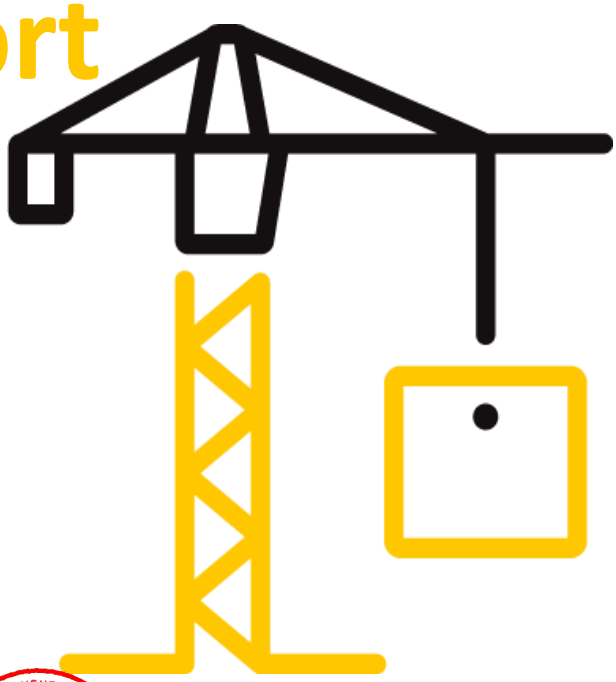
Anhui Leao New Materials Technology Co., Ltd

TEST Report



SCOPE OF WORKS

<Type of Testing – FIBER CEMENT BOARD>

Referenced: High Quality Panel

REPORT NUMBER

230925139GZU-001

ISSUE DATE **REVISED DATE**

1/26/2024 /

PAGES

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Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

DOCUMENT CONTROL NUMBER

TTRF-EN12467-a

Room 4103 & 4203, No. 63, Punan Road, Huangpu District,
Guangzhou, Guangdong Province, China
Tel: 020-82139688 Fax: 020-32157538
Website: www.intertek.com

Test Report

Report Number:230925139GZU-001
Report Date: 1/26/2024

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

Sample Information As Declaration:

Product Name:	FIBER CEMENT BOARD Referenced: High Quality Panel
Trade Mark:	/
Model or Type reference:	8mm, 9mm, 10mm, 12mm, 15mm, 18mm, 20mm, 22mm and 24mm
Manufacturer:	Anhui Leao New Materials Technology Co., Ltd
Manufacturer Address:	Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui, China
Intend Use:	external wall finishes
Ratings:	Reaction to fire Class A1 Weather resistance: Category A Bending strength (Wet condition): Class 3; Method of installation: Large size sheet Dimensional tolerance: Level I
Sample ID:	S230925139GZU.001
Date Received:	09/25/2023
Date Test Conducted:	From 10/9/2023 to 12/19/2023
Status As Sample Received:	Sample received was in good condition

General remarks:

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
"(See remark #)" refers to a remark appended to the report.
"(See Appendix #)" refers to an appendix appended to the report.
Throughout this report a comma (point) is used as the decimal separator.
When determining the test result, measurement uncertainty has been considered.
The clause which indicated with * is the subcontract test item.

Room 4103 & 4203, No. 63, Punan Road, Huangpu District,
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Test Report

Report Number:230925139GZU-001
Report Date: 1/26/2024

Testing Information

Standard:	EN 12467:2012+A2:2018
Test lab :	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Test lab address:	Room 4103 & 4203, No. 63, Punan Road, Huangpu District, Guangzhou, Guangdong Province, China

Possible test case verdicts:

Test case does not apply to the test object:	N/A
Test object does meet the requirement:	P(Pass)
Test object does not meet the requirement:	F(Fail)

Conclusion:

The submitted samples were tested and found to **COMPLY WITH** applicable requirements of EN 12467:2012+A2:2018.

General Product information

Submitted samples are fiber cement board, intended use as internal wall and ceiling finishes. The product includes 8mm, 9mm, 10mm, 12mm, 15mm, 18mm, 20mm, 22mm and 24mm in thickness, the client claimed that all the models are the same in formula, density, product process and material (cement, cellulose fibre and quartz sand), the only difference is thickness.
All test results based on 8mm and 24mm thickness.
Reaction to fire (Class A1) was conducted by Notified Body Lab No.1812 Efectis France.
See Appendix C for products' appearance.

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Copy of marking plate and summary of test results (information/comments):

Only example for specified model: 8mm(thickness)

CE
Anhui Leao New Materials Technology Co., Ltd Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui, China 24 XXXXX-CPR-2024/01/26
EN 12467:2012+A2:2018 Fiber cement board for external wall finishes NT Length 2440mm, Width 1220mm, Thickness 8mm Mechanical resistance: A3 Reaction to fire: A1 Water impermeability: No water drops Release of dangerous substances: NPD Durability against: Warm water: RL>=0,75 Soak/ dry: RL>=0,75 Freeze-thaw: RL>=0,75 Heat-rain: Pass

Note:

1. If the CE marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.
2. The various components of the CE marking must have substantially the same vertical dimension, which may not be less than 5 mm.
3. CE marking and label shall be affixed visibly, legibly and indelibly.
4. “XXXXX-CPR-2024/01/26” should be the reference number of the DoP.

Summary of testing:
The submitted samples were tested and found to comply with applicable requirements of EN 12467:2012+A2:2018.

