



ASK Gypsum Factory

VAT # 300440051300003

Tel: +966 2 6130000

Fax (Jeddah): Ext 101

Fax (Yanbu): Ext 102

www.gboard-sa.com

ARAMCO Vendor No: 100061804

SABIC Vendor No: 5126971



PRE-QUALIFICATION & TECHNICAL SUBMITTAL

Date:

Client:

Project Name:

Consultant:

Contractor:

Supplier:

Manufacturer: Ask Gypsum Factory Ltd.



سابك
عندك

ارامكو السعودية
Saudi Aramco



TÜV
AUSTRIA
HELLAS
EN ISO 9001: 2008
No.: 1317100062786

Approved for ARAMCO projects Under Vendor No: 100061804, and Approved for SABIC Achilles Vendor No: 5126971.



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SECTION - 1

- **Company Profile**

Company Profile

The Company



A regional leader.

Established in 2005 as a Lebanese-Saudi joint venture, ASK is a limited liability company registered in Saudi Arabia as per the laws in force. Specializing in the manufacture and trade of gypsum products for the Region, it has brought to the Kingdom more than 50 years of experience in the industry, and a new era of technological innovations and precision products.

ASK Gypsum Factory is the largest supplier of gypsum products in the Gulf. Its 75,000 sqm facility produces over 20 million sqm of gypsum boards per year, and is expected to reach 50 million sqm by 2012.



Gypsum: The next construction essential.

Gypsum has become an essential element for building interiors and lightweight construction solutions. Produced by ASK under the commercial names of Gboard (for boards) and Gulf Gypsum (for powder), gypsum is increasingly used to add strength to the interior walls of buildings, and has insulation qualities that enhance living and working conditions.

Gboard offers the full spectrum of gypsum boards, from standard to fire resistant and water resistant boards. To further improve these types, gboard inovated impact-resistant boards, used in schools, hospitals and public facilities to reinforce walls that are subject to impact.

International quality standards.

Gboard's leadership in the gypsum industry is a result of one thing: quality. Strict quality control applies from beginning to end, with a close monitoring of the raw material received from the factory's own quarries, to ensure manufacturing embarks with the required high-level components. Precision measurement equipment is then used to maintain optimal tolerance levels for the production line.



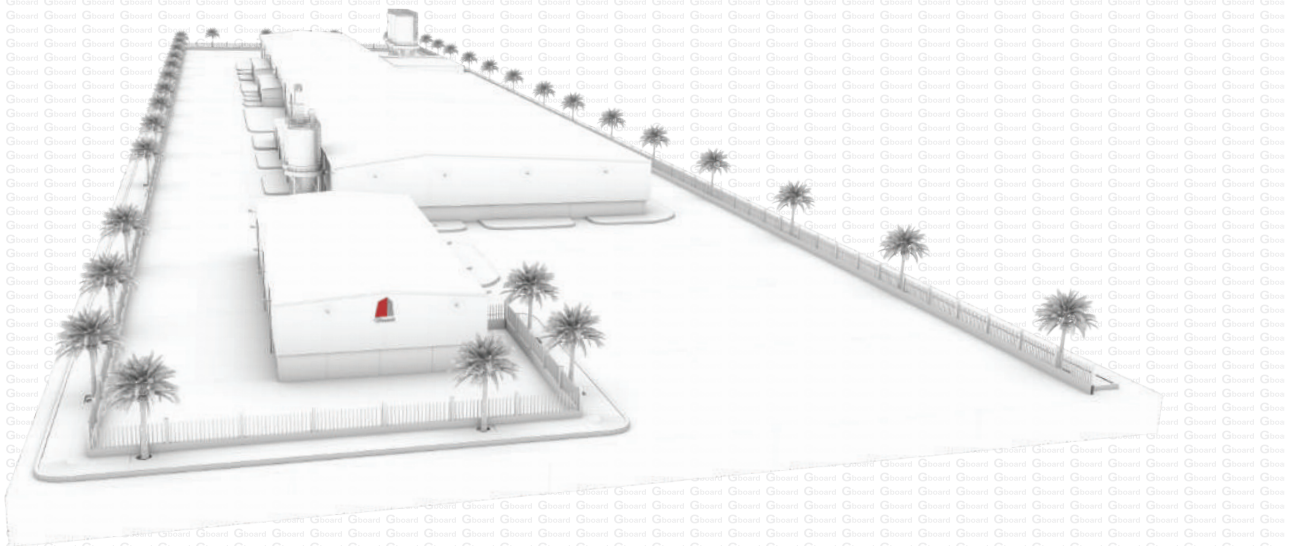
THE PRODUCT

UL certification

The UL Mark is the most recognized, accepted and trusted symbols in the world.

It is a registered certification mark of Underwriters Laboratories Inc. (UL), an independent product safety testing and certification organization.

For the sake of understanding of the UL certification, it is worth highlighting the difference between a 'Certificate' and a 'test report' – UL certificates are issued when a product qualifies and meets all the requirements and safety norms set forth by the Underwriters laboratories with regards to safety. Whereas test reports are a temporary phenomenon that declares a particular lot or a batch of the product produced at a given time to be test approved, thus test reports are valid only for that particular batch. That is what sets Gboard apart from rest of its compatriots, being a genuine UL tested and Certified product carrying UL mark.



White gypsum. Green Company.

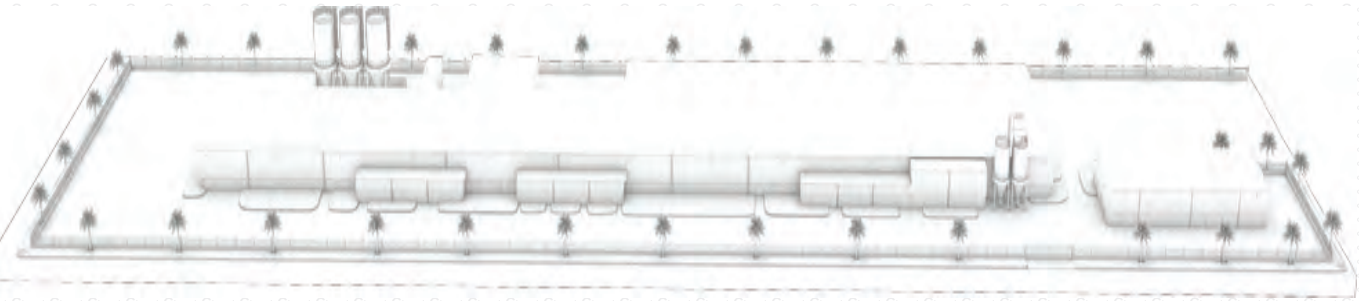
In a company that believes in natural construction products, Gboard is produced in the “greenest” ways possible. Raw gypsum is extracted directly from the factory’s quarries, making the starting material as pure as possible, and the final product 99.9% natural.

With “build natural” as its motto, Gboard applies the most eco-friendly methods, such as dust minimization, waste diminution, and conservation of energy and water. This optimized utilization of natural resources, combined with cutting-edge technologies, has helped Gboard remain ahead of competition as a Company that continuously develops its products and provides benchmark quality at effective value.

Beyond excellence.

Meeting clients’ expectations is easy. Exceeding them is what Gboard prides with. By offering exceptional service, innovative solutions, and quality products at the best value, it has become a reference in reliability and economy, and an industry player with a well-earned market share.

CONTACTS



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info@gboard-sa.com

www.gulfgyptoms.com
www.gboard-sa.com



SECTION - 2

- **Legal Documents**
 - Commercial Registration
 - Chamber of Commerce
 - Zakat Certificate
 - Industrial Investment License-(SAGIA)
 - VAT- Value Added Tax.



وزارة التجارة والاستثمار
Ministry of Commerce and Investment

VISION 2030
رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

شهادة تسجيل فرع شركة

اسم الشركة: شركة ممينج أسك بلجيس المحدودة.

نوعها: ذات مسئولية محدودة. مختلطة. رأسها: مودودي

مركزها الرئيسي: ينجع المناع - منطقة المناعات الخفيفة

ص ب ٣١٣٨٩١ - الرمز البريدي: هاتف: ٣٩٢٢٢٢٢٢ فاكس: ٣٩٢٠٢٢٢٢

رقم سجل المركز الرئيسي: ٤٠٩٤٤٠٠ - تاريخه: ١٤٢٧/١١/٢٧ - مصدره: ينجع

الاسم التجاري: ممينج أسك إنلوج

العضوان: ينجع لصناعية - الصناعات الخفيفة

ص ب ٣١٣٨٩١ - الرمز البريدي: هاتف: ٣٩٢٠٢٢٢٢٢ فاكس: ٣٩٢٠٢٢٢٢٢

النشاط: صناعة الواج اسمنتية ومستلزماتها ومشتقاتها بموجب ترخيص. مناعي. رقم (٥٩٤٤٣) م

وتاريخ ١٩/١١/٢٧٨١٤٣٧٨ - رقم (١٣١٠٣١٠١٧٢٠) وتاريخ ١٧/١١/٢٤٢٤١ م

٢٢٢٢٢٢

اسم المدير (رباعيا): شارل جوزف الخوري

الجنسية: لبناني مكان الميلاد: ١٩٧٢ شكا

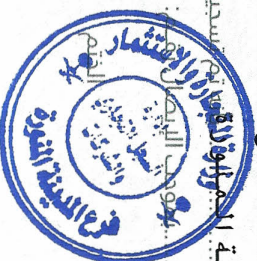
رقم السجل المدني: ٢٢٢٠٩١٦٦٢٣ تاريخه: ٠٠٠٠/١٠/١٠٠٠ مصدره: ينجع

سلطات المدير: الإدارة أعمال الفرع: تاريخه: مصدره: ينجع

يشهد مكتب السجل التجاري بمدينة: المدينة الامم والاولاد تسجيل فرع الشركة المذكورة اعلاه بمدينة: ينجع

وتنتهي صلاحية الشهادة في: ١٤٤٣/١٠/١٠٣ وتاريخ: ٠١/٣٩/١٥٢٨

عبد الرحمن بن سالم شكر
مدير السجل التجاري للشركات:
التوقيع



٢٠١٦
١٤٣٩
١٤٣٩



٢٠١٦
١٤٣٩
١٤٣٩

الغرفة التجارية الصناعية بمحافظة ينبع
Yanbu Chamber Of Commerce & Industry
إدارة الشؤون المتكاملين

رقم العضوية :

٢٠٥٠٠٠١١٦٤٩٠

تاريخ الإلتحاق :

١٤٣٩/١٢/٣٠

الدرجة :

الأولى

تاريخ الإشتراك :

١٤٣٧/٠١/٢٧

مسجل لديها لهذا العام

٤٧٠٠٠٠٩٤٤٠

رقم السجل التجاري / الترخيص

شركة مصنع اسك للجبس

مدير إدارة شؤون المتسبين

يوسف بن عبد الله الخلف

٣٢٢١٠٠٦ فاكس ٣٣٢٠٩٩٨ هاتف ٥٩ ص ب ٢٢١١٤٤٣ - ينبع الصناعية - ص ب ١٩٣ ٣٠١٩٣ هاتف ٣٠١٩٣٠٠٠-٣٩١٣٦٠٧-٣٩١٣٦٠٧ فاكس ٣٩١٣٦٠٧-٣٩١٣٦٠٧
البريد الإلكتروني: info@Ynbcci.Org.Sa

٣٢٢١٠٠٦ فاكس ٣٣٢٠٩٩٨ هاتف ٥٩ ص ب ٢٢١١٤٤٣ - ينبع الصناعية - ص ب ١٩٣ ٣٠١٩٣ هاتف ٣٠١٩٣٠٠٠-٣٩١٣٦٠٧-٣٩١٣٦٠٧ فاكس ٣٩١٣٦٠٧-٣٩١٣٦٠٧
موقع الغرفة : www.Ynbcci.Org.sa



77780

رقم الترخيص (13103101720)
تاريخ الإنشاء: 1443/12/23 هـ
٢٠٢٢/٠٧/٢٣ م

رقم الترخيص
تاريخ الإصدار: 1424/11/07 هـ
٢٠٢٢/١١/٢١ م



الهيئة العامة للاستثمار
SAGIA

ترخيص استثمار صناعي
Industrial Investment License

المركز الرئيسي

حالة الترخيص: تجدي

شركة مصنع اسك للجنس المحدودة (602496)

شركة ذات مسؤولية محدودة

اسم الترخيص

300 فرد

عدد العمالة

الموقع

+966123960222

الهاتف

إجمالي التمويل

41912

الرمز البريدي

ب.م

الاسم
رقم المستثمر الأجنبية
33% السعودية 702521

اسم صاحب/ أصحاب الترخيص
اسم سعد فهد الكريديس

الاسم
52% لبنان

رقم المستثمر الأجنبية
702520

اسم صاحب/ أصحاب الترخيص
شارل جوزف الطغوري
مجموعة عبد المحسن عبد العزيز الحكير
القابضة

الاسم
الكمية
380000
طن
60000
طن

المنتج
البنك الجمركي
25201010
جيس ومطقاته
68118200
الوراح اسمنتيه ومطقاتها
ومستلزماتها

الاسم
الكمية
50000000
طن
5000
طن

الاسم
الكمية
25201010
الوراح جيس
32141094
مجموع فو اصل

رقم الفرع
الاسم
نوع الفرع

اسم الفرع

رقم الفرع
314114

الاسم
جدة

نوع الفرع
مقر إداري

اسم الفرع
فرع شركة مصنع اسك للجنس المحدودة

منه ابراهيم بن صالح السويل
تاريخ التوقيع : 1438/12/04

79129

الهيئة العامة للاستثمار
SAGIA
الهيئة العامة للاستثمار



تاريخ الطباعة 1438/12/05 هـ المحافظة م.م ابراهيم بن عبد الرحمن الممر



ترخيص صناعي استثمار

رقم (١٥١٩) بتاريخ: ٣٠/٠٥/٢٠١٤ هـ
تعديل ترخيص هيئة الإستثمار رقم (١٣١٠٣١٠١٧٢٠)

وزارة الطاقة والصناعة والثروة المعدنية
Ministry of Industry and Mineral Resources

٤٧٠٠٠٠٠٩٤٤٠	السجل التجاري للمنشأة	١٦١٤٢١	رقم المنشأة	شركة مصنع امك للجبس المحدودة	اسم المنشأة
٠١٢٦١٣٠٠٠٠	فاكس	٠١٢٦١٣٠٠٠٠	هاتف	بنيق (N24.0107250 - E38.2697356)	موقع المنشأة
٥١٠٠٠	الرمز البريدي	٣١٣٨١	صندوق البريد	شركة مصنع امك للجبس المحدودة (رقم السجل التجاري: ٤٧٠٠٠٠٩٤٤٠ / الجنسية: السعودية)	ملكية المنشأة المدنية
				بنيق	النشاط الصناعي

