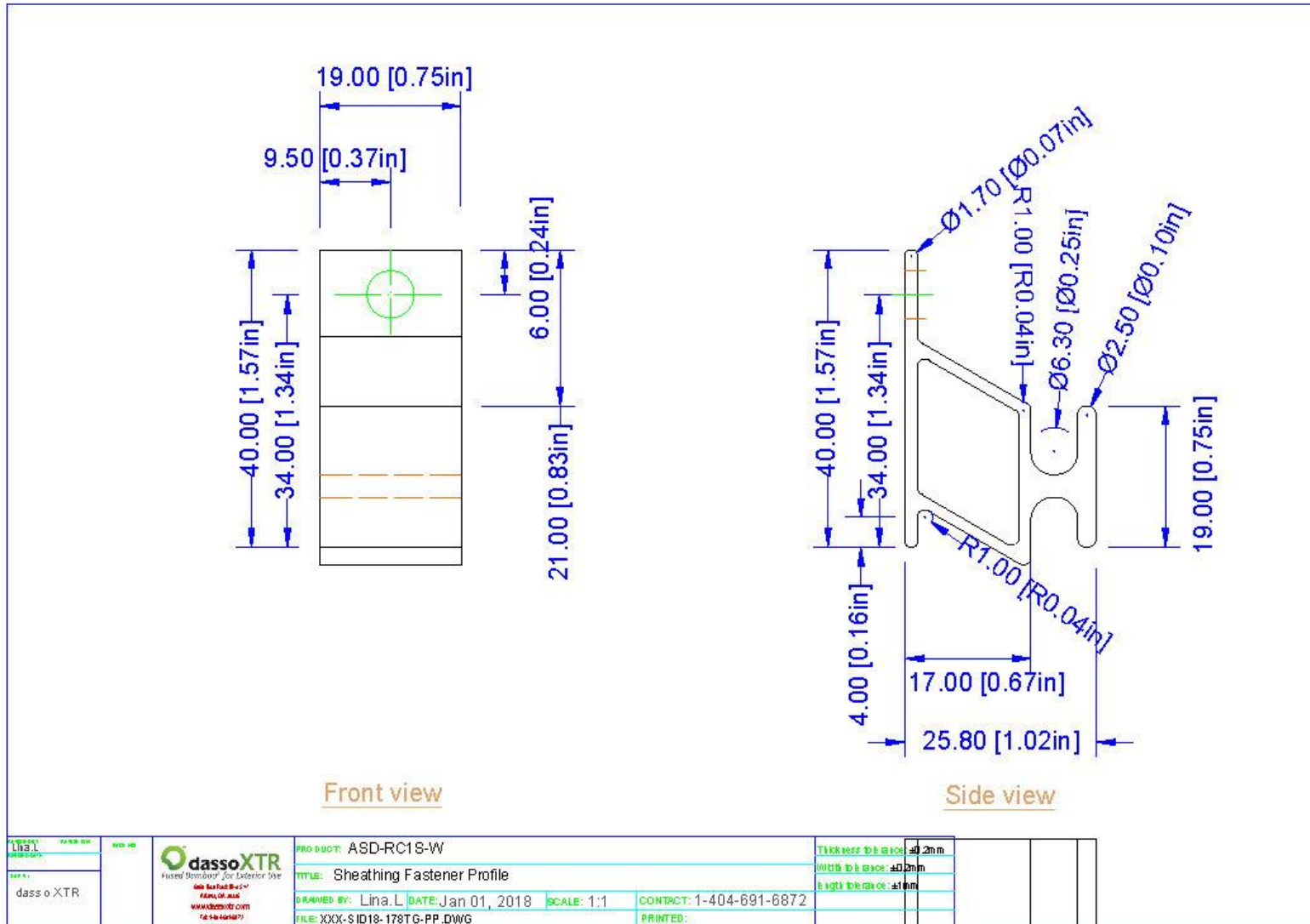
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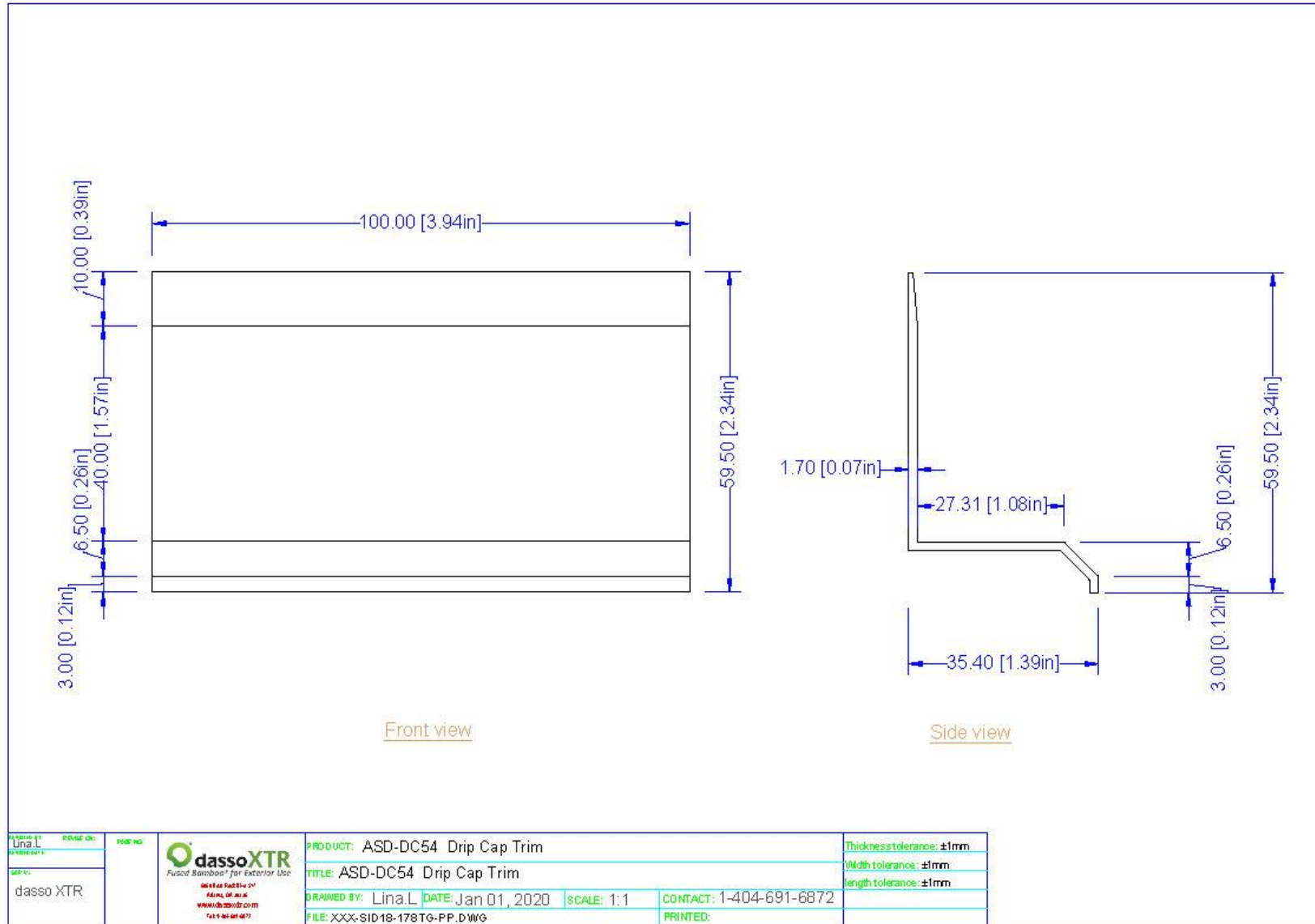
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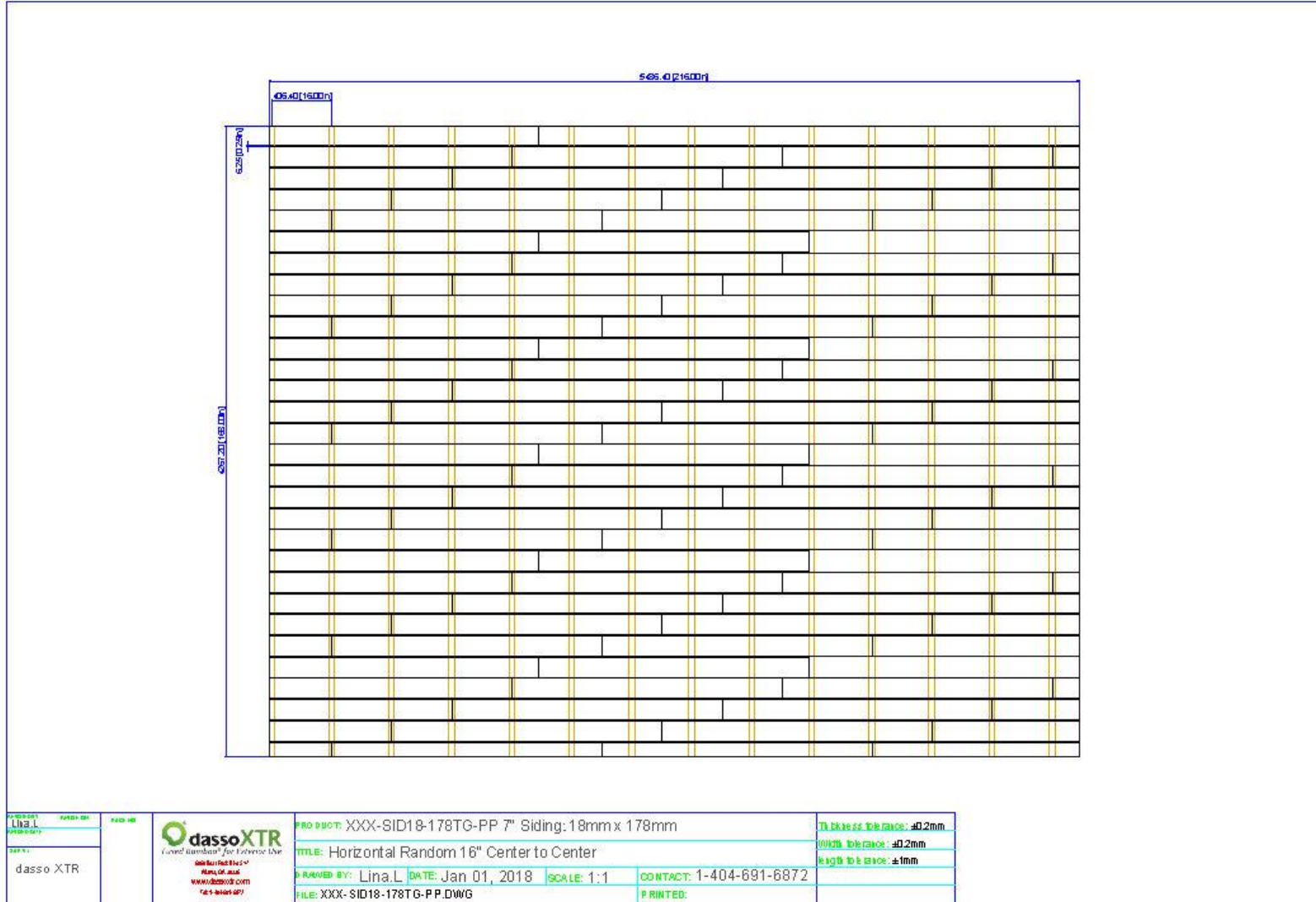