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Report Date: 1/26/2024

Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
5	REQUIREMENTS		-
5.1	General		
5.1.1	Composition Sheets shall consist essentially of cement or a calcium silicate formed by a chemical reaction of a siliceous and a calcareous material, reinforced by fibres. The cement shall comply with EN 197-1 or with technical specifications relevant in the country of use. This European Standard covers fibre-reinforced cement flat sheets of type NT. The reinforcing fibres shall be one or more of the following forms: —discrete elements randomly dispersed; —continuous strands or tapes; —nets or webs. Process aids, fillers, aggregates and pigments may be added.	Claimed composition: Cement, Cellulose fibre, Quartz sand; and the cement complied with EN 197-1. Applicant declaration: no asbestos contained.	-
5.1.2	Appearance and finish The exposed face of the sheets can be with or without texture. The sheets can be coloured or left in their natural colour. The sheets can also receive adherent coloured or uncoloured coatings on their surface. Variations of the surface appearance which do not impair the fitness for purpose of the sheets are permitted. The sheets may be supplied with holes for fixing and/or cut to size.	Model: 8mm: No major defect was found. Model: 24mm: No major defect was found.	P
5.2	Classification		

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Report Date: 1/26/2024

Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.1	General Sheets covered by this document are divided into: —four categories in accordance with their weather resistance (see 5.2.2 to 5.2.5); —five classes in accordance with their bending strength (see 5.4.3); —two groups of sizes in accordance with their method of installation (see 5.2.6); — two levels in accordance with their dimensional tolerances (see 5.3.4). Type tests for each category are specified in Table 7.	Model: 8mm: Weather resistance: Category A Bending strength (wet condition): Class 3 Method of installation: Large size sheet Level of tolerance: Level I Model: 24mm: Weather resistance: Category A Bending strength (wet condition): Class 3 Method of installation: Large size sheet Level of tolerance: Level I	–
5.3	Dimensions and tolerances		
5.3.1	General There are two levels of tolerances for length, width, straightness and squareness of edges. Sheets shall comply with the requirements of the same level for the four sets of tolerances.	Refer to below clause 5.3.2 to 5.3.5.	–
5.3.2	Nominal length and width The manufacturer shall specify the nominal length and width of the sheets.	1220*2440mm	–
5.3.3	Thickness The manufacturer shall specify the nominal thickness of the sheets.	8mm, 9mm, 10mm, 12mm, 15mm, 18mm, 20mm, 22mm and 24mm	-
5.3.4	Tolerance on nominal dimensions		–

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Test Items, Method and Results：

<table>
<tr><td colspan="4">EN 12467:2012+A2:2018</td></tr>
<tr><td>Clause</td><td>Requirement - Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>5.3.4.1</td><td>Tolerance on length and width
Tolerance on length and width shall be in accordance with Table 1, for the appropriate level.
<table><tr><td>Nominal dimension a</td><td>Level I</td><td>Level II</td></tr><tr><td>a<= 600mm</td><td>±3mm</td><td>±4mm</td></tr><tr><td>600mm<a<=1000mm</td><td>±3mm</td><td>±5mm</td></tr><tr><td>1000mm<a<=1600mm</td><td>±0,3% a</td><td>±0,5% a</td></tr><tr><td>1600mm<a</td><td>±5mm</td><td>±8mm</td></tr><tr><td colspan="3">a is the nominal width or length</td></tr></table></td><td>Model: 8mm:
Average Length: 2438mm
Deviation: -2mm
Average Width: 1219mm
Deviation: -0,1%

Model: 24mm:
Average Length: 2439mm
Deviation: -1mm
Average Width: 1219mm
Deviation: -0,1%</td><td>P</td></tr>
<tr><td>5.3.4.2</td><td>Tolerance on thickness
For non-textured sheets, tolerance shall be in accordance with Table 2.
<table><tr><td>e <=6mm</td><td>±0,6mm</td></tr><tr><td>6< e <=20mm</td><td>±10% e</td></tr><tr><td>e>20mm</td><td>±2mm</td></tr></table></td><td>Model: 8mm:
Thickness : 8,3mm
Deviation: 3,8%~-4,6%

Model: 24mm:
Thickness : 24,8mm
Deviation: 0,03mm~1,03mm</td><td>P</td></tr>
<tr><td>5.3.5.1</td><td>Straightness of edges
The tolerance on the straightness of edges are defined as a percentage of the length of the edge of the relevant dimensions (length or width), and shall be in accordance with Table 4 for the appropriate level.
<table><tr><td>Level I</td><td>Level II</td></tr><tr><td>0,1%</td><td>0,3%</td></tr></table></td><td>Model: 8mm:
Straightness of edge: 0,01%

Model: 24mm:
Straightness of edge:
0,01%~0,02%

Complied Level I</td><td>P</td></tr>
<tr><td>5.3.5.2</td><td>Squareness of edges
The tolerances on squareness of sheets shall be in accordance with Table 5, for the appropriate level.
<table><tr><td>Level I</td><td>Level II</td></tr><tr><td>2mm/m</td><td>4mm/m</td></tr></table></td><td>Model: 8mm:
Squareness of edge:
0,14 mm/m ~0,33 mm/m