صنع اصناف من الغرساة والاسمنت والجص (رمز النشاط: ٢٣٩٥)

الطاقة الإنتاجية	الوحدة	رمز المنتج	وصف المنتج
٢٨٠٠٠٠	طن	٢٥٢٠١٢٠	جبس (بودرة)
١٤٥٠٠٠	طن	٢٨٠٨٠٠٠٠	الواح جبسية

الطاقة الإنتاجية	الوحدة	رمز المنتج	وصف المنتج
٥٠٠٠٠	طن	٣٢٢٤١٠٩٤	ملاحيق فواصل للاتصالات والاسمنت
٦٠٠٠٠	طن	٢٨١١٨٢٠٠	الواح اسمنت مسنت



عدد العمالة: ٣٠٠ (ثلاثمائة) فردا
اجمالي التحويل: ٢٠ (عشرون) مليون ريال

تنتهي صلاحية الترخيص بتاريخ: ٠٦/٠٢/١٤٤١ هـ

ملاحظة هامة: المعلومات خلف الترخيص متعممة له

وزير الطاقة والصناعة والثروة المعدنية
خالد بن عبدالعزيز الفالح



1060102600

رقم الشهادة : ١٠٦٠١٠٢٦٠٠

التاريخ : ١٤٣٨/٠٨/١٥ هـ

الرقم المميز : ٣٠٠٤٤٠٠٥١٣

الهيئة العامة للزكاة والدخل
GENERAL AUTHORITY OF ZAKAT & TAX

فرع المدينة المنورة

شهادة
CERTIFICATE

تشهد الهيئة العامة للزكاة والدخل بأن المكلف / شركة مصنع أسك للجبس المحدودة

شركة رقم ٧٠٠١٤٧٩١٤١ وسجل تجاري رقم ٤٧٠٠٠٠٩٤٤٠ رخصة رقم ١٣١٠٣١٠١٧٢٠

قدم إقراره عن الفترة المنتهية في ٢٠١٦/١٢/٣١ م

وقد منح هذه الشهادة لتمكينه من إنهاء جميع معاملاته بما في ذلك صرف مستحقاته النهائية عن العقود.

يسري مفعول هذه الشهادة حتى تاريخ ١٤٣٩/٠٨/١٤ هـ الموافق ٢٠١٨/٠٤/٣٠ م.

(الرابع عشر من شعبان ألف و أربعمائة و تسعة و ثلاثون هجري)

الفروع (١) في النموذج المرفق

الهيئة العامة
للزكاة والدخل
GENERAL AUTHORITY
OF ZAKAT & TAX
الشهادات

الختم الرسمي

هذه الوثيقة مستخرجة من النظام الآلي ولا تحتاج إلى توقيع

لا يعتد بهذه الشهادة إلا بعد التحقق من موقع الهيئة www.dzit.gov.sa



تاريخ الترخيص : ١٤٣٨/١٢/٠٣ هـ
الرقم المميز : ٣٠٠٤٤٠٠٥١٣



الهيئة العامة للزكاة والدخل
GENERAL AUTHORITY OF ZAKAT & TAX

المملكة العربية السعودية
الهيئة العامة للزكاة والدخل
GENERAL AUTHORITY OF ZAKAT & TAX
(١٨٥)

شهادة CERTIFICATE

شهادة تسجيل في ضريبة القيمة المضافة VAT registration certificate

تشهد الهيئة العامة للزكاة والدخل بأن المالك : شركة مصنع أسك للجبس المحدودة
مسجل في ضريبة القيمة المضافة بتاريخ : ١٤٣٨/١٢/٠٣ هـ، وتحمل الرقم الضريبي : ٣٠٠٤٤٠٠٥١٣٠٠٠٣

عنوان المركز الرئيسي :
المدينة : ينبع الحي :
صندوق البريد : الرمز البريدي : ٤١٩١٢
الهاتف : ٠٠٩٦٦٥٦٩٤٠٦٤٨٠

الهيئة العامة للزكاة والدخل



هذه الوثيقة مرسلة من النظام الآلي ولا تحتاج إلى توقيع



SECTION - 3

- **Products Catalogues.**



ASK Factory
Building Products

Technical Manual

2016

Solidly light



**Walls, Ceilings
and Floors Applications**

CONTENTS

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INTRODUCTION

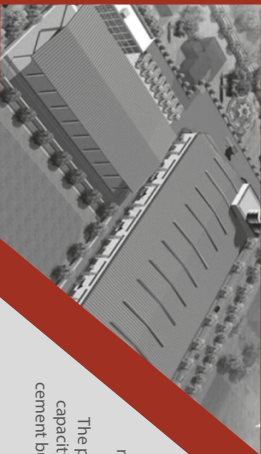
The Company Behind the Product

With its success driven by its people and their expertise, ASK has been implementing excellence in producing versatile building products for many years. By employing innovative technology all throughout our manufacturing process, ASK has achieved international recognition, which has led to an inclusion of new business opportunities that are captured and executed into a concrete, productive, and beneficial product range, bringing high quality and fast services into the light. ASK continues to please a vast number of customers worldwide.

Today, ASK introduces its new Facility, manufacturing Fiber cement board materials and solutions branded as **C Board™**.

Regional Leader

ASK is committed to achieving and sustaining a regional leadership position in the manufacture and marketing of durable fiber cement building products. The investment in technology through the years has allowed ASK to continually introduce innovative building concepts to the market that are synonymous with high performance, durability and architectural flexibility and as a result, providing the customers with exceptional costs.



Manufacturing Capabilities

In both KSA and Egypt, ASK has built two of the most advanced fiber cement board manufacturing plants with sophisticated computerized process control systems to guarantee the highest quality of manufactured products.

The plants were completed in early 2016 with the capacity of production over 10 Million m² of fiber cement building sheets annually.

Basic Composition

Fiber Cement is manufactured from Portland cement, high purity silica sand, treated cellulose fiber and water. It does not contain asbestos.

water
Dissolves the wood pulp activators and hardens the cement.

High Purity Silica Sand

wood pulp
Improves flexibility and resilience.

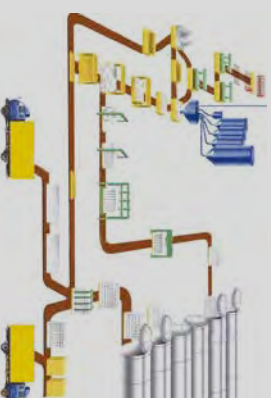
Portland cement
Binds the ingredients. Made with limestone, clay and iron.



Manufacturing Process

Fiber Cement is manufactured using the hatschek process, which involves building up a number of laminations of a slurred mix of the core ingredients on a large steel cylinder, known as the size roller. When the desired sheet thickness is achieved, the "green" sheet is cut away and deposited on a conveyor, where it is trimmed to size, then sacked and left for a short period of pre-curing.

The final curing, which is made in a high pressure steam autoclave, changes the chemical structure of the cement/silica sand matrix to produce highly durable and strong fiber cement products such as **C Board™** building boards.

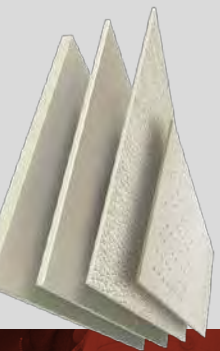


Product Range

Boards

Smooth and durable **C Board™** building boards are a tough, flexible building products, unsurpassed for economy, versatility and ease of working. They are ideal for many general building purposes and can be used for:

- Internal Linings
- Internal Partitioning.
- False Ceiling.
- External Claddings.
- Floorings.



Dimensions (mmxmm)	Thickness mm					
	Square or Recessed Edge					
4	6	9	12	15	18	
1200 X 2400	Only Square Edge	0	0	0	0	0
1220 X 2440	Only Square Edge	0	0	0	0	0
1200 X 3000	Only Square Edge	0	0	0	0	0

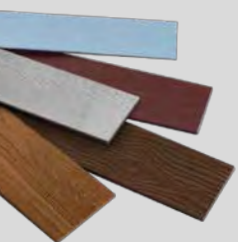
** Size to be manufactured in the near future

PRODUCT APPLICATION							
Application	4	6	9	12	15	18	
Internal Ceiling	0						
External Ceiling / Internal Ceiling / Arch Ceiling	0	0					
Banded Wall / Internal Partitions		0	0	0			
Subroof / Sunshade			0				
General External Wall In Wet Area			0				
High Rise Building Wall / External Cladding			0	0			
Underlayment			0				
Raised Floor / Elevated Floor					0	0	0

Planks

Through using the unique composite of natural fibers bonded tightly in a high grade silicate structure, this autoclave wood grain siding acquires impressive toughness yet remains flexible and dimensionally stable. It is a cellulose cement plank that contains absolutely no asbestos fibers.

C Board™ Planks can withstand simple handling and installation therefore suitable for even Do it yourself (DIY).



Dimensions (mmxmm)			
8 X 150 X 2400	5.43 kg / Pc		2.77 Pcs / m ²
8 X 200 X 2400	7.2 kg / Pc		2.08 Pcs / m ²

Usage / Thickness:

- Internal and External Wall cladding

Key Features



Thermal Insulation



Fire Resistance



Termite Resistance



Weather Resistance



High Impact Strength



Easy to decorate



Easy to work with



flexibility



X Example: Gypsum Board
Not termite resistant



X Example: Wood / Plywood
Not termite resistant



X Example: Gypsum Board
Not water resistant



X Example: Wood / Plywood
Not humidity resistant

Product Range

Main Benefits when Using C Board™

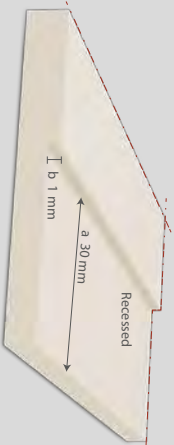
C Board™ Cement cellulose boards are absolutely free of asbestos, chrysotile, amosite, crocidolite and any kind of asbestos.



Edges

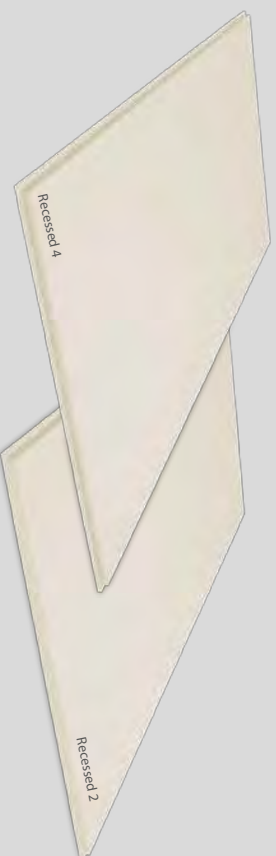
C Board™ manufacture three types of edges:

- Square Edge
 - Recessed Edge/ 2 or 4 Sides
- Square Edge is applicable for all thicknesses. However, when it comes to recessed edge it is only applicable for boards with thickness of 6mm and above.



Benefits:

- Perfect and Even Joints between Boards
- Faster and easier work when jointing boards



Physical Properties

TECHNICAL DATA

Physical Properties	Standard	Unit	Test Results
Density	ASTM C1186 -2012	G/ Cm3	1.3 +/- 0.05
Flexural Strength	ASTM C1186- 2012	Mpa	>7.0
Water Absorption	ASTM C1186- 2012	%	<35
Water Tightness	ASTM C1186- 2012	-	Pass
Moisture Movement	ASTM C1186- 2012	-	0.04
Moisture Content	ASTM C1186- 2012	%	<12
Thermal Conductivity at 250C	ASTM C158 - 2010	Wat/mk	0.15
Sound Protection	ISO & ASTM	dB	30 - 64
PH Value	ISO & ASTM	-	7 - 8
Fire Properties			
Ignitability	BS 476 :4	-	Pass
Fire Propagation Index	BS 47 6- 6:1989 + A1 : 2009	-	I = 0
Surface Spread of Flame	BS 476 - 7	-	Class 1
Combustibility	BS 476 : 4	-	Class 0
Durability Properties			
Freeze/ Thaw Resistance	ASTM C1186 - 2012	-	Pass
Warm Water Resistance		-	Pass
Heat/Rain resistance		-	Pass
Soak Dry Resistance	ISO 8336 - 2009 (E)	-	Pass

*** Given Test Results are based on 9mm Non Pressed Thick Specimen

C Board® Accessories

C Board™ Screw Fix – A

For Galvanized Steel Frame
0.55mm – 1.2mm Thickness



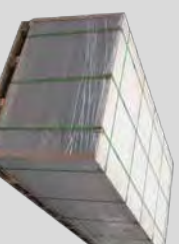
C Board™ Screw Fix – B

For Steel Frame
3.2 – 1.0mm thickness



C Board™ sealant

Polyurethane joint sealant,
internal and external use.



Handling and Storage

Store under a shady, dry and leveling area on 5 timbers bases/ for 6mm thickness, the height of stack should not exceed 130 Pcs. Do not install and paint the sheets when they are wet.

Handle vertically from both edges

Where to use?

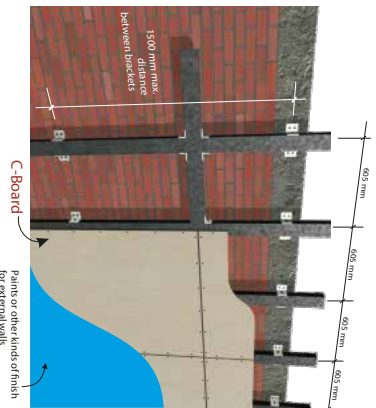
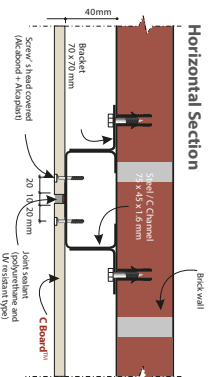
1. For Ceiling System.
2. For Exterior Wall System.
3. For Interior Wall System.
4. For Flooring System.



External Walls

Best Installation Practices

For Lining Wall application (ideal for building renovation)
 In external applications, a minimum **C Board™** sheet thickness of 6mm should be used. Recommendations for sheet layout are identical to those outlined in the previous section.

