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Anhui Leao New Materials Technology Co., Ltd

TEST REPORT

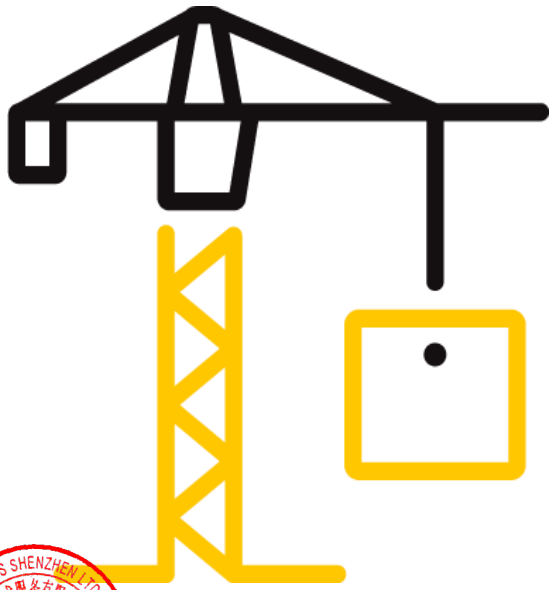
SCOPE OF WORK
FIBER CEMENT BOARD
Referenced: High Quality Panel

REPORT NUMBER
230925139GZU-003

TEST DATE(S)
From 10/9/2023 to 12/19/2023

ISSUE DATE **[REVISED DATE]**
1/26/2024 /

PAGES
10



Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

DOCUMENT CONTROL NUMBER
TTRF_Performance _02a
Effective date:2020-12-30

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5.All the tests results give the statement of conformity refer to the decision rule of “Procedure 2 “ Accuracy Method” as stated in the IEC Guide 115:2007.

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Client Information:

Applicant Name	Anhui Leao New Materials Technology Co., Ltd
Address	Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui, China
Attn	Crane Yu

Product Information:

Product Name	FIBER CEMENT BOARD Referenced: High Quality Panel	Sample Description	Good Condition
Model and/ or type reference	8mm, 9mm, 10mm, 12mm, 15mm, 18mm, 20mm, 22mm and 24mm	Received Date	09/25/2023
Sample ID.	S230925139GZU.001	Sample Amount	1 package
Specification	1220 mm x 2440 mm	Brand	/
Manufacturer	Anhui Leao New Materials Technology Co., Ltd		
Address	Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui, China		
Test Type	Performance test, samples provided by the applicant		

Test Methods And Standards:

Test Standard	ASTM C1185-08(2016)
Specification Standard	ASTM C1186-2022
Test Conclusion	The samples were tested according to the above standard, and the results are shown in the following page(s).

Note:1.*The test item is subcontracted to the body accredited by CNAS.

Laboratory information:

Testing Laboratory	Intertek testing services Shenzhen Ltd. Guangzhou Branch
Test location	Room 4103 & 4203, No. 63 Punan Road, Huangpu District, Guangzhou, China

Report Authorized :

Authorized By: Jeff Deng
Reviewer

Checked By: Kelming Wang
Project Engineer

Noted: If you have any questions for the report, please contact: lillian.lf.he@intertek.com

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General product information:

Client declaration: The applicant declared that their product Fiber cement sheet has a thickness range of 8mm to 24mm, all the products has the same composition, only difference in thickness. They are Type A products according to ASTM C1186-2022 and are intended for external wall and ceiling use. All tests were carried out based on thickness of 8mm and 24mm except for Surface Burning Characteristics was tested on the thickness of 8mm

Test Items, Method and Results:

No.	Test Item	Test Parameter	Test Result	Verdict
1	Classification	Test method: Section 4.1, 4.2 and 4.3 of ASTM C1186-2022 Flat sheets covered by this specification are divided into two types, according to their intended application. Type A—Sheets are intended for exterior applications, subjected to the direct action of sun, rain, or snow. They are supplied coated or uncoated. Type B—Sheets are intended for exterior applications, not subjected to the direct action of sun, rain, or snow.	Classification: Type A (Applicant declaration)	-
2	Composition and Manufacture	Test method: Section 5.1 and 5.2 of ASTM C1186-2022 Composition—This specification is applicable to fiber cement flat sheets consisting essentially of an inorganic hydraulic binder or a calcium silicate binder formed by the chemical reaction of a siliceous material and a calcareous material reinforced by organic fibers, inorganic non-asbestos fibers, or both. Process aids, fillers, and pigments that are compatible with fiber cement are not prohibited from being added. Manufacture—These products are formed either with or without pressure and cured, either under natural or accelerated conditions, to meet the physical requirements of this specification.	Applicant declaration: The fiber cement flat sheets consist essentially of an inorganic hydraulic binder reinforced by inorganic non-asbestos fibers. The products are formed with pressure and cured under accelerated conditions.	-