Model: 24mm:
Squareness of edge:
0,16 mm/m ~0,31 mm/m

Complied Level I</td><td>P</td></tr>
</table>

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Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
5.4.1	General Mechanical and material properties are normally determined on sheets as delivered. The results shall be indentified as applying to coated or uncoated material.	Refer to below clause 5.4.1 to 5.4.6.	–
5.4.2	Apparent density The manufacturer shall specify in his literature the minimum apparent density for each category of sheet. When tested in accordance with the method specified in 7.3.1 the density shall be not less than this value.	No claims Model: 8mm: Apparent density: 1,450g/cm^3 Measured: 1,402g/cm^3 to 1,479g/cm^3 Model: 24mm: Apparent density: 1,530g/cm^3 Measured: 1,500g/cm^3 to 1,573g/cm^3	–
5.4.3	Moisture movement The manufacturer's literature shall state the percentage value of linear sheet moisture movement measured when the sheet is exposed to a relative humidity change from 30 % to 90 %. The stated value shall be determined in accordance with 7.3.7 using the test method given in Annex C.	Model: 8mm: The percentage value of linear sheet moisture movement: 0,05% Model: 24mm: The percentage value of linear sheet moisture movement: 0,04%	–

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Test Items, Method and Results：

<table>
<tr><td colspan="4">EN 12467:2012+A2:2018</td></tr>
<tr><td>Clause</td><td>Requirement - Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td>5.4.4</td><td>Mechanical characteristics –Bending strength (MOR) – Modulus of elasticity (MOE)
When tested as specified in 7.3.2, the minimum modulus of rupture of the sheets, expressed in megapascals, shall be as specified in Table 6. The MOR shall be the average of the values obtained from testing the sample in both directions.
Category A and B sheet strengths are specified in the wet condition (see Table 10).
Category C and D sheet strengths are specified in the ambient condition (see Table 10).
<table>
<tr><td rowspan="2">Classes</td><td>min. MOR in the wet condition, MPa</td></tr>
<tr><td>Category A & B</td></tr>
<tr><td>1</td><td>4</td></tr>
<tr><td>2</td><td>7</td></tr>
<tr><td>3</td><td>13</td></tr>
<tr><td>4</td><td>18</td></tr>
<tr><td>5</td><td>24</td></tr>
</table></td><td>Category A
Wet condition:
Model 8mm:
MOR average: 14,6MPa,
minimum: 13,5MPa
Class 3
MOE average: 9920MPa
Standard deviation: 1020MPa

Model 24mm:
MOR average: 16,4MPa,
minimum: 15,3MPa
Class 3
MOE average: 14560MPa
Standard deviation: 610MPa</td><td>–</td></tr>
<tr><td>5.4.5</td><td>Water impermeability for Categories A, B and D
When tested in accordance with 7.3.3, traces of moisture may appear on the under surface of the sheet, but in no instance shall there be any formation of drops of water.</td><td>Model: 8mm:
No formation of drops of water after being tested.
Model: 24mm:
No formation of drops of water after being tested.</td><td>P</td></tr>
<tr><td>5.4.6</td><td>Water vapour permeability for Category D</td><td>The products belong to Category A, Not applicable.</td><td>N/A</td></tr>
<tr><td>5.5</td><td colspan="3">Durability requirements</td></tr>
<tr><td>5.5.1</td><td>Mechanical and material properties are normally determined for sheets as delivered. The results shall be identified as applying to coated or uncoated material. The performance of the coating in the following tests shall not be considered in the assessment of the product.</td><td>Refer to below clause 5.5.2 to 5.5.5.</td><td>-</td></tr>
</table>

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Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
5.5.2	Freeze-thaw for categories A, B and D When tested in accordance with 7.4.1, after 100 freeze-thaw cycles for Category A and 25 cycles for Category B and D, the ratio RL as defined in 7.4.1.4 shall be not less than 0,75.	Model: 8mm: Wet condition: MOR average: 15,2MPa, minimum: 14,6MPa RL=1,02 Model: 24mm: Wet condition: MOR average: 22,5MPa, minimum: 21,0MPa RL=1,31	P
5.5.3	Heat-rain for categories A and B When tested in accordance with 7.4.2,after 50 heat-rain cycles for Category A and 25 cycles for Category B, any visible cracks, delamination, warping and bowing or other defects in the sheets shall not be of such a degree as to affect their performance in use. Water tightness is tested according to 5.4.5. Warping and bowing are visually assessed.	Model: 8mm and 24mm 1. No formation of drops of water; 2. No visible cracks, delamination, warping and bowling or other defects were found in the sheets.	P
5.5.4	Warm water for categories A, B, C and D When tested in accordance with 7.3.5, after 56 days at 60°C, the ratio RL as defined in 7.3.5.4 shall be not less than 0, 75.	Model: 8mm: MOR average: 15,9MPa, minimum: 14,9MPa RL=1,05 Model: 24mm: MOR average: 17,1MPa, minimum: 16,3MPa RL=1,01	P
5.5.5	Soak-dry for categories A, B, C and D When tested in accordance with 7.3.6, after 50 soak-dry cycles for category A and 25 cycles for Category B, C and D the ratio RL as defined in 7.3.6.4 shall be not less than 0, 75.	Model: 8mm: MOR average: 16,1MPa, minimum: 15,0MPa RL=1,06 Model: 24mm: Wet condition: MOR average: 17,0MPa, minimum: 16,1MPa RL=1,00	P