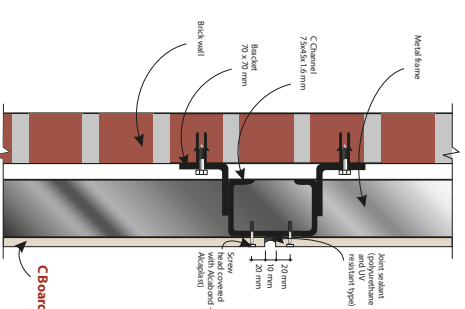


Physical Properties

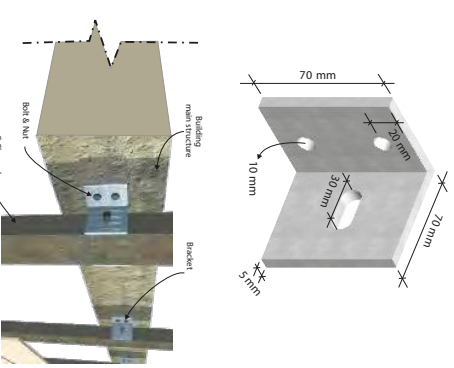
TECHNICAL DATA			
Physical Properties	Standard	Unit	Test Results
Density	ASTM C1186 - 2012	G/ Cm3	1.65 +/-0.05
Flexural Strength	ASTM C1186 - 2012	Mpa	21
Water Absorption	ASTM C1186 - 2012	%	18.5
Water Tightness	ASTM C1186 - 2012	-	Pass
Moisture Movement	ASTM C1186 - 2012	-	0.12
Moisture Content	ASTM C1186 - 2012	%	6.6
Thermal Conductivity at 250C	ASTM C158 - 2010	Watt/mk	0.19774
Sound Protection	ISO & ASTM	dB	30 - 64
PH Value	ISO & ASTM	-	7 - 8
Fire Properties			
Surface Burning	ASTM C1186 - 2012	-	Pass
Ignitability	BS 476 - 5 : 1979	-	Pass
Fire Propagation	BS 476 - 6 : 1989 + A1 : 2009	-	I=0.1
Durability Properties			
Freeze/Thaw Resistance	-	-	Pass
Warm Water Resistance	ASTM C1186 - 2012	-	Pass
Heat/Rain resistance	-	-	Pass
Soak Dry Resistance	ISO 8336 - 2009 (E)	-	Pass

*** Given Test Results are based on 9mm Pressed Thick Specimen

Vertical Section



Bracket System for External Walls:



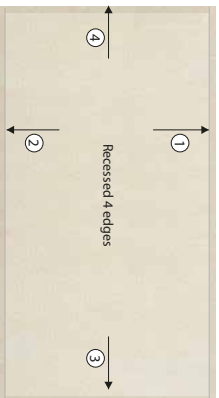
Sheet Layout

Install **C Board™** sheets across the framing components i.e. place the long edges of the sheet at right angles to the joists or furring channels.

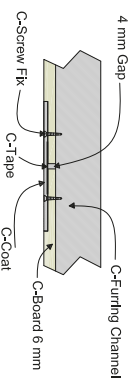
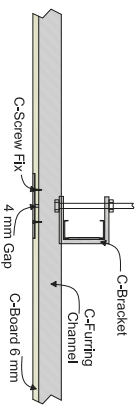
Sheets should be laid out in 'brick' staggered pattern so that adjacent butt joints are not located on the same framing components.

Locate butt joints on the centerline. Where joints are set, lay sheets to ensure that butt joints do not coincide with corners of openings, as these joints may crack due to frame movement.

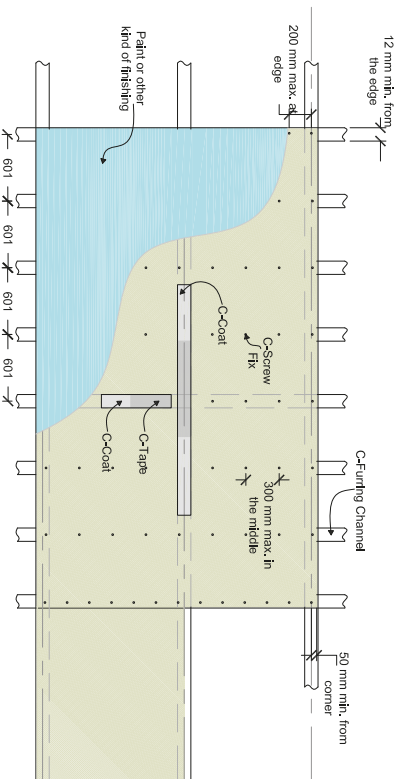
Best Installation Practices



Jointing details at the recessed edges :



View From Below



Floorings

C Board™ Flooring Board is the non-asbestos fiber-cement product, composing of Portland cement, cellulose fiber and refined sand. With the special manufacturing process called autoclave, ASKs Flooring Board acquires the strength, durability of cement and easy workability of wood work as well as dimensional stability.

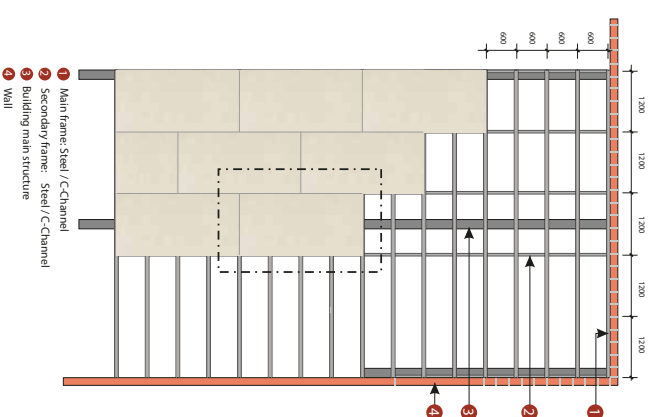
A thick and strong fiber-cement flat board gives a complete different feel to the floor be it leveled or a raised floor.

A fast and easy installation, the thick board of 15 and 18 mm can be used for any application; interior and exterior as well as commercial and residential.

Framing Requirements

C Board™ flooring Board can be fixed with either steel frame or timber frame. Frame and method of framing must comply with relevant building regulations and standards in each country. Joist spacing for each degree of design load must be installed according to the following table.

Screw is recommended to use as fastener. For metal screws, the size and length of the screw will be according to thickness of the board and the gauge of framing. Pre-drilling the **C Board™** Flooring Board is a must, otherwise, Self-embedding, self-drilling head screws, Fastener must locate at more than 12 mm from board edges and 50 mm from board corners. Maximum fastener spacing is 300 mm.



- 1 Main frame: Steel / C-Channel
- 2 Secondary frame: Steel / C-Channel
- 3 Building main structure
- 4 Wall

Planks

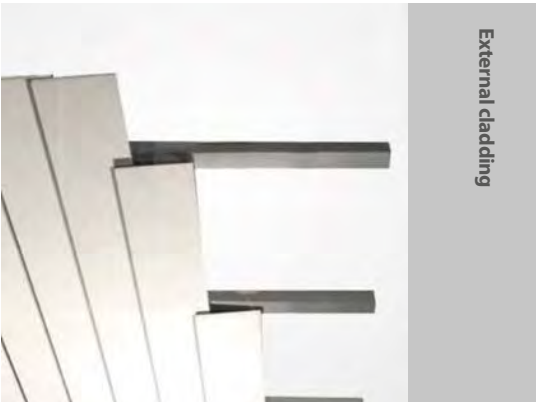
C Board™ Plank in a unique composite of natural fibers bonded tightly in a high-grade silicate structure. This autoclaved wood-grain siding acquires impressive toughness, yet remains flexible and dimensionally stable. It is cellulose cement plank that contains absolutely NO asbestos fiber.

C Board™ Plank can withstand simpler handling and installation and is therefore suitable for even Do-it-Yourself (DIY) segment. It comes in several sizes and textures with a real remedy to wood-cladding houses, which are severely affected by termites and rains.

Framing Requirements

Framing: **C Board™** Plank can be fixed to steel frame with thickness of between 0.55 and 1.6 mm. Framing must be selected to provide sufficient strength to support the **C Board™** Plank siding.

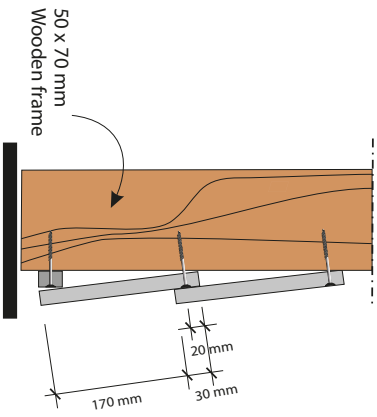
Fixing: Fastener should be screwed. The size and length of the screw will be according to thickness of the Plank and the gauge of framing. Pre-drilling the board is a must; otherwise, Self-embedding, self-drilling head screws such as **C Board™** FIX-W32G8 are preferred.



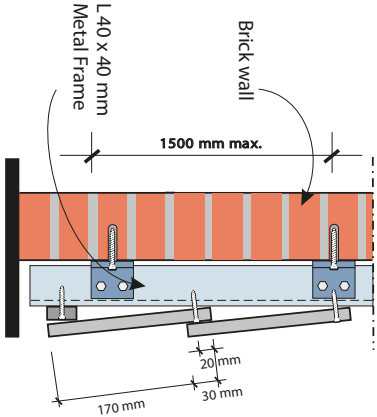
External cladding

Best Installation Practice

Vertical section as external wall on wooden frame



Vertical section as lining wall on a metal frame



C Board™ Décor

With Meticulous Design and continuous refinement, **C Board™ Décor** is a versatile weather board that offers the texture and the natural beauty timber, stone, marble, etc., whilst delivering the maintenance free durability of fiber cement board.

Made from an advanced material that's five times thicker than typical vinyl cladding, **C Board™** is fire, moisture, rot and pest resistant. It's unaffected by rain and hail damage and can be installed to withstand winds.

From classic to contemporary, there is a **C Board™** product that will help you achieve the perfect look and finish for your project.

- C-Board Mono
- C-Board Line
- C-Board Plaster
- C-Board Stone
- C-Board Wood

C Board™ Mono



Thickness

4 mm - 18 mm (By increasing 2 mm)

Standard Production Dimensions

(width) 1200 x (length) 2400mm

Special production and cutting are performed according to the project.

USAGE TYPES	USAGE AREAS	
Siding	Exteriors	Interior Decorative Plating Column Facing
	Wall Panels	
	Partition Walls	
Wall Applications	Prefabricated Building Walls	
Applications Below The Ceiling and Roof Coatings	Suspended Ceiling (9 mm products)	



C Board™ Line



Thickness

8 mm - 14 mm (By increasing 2 mm)

Standard Production Dimensions

(width) 1200 x (length) 2400 mm

Special production and cutting are performed according to the project.

USAGE TYPES	USAGE AREAS	
Siding	Exteriors	Interior Decorative Plating Column Facing
	Wall Panels	
	Partition Walls	
Wall Applications	Prefabricated Building Walls	
Faise Floor Applications	Prefabricated and Steel Structure Mezzanine Floor Covering	



C Board™ Plaster



Thickness

8 mm - 14 mm (By increasing 2 mm)

Standard Production Dimensions

(width) 1200 x (length) 2400 mm

Special production and cutting are performed according to the project.

USAGE TYPES	USAGE AREAS	
Siding	Exteriors	Wall Panels Partition Walls Prefabricated Building Walls
	Interior Decorative Plating	
	Column Facing	
Wall Applications	Wall Panels	
Applications Below The Ceiling and Roof Coatings		Suspended Ceiling



C Board™ Stone



Thickness

8 mm - 14 mm (By increasing 2 mm)

Standard Production Dimensions

(width) 1200 x (length) 2400 mm

Special production and cutting are performed according to the project.

USAGE TYPES	USAGE AREAS	
Siding	Exteriors	Wall Panels Partition Walls Prefabricated Building Walls
	Interior Decorative Plating	
	Column Facing	
Wall Applications	Wall Panels	
Applications Below The Ceiling and Roof Coatings		Prefabricated and Steel Structure Mezzanine Floor Covering





Thickness

8 mm - 14 mm (By increasing 2 mm)

Standard Production Dimensions

(width) 1200 x (length) 2400 mm

Special production and cutting are performed according to the project.

USAGE TYPES	USAGE AREAS	
Siding	Exteriors	Wall Applications
	Interior Decorative Plating	
	Column Facing	
	Wall Panels	
	Partition Walls	
	Prefabricated Building Walls	
Applications Below The Ceiling and Roof Coatings	Suspended Ceiling (9 mm products)	



Flush Jointing Internal Walls

C Board™ Sheets can be jointed using the G-Coat. To minimize the surface buildup of jointing materials over the joint, ensure that the recommended finished jointing widths in the following guidelines are applied.

SET JOINTS

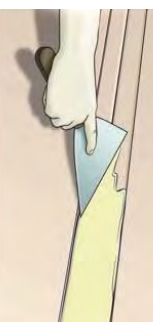
Step 1

Preparation Ensure that the joints are clean and free of dust and contaminants. If working conditions are warm and dry, dampen the area around the joint prior to working with clean cold water.



Step 2 – First coat

Apply G-Coat putty to fill the joints with a 150mm broad knife.



Step 4 – Fastener heads

Cover all fastener heads with C Board™ Base Coat. Allow to dry before applying a second coat.



Step 5 – Second coat

When the base coat is fully dry, use a 200mm wide second coat trowel to apply the C Board™ Base Coat. Apply this coat approximately 180mm wide, laid down over the recess and feather the edges.



Step 6 – Sanding



Step 3 – Embed tape

Firmly embed the paper tape centrally into the joint using a 150mm broad knife. Ensure that there are no voids under the tape and remove excess compound.



Notes:

A series of horizontal dashed lines providing space for notes.



ASK Factory
Building Products

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Old Road, Suez, Egypt



SECTION - 4

- **Compliance statement (ASTM)**
 - American Society for Testing and Materials
(ASTM C 1186)

Compliance Statement

We **ASK Gypsum Factory Ltd.** hereby confirm that "**Cboard**" is 100% asbestos free Fiber Cement Board manufactured in compliance with the enclosed standard specification for flat fiber cement-sheets ASTM C1186-08, from a homogenous mixture of Portland cement and high purity Silica Sand with a reinforcing fiber known as Cellulose (a plant extract) or Wood Pulp added in versatile doses, using the latest technology of Hatschek process and Autoclave curing system.

Our product meets the technical requirements of the project specifications according to International Standards.