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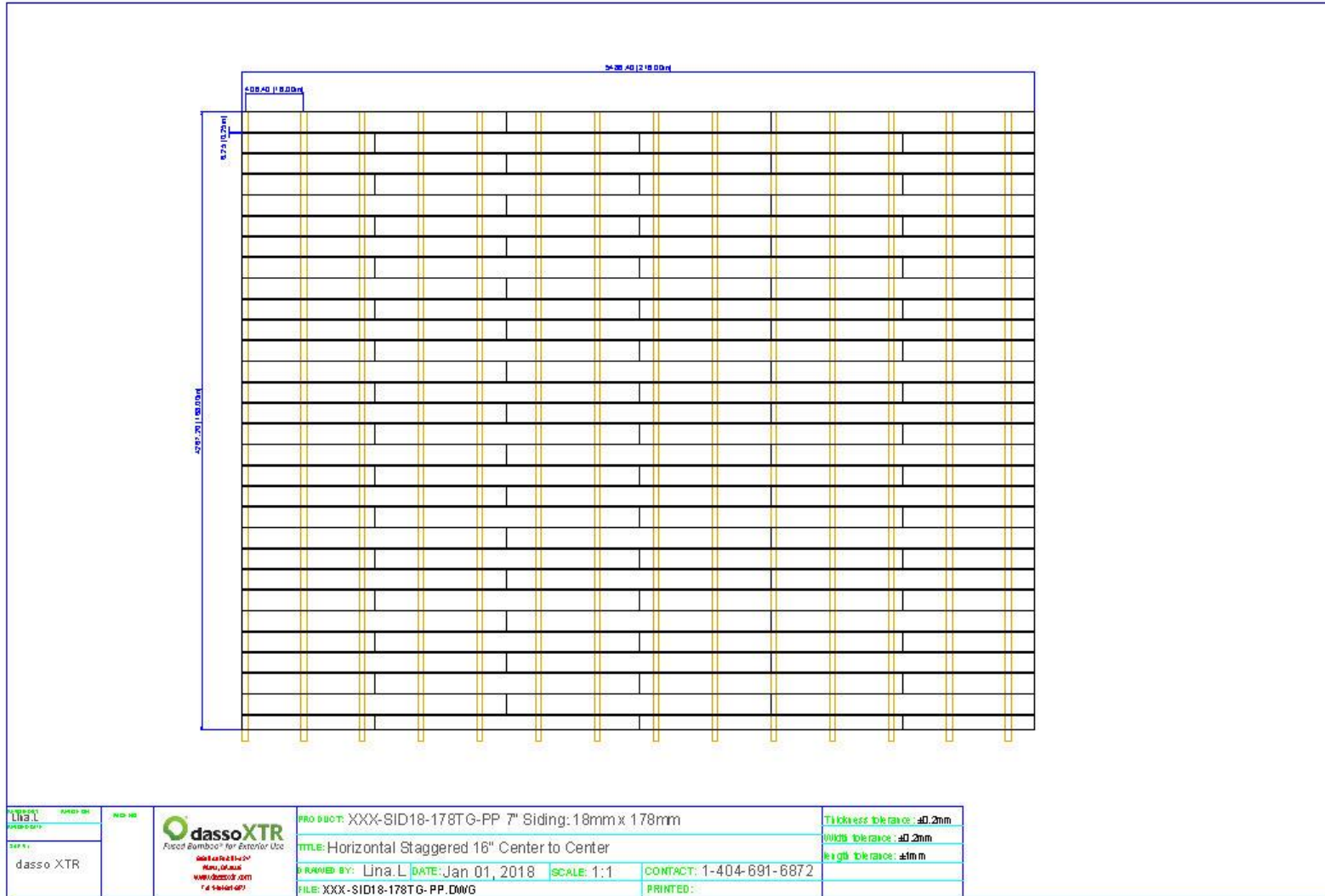
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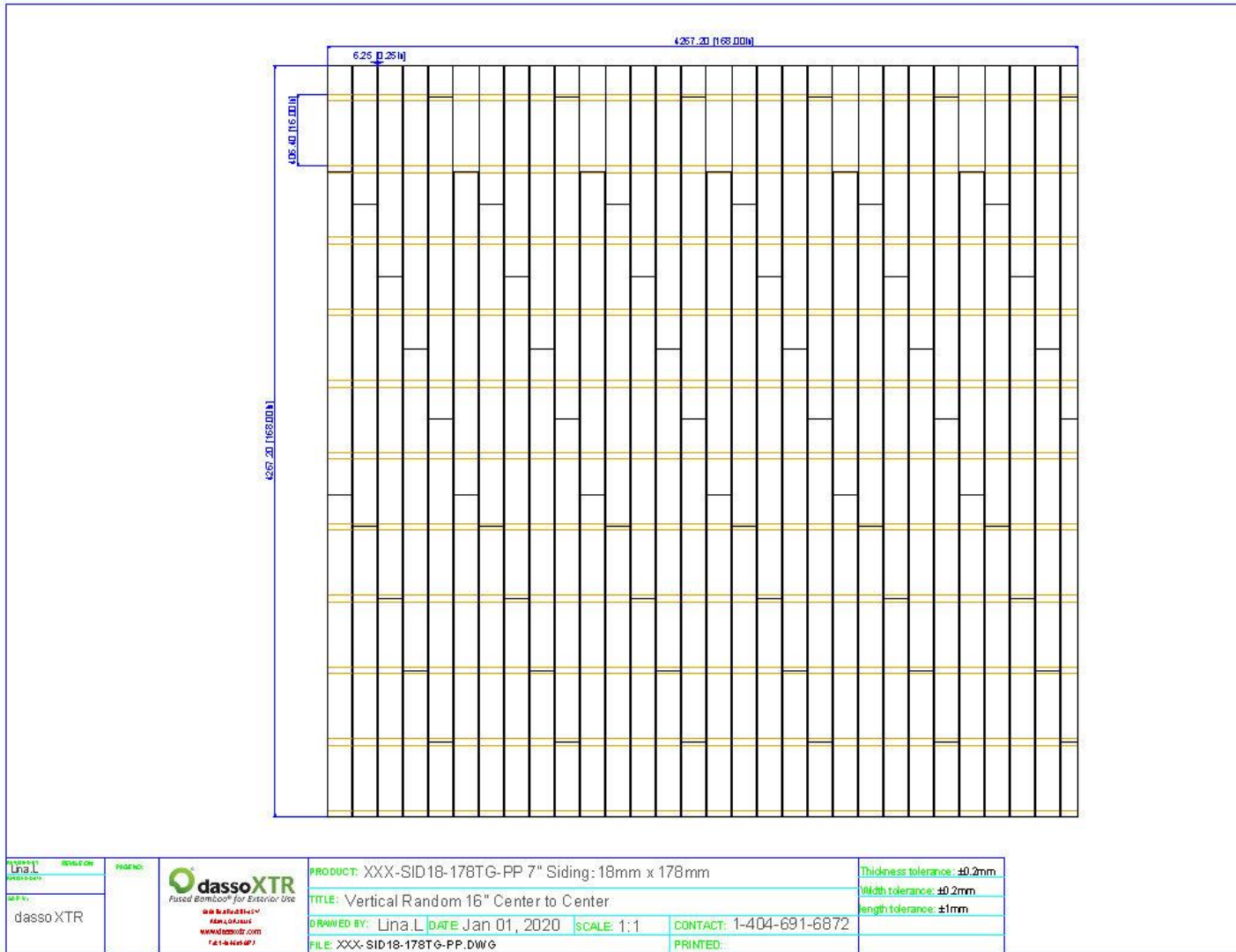
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REVISION HISTORY:

DATE	PAGE	DESCRIPTION	QAI STAFF
10/19/2021	All	Report Issued	QAI
05/11/2022		Update to page 6 to correct Epic Cognac conclusions type from 0.005" to 0.003" results achieved during testing.	ML
	11	Report updated to include base material thickness prior to water application.	
	13	Update to report to outline determining compliance of results with 5% exclusion limits.	
	18	Correction to Classic Espresso smoke developed index to reflect tested values of 10.	
	1, 21	Update to allowable wind resistance to remove rounding to 10 psf	
	Appendix A, B	Update to ASTM E84 reports to correct test report numbers, please product name to dassoXTR, and addition of product thickness of test samples.	
	Appendix C	Update to remove furring strip clip product ASD—RC1B-W as this clip was not evaluated.	

*****<<<END OF REPORT>>>*****