Test Report **Report Number:230925139GZU-001**

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Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
5.6	Fire and safety		
5.6.1*	Reaction to fire When subject to regulatory requirements, the reaction to fire of the sheets shall be declared in accordance with 7.5.	Class A1, refer to Annex A: copy of the report (Issue by: NB 1812)	P
5.6.2	Release of dangerous substances For products containing substance(s) defined in Council Directive 76/769/EEC, the content shall be declared by the manufacturer. This applies to substances contained in the original formulation or created during the manufacturing process. In addition see Annex ZA.	Applicant with written declaration that the product does not contain/release of any hazardous substances including asbestos.	-
5.7	Product information The manufacturer shall include the following in his literature: a) designation of the sheet: - type of product: NT (see 5.1.1); - name of the sheet, - category, - class, - level of tolerances; b) nominal values for: - thickness - length and width c) minimum apparent density d) instructions relevant to the handling and installation.	See “Copy of marking plate”, instruction was not provided.	–
6	Assessment and verification of constancy of performance — AVCP		
6.1	General The compliance of fibre-cement flat sheets with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by: —determination of the product type; —factory production control by the manufacturer, including product assessment. The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performance(s).		–

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Test Items, Method and Results：

EN 12467:2012+A2:2018			
Clause	Requirement - Test	Result - Remark	Verdict
6.2	Type testing Type tests shall be carried out on products as delivered. If several formats or sizes of the same category and class are being produced from the same composition and by the same production method, type tests only need to be carried out on maximum and minimum thickness. If the ratio of the maximum to minimum thickness is greater than three then an additional intermediate thickness shall be tested.	Refer to clause 5.3 to 5.6	P
6.3	Factory product control (FPC) The manufacturer shall establish, document and maintain a FPC system to ensure that the products placed on the market comply with the declared performance of the essential characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. Manufacturers having an FPC system, which complies with EN ISO 9001 and which addresses the provisions of the present European Standard are considered as satisfying the FPC requirements of the Regulation (EU) No 305/2011.	Factory operates in accordance with ISO 9001(please refer to Annex B of ISO 9001 certificate which is submitted by the applicant), and is deemed to satisfy the requirement of FPC.	P

Appendix A*: Copy of Test Report (Issued by: NB 1812)

Efectis

Efectis France
ZI Les Nappes
149, route du Marc
F-38630 LES AVENIERES VEYRINS-THUELLIN
Tél : +33 (0)4 37 06 38 11

RAPPORT DE CLASSEMENT
CLASSIFICATION REPORT

RAPPORT DE CLASSEMENT DE LA REACTION AU FEU n° EFR-23-004875
CLASSIFICATION REPORT OF REACTION TO FIRE n° EFR-23-004875

1. INTRODUCTION / *INTRODUCTION*

Le présent rapport de classement définit le classement attribué à « High Quality Panel » conformément aux modes opératoires donnés dans l'EN 13501-1:2018.
This classification report defines the classification assigned to « High Quality Panel » in accordance with the procedures given in EN 13501-1:2018.

CLASSEMENT DE LA RÉACTION AU FEU CONFORMÉMENT À L'EN 13501-1:2018

CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH EN 13501-1:2018

Commanditaire : ***Sponsor :***	Anhui Leao New Materials Technology Co., Ltd Qilihe Village, Chihe Town, Dingyuan County 510663 Chuzhou City, Anhui China
Établi par : ***Prepared by:***	Efectis France ZI Les Nappes 149, route du Marc 38630 LES AVENIERES VEYRINS-THUELLIN France
N° de l'organisme notifié : ***Notified Body No:***	1812
Nom du produit : ***Product name:***	High Quality Panel
N° de rapport de classement : ***Classification report No.:***	EFR-23-004875
Numéro d'émission : ***Issue number:***	1
Date d'émission : ***Date of issue:***	08 décembre 2023 December 08, 2023

Ce rapport de classement comprend six pages et ne peut être utilisé ou reproduit que dans son intégralité.
This classification report consists of six pages and may only be used or reproduced in its entirety.

2. DETAILS DU PRODUIT CLASSE / *DETAILS OF CLASSIFIED PRODUCT*

2.1. GENERALITES / *GENERAL*

Le produit, « High Quality Panel », est défini comme plaques en fibre ciment d'après la norme EN 12467:2012+A2:2018 - Plaques planes en fibres-ciment - Spécifications du produit et méthodes d'essai.
The product, « High Quality Panel », is defined as a fibre cement board (according to harmonized product standard EN 12467:2012+A2:2018 - Fibre-cement flat sheets - Product specification and test methods.

2.2. DESCRIPTION DU PRODUIT / *PRODUCT DESCRIPTION*

Le produit, « High Quality Panel », est décrit ci-dessous ou dans les rapports fournis à l'appui du classement énuméré en 3.
The product, « High Quality Panel », is described below or is described in the reports provided in support of classification listed in 3.

Description du produit *Product description*	
Référence commerciale *Trade mark*	« High Quality Panel »
Composition *Composition*	Panneau de fibres-ciment composé de 37,5 % de ciment, 7,5 % de fibres de cellulose et 55 % de sable de quartz. *Fibre cement board made of 37.5% cement, 7.5% cellulose fibre and 55% quartz sand*
Épaisseur *Thickness*	8 mm
Masse surfacique *Mass per unit area*	11,8 kg/m²
Masse volumique *Density*	1470 kg/m³
Couleur *Color*	Blanc cassé Off white

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3. RAPPORTS ET RESULTATS A L'APPUI DE CE CLASSEMENT / *REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION*

3.1. RAPPORTS / *REPORTS*

Nom du laboratoire *Name of Laboratory*	Nom du commanditaire *Name of sponsor*	N° de référence du rapport *Report ref. no*	Méthode d'essai et date/règles du champ d'application et date *Test method and date field of application rules and date*
EFECTIS UK/Ireland	Anhui Leao New Materials Technology Co., Ltd	EUI-23-HC-000774	**BS EN ISO 1716:2018**
EFECTIS France	Anhui Leao New Materials Technology Co., Ltd	EFR-23-004875-NC	**NF EN ISO 1182 : 2020**