R02

For Ask Gypsum Factory Ltd.
Gboard QA/QC





Designation: C1186 – 08 (Reapproved 2016)

Standard Specification for Flat Fiber-Cement Sheets¹

This standard is issued under the fixed designation C1186; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers either untextured or surface textured fiber-cement flat sheets intended for exterior applications such as claddings, facades, curtain walls, soffits, and so forth.

1.2 This specification is not applicable to asbestos-cement flat sheets (Specification C220), gypsum-based boards (Specifications C1396/C1396M, C1177/C1177M, C1178/C1178M), or particle boards (Terminology D1554) discrete non-asbestos fiber-cement interior substrate sheets (Specification C1288), fiber-mat reinforced non-asbestos cement interior substrate sheets (Specification C1325), or cement-bonded particleboards (Specification BS 5669: Part 4) and (ISO 8335).

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:²

- C220 Specification for Flat Asbestos-Cement Sheets
- C1154 Terminology for Non-Asbestos Fiber-Reinforced Cement Products
- C1177/C1177M Specification for Glass Mat Gypsum Substrate for Use as Sheathing
- C1178/C1178M Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
- C1185 Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding

¹ This specification is under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.02 on Non-Asbestos Fiber Cement Products.

Current edition approved Nov. 1, 2016. Published November 2016. Originally approved in 1991. Last previous edition approved in 2012 as C1186 - 08(2012). DOI: 10.1520/C1186-08R16.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

Shingles, and Clapboards

- C1288 Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets
 - C1325 Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units
 - C1396/C1396M Specification for Gypsum Board
 - D1554 Terminology Relating to Wood-Base Fiber and Particle Panel Materials
 - E84 Test Method for Surface Burning Characteristics of Building Materials
- 2.2 *British Standards:*³
- BS 5669: Part 4 Specification for Cement Bonded Particle-board
- 2.3 *International Standards:*³
- ISO 8335 Cement-bonded Particleboards—Boards of Portland or Equivalent Cement Reinforced with Fibrous Wood Particles

3. Terminology

- 3.1 *Definitions*—Refer to Terminology C1154.

4. Classification

4.1 Flat sheets covered by this specification are divided into two types, according to their intended application.

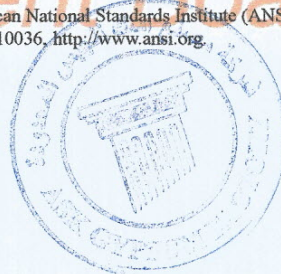
4.2 *Type A*—Sheets are intended for exterior applications, subjected to the direct action of sun, rain, or snow. They are supplied coated or uncoated.

4.3 *Type B*—Sheets are intended for exterior applications, not subjected to the direct action of sun, rain, or snow.

NOTE 1—If sheets of Type B are used in an exterior application, where they are directly exposed to the weather, but are protected by impregnation or coatings, the weather resistance of the product may be altered by the quality of the protection. Specification of this protection, as well as the method for control and test, are outside the scope of this specification.

4.4 The sheets are further classified into four grades according to their flexural strengths. The manufacturer shall declare the type and grade of a given product in the literature for that product.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.



5. Composition and Manufacture

5.1 *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.

5.2 *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.

6. Mechanical and Physical Requirements

6.1 Mechanical and physical properties shall be determined on uncoated product wherever practical. Where products are supplied coated, this material shall also be tested with the results identified as applying to coated material.

6.1.1 Sampling and inspection for mechanical and physical properties shall be conducted in accordance with Test Method C1185.

6.2 Mechanical Requirements:

6.2.1 *Flexural Strength*—When tested in accordance with Test Method C1185, the flexural strength shall not be less than the corresponding value for the appropriate grade in Table 1. Where manufacturers state minimum product strength, this shall be at the 4 % acceptable quality level (AQL) as are the values of Table 1.

6.2.2 Type A sheets for exterior applications shall be tested and specified in both the wet and equilibrium conditions. Type A sheets shall meet the minimum wet and minimum equilibrium flexural strength requirements for the appropriate grade specified in Table 1. In addition, the average wet flexural strength of the sample shall not be less than 50 % of the mean equilibrium strength of the sample.

6.2.3 Type B sheets shall be specified and tested in the equilibrium condition only.

NOTE 2—When sampling from continuous production, these tests may be conducted on dry, equilibrium, or saturated specimens, provided a relationship can be established between this testing and the specified values.

6.3 Physical Requirements:

6.3.1 *Density*—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.

TABLE 1 Flexural Strength Requirements

NOTE 1—The values of Table 1 are lower limit values based on an acceptable quality level (AQL) of 4 % at a 90 % confidence level.

Grade	Wet Strength, psi (MPa)	Equilibrium Strength, psi (MPa)
I	580 (4)	580 (4)
II	1015 (7)	1450 (10)
III	1885 (13)	2320 (16)
IV	2610 (18)	3190 (22)

7. Dimensions and Tolerances

7.1 *Method of Measurement*—The method of measurement shall be in accordance with Test Method C1185.

7.2 *Nominal Length and Width*—Fiber-cement sheets are typically supplied in nominal lengths of 96 in. (2438 mm), 120 in. (3048 mm) and nominal width of 48 in. (1219 mm). Greater or lesser nominal lengths and widths are not prohibited from being supplied.

7.3 *Nominal Thickness*—Fiber-cement sheets are normally available in thickness of 1/8 in. (3.5 mm) to 1 in. (25 mm), although thickness outside of this range is not prohibited from being supplied. Refer to Table 2.

7.4 *Length and Width Tolerance*—The tolerance from the nominal shall be $\pm 0.5\%$ with a maximum variation of 6 1/4 in. (6 mm). A tolerance of 6 1/8 in. is acceptable for dimensions less than 24 in. (609 mm).

7.5 *Thickness Tolerance*—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.

7.6 *Squareness Tolerance*—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).

7.7 *Edge Straightness Tolerance*—The sheet edges shall be straight within 1/32 in./ft (2.6 mm/m) of length or width.

8. Workmanship, Finish, and Appearance

8.1 *Workmanship*—Sheets shall have a commercially uniform surface on one side, and be free of major defects that will impair appearance, erection, use, or serviceability.

8.2 *Finish*—The surface of the sheet to be exposed shall be smooth, granular, or otherwise textured.

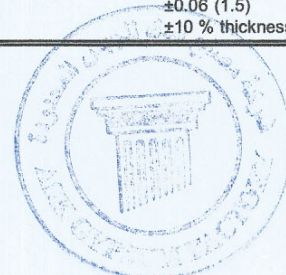
8.3 *Color*—The surface of the sheet shall be the natural color of the product or colored by the addition of mineral pigments, chemical impregnation, pigmented coating, veneer, or embedded mineral granules.

9. Inspection

9.1 Inspection of material shall be made at the point of shipment. The inspector representing the purchaser shall have free access to the carriers being loaded for shipment to the purchaser. The purchaser shall be afforded all reasonable and available facilities at the point of shipment for sampling and

TABLE 2 Thickness Requirements

Nominal Thickness, in. (mm)	Tolerance, in. (mm)
1/8 - 3/16 (3.5-5)	± 0.02 (0.5)
>3/16 - 3/8 (>5-10)	± 0.04 (1.0)
>3/8 - 3/4 (>10-16)	± 0.05 (1.3)
>3/4 - 1 (>16-20)	± 0.06 (1.5)
>1 (>20)	$\pm 10\%$ thickness



inspection of the material, which shall be conducted as not to interfere unnecessarily with the loading of the carriers.

9.2 Third party certification, either continuous or at regular intervals, shall be recognized as an alternative to batch inspection.

10. Rejection

10.1 If the sampling fails to conform to any one of the requirements of this specification, a second sample from the same lot shall be prepared and tested. The results of the retest shall be combined with the results of the original test, according to the sampling procedure, to determine compliance with this specification.

10.2 Failure to conform to any one of the requirements of this specification, upon retest as prescribed above, shall constitute grounds for rejection.

11. Product Marking

11.1 *Identification*—Product marking shall include trademark or other means of identification that ensures that the manufacturer and product category can be identified. The method of marking shall be stated in the manufacturer’s catalog.

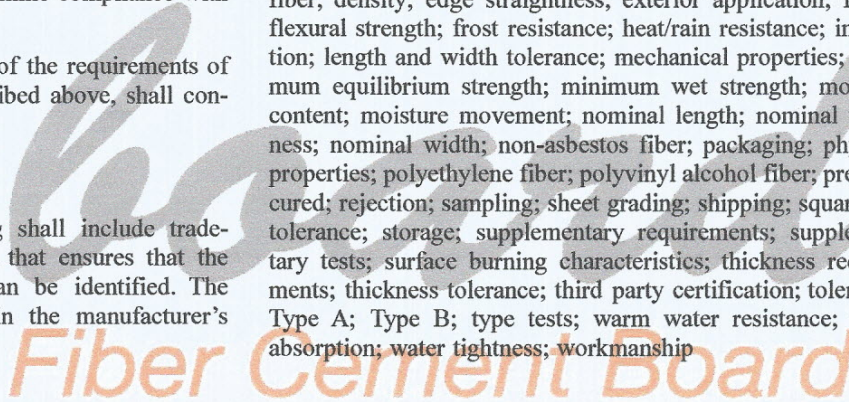
12. Packaging and Storage

12.1 *Commercial Packaging*—Flat sheets shall be so shipped as to ensure acceptance by common carrier. There is no standard package. The material is usually in bulk or crated when so specified by the purchaser.

12.2 *Storage*—Flat sheets must be piled on sufficient firm supports that will keep the sheets level and flat. The sheets must be piled with the edges square and flush and covered to provide protection from the weather until used.

13. Keywords

13.1 air cured; appearance; autoclaved cured; cellulose fiber; density; edge straightness; exterior application; finish; flexural strength; frost resistance; heat/rain resistance; inspection; length and width tolerance; mechanical properties; minimum equilibrium strength; minimum wet strength; moisture content; moisture movement; nominal length; nominal thickness; nominal width; non-asbestos fiber; packaging; physical properties; polyethylene fiber; polyvinyl alcohol fiber; pressure cured; rejection; sampling; sheet grading; shipping; squareness tolerance; storage; supplementary requirements; supplementary tests; surface burning characteristics; thickness requirements; thickness tolerance; third party certification; tolerance; Type A; Type B; type tests; warm water resistance; water absorption; water tightness; workmanship



SUPPLEMENTARY REQUIREMENTS

S1. Supplementary requirements for Type A and B sheets shall consist of once only supplementary test, with the manufacturer’s statement of results provided upon customer’s request. Fundamental changes in formulation or methods of manufacture, or both, shall require the subsequent retesting of the supplementary tests.

S1.1 The following supplementary tests shall be required for Type A and B sheets:

Supplementary Test	Type A	Type B
Moisture Movement	yes	yes
Water Absorption	yes	yes
Moisture Content	yes	yes
Water Tightness	yes	no
Surface Burning Characteristics	yes	yes
Frost Resistance	yes	no
Warm Water Resistance	yes	no
Heat/Rain Resistance	yes	no

S1.2 Supplementary requirements shall be determined on uncoated product wherever practical. Where products are supplied coated, this material shall also be tested with the results identified as applying to coated material.

S2. *Moisture Movement*—The linear variation with change in moisture content shall be stated as the percentage change in length based on a relative humidity change from 30 to 90 % in accordance with Test Method C1185.

S3. *Water Absorption*—Calculate the amount of water absorbed from the increase in weight of the dried specimen during submersion for a period of 48 h. Express the water

absorptions as the percentage by weight when tested in accordance with Test Method C1185.

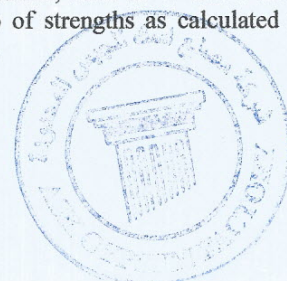
S4. *Moisture Content*—State the percentage of moisture content of the fiber-cement sheet when conditioned at 50 ± 5 % relative humidity and a temperature of 73 ± 4°F (23 ± 2°C) in accordance with Test Method C1185.

S5. *Water Tightness*—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.

S6. *Surface Burning Characteristics*—Fiber cement sheets of ¼ 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 ¼ in. (6 mm) shall meet this specification or shall be formed at ¼ in. (6 mm) thickness with the same formulation for test purposes.

S7. *Frost Resistance (Freeze/Thaw)*—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 %.

S8. *Warm Water Resistance*—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.





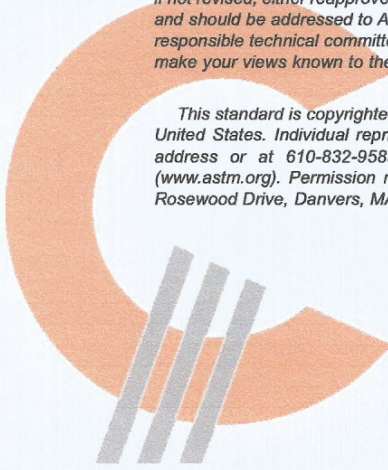
S9. *Heat/Rain Resistance*—The specimens, when tested in accordance with Test Method C1185 (Section 14 on Heat/Rain—Wall Structures), for 25 cycles, shall not show visible

cracks or structural alteration of the sheets and frame assembly such as to affect their performance in use.

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board

Fiber Cement Board



board

Fiber Cement Board





SECTION - 5

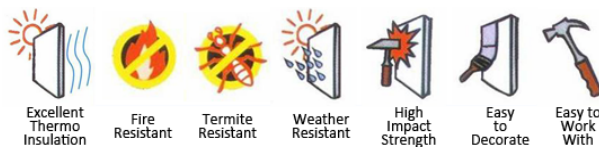
- **Technical Datasheets (TDS)**

Description

Cboard is a 100% asbestos free fiber cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of Portland cement and high purity silica sand with a reinforcing fiber known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of pressing and autoclave processes.

Cboard is a very strong and more durable board, with superior physical and mechanical properties, and it can be used in the interior and exterior works.

Key Features



Applications

Cboard is flat in shape with various thicknesses and dimensions making it a versatile board for the use in wide range of segments (residential, commercial and Industrial buildings) and different applications.

- **Internal Areas:** false ceiling, partitions, wall paneling, wall skirting, mezzanine flooring, doors, wet areas, etc.
- **External Areas:** prefab structures, wall cladding, roof underlay, soffit and eaves lining, sign boards, etc.