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3	Mechanical Require-ments-Flexural Strength	Test method: Section 6.2 of ASTM C1186-2022 and ASTM C1185-08(2016) Conditioning 1: Equilibrium Conditioning Conditioning 2: Wet Conditioning Test span: 254 mm Requirement: Type A sheets for exterior applications shall be tested and specified in both the wet and equilibrium conditions.In addition, the average wet flexural strength of the sample shall not be less than 50 % of the mean equilibrium strength of the sample.	Model: 8 mm Wet Strength: 15.2 MPa; Equilibrium Strength: 20.1 MPa Flexural Strength Grade: III Model: 24 mm Wet Strength: 15.9 MPa; Equilibrium Strength: 18.6 MPa Flexural Strength Grade: III	Pass
4	Density	Test method: Section 6.3 of ASTM C1186-2022 and ASTM C1185-08(2016) Dry process: 90°C, 26 h Immersion period: 48h Requirement: Nominal values and tolerances for density shall be stated by the manufacturer for each product. When tested in accordance with the method specified in Test Method C1185, the value for density shall comply with the value stated by the manufacturer.	Average density: Model: 8 mm 1430 kg/m^3 Model: 24 mm 1500 kg/m^3 No nominal density submitted.	-
5	Length and Width Tolerance	Test method: Section 7.4 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The tolerance from the nominal shall be 60.5 % with a maximum variation of 61⁄4 in. (6 mm). A tolerance of 61⁄8 in. is acceptable for dimensions less than 24 in. (609 mm).	Model: 8 mm Length measured: Average and Minimum: 2438mm Maximum: 2439mm Width measured: Average, Maximum and Minimum: 1219mm Model: 24 mm Length measured: Average and Minimum: 2439mm Maximum: 2440mm Width measured: Average, Maximum and Minimum: 1219mm	Pass

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6	Thickness Tolerance	Test method: Section 7.5 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The maximum difference between extreme values of the thickness measurement within a sheet shall not exceed 15 % of the maximum measured value. Thickness variation from sheet to sheet shall not exceed the tolerances shown in Table 2.	Model: 8 mm Thickness measured: Average: 8.3 mm Max.: 8.4 mm Min.: 8.3 mm Model: 24 mm Thickness measured: Average: 24.8 mm Max.: 25.0 mm Min.: 24.5 mm	Pass
7	Squareness Tolerance	Test method: Section 7.6 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The length of the diagonals shall not vary by more than 1⁄32 in./ft (2.6 mm/m) of the length of the sheet. Opposite sides of the sheet shall not vary in length by more than 1⁄32 in. /ft (2.6 mm/m).	Maximum variation of length of the diagonals: Model: 8 mm: 0.33mm/m Model: 24 mm: 0.31mm/m Maximum variation of length of the Opposite sides: Model: 8 mm: 0.41mm/m Model: 24 mm: 0.41mm/m	Pass
8	Edge Straight-ness Tolerance	Test method: Section 7.7 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The sheet edges shall be straight within 1/32 in. /ft (2.6 mm/m) of length or width.	Maximum edge straightness: Model: 8 mm: 0.1mm/m Model: 24 mm: 0.2mm/m	Pass

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9	Workman-ship	Test method: Section 8.1 of ASTM C1186-2022 Requirement: Sheets shall have a commercially uniform surface on one side, and be free of major defects that will impair appearance, erection, use, or serviceability.	Sheets submitted have a commercially uniform surface on one side, and be free of major defects that will impair appearance, erection, use, or serviceability.	Pass
10	Finish	Test method: Section 8.2 of ASTM C1186-2022 Requirement: The surface of the sheet to be exposed shall be smooth, granular, or otherwise textured.	The surface of the sheet to be exposed is smooth.	Pass
11	Color	Test method: Section 8.3 of ASTM C1186-2022 Requirement: The surface of the sheet shall be the natural color of the product or colored by the addition of mineral pigments, chemical impregnation, pigmented coating, veneer, or embedded mineral granules.	The surface of the sheet is the natural color of the product, offwhite, as declared by the applicant.	Pass
12	Moisture Movement	Test method: Section S2 of ASTM C1186-2022 and ASTM C1185-08(2016) Conditioning 1: (23 ± 2°C), 30 ± 2 %R.H., 14 days Conditioning 2: (23 ± 2°C), 90 ± 5 %R.H., 3 days	Model: 8 mm Moisture Movement: 0.05% Model: 24 mm Moisture Movement: 0.04%	-
13	Water Absorption	Test method: Section S3 of ASTM C1186-2022 and ASTM C1185-08(2016) Dry process: 90°C, 26h; immersion in water: 48h	Average water absorption: Model: 8 mm: 27.5% Model: 24 mm: 24.7%	-