3.2. RESULTATS / *RESULTS*

Méthode d'essai et numéro d'essai *Test method and test number*	Paramètre *Parameter*	Nombre d'essais a) *No. Tests* a)	Résultats *Results*	
			Paramètre continu – moyenne (m) *Continuous parameter - mean (m)*	Conformité aux paramètres *Compliance with parameters*
BS EN ISO 1716:2018 EUI-23-HC-000774	PCS (MJ/kg) *GCV (MJ/kg)*	3	0.8	-
NF EN ISO 1182 : 2020 EFR-23-004875-NC	ΔT (°C) Elévation de température *Temperature rise*	5	2	-
	Δm (%) Perte de masse *Mass loss*		16	-
	tf (s) Durée d'inflammation *Duration of sustained flaming*		0	-

a) Non applicable à l'application étendue
a) Not for extended application

Le (-) signifie non applicable
(-) means not applicable

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4. CLASSEMENT ET CHAMP D'APPLICATION / *CLASSIFICATION AND FIELD OF APPLICATION*

4.1. REFERENCE DE CLASSEMENT / *REFERENCE OF CLASSIFICATION*

Le présent classement a été effectué conformément à l'EN 13501-1:2018.
This classification has been carried out in accordance with EN 13501-1:2018.

4.2. CLASSEMENT / *CLASSIFICATION*

Le produit, « High Quality Panel », a été classé en fonction de son comportement au feu :
The product, « High Quality Panel », in relation to its reaction to fire behaviour is classified:

A1

Le format du classement de réaction au feu pour les produits de construction, à l'exception des revêtements de sol et des produits d'isolation thermique pour conduites linéaires est :
The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation products is:

Comportement au feu *Fire behaviour*
A1

autrement dit, A1
i.e. A1

Classement de réaction au feu ***Reaction to fire classification***	**A1**

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4.3. CHAMP D'APPLICATION / *FIELD OF APPLICATION*

D'après la norme produit EN 12467:2012+A2-2018 - Plaques planes en fibres-ciment - Spécifications du produit et méthodes d'essai, le présent classement est valable pour les paramètres suivants liés au produit :
According to the standard EN 12467:2012+A2-2018 - Fibre-cement flat sheets - Product specification and test methods, this classification is valid for the following product parameters:

- *Valable pour le produit telle que décrit au paragraphe 2.2*
- *Valid for product as described in 2.2*

- Valable pour une épaisseur supérieur ou égale à 8 mm
- *Valid for the thickness of 8 mm or greater*

- Valable pour une densité de 1470 kg/m^3± 150 kg/m^3
- *Valid for the density of 1470 kg/m^3 ± 150 kg/m^3*

- Valable pour la couleur testée (Blanc cassé)
- *Valid for tested colour (off white)*

- Valable pour les deux faces
- *Valid for fire on both sides*

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Efectis | EFR-23-004875 | RAPPORT DE CLASSEMENT *CLASSIFICATION REPORT*

5. RESTRICTIONS / *LIMITATIONS*

Le présent document de classement ne constitue ni une approbation de type ni une certification du produit.
This classification document does not represent type approval or certification of the product.

Le classement accordé au produit dans le présent rapport est approprié à une déclaration de conformité par le fabricant dans le contexte du système 3 EVCP et du marquage CE sous couvert du Règlement 305/2011/UE du Parlement européen et du Conseil du 9 mars 2011 stipulant des conditions harmonisées pour la commercialisation des produits de construction.
Le fabricant a effectué une déclaration qui est archivée. Elle confirme que la conception du produit n'exige aucun processus, aucun mode opératoire, ni aucune étape spécifique (pas d'ajout d'ignifuges, limitation des matières organiques, ni ajout de corps de remplissage) visant à améliorer la tenue au feu pour obtenir le classement atteint. Le fabricant a conclu, par conséquent, que l'attestation du système 3 est appropriée.
Par conséquent, le laboratoire d'essais n'a joué aucun rôle dans l'échantillonnage du produit pour l'essai, mais il détient toutefois les références appropriées, fournies par le fabricant, pour assurer la traçabilité des échantillons soumis à essai.

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.
The manufacturer has made a declaration, which is held on file. This confirms that the products design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.
The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

SIGNÉ / *SIGNED* **APPROUVÉ / *APPROVED***

X Benjamin BESSON

Project Leader
Signé par : Benjamin BESSON

X Damien FLAMMIER

Test Supervisor
Signé par : Damien FLAMMIER

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Efectis

Efectis France
ZI Les Nappes
149, route du Marc
F-38630 LES AVENIERES VEYRINS-THUELLIN

RAPPORT D'ESSAI
TEST REPORT

RAPPORT D'ESSAI DE REACTION AU FEU / *REACTION TO FIRE TEST REPORT*
N° EFR-23-004875-NC

Norme d'essais : **NF EN ISO 1182:2020** - Essais de réaction au feu de produits - Essai d'incombustibilité
Test standard: ***NF EN ISO 1182:2020*** *– Reaction to fire tests for products – Non-combustibility test*

Dérogations par rapport à la norme : Aucunes
Deviation from the standard: *None*

Autres documents de référence : **EN 12467:2012+A2:2018** - Plaques planes en fibres-ciment - Spécifications du produit et méthodes d'essai
Other reference document: ***EN 12467:2012+A2:2018*** *- Fibre-cement flat sheets - Product specification and test methods)*