Standard Sizes & Shapes

- **Thicknesses:** 6, 9, 12, 15 & 18mm
- **Sizes:** 1200 x 2400mm & 1220 x 2440mm
- **Edges:** square & beveled

Technical and Physical Specifications

Test	Test Standard	Results				
		6mm	9mm	12mm	15mm	18mm
Unit Weight	ASTM C1186	7.8 kg/m ² ± 0.30	12.1 kg/m ² ± 0.45	16.3 kg/m ² ± 0.60	20.9 kg/m ² ± 0.75	24.8 kg/m ² ± 0.90
Density	ASTM C1186	> 1300 kg/m ³ ± 50				
Flexural Strength	ASTM C1186	Longitudinal: > 12 MPa Transversal: > 7 MPa				
Water Absorption	ASTM C1186	< 35%				
Water Tightness	ASTM C1186	Pass				
Moisture Movement	ASTM C1186	Linear Change: 0.06% to 0.11%				
Moisture Content	ASTM C1186	5% to 10%				
Thermal Conductivity at 25°C	ASTM C518	0.20 W/m.k				
Warm Water Resistance	ASTM C1186	Pass				
Heat Rain Resistance	ASTM C1186	Pass				
Freeze / Thaw Resistance	ASTM C1186	Pass				
Soak Dry Test (25 Cycle)	ISO 8336 (E)	Pass				
pH Value	ISO & ASTM	7 to 10				
STC Values	ISO & ASTM	30 – 64 dB				
Screw Withdrawal Strength	ISO & ASTM	400 N ± 50	500 N ± 50	1350 N ± 50	1400 N ± 50	1450 N ± 50
Fire Resistance Properties						
Combustibility	BS 476:4	Class '0' – Non-Combustible				
Ignitibility	BS 476-5	Class 'P' – Not Easily Ignitable				
Smoke Developed Index (SDI)	ASTM E84	5 (Class A)				
Flame Spread Index (FSI)	ASTM E84	0 (Class A)				

- *Cboard* is a registered trade mark. Given test results are based on 6, 9, 12, 15 & 18mm thick specimen
- Due to continued product development, ASK Factory reserves the right to modify technical specifications without prior notice

ASK Gypsum Factory Ltd.

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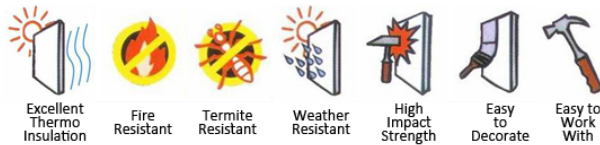


Description

Cboard - HD is a 100% asbestos free fiber pressed cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of cement and silica with a reinforcing fiber known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of pressing and autoclave processes.

Cboard is a very strong and more durable board, with superior physical and mechanical properties, and it can be used in the interior and exterior works.

Key Features



Applications

Cboard is flat in shape with various thicknesses and dimensions making it a versatile board for the use in wide range of segments (residential, commercial and Industrial buildings) and different applications.

- **Internal Areas:** false ceiling, partitions, wall paneling, wall skirting, mezzanine flooring, doors, wet areas, etc.
- **External Areas:** prefab structures, wall cladding, roof underlay, soffit and eaves lining, sign boards, etc.

Standard Sizes & Shapes

- **Thicknesses:** 9 & 15mm
- **Sizes:** 1200 x 2400mm (metric) or 1220 x 2440mm (imperial)
- **Edges:** square & beveled

Technical and Physical Specifications

Test	Test Standard	Result	
		9MM	15MM
Density	ASTM C1186	1.60 g/cm ³ ± 0.05	1.5 g/cm ³
Flexural Strength	ASTM C1186	> 21.0 MPa	> 21.0 MPa
Water Absorption	ASTM C1186	< 19%	< 24%
Water Tightness	ASTM C1186	Pass	Pass
Moisture Movement	ASTM C1186	0.12%	0.12%
Moisture Content	ASTM C1186	< 7%	< 10%
Thermal Conductivity at 250C (mean temperature)	ASTM C518	0.20 W/m.k	0.20 W/m.k
Warm Water Resistance	ASTM C1186	Pass	Pass
Heat Rain Resistance	ASTM C1186	Pass	Pass
Freeze / Thaw Resistance	ASTM C1186	Pass	Pass
Soak Dry Test	ISO 8336 (E)	Passes 25 Cycles	Passes 25 Cycles
Screw Withdrawal Strength (Face)	ISO & ASTM	1350 N ± 50	1450 N ± 50
pH Value	ISO & ASTM	7 – 9	7 – 9
STC Values	ISO & ASTM	40 – 50 dB	50 – 60 dB
Fire Resistance Properties			
Combustibility	BS 476:4	Class '0' Non-Combustible	Class '0' Non-Combustible
Ignitibility	BS 476-5	Class 'P' – not easily ignitable	Class 'P' – not easily ignitable
Fire Propagation Index	BS 476-6	I=0.1	I=0.1
Surface Spread of Flame	BS 476-7	Class – 1	Class – 1

- Given test results are based on 9 & 15mm thick pressed specimen
- Due to continued product development, ASK Factory reserves the right to modify technical specifications without prior notice

ASK Gypsum Factory Ltd.

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SECTION - 6

○ **Certificates**

- TUV – ISO
- Achilles - Chemicals and Allied Industries
- United Arab Emirates Ministry of Interior Civil Defense G.H.Q
- Thomas Bell-Wright- Cboard Fiber Cement Board Non-Load-bearing partition
Wall System Test Method: ASTM E119-16a.
- Thomas Bell-Wright- Cboard Fiber Cement Board Fire Test to the test
Standard ASTM: E84-16.

CERTIFICATE

**Management System as per
EN ISO 9001: 2008**

In accordance with TÜV AUSTRIA procedures, it is hereby certified that

**ASK GYPSUM FACTORY LTD.
Saudi Arabia, Medinah, Yanbu, light industrial Area – AL Razi street.**

Applies a Quality Management System in line with the above Standard for
the following Scope

**MANUFACTURING OF GYPSUM POWDER, GYPSUM BOARD, AND
FIBRE CEMENT BOARD.**

Certificate Registration No.: **1317100062786**

Valid until: 2018-09-15*



Certification Body
at TÜV AUSTRIA

Athens, 2017-01-18

This certification was conducted in accordance with TÜV AUSTRIA auditing and certification procedures and is subject to regular surveillance audits.

*The validity of the present certificate is renewed provided that the audit, according to the Standard EN ISO 9001:2015, has a positive result, according to the Regulation of TÜV Austria Hellas.

TÜV AUSTRIA HELLAS
429, Mesogeion Ave.
GR-153 43 Athens, Greece
www.tuvaustriahellas.gr



CePRK416_A7e

Headquarters in Athens bear the responsibility of the Certification decision



**TÜV AUSTRIA
GROUP**



Certificate of Verification

This is to certify that

Ask Gypsum Factory Ltd.

is now a verified supplier in the Achilles Chemicals & Allied Industries Community, and that company information related to the following criteria has been checked and validated by Achilles Information Limited, an independent third party:

- Supply Chain Management
- Corporate Social Responsibility
- Health & Safety Management
- Quality Management
- Environmental Management
- Carbon Management
- Financial & Insurance

Supplier ID: 5126971
Issue Date: 28-11-2017
Expiration Date: 17-11-2018

Gareth Palmer
Chemicals & Allied Industries Community Director
Achilles Information Limited





Verified Products/Services

Product/Service Code and Description

9.2.10 Interior finishing products

9.2.13 Plaster

9.2.3 Cement


9.2.6 Exterior finishing products





Date: June 20, 2017

CERTIFICATE OF COMPLIANCE

This certificate of compliance validates the following			
TEST REPORT NUMBER 'Assessment Reports' are not acceptable	QH147-1 QH147-2 QH147-3 QH147-4	CERTIFICATE NUMBER	TBW0300164
DATE OF ISSUE	QH147-1: Jan. 30, 2017 QH147-2: Jan. 30, 2017 QH147-3: Jan. 30, 2017 QH147-4: Jan. 30, 2017	DATE OF ISSUE	Apr. 11, 2017
DATE OF EXPIRY	N/A	DATE OF EXPIRY	Apr. 10, 2020
Manufacturer details			
NAME OF FACTORY/ MANUFACTURER	ASK Gypsum Factory Ltd	NAME OF THE BRAND	"C board" Fibre Cement Boards
FACTORY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box. 6556 Jeddah 23513-2509, Kingdom of Saudi Arabia	MODEL / NO	N/A
WEBSITE	www.gboard-sa.com	LOGO ON THE PRODUCT	
TEL	+966 2 613 0000	EMAIL	info@gboard-sa.com





Product Details From Test Report		Reference Test Report page NO
DESCRIPTION OF THE PRODUCT (TECHNICAL DETAILS FROM TEST REPORT, SUCH AS ACTUAL FIRE RATINGS/DIMENSIONS/THICKNESS/ SENSITIVITY ETC)	The boards are Asbestos free fibre board manufactured from a homogenous mixture of cement and silica with reinforcing fibre (Cellulose or pulp). The boards are 6 mm, 9 mm, 12 mm and 18 mm thick "C Board" Fibre Cement Boards.	QH147-1 QH147-2 QH147-3 QH147-4 Page 5
TEST STANDARD (SUCH AS ASTM/BS EN/ DNETC)	ASTM E84-16 Determination of the flame spread index and the smoke developed index of aluminum composite material as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.	QH147-1 QH147-2 QH147-3 QH147-4 Page 4
TEST DESCRIPTION	ASTM E84-16 The test specimen consisted of 3 sections of fiber cement. The total dimensions of the specimens were 7320 x 600 x 4mm (l x w x thk). The dimension per panel was 2440 x 600 x 6/9/12/18 mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7320 x 600 x 3mm (l x w x thk). Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600 mm (l x w), were placed at the back of the sample to protect the furnace lid assembly. The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The core smooth surface of the specimen (fire side) was exposed to a flaming exposure during the 10 minute test duration. Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).	QH147-1 QH147-2 QH147-3 QH147-4 Page 5
SPECIFICATION OF TEST SPECIMEN	a. 6 mm thick "C Board" Fiber Cement Board Density: 1308 kg/m ³ Thickness: 6 mm Colour: Grey Dimensions per Panel: 2400 x 600 mm b. 9 mm thick "C Board" Fiber Cement Board Density: 1355 kg/m ³ Thickness: 9 mm Colour: Grey Dimensions per Panel: 2400 x 600 mm c. 12 mm thick "C Board" Fiber Cement Board Density: 1309 kg/m ³ Thickness: 12 mm Colour: Grey Dimensions per Panel: 2400 x 600 mm d. 18 mm thick "C Board" Fiber Cement Board Density: 1381 kg/m ³ Thickness: 18 mm Colour: Grey Dimensions per Panel: 2400 x 600 mm	QH147-1 QH147-2 QH147-3 QH147-4 Page 5





TEST RESULT
(SUCH AS PASSED
CRITERIA ___/ COMPLIED
TO ___/
DURATION ___/ OBSERVATIO
N ___/ ETC)

- a. 6 mm thick "C Board" Fibre Cement Board
When tested in accordance with ASTM E84-16, the 6-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)
Test Report Reference: QH147-1

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

- b. 9 mm thick "C Board" Fibre Cement Board
When tested in accordance with ASTM E84-16, the 9-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)
Test Report Reference: QH147-2

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

- c. 12 mm thick "C Board" Fibre Cement Board
When tested in accordance with ASTM E84-16, the 12-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)
Test Report Reference: QH147-3

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

- d. 18 mm thick "C Board" Fibre Cement Board
When tested in accordance with ASTM E84-16, the 18-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)
Test Report Reference: QH147-4

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

QH147-1
QH147-2
QH147-3
QH147-4

Page 6





**PRODUCT
APPLICATION
GUIDELINE
(END USE)**

(CLEARLY STATE THE END USE WITH SPECIFIC APPLICATION, SUCH AS EXACT FIRE RATING/TO BE INSTALLED IN ___/TO BE INSTALLED AT ___/TO BE CONNECTED WITH ___/TO BE INSTALLED WITH ___ ETC ALONG WITH ANY WARNINGS SUCH AS NOT TO BE USED IN ___/NOT TO BE INSTALLED AT ___/ NOT TO BE INSTALLED WITH ___ ETC.



- a. This Certification covers the specifications of the "C Board" Fibre Cement Boards as tested which can be used in areas the requires Class A or Class 1 reaction to fire classification under the International Building Code 2015 , Section 803.1.1 when tested in accordance with the requirements of ASTM E84-16.
- b. "C Board" Fibre Cement Boards were tested under controlled condition in accordance with the requirements of the standard covered under this certification. The result described in each particular test report on their own does not represent the fire behavior of the product, material or system assembly under actual fire conditions and shall not be used as sole criteria for fire hazard or fire risk assessment.
- c. This certification pertains to the tested material only and does not include the system or wall structure it will be installed into.
- d. The test (and Certification) do not address the following:
 1. Measurement of heat transmission
 2. Effect of aggravated flame spread behavior of an assembly resulting from proximity of combustible walls and ceilings.
 3. Classification or definition of material as noncombustible
 4. Any Resistance to Fire rating
 5. Toxicity level of smoke developed during combustion



TM



Laboratory and Certification Body Details

	CERTIFICATION BODY	TESTING FACILITY
NAME OF CERTIFICATION BODY & TESTING FACILITY	Thomas Bell-Wright International Consultants	Thomas Bell-Wright International Consultants
CERTIFICATION BODY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	46 th & 47 th Sts. Jebel Ali Ind. Area 1 PO Box 26385, Dubai, UAE	46 th & 47 th Sts. Jebel Ali Ind. Area 1 PO Box 26385, Dubai, UAE
WEBSITE	www.bell-wright.com	www.bell-wright.com
TEL	+ 971 4 821 5777	+ 971 4 821 5777
EMAIL	certification@bell-wright.com	fire@bell-wright.com
ACCREDITED BY (ACCREDITATION BODY AND WEBSITE)	UKAS www.ukas.com	UKAS www.ukas.com
AS PER (STANDARD TO WHICH ACCREDITED)	ISO/IEC 17065:2012	ISO/IEC 17025:2005
VALIDITY (EXPIRY DATE OF ACCREDITATION)	July 2017	August 2018
REFERENCE NUMBER: (ACCREDITATION NUMBER)	6762	4439
LISTING WEBSITE	www.tbwcert.com	www.tbwtrs.com
CERTIFICATION MARK / LOGO		