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14	Moisture Content	Test method: Section S4 of ASTM C1186-2022 and ASTM C1185-08(2016) Conditioning: (23 ± 2°C), 50 ± 5 %R.H., 7 days Dry process: 90°C, 26h	Average moisture content: Model: 8 mm: 3.4% Model: 24 mm: 6.7%	-
15	Water Tightness	Test method: Section S5 of ASTM C1186-2022 and ASTM C1185-08(2016) Water level: 50mm above the surface of product test period: 24h Requirement: The specimens, when tested in accordance with Test Method C1185, are not prohibited from showing traces of moisture on the underside of the sheet, but in no instance shall there be any formation of drops of water.	There was no formation of drops of water for both models.	Pass
16	Surface Burning Characte-ristics	Test method: Section S6 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: Fiber cement sheets of 1⁄4 in. (6 mm) shall have a reported flame spread index of 0 and a smoke developed index of not more than 5, when tested in accordance with Test Method E84. Sheets of thickness greater than 1⁄4 in. (6 mm) shall meet this specification or shall be formed at 1⁄4 in. (6 mm) thickness with the same formulation for test purposes.	Model: 8 mm: Flame Spread Index (FSI): 0 Smoke Developed Index(SDI): 0	Pass
17	Frost Resistance (Freeze/Thaw)	Test method: Section S7 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The specimens, when tested in accordance with Test Method C1185 (Section 12 on Freeze/Thaw—Cladding Products), for 50 cycles, shall not show visible cracks or structural alteration such as to affect their performance in use. The ratio of retained strength as calculated from the test results shall be at least 80 %.	No defects observed after freeze-thaw test. Model: 8 mm: Flexural Strength after Freeze/Thaw test: 16.2 MPa; Ratio: 106%; Model: 24 mm: Flexural Strength after Freeze/Thaw test: 16.8 MPa; Ratio: 106%	Pass

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18	Warm Water Resistance	Test method: Section S8 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The specimens, when tested in accordance with Test Method C1185, shall not show visible cracks or structural alteration, such as to affect their performance in use. The ratio of strengths as calculated from test results shall be reported.	No defects observed after warm water test. Model: 8 mm: Flexural Strength after warm water test: 15.6 MPa; Ratio: 103%; Model: 24 mm: Flexural Strength after warm water test: 17.7 MPa; Ratio: 111%	Pass
19	Heat/Rain Resistance	Test method: Section S9 of ASTM C1186-2022 and ASTM C1185-08(2016) Requirement: The specimens, when tested in accordance with Test Method C1185 (Section 14 on Heat/ Rain—Wall Structures), for 25 cycles, shall not show visible cracks or structural alteration of the sheets and frame assembly such as to affect their performance in use.	There is no visible cracks or structural alteration of the sheets and frame assembly such as to affect their performance in use.	Pass

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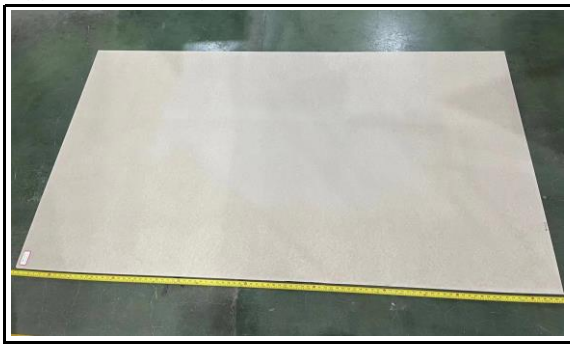
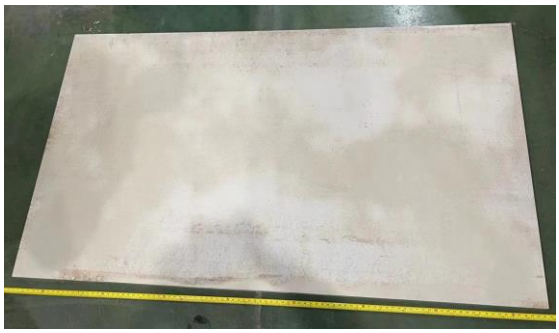
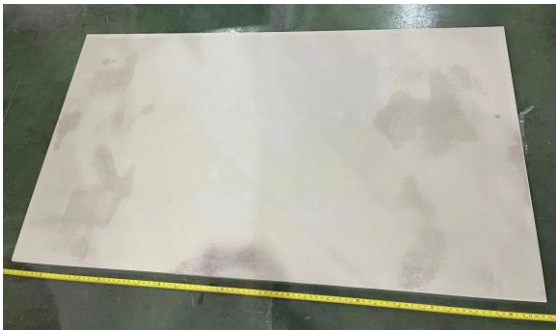
Appendix A: Sample Photo

	
A1. Over view of Model 8mm	A2. Section view of Model 8mm
	
A3. Over view of Model 24mm	A4. Section view of Model 24mm

Revision:

Revision No.	Date	REVISION	Reviser	Reviewer
/	/	Original Report Issue	/	/

**********End of Report**********