EN 13238:2010 - Essais de réaction au feu des produits de construction - Modes opératoires de conditionnement et règles générales de sélection des substrats
EN 13238:2010 *– Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates*

Concernant : Plaque de fibre ciment
Product: *Fiber cement board*

Référence / *Reference*: High Quality Panel

Demandeur : Anhui Leao New Materials Technology Co., Ltd
Applicant: Qilihe Village, Chihe Town,
Dingyuan County
510663
Chuzhou City, Anhui
China

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Accréditation n° 1-2470
Portée disponible sur
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Efectis | EFR-23-004875-NC | RAPPORT D'ESSAI / *TEST REPORT*

SUIVI DU DOCUMENT / *DOCUMENT FOLLOW UP*

Indice de Révision *Version*	Modification *Modification*	Commentaire *Comment*	Date *Date*		
0	Création du document *Document creation*	/	*08/12/2023*	Rédacteur *Editor*	BBE
				Vérificateur *Verifier*	DFL
				Approbateur *Approver*	DFL

1. OBJET / *OBJECT*

Les résultats reportés dans le présent document visent à déterminer, dans des conditions spécifiées, les performances d'incombustibilité des produits homogènes et des composants substantiels des produits hétérogènes.
The results reported in this document are intended to determine, under specified conditions, the non-combustibility performance of homogeneous products and substantial components of non-homogeneous products.

2. PRODUIT TESTE / *TESTED PRODUCT*

Date de réception : 17 novembre 2023
Date of receipt: *November 17, 2023*

Les informations ci-dessous ont été fournies par le demandeur qui en atteste l'exactitude
The information below were provided by the applicant who attests their accuracy.

Fabricant / Fournisseur :
Manufacturer / Supplier:
Anhui Leao New Materials Technology Co., Ltd
Qilihe Village, Chihe Town,
Dingyuan County
510663
Chuzhou City, Anhui
China

Identification du produit :
Identification of the product:
Plaque de fibre ciment
Fiber cement board

Référence / *Reference*: High Quality Panel

Description générale du produit :
General description of the product:

Composition / *Composition*: Panneau de fibres-ciment composé de 37,5 % de ciment, 7,5 % de fibres de cellulose et 55 % de sable de quartz.

Fibre cement board made of 37.5% cement, 7.5% cellulose fibre and 55% quartz sand

Épaisseur / *Thickness*: 8 mm

Masse volumique / *Density*: 1470 kg/m³

Masse surfacique / *Mass per unit area*: 11.8 kg/m²

Coloris / *Colour*: Blanc cassé / Off white

3. ESSAIS / *TESTS*

3.1. PREPARATION DES EPROUVETTES / *SPECIMEN PREPARATION*

Les éprouvettes cylindriques ont été réalisées conformément aux prescriptions des documents de référence par le demandeur.
Cylindrical specimens have been made according to the specifications of the standard by the applicant.

Elles étaient constituées par les superpositions de plusieurs couches afin d'obtenir une hauteur de (50 ± 3) mm.
They were composed by juxtaposition of layers in order to reach a height of (50 ± 3) mm.

Les dimensions [diamètre compris entre 43 mm et 45 mm ; hauteur de (50 ± 3) mm] ont été contrôlées.
The dimensions [diameter between 43 mm and 45 mm; height of (50 ± 3) mm] have been checked.

3.2. CONDITIONNEMENT / *CONDITIONING*

Préalablement aux essais, les éprouvettes ont été conditionnées à une température de (23 ± 2) °C et à une humidité relative de (50 ± 5) %, pendant au moins 48 h et jusqu'à stabilisation de masse, conformément à la norme EN 13238.
Puis elles ont été séchées dans une étuve ventilée maintenue à (60 ± 5) °C pendant 20 h à 24 h et refroidies à la température ambiante dans un dessiccateur avant l'essai.
Prior to testing, specimens have been conditioned at a temperature of (23 ± 2) °C and relative humidity of (50 ± 5) %, during at least 48 h and until stabilization of mass, according to EN 13238 standard.
Afterwards, they have been dried in a ventilated oven maintained at (60 ± 5) °C, during 20 h to 24 h, and cooled to ambient temperature in a desiccator prior to testing.

3.3. REALISATION DES ESSAIS / TESTING

Les essais ont été réalisés du 21 novembre 2023 au 22 novembre 2023
Tests have been performed from November 21, 2023 to November 22, 2023

Les essais ont été effectués conformément au mode opératoire décrit dans la norme.
Tests have been performed in accordance with the procedure described in the test standard.

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4. RESULTATS / *RESULTS*

4.1. RESULTATS D'ETALONNAGE / *CALIBRATION RESULTS*

Les résultats d'étalonnage du four sont donnés en annexe 1.
The furnace calibration results are given in appendix 1.

4.2. MESURES / *MEASURES*

	Eprouvette / Sample 1	Eprouvette / Sample 2	Eprouvette / Sample 3	Eprouvette / Sample 4	Eprouvette / Sample 5
masse initiale / initial mass (g)	111,237	110,334	121,08	120,755	121,672
masse finale / final mass (g)	91,843	91,321	102,677	102,51	103,018
perte de masse / mass loss	17,4%	17,2%	15,2%	15,1%	15,3%
tinf (s)	Non Applicable	Non Applicable	Non Applicable	Non Applicable	Non Applicable
text (s)	Non Applicable	Non Applicable	Non Applicable	Non Applicable	Non Applicable
durée d'inflammation / sustained flaming duration (s)	Non Applicable	Non Applicable	Non Applicable	Non Applicable	Non Applicable
T1,i (°C)	749,5	750,2	750,7	750,5	748,4
T2,i (°C)	749,8	749,5	749,9	750,4	748,1
T1max (°C)	783,2	792,1	780,9	780,7	796,4
T2max (°C)	789,6	799,7	781,1	770,7	804,3
T1,f (°C)	781,4	790,6	780,3	773,3	795,1
T2,f (°C)	787,6	798,0	780,7	770,3	803,0
ΔT1 (°C)	1,8	1,5	0,6	7,4	1,3
ΔT2 (°C)	2,0	1,7	0,4	0,4	1,3
ΔT (°C)	1,9	1,6	0,5	3,9	1,3

t inf (s) : Temps à partir duquel apparait la flamme persistante la plus longue dans le temps.
Time from which the longest sustained flaming starts.