TM



(ENDORSEMENT) TO BE SIGNED BY MANUFACTURER			
NAME OF MANUFACTURER'S SIGNATORY	Charles Khoury	SIGNATURE	
EMAIL / TEL	ceo@gboard-sa.com/ +9662 613 0000	FACTORY OFFICIAL SEAL	
NOTES: I Undertake that all data and information provided are genuine and accurate			

(ENDORSEMENT) TO BE SIGNED BY CERTIFICATION BODY			
NAME OF CERTIFICATION BODY SIGNATORY	Thomas F. Bell-Wright	SIGNATURE	
EMAIL / TEL	tomb-w@bell-wright.com/ +971 50 645 3744	CERTIFICATION BODY OFFICIAL SEAL	
NOTES: I Undertake that all data and information provided are genuine and accurate			


ATTACHMENTS:

- COPY OF 'CERTIFICATE OF COMPLIANCE' ISSUED BY CERTIFICATION BODY (OLD OR NEW)



Date: June 20, 2017

CERTIFICATE OF COMPLIANCE

This certificate of compliance validates the following			
TEST REPORT NUMBER 'Assessment Reports' are not acceptable	QH147-5	CERTIFICATE NUMBER	TBW0200163
DATE OF ISSUE	Mar. 16, 2017	DATE OF ISSUE	Apr. 11, 2017
DATE OF EXPIRY	N/A	DATE OF EXPIRY	Apr. 10, 2020
Manufacturer details			
NAME OF FACTORY/ MANUFACTURER	ASK Gypsum Factory Ltd	NAME OF THE BRAND	"C board" Fibre Cement Board
FACTORY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box. 6556 Jeddah 23513-2509, Kingdom of Saudi Arabia	MODEL / NO	"CWS 99"
WEBSITE	www.gboard-sa.com	LOGO ON THE PRODUCT	
TEL	+9766 2 613 0000	EMAIL	info@gboard-sa.com






Product Details From Test Report		Reference Test Report page NO
<p>DESCRIPTION OF THE PRODUCT (TECHNICAL DETAILS FROM TEST REPORT, SUCH AS ACTUAL FIRE RATINGS/DIMENSIONS/THICKNESS/ SENSITIVITY ETC)</p>	<p>The non-loadbearing 12mm thick single layer cement board wall partition consisted of galvanized steel framing system made of 49 x 32 x 8 x 0.55mm (web x depth x flange x thk.) C-channel studs and 51 x 25 x 0.55mm (web x depth x thk.) tracks, 12mm thick cement board fixed to either side, and 50 kg/m³ rockwool infill.</p> <p>The galvanized steel tracks were fixed to the horizontal and vertical perimeter of the test frame opening using Ø4.2x50mm self-tapping screws and washers with plastic anchors, spaced a maximum of 100mm from the ends and nominally 600mm C/C. The galvanized steel studs were fixed vertically within the head and sill tracks, spaced nominally 600mm C/C, and fixed in place using Ø13mm Gyproc Waferhead Jackpoint Screws. Horizontal sections of steel track were cut and fixed between the C-channel studs, using the same Ø13mm screws, at heights of 800, 1600, and 2400mm above the sill of the specimen.</p> <p>The cement boards were fixed to the framing system using Ø4.2x45mm and Ø4x32mm coated self-tapping steel screws. For the board installation, 100mm wide strips of cement board were fixed to either side of all members of the framing system using the 32mm long screws, then full size boards were fixed over top of them using the 45mm long screws. All screws were spaced at a maximum of 100mm from the ends and 300mm C/C. Before the full size boards were installed to the interior and exterior faces of the specimen, the edges were slightly tapered using a grinder, so as to make space for the jointing tape and jointing compound.</p> <p>After the installation of the unexposed boards, rockwool insulation of density 50kg/m³ was fitted between the studs and tracks of the framing system. It was not fastened, but pressure fitted between the framing members.</p> <p>DAP FIRE STOP silicone sealant was applied around the perimeter of the framing system on the exposed face of the specimen, before the installation of the boards. After the installation of the interior and exterior layers of boards, cement jointing compound and fiber tape were applied over all meeting edges of the boards, and the jointing compound was applied over the screw heads and around the perimeter of the specimen on both the exposed and unexposed faces.</p> <p>The overall dimension of specimen was 3048 x 3048 x 99mm (w x h x thk).</p>	<p>Page 4 to 5</p>
<p>TEST STANDARD (SUCH AS ASTM/BS EN/ DNETC)</p>	<p>ASTM E119-16a ASTM E 119-16a: Standard Test Methods for Fire Tests of Building Construction and Materials</p>	<p>Page 4</p>
<p>TEST DESCRIPTION</p>	<p>ASTM E119-16a</p> <p>1. General</p> <p>The test methods described in this fire-test-response standard are applicable to assemblies of masonry unit and to composite assemblies of masonry units to composite assemblies of structural materials for buildings. The test assembly was installed on a restraint frame made of steel and dense refractory concrete with an opening of 10 x 10 ft (w x h). The time-temperature curves have been controlled using nine thermocouples distributed in the furnace.</p>	<p>Page 5 to 7</p>



	<p>2. Preparation The test assembly was installed on a restraint frame made of steel and dense refractory concrete with an opening of 10 × 10 ft (w × h). The assembly was then locked in the front of a 3 m × 3 m furnace and exposed to specified heating and pressure regime as per the requirement of the test standard ASTM E119-16a. The temperature inside the furnace was controlled using 9 thermocouples distributed evenly within the furnace. The furnace thermocouples were placed at 6 in (152 mm) from the exposed face of the specimen and this distance has been maintained throughout the entire test duration. The pressure has been controlled at -4 Pa at its relative position in the furnace in order to maintain neutral pressure at the head of the specimen. Deflections have been measured and recorded.</p> <p>3. Observations Deflections have been measured and recorded. Unexposed face temperatures have been measured and recorded. Visual observations on the unexposed face of the specimen has been recorded during the whole duration of the test.</p>	
<p>SPECIFICATION OF TEST SPECIMEN</p>	<p>1. Cement Board Material: Non-asbestos fibre cement Board Dimensions: 1200 × 2400 × 12mm (width × height × thickness) Board Density: 1411 kg/m³ Manufacturer: Ask Gypsum Factory Ltd Fixing Details: Single layer of cement board fixed on each side of the framing system with staggered joints using W & BT10-16 × 45 mm screws at a nominal spacing between 100 to 300 mm and 20 mm from the edges of the boards. A 100 × 12 mm (width × thickness) “C-board” cut-out was fixed between the full-size boards and framing system to serve as a spacer. The boards cut-out where fixed using BT 10-16 × 32 mm screws.</p> <p>2. Tracks Material: Hot Dipped Galvanized Steel Specification: ASTM A653 CSB Dimension: 51 × 25 × 25 × 0.55 mm (web × flange × flanges × thickness) Manufacturer: Sigma Factory for Steel Products Reference: G-Frame RNR 052-GS Fixing Details: Fixed to the structural opening using Ø4.2 × 50 mm self-tapping screws with washer and plastic anchors at a nominal spacing of 100 to 600 mm.</p> <p>3. Vertical Studs Material: Hot Dipped Galvanized Steel Specification: ASTM A653 CSB Dimension: 49 × 32 × 32 × 0.55 mm (web × flange × flanges × thickness) Manufacturer: Sigma Factory for Steel Products Reference: G-Frame STD 050-GS Fixing Details: Fixed to the tracks using 13 mm Gyproc Waferhead Jackpoint screw</p> <p>4. Horizontal Studs Material: Hot Dipped Galvanized Steel Specification: Dimension: 49 × 32 × 32 × 0.55 mm (web × flange × flanges × thickness) Manufacturer: Sigma Factory for Steel Products</p>	<p>Page 4 to 5/ 10 to 19</p>





	<p>Fixing Details: Fixed to the vertical studs using 13 mm Gyproc Waferhead Jackpoint screw at every joint where the vertical and horizontal members met.</p> <p>5. Insulation Material: Mineral Wool Reference: Thickness: 50 mm Density: 50 kg/m³ Manufacturer: Saudi Rockwool Factory Co. Fixing Method: Fitted on the voids within the studs and tracks.</p> <p>6. Boards Joint Filler Material: Single component neutral cure silicone with fibre mesh joint tape Manufacturer: DAP® Products Incorporated Reference: C-Coat</p> <p>7. Joint Tape Material: Self-adhesive Fibre Mesh Joint Tape Manufacturer: Ayhaco</p> <p>8. Fasteners 8.a. Fixing of tracks to the structure Ø 4.2 × 50 mm self-tapping screws with steel washers and plastic jackets spaced at 600 mm centres and 100 mm from the edges. 8.b. Fixing of studs to tracks Description: Corrosion resistant self-tapping zinc plated steel screws with wafer cross-head and self-drilling points. Reference: 13 mm Gyproc Waferhead Jackpoint Screws (EN 14566-Type A1) Manufacturer: Gyproc Saint-Gobain 8.c. Fixing of Cement Boards Description: Countersunk Head, 6 Ribs, Philips Drive 2, Full Thread, BOTAPP Wing, Levin Point Manufacturer: Engineering Edge (Singapore) PTE LTD Reference: BOTAPPTM Board Fixing Fasteners Spacer: BT 10-16 × 32 mm - W Board: BT 10-16 × 45 mm-W between 100 to 300 mm centres and 20 mm from the edge of the boards.</p>	
<p>TEST RESULT (SUCH AS PASSED CRITERIA ___/ COMPLIED TO ___/ DURATION ___/OBSERVATIO N ___/ETC)</p>	<p>Non-load-bearing partition wall system with 12 mm thick single layer cement board and mineral wool cavity insulation is approved to provide Fire Rating of up to 1 hour.</p> <p>Test Report Reference: QH147-5</p>	<p>Page 9</p> 



**PRODUCT
APPLICATION
GUIDELINE
(END USE)**

(CLEARLY STATE THE END USE WITH SPECIFIC APPLICATION, SUCH AS EXACT FIRE RATING/TO BE INSTALLED IN ___/TO BE INSTALLED AT ___/TO BE CONNECTED WITH ___/TO BE INSTALLED WITH ___ ETC ALONG WITH ANY WARNINGS SUCH AS NOT TO BE USED IN ___/NOT TO BE INSTALLED AT ___/ NOT TO BE INSTALLED WITH ___ ETC.


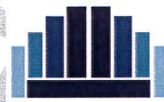
- a. The partition wall system shall be installed as an interior wall partition that requires a maximum fire resistance rating of up to 1 hr.
- b. The fire resistance of the wall system covered under this certification is a result of the fire test conducted on the system constructed of specific materials and assembled in a particular manner. Substitution of the tested components or deviation from the methods of assembly could adversely affect the fire resistance of the wall.
- c. The partition system is non-load-bearing.
- d. The thickness of cement boards covered under this certification are minimum and may not be reduced. Additional layers of the cement boards are allowed provided that the screw length is increased by not less than the thickness of the additional layer of the boards.
- e. The thicknesses of the steel components are minimum and may not be reduced. Heavier gauge or larger dimensions are permitted.
- f. The treatment of the joints between the boards as well as the gaps on the perimeter of the wall shall be as tested including the specification of materials used and the method of application.
- g. Installation of the gypsum wall partition system shall be in accordance with manufacturer's installation instruction "1-Hr Fire Resistant Test for Fibre Cement Board Drywall Partition Version No. 1/2017"
- h. Only Fire Resistance performance rating according to ASTM E119-16a is covered under this Certification; other properties such as (but not limited to) acoustical, weather resistance, durability, toxicity level of smoke developed during combustion etc., are not addressed.



TM



Laboratory and Certification Body Details

CERTIFICATION BODY		TESTING FACILITY
NAME OF CERTIFICATION BODY & TESTING FACILITY	Thomas Bell-Wright International Consultants	Thomas Bell-Wright International Consultants
CERTIFICATION BODY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	46 th & 47 th Sts. Jebel Ali Ind. Area 1 PO Box 26385, Dubai, UAE	46 th & 47 th Sts. Jebel Ali Ind. Area 1 PO Box 26385, Dubai, UAE
WEBSITE	www.bell-wright.com	www.bell-wright.com
TEL	+ 971 4 821 5777	+ 971 4 821 5777
EMAIL	certification@bell-wright.com	fire@bell-wright.com
ACCREDITED BY (ACCREDITATION BODY AND WEBSITE)	UKAS www.ukas.com	UKAS www.ukas.com
AS PER (STANDARD TO WHICH ACCREDITED)	ISO/IEC 17065:2012	ISO/IEC 17025:2005
VALIDITY (EXPIRY DATE OF ACCREDITATION)	July 2017	August 2018
REFERENCE NUMBER: (ACCREDITATION NUMBER)	6762	4439
LISTING WEBSITE	www.tbwcert.com	www.tbwtrs.com
CERTIFICATION MARK / LOGO	 THOMAS BELL-WRIGHT	 THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS



TM

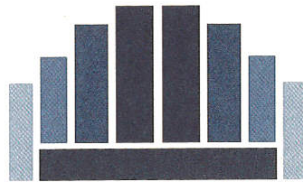


(ENDORSEMENT) TO BE SIGNED BY MANUFACTURER			
NAME OF MANUFACTURER'S SIGNATORY	Charles Khoury	SIGNATURE	
EMAIL / TEL	ceo@gboard-sa.com/ +9662 613 0000	FACTORY OFFICIAL SEAL	
NOTES: I Undertake that all data and information provided are genuine and accurate			

(ENDORSEMENT) TO BE SIGNED BY CERTIFICATION BODY			
NAME OF CERTIFICATION BODY SIGNATORY	Thomas F. Bell-Wright	SIGNATURE	
EMAIL / TEL	tomb-w@bell-wright.com/ +971 50 645 3744	CERTIFICATION BODY OFFICIAL SEAL	
NOTES: I Undertake that all data and information provided are genuine and accurate			

ATTACHMENTS:

- COPY OF 'CERTIFICATE OF COMPLIANCE' ISSUED BY CERTIFICATION BODY (OLD OR NEW)



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**



In accordance with UKAS accreditation to ISO 17065
Certification is Hereby Granted

to

ASK Gypsum Factory Ltd

*Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box, 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia*

for

**“C Board” Fibre Cement Board
Non-load-bearing Partition Wall System
Test Method: ASTM E119-16a**

which, subject to limitations described on the following pages and
continued listing on www.tbwcert.com, complies with Product Certification
Scheme SD02 Fire Resistant Separating Elements Scheme

In witness whereof this Certificate is issued this 11th day of April 2017



Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate number: TBW0200163

Initial registration: April 11, 2017
File Name: QH105 Ask Gypsum

Issued: April 11, 2017

Expiration: April 10, 2020
Save Date: 11/04/17 9:49 AM

This certificate and schedules are held in force by regular Factory Inspections by Thomas Bell-Wright International Consultants (TBWIC). Refer to www.tbwcert.com or contact TBWIC Fire Compliance Division to validate the current status of Certification. This certificate remains the property of THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS, PO BOX 26385, DUBAI, UAE.

Tel: +971 4 821 5777, Email: certification@bell-wright.com. Web: www.bell-wright.com **F 19 Scheme Certificate Issue 5, Dec 2016**

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“C Board” Fibre Cement Board Non-load-bearing Partition Wall System

- A. Certification is given for “C Board” Fibre Cement Board Non-load-bearing partition wall system installed in accordance with the manufacturer’s instructions and subject to the limitations below to provide Fire Resistance rating of 1-Hr in accordance with test standards ASTM E119-16a. Readers of this document should be familiar with Resistance to fire testing and the requirements of ISO/IEC 17065:2012. The Certification will be listed on www.tbwcert.com, while it remains current. This Certification is not valid if this product is not so listed.
- B. The product is approved on the basis of TBWIC Product Certification Scheme SD02 for Fire Separating Elements which includes pre-test sampling, evidence of performance (under ref: TBWIC Test Report No. QH147-5), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/ Audits.
- C. The partition wall system is composed of 12 mm thick single layer “C Board” Fibre cement board fixed to a 0.55 mm thick galvanized steel framing system and 50 kg/m³ mineral wool insulation. The maximum dimensions of the boards were 1200 × 2400 mm (width × height). The overall thickness of the partition wall system was 99 mm.
- D. Limitations
- D.1. The fire resistance of the wall system covered under this certification is a result of the fire test conducted on the system constructed of specific materials and assembled in a particular manner. Substitution of the tested components or deviation from the methods of assembly could adversely affect the fire resistance of the wall.
- D.2. The partition system is non-load-bearing.
- D.3. The thickness of cement boards covered under this certification are minimum and may not be reduced. Additional layers of the cement boards are allowed provided that the screw length is increased by not less than the thickness of the additional layer of the boards.
- D.4. The thicknesses of the steel components are minimum and may not be reduced. Heavier gauge or larger dimensions are permitted.
- D.5. The treatment of the joints between the boards as well as the gaps on the perimeter of the wall shall be as tested including the specification of materials used and the method of application.
- D.6. Installation of the gypsum wall partition system shall be in accordance with manufacturer's installation instruction “1-Hr Fire Resistant Test for Fibre Cement Board Drywall Partition Version No. 1/2017”
- D.7. Only Fire Resistance performance rating according to ASTM E119-16a is covered under this Certification; other properties such as (but not limited to) acoustical, weather resistance, durability, toxicity level of smoke developed during combustion etc., are not addressed.
- E. Approved Manufacturing Location
- Prince Faysal Bin Fahd Street, Al Chate District,
P.O. Box. 6556 Jeddah 23513-2509,
Kingdom of Saudi Arabia

Certificate number: TBW0200163

Page 2 of 5



Nick Purcell
Certification Manager

Seal number: 100210

Issued: 11 Apr 2017
Valid to: 10 Apr 2020

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F. System Configuration

Single Layered Non-load-bearing partition wall system

Height: 3048 mm

Width: 3048 mm

Wall Thickness: 99 mm

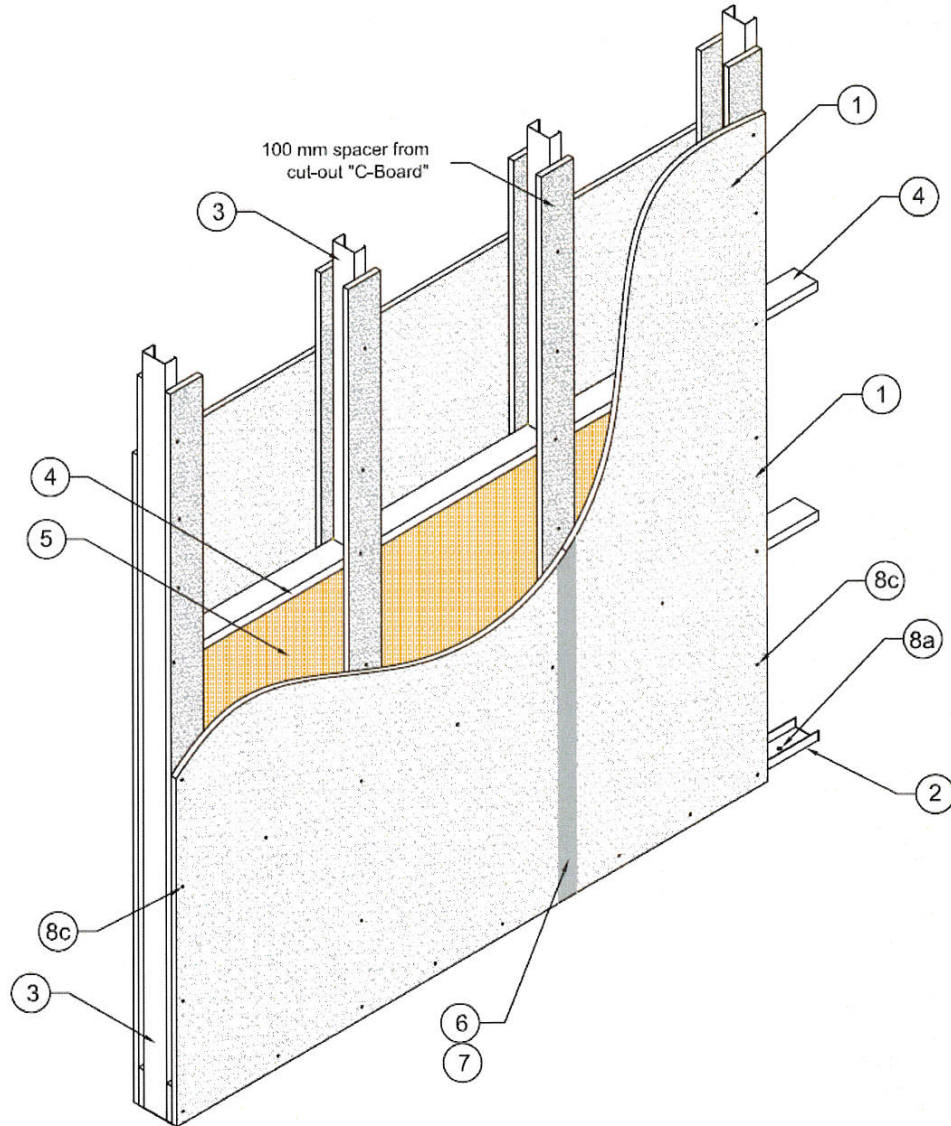


Figure 1. Single Layered Non-load-bearing partition wall system

Certificate number: TBW0200163

Page 3 of 5


Nick Purcell
Certification Manager

Seal number: 100210

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1. Cement Board

Material: Non-asbestos fibre cement

Board Dimensions: 1200 × 2400 × 12mm (width × height × thickness)

Board Density: 1411 kg/m³

Manufacturer: Ask Gypsum Factory Ltd

Fixing Details: Single layer of cement board fixed on each side of the framing system with staggered joints using W & BT10-16 × 45 mm screws at a nominal spacing between 100 to 300 mm and 20 mm from the edges of the boards. A 100 × 12 mm (width × thickness) "C-board" cut-out was fixed between the full-size boards and framing system to serve as a spacer. The boards cut-out where fixed using BT 10-16 × 32 mm screws.

2. Tracks

Material: Hot Dipped Galvanized Steel

Specification: ASTM A653 CSB

Dimension: 51 × 25 × 25 × 0.55 mm (web × flange × flanges × thickness)

Manufacturer: Sigma Factory for Steel Products

Reference: G-Frame RNR 052-GS

Fixing Details: Fixed to the structural opening using Ø4.2 × 50 mm self-tapping screws with washer and plastic anchors at a nominal spacing of 100 to 600 mm.

3. Vertical Studs

Material: Hot Dipped Galvanized Steel

Specification: ASTM A653 CSB

Dimension: 49 × 32 × 32 × 0.55 mm (web × flange × flanges × thickness)

Manufacturer: Sigma Factory for Steel Products

Reference: G-Frame STD 050-GS

Fixing Details: Fixed to the tracks using 13 mm Gyproc Waferhead Jackpoint screw

4. Horizontal Studs

Material: Hot Dipped Galvanized Steel

Specification:

Dimension: 49 × 32 × 32 × 0.55 mm (web × flange × flanges × thickness)

Manufacturer: Sigma Factory for Steel Products

Fixing Details: Fixed to the vertical studs using 13 mm Gyproc Waferhead Jackpoint screw at every joint where the vertical and horizontal members met.

5. Insulation

Material: Mineral Wool

Reference:

Thickness: 50 mm

Density: 50 kg/m³

Manufacturer: Saudi Rockwool Factory Co.

Fixing Method: Fitted on the voids within the studs and tracks.

6. Boards Joint Filler

Material: Single component neutral cure silicone with fibre mesh joint tape

Manufacturer: DAP® Products Incorporated

Reference: C-Coat

Certificate number: TBW0200163

Page 4 of 5



Nick Purcell
Certification Manager

Seal number: 100210

Issued: 11 Apr 2017
Valid to: 10 Apr 2020

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7. Joint Tape

Material: Self-adhesive Fibre Mesh Joint Tape
Manufacturer: Ayhaco

8. Fasteners

8.a. Fixing of tracks to the structure

Ø 4.2 × 50 mm self-tapping screws with steel washers and plastic jackets spaced at 600 mm centres and 100 mm from the edges.

8.b. Fixing of studs to tracks

Description: Corrosion resistant self-tapping zinc plated steel screws with wafer cross-head and self-drilling points.

Reference: 13 mm Gyproc Waferhead Jackpoint Screws (EN 14566-Type A1)

Manufacturer: Gyproc Saint-Gobain

8.c. Fixing of Cement Boards

Description: Countersunk Head, 6 Ribs, Philips Drive 2, Full Thread, BOTAPP Wing, Levin Point

Manufacturer: Engineering Edge (Singapore) PTE LTD

Reference: BOTAPP™ Board Fixing Fasteners

Spacer: BT 10-16 × 32 mm - W

Board: BT 10-16 × 45 mm-W between 100 to 300 mm centres and 20 mm from the edge of the boards.

Certificate number: TBW0200163

Page 5 of 5



Nick Purcell
Certification Manager

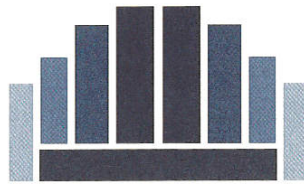
Seal number: 100210

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**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**



In accordance with UKAS accreditation to ISO 17065
Certification is Hereby Granted

to

ASK Gypsum Factory Ltd

*Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box, 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia*

for

“C Board” Fibre Cement Board
Test Method: ASTM E84

which, subject to limitations described on the following pages and
continued listing on www.tbwcert.com, complies with Product Certification
*Scheme SD03 Exterior Wall Assemblies, Cladding, Curtain Walls, Building
Materials, Products and Assemblies*

In witness whereof this Certificate is issued this 11th day of April 2017



Thomas F. Bell-Wright
Certification Director

Nick Purcell
Certification Manager

Certificate number: TBW0300164

Initial registration: April 11, 2017

Issued: April 11, 2017

Expiration: April 10, 2020

File Name: QH105 Ask Gypsum Factory Ltd

Save Date: 11/04/17 9:54 AM

This certificate and schedules are held in force by regular Factory Inspections by Thomas Bell-Wright International Consultants (TBWIC). Refer to www.tbwcert.com or contact TBWIC Fire Compliance Division to validate the current status of Certification. This certificate remains the property of THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS, PO BOX 26385, DUBAI, UAE.

Tel: +971 4 333 2692, Email: fire@bell-wright.com. Web: www.bell-wright.com **F 19 Scheme Certificate Issue 5. Dec 2016**

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“C Board” Fibre Cement Board

1. Certification is given for “C Board” Fibre Cement Board Reaction to Fire Test to the test standard ASTM E84-16 for Flame Spread Index (FSI) and Smoke Developed Index (SDI), subject to the limitations below. Readers of this document should be familiar with Reaction to Fire Testing and the requirements of ISO/IEC 17065:2012. The Certification will be listed on www.tbwcert.com, while it remains current. This Certification is not valid if it is not listed.
2. This certification covers 6 mm, 9 mm, 12 mm and 18 mm thick “C Board” Fibre Cement Boards. The board are Asbestos free fibre board manufactured from a homogenous mixture of cement and silica with reinforcing fiber (Cellulose or pulp)
3. The product is approved on the basis of TBWIC Product Certification Scheme SD03 for Exterior Wall Assemblies, Cladding, Curtain Walls, Building Materials, Products and Assemblies which includes pre-test sampling, evidence of performance (under ref: TBWIC Test Report No. QH147-1, QH147-2, QH174-3, QH174-4), Technical Verification and Proof of Performance, compliance to Factory Production Control requirements and surveillance & Re-certification Inspection/ Audits.
4. Limitations:
 - 4.1. This Certification covers the specifications of the “C Board” Fibre Cement Boards as tested which are described in more detail in Section 5.
 - 4.2. “C Board” Fibre Cement Boards were tested under controlled condition in accordance with the requirements of the standard covered under this certification. The result described in each particular test report on their own does not represent the fire behavior of the product, material or system assembly under actual fire conditions and shall not be used as sole criteria for fire hazard or fire risk assessment.
 - 4.3. This certification pertains to the tested material only and does not include the system or wall structure it will be installed into.
 - 4.4. The test (and Certification) do not address the following:
 - 4.4.1. Measurement of heat transmission
 - 4.4.2. Effect of aggravated flame spread behavior of an assembly resulting from proximity of combustible walls and ceilings.
 - 4.4.3. Classification or definition of material as noncombustible
 - 4.4.4. Any Resistance to Fire rating
 - 4.4.5. Toxicity level of smoke developed during combustion
5. Product details and test results
 - 5.1. 6 mm thick “C Board” Fibre Cement Board
 - 5.1.1. Density: 1308 kg/m³
 - 5.1.2. Thickness: 6 mm
 - 5.1.3. When tested in accordance with ASTM E84-16, the 6-mm thick “C Board” Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)
Test Report Reference: QH147-1