t ext (s) : Temps à partir duquel disparait la flamme persistante la plus longue dans le temps.
Time from which the longest sustained flaming stops.

T1,i et T2,i (°C) (Températures initiales du four) : Températures moyennes dérivées pendant les dix dernières minutes de la période de stabilisation du four.
(Initial furnace temperatures): Average temperatures over the final 10 min of stabilization period.

T1,max et T2,max (°C) (Températures maximales du four) : Valeurs discrètes des températures maximales en tout point et pendant toute la période de l'essai.
(Maximum furnace temperatures): Discrete values at maximum temperatures anywhere over the entire test period.

T1,f et T2,f (°C) (Températures finales du four) : Températures moyennes pendant la dernière minute de la période d'essai.
(Final furnace temperatures): Average temperatures over the final 1 min of the test period.

ΔT1 et ΔT2 (°C) (Élévation de température de chaque thermocouple du four) : T1,max-T1,f et T2,max-T2,f.
(Temperature rise of each furnace thermocouples): T1,max-T1,f and T2,max-T2,f.

ΔT (°C) (Élévation de température moyenne du four) : (ΔT1+ΔT2)/2
(Average temperature rise) : (ΔT1+ΔT2)/2

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4.3. OBSERVATIONS / *OBSERVATIONS*

Aucune observation particulière.
No specific observation.

5. CONCLUSIONS

Ces résultats d'essais rendent compte du comportement des éprouvettes d'un matériau soumis à des conditions spécifiques d'essai ; ils ne prétendent pas représenter le seul critère d'évaluation du danger potentiel de contribution à l'incendie que présente le produit dans les conditions d'utilisation.
L'attention est attirée sur le fait que les résultats obtenus avec l'échantillon objet du présent rapport d'essais ne sont pas généralisables sans justification de la représentativité des échantillons et essais.
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criteria for assessing the potential fire hazard of the product in use.
The attention is drawn on the fact that the results obtained with the sample being the subject of the present test report can not be generalized without justification of the representativeness of the samples and tests.

Les Avenières Veyrins-Thuellin, le 08 décembre 2023
On December 08, 2023

X Benjamin BESSON

Chargé d'affaires
Signé par : Benjamin BESSON

X Damien FLAMMIER

Superviseur Essais
Signé par : Damien FLAMMIER

Efectis | EFR-23-004875-NC | RAPPORT D'ESSAI / *TEST REPORT*

ANNEXE 1 / Appendix 1 – Etalonnage du four / *Furnace calibration*

19/10/2023

	Niveau				
Axe vertical	a (à + 30 mm)	b (à 0 mm)	c (à - 30 mm)	$T_{avg,axe}$	$T_{dev,axe}$(%)
1 (à 0°)	791,0	791,2	806,0	796,1	0,1
2 (à 120°)	788,1	795,8	796,8	793,6	0,2
3 (à 240°)	788,4	796,1	804,3	796,3	0,1
$T_{avg,level}$	789,2	794,4	802,4	CONFORME	
$T_{dev,level}$(%)	0,8	0,1	0,9		

T_{avg}	795,3	
$T_{avg,dev,axe}$(%)	0,1	CONFORME
$T_{avg,dev,level}$(%)	0,8	CONFORME

Température du four :

position (mm)	température relevée en descente	température relevée en montée	moyenne températures relevées	Tmin théorique	Tmax théorique	Conformité	NORMAL
145	641,4	642,2	641,8	639	665	OUI	671
135	668,7	669,4	669,1	664	693	OUI	698
125	691,0	691,2	691,1	683	712	OUI	716
115	713,3	714,2	713,8	698	726	OUI	729
105	724,7	725,0	724,9	709	735	OUI	737
95	732,8	732,4	732,6	717	741	OUI	743
85	739,5	741,0	740,3	722	745	OUI	746
75	743,9	743,6	743,8	723	746	OUI	747
65	743,3	744,2	743,8	720	745	OUI	746
55	738,3	739,4	738,9	712	742	OUI	743
45	733,2	733,1	733,2	699	735	OUI	736
35	718,2	717,8	718,0	679	723	OUI	724
25	699,2	694,1	696,7	652	705	OUI	705
15	664,3	664,0	664,2	616	678	OUI	678
5	630,6	629,9	630,3	570	639	OUI	639
		CONCLUSION	CONFORME				

Efectis UK/Ireland

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TEST REPORT

REACTION TO FIRE TEST REPORT No EUI-23-HC-000774

Test Standard: **BS EN ISO 1716:2018** - Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value)

Other reference document: **BS EN 13238:2010** – Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates

Product: Fibre cement board
Referenced: High Quality Panel

Applicant: Anhui Leao New Materials Technology Co., Ltd
Qilihe Village, Chihe Town,
Dingyuan County
510663
Chuzhou City, Anhui
China

UKAS TESTING
10169

Efectis | EUI-23-HC-000774 | TEST REPORT

1. DOCUMENT TRACKING

Revision Index.	*Modification*
0	Original document

2. OBJECT

The results reported in this document are intended to determine, under specified conditions, the gross heat of combustion (GHC) of homogeneous and heterogeneous products.