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

Certificate number: TBW0300164

Page 2 of 3



Certification Manager
Nick Purcell

Seal number: 100212

Issued: 11 Apr. 2017
Valid to: 10 Apr. 2020

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5.2. 9 mm thick "C Board" Fiber Cement Board

5.2.1. Density: 1355 kg/m³

5.2.2. Thickness: 9 mm

5.2.3. When tested in accordance with ASTM E84-16, the 9-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)

Test Report Reference: QH147-2

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

5.3. 12 mm thick "C Board" Fiber Cement Board

5.3.1. Density: 1309 kg/m³

5.3.2. Thickness: 12 mm

5.3.3. When tested in accordance with ASTM E84-16, the 12-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)

Test Report Reference: QH147-3

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

5.4. 18 mm thick "C Board" Fiber Cement Board

5.4.1. Density: 1381 kg/m³

5.4.2. Thickness: 18 mm

5.4.3. When tested in accordance with ASTM E84-16, the 18-mm thick "C Board" Fibre Cement Board meets the criteria for a classification **Class A or Class 1** (International Building Code 2015)

Test Report Reference: QH147-4

Flame Spread Index (FSI)	0
Smoke Developed Index (SDI)	5

6. Approved Manufacturing Location

Prince Faysal Bin Fahd Street, Al Chate District,
P.O. Box. 6556 Jeddah 23513-2509,
Kingdom of Saudi Arabia

Certificate number: TBW0300164

Page 3 of 3



Certification Manager
Nick Purcell

Seal number: 100212

Issued: 11 Apr. 2017
Valid to: 10 Apr. 2020

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SECTION - 7

○ **Test Reports**

- Thomas Bell-Wright ASTM E84-16: 6mm, 9mm, 12mm and 18mm
Fiber cement board Standard Test Method for Surface Burning Characteristics of Building Materials.
- Thomas Bell-Wright ASTM E119-16a Standard Test Methods for Fire Tests for building construction and material, Non-load bearing 12mm thick single layer cement board wall partition.
- Material Lab Mechanical and Physical properties Test Reports – 6mm, 9mm, 12mm and 18mm thickness.
- Intertek Mechanical and Physical properties Test Report – Heavy Duty 9mm thickness.
- IPLM Analysis Report on Suspected Asbestos Test carried out by EPA 600/R-93/116 method using polarized light Microscopy.

TEST REPORT

REACTION TO FIRE TEST

TEST SPONSOR:

ASK Gypsum Factory Ltd

Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556

Jeddah 23513-2509, Kingdom of Saudi Arabia

T: +966 (12) 61300 00

Website: www.gboard-sa.com

TESTED MATERIAL/ASSEMBLY:

6mm thick Fibre Cement Board

TEST STANDARD:

ASTM E84-16: Standard Test Method for Surface Burning Characteristics of Building Materials



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 16-Jan-17
Issue Date: 30-Jan-17
Test Reference No.: QH147-1

PO BOX 26385, DUBAI UAE

T +971 (0)4 333 2692

admin@bell-wright.com

www.bell-wright.com

DUBAI

ABU DHABI

DOHA



Accreditation

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

United Kingdom Accreditation Service (UKAS) - Testing Laboratory: **4439**
www.ukas.com



GCC Accreditation Center (GAC) – Testing Laboratory: **ATL-0017**
www.GCC-accreditation.org



Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

www.egolf.org.uk

Member of International Trade Council

www.thetradecouncil.com

Member of Association for Specialist Fire Protection

www.asfp.org.uk

Member of Centre for Window and Cladding Technology

www.cwct.co.uk



The work which is the subject of this report falls wholly or partly under the accreditations of **ISO 17025 UKAS and ISO 17025 GAC**.

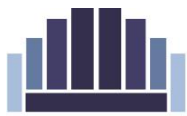


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1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of 6mm thick Fibre Cement Board as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

2. SPONSOR

Name: ASK Gypsum Factory Ltd
Address: Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia
T: +966 (12) 61300 00
Website: www.gboard-sa.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1
Dubai, UAE
T: +971 (0)4 333 7992 | +971 (0)4 821 5777
Website: www.bell-wright.com

4. DATE OF TEST

Sample received: 11-Jan-17
Test date: 16-Jan-17

The test has not been witnessed by the Sponsor.



5. SPECIMEN DESCRIPTION

The description of the specimen given below has been prepared from information provided by the Sponsor.

Product Tested	6mm thick Fibre Cement Board	
Fire side	One side of fibre cement board surface	
Product Description	C board is a 100% asbestos free fibre cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of cement and silica with a reinforcing fibre known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of autoclave process.	
Product Details	Product Name	C Board
	Product Reference	Fibre Cement Board
	Manufacturer	ASK Gypsum Factory Ltd Made in KSA
	Colour	Grey
	Thickness, mm	6
	Density, kg/m ³	1308
Dimensions per panel	2400 x 600 x 6mm (l x w x thk) (measured)	
No. of panel	3	
Total dimension	7200 x 600 x 6mm (l x w x thk) (measured)	
Specimen placement	3 sections of fiber cement boards were butt jointed end-to-end. The test specimen was placed directly to the tunnel ledges with the fibre cement board surface towards the flame source.	

The test specimen was sampled by Mr. Suresh Kumar of TBWIC on 27 November 2016 and was submitted by the Sponsor for testing as part of product certification process.

6. METHOD OF TEST

6.1. Placing of test specimen

The test specimen consisted of 3 sections of fiber cement boards. The dimension per panel was 2400 x 600 x 6mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7200 x 600 x 6mm (l x w x thk).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600mm (l x w), were placed at the back of the sample to protect the furnace lid assembly.

6.2. Test Method

The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The fibre cement board surface (fire side) was exposed to a flaming exposure during the 10 minute test duration.

Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).

6.3. Conditioning

After delivery on 11-Jan-17, the specimen was stored in room temperature for 5 days prior to the test ranging from 20.2 to 25.8°C and 45 to 55% relative humidity.



7. OBSERVATION

Test Data and Observation

Observations	
Ignition Time (min:sec)	None
Time to maximum flame front advance (min:sec)	None
Maximum flame spread (ft)	None
Time to end of tunnel reached (min:sec)	Not Reached
Maximum temp recorded at the exposed thermocouple located near the end of the tunnel (°F / °C)	566/297
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	None
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	None
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	0
Smoke Area (%A*min)	2.42
Red Oak Smoke Area (%A*min)	85.2

8. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

The test results are:

FLAME SPREAD INDEX (FSI)	0
SMOKE DEVELOPED INDEX (SDI)	5

Results are valid for the tested configuration only.



9. CLASSIFICATIONS

The following information is designed to help put these test results into context. Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by regulatory agencies to approve materials for various applications. For example, the International Building Code 2015, Section 803.1.1 requires that:

Interior wall and ceiling finish materials shall be classified in accordance with ASTM E84 or UL 723-10th Ed. 2008. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.

Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.

Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.

Note that the above example is the IBC requirement for interior wall and ceiling finishes only; your application may be different.



10. LIMITATIONS

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 the testing materials that remain in place

Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared/Tested By:

Romano Parungao
Fire Testing & Inspection Engineer

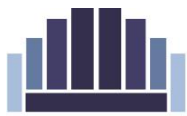
Reviewed By:

Fredilyn Paragoso
Fire Testing Support Engineer

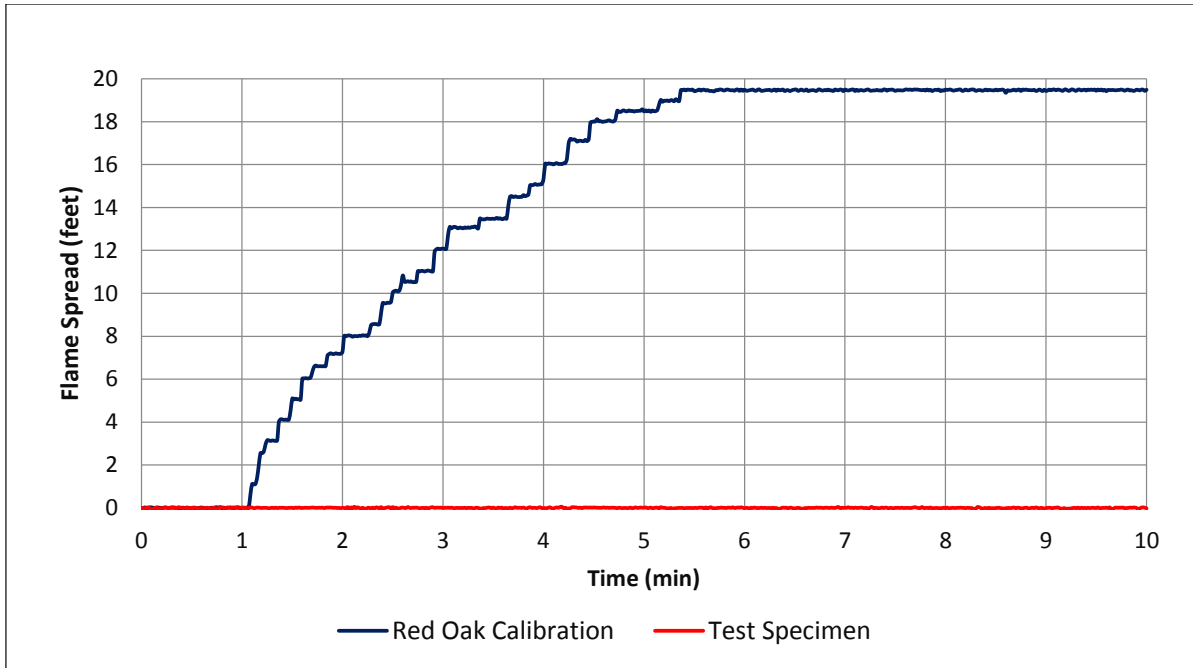
Approved By:

David Campbell, GFireE
Regional Director of Fire Compliance

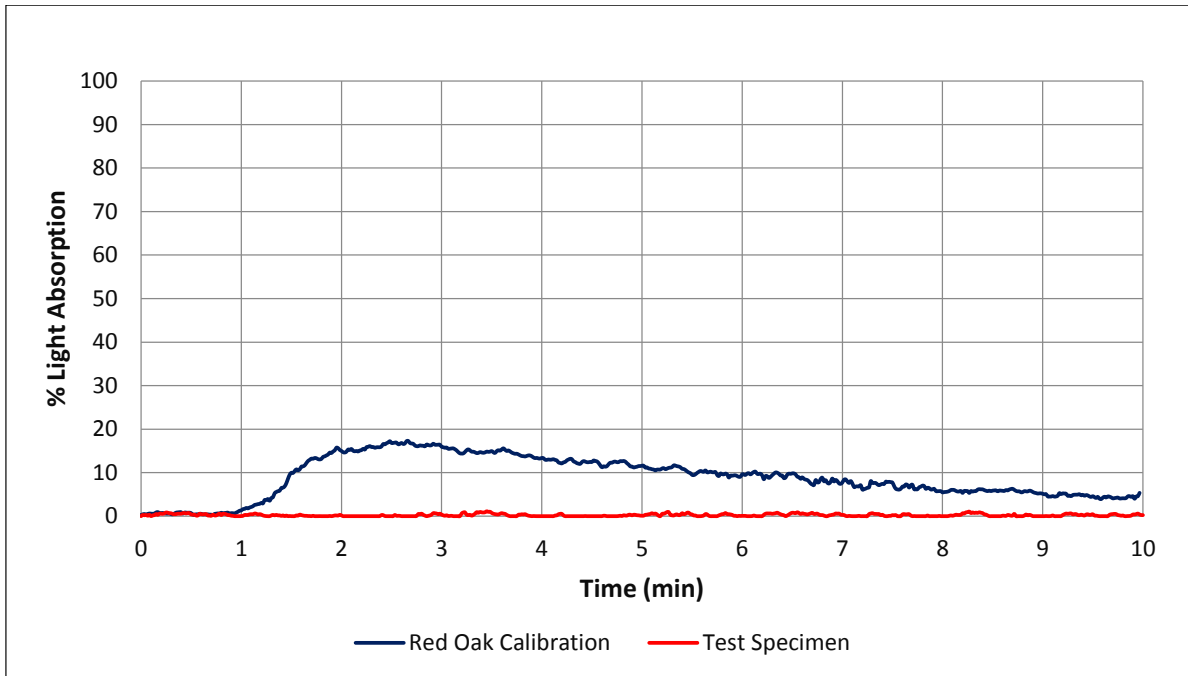




11. APPENDIX 1- GRAPHS



Graph 1: Flame Spread Index (FSI)



Graph 2: Smoke Developed Index (SDI)



12. APPENDIX 2- PICTURES



Photo 1: Specimen before the test
(Fire side)



Photo 2: Specimen after the test
(located near the fire end)



Photo 3: Specimen after the test
(located near the exhaust end)

- End of test report -

TEST REPORT

REACTION TO FIRE TEST

TEST SPONSOR:

ASK Gypsum Factory Ltd

Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556

Jeddah 23513-2509, Kingdom of Saudi Arabia

Website: www.gboard-sa.com

TESTED MATERIAL/ASSEMBLY:

9mm thick Fibre Cement Board

TEST STANDARD:

ASTM E84-16: Standard Test Method for Surface Burning Characteristics of Building Materials



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 16-Jan-17
Issue Date: 30-Jan-17
Test Reference No.: QH147-2

PO BOX 26385, DUBAI UAE

T +971 (0)4 333 2692

admin@bell-wright.com

www.bell-wright.com

DUBAI

ABU DHABI

DOHA



Accreditation

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

United Kingdom Accreditation Service (UKAS) - Testing Laboratory: **4439**
www.ukas.com



GCC Accreditation Center (GAC) – Testing Laboratory: **ATL-0017**
www.GCC-accreditation.org



Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

www.egolf.org.uk

Member of International Trade Council

www.thetradeCouncil.com

Member of Association for Specialist Fire Protection

www.asfp.org.uk

Member of Centre for Window and Cladding Technology

www.cwct.co.uk

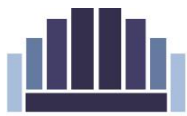


The work which is the subject of this report falls wholly or partly under the accreditations of **ISO 17025 UKAS and ISO 17025 GAC.**



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1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of 9mm thick Fibre Cement Board as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

2. SPONSOR

Name: ASK Gypsum Factory Ltd
Address: Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia
T: +966 (12) 61300 00
Website: www.gboard-sa.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1
Dubai, UAE
T: +971 (0)4 333 7992 | +971 (0)4 821 5777
Website: www.bell-wright.com

4. DATE OF