3. INFORMATION ABOUT THE TESTED PRODUCT

Sampling: The tested sample has not been subject of a sampling, thus the results apply to the sample as received.

Date of arrival: October 02, 2023

The information below were provided by the applicant who attests their accuracy.

Manufacturer / supplier: Anhui Leao New Materials Technology Co., Ltd
Qilihe Village, Chihe Town,
Dingyuan County
510663
Chuzhou City, Anhui
China

Identification of the product: Fibre cement board
Referenced: High Quality Panel

General description of the product:

Composition: Fibre cement board made of 37.5% cement, 7.5% cellulose fibre and 55% quartz sand

Thickness: 8 mm
Mass per unit area: 11.8 kg/m^2
Density: 1470 kg/m^3

Colour: Off white
Fire-retardant treatment: No

Specimen:

Form of construction: fibre cement board is the Portland cement, natural mineral plant fibre as the main raw material, through grinding, pulping, molding, high compression, high temperature steam, maintenance, mould release, autoclaving, drying, finished product inspection and delivery.

Sampling procedure: No sampling was performed

4. TESTS

4.1. SPECIMENS PREPARATION

Select according to the tested specimen:

Bulk material:

50 g were taken from the fibre cement board and reduced into powder.

Specimen preparation:
The specimens were prepared by mixing about 0.5 g (to the nearest 0.1 mg) of component and about 0.5 g (to the nearest 0.1 mg) of paraffin oil.

4.2. CONDITIONING

Prior to tests, specimens have been conditioned at a temperature of (23 ± 2) °C and relative humidity of (50 ± 5) %, at least 48 h and until stabilisation of mass, according to BS EN 13238 standard.

4.3. TESTING

Tests have been performed on November 06, 2023.

At least 3 specimens have been tested.

Tests have been performed in accordance with the procedure described in the test standard.

5. RESULTS

5.1. TEST CONDITIONS

Room Temperature: 18 °C
E (MJ/K): Water equivalent: 0.00999461

5.2. MEASURE

Components				*GHC*	
No	*Reference name (supplier name)*	*Samples*		*MJ/kg*	*MJ/m²*
1	High Quality Panel	N°	1	0.8	-
			2	0.8	
			3	0.8	
			Average	**0.8**	

As the laboratory was not responsible for the sampling stage, thus the test results only apply to the tested specimen.

5.3. OBSERVATIONS

-

Efectis | EUI-23-HC-000774 | TEST REPORT

6. CONCLUSIONS

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.
The attention is drawn on the fact that the results obtained with the sample being the subject of the present test report cannot be generalised without justification of the representativeness of the samples and tests.

Belfast, on December 08,2023

SIGNED **APPROVED**

Mohamad Aloulou
Project leader

Damien Flammier
Technical Manager

END OF TEST REPORT

Appendix B: ISO 9001 certificate

领航盛达

hSd

Quality Management Certification

Certificate No: 86123Q0224R0S

This is to certify that:

Anhui Leao New Materials Technology Co.,Ltd.

Uniform credit code: 91341125MA2WFMG89K

Registered address: 513 km away, 328 National Road, Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui Province

Business address: 513 km away, 328 National Road, Qilihe Village, Chihe Town, Dingyuan County, Chuzhou City, Anhui Province

GB/T 19001-2016/ISO 9001:2015

Scope of certification:

Production of asbestos-free fiber cement plate

Date of issue: 2023-11-07 Date of valid: 2026-11-06

Certification Manager:

Zhenguo Wang

LHSD (Beijing) International Certification Co., Ltd
Room 331, Building 3, Yard 12, Shuyuan South Street, Fangshan District, Beijing, China

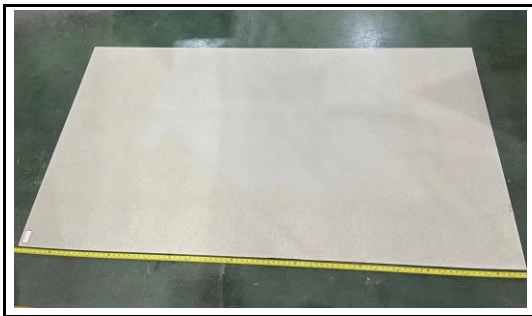
Web：www.lhsdbj.cn

Remark: This certificate is issued by LHSD. For its validity, please scan the QR code on the certificate. The certificate can be verified on the official website of LHSD(www.lhsdbj.cn) and also on the official website of Certification and Accreditation Administration (www.cnca.gov.cn)

ISO管理体系认证 ISO management system

ISO 9001

Appendix C: Product photo

	
C1. Over view of sample 8mm	C2. Section view of sample 8mm
	
C3. Over view of sample 24mm	C4. Section view of sample 24mm

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Total Quality. Assured.

Test Report

Report Number:230925139GZU-001
Report Date: 1/26/2024

Appendix D: Revision history

Approved by:

Name: Jeff Deng
Title: Manager

Drafted by:

Name: Kelming Wang
Title: Project Engineer

Revision:

Report No.	Date	Changes	Author	Reviewer
230925139GZU-001	1/26/2024	First issue	Kelming Wang	Jeff Deng

****

The End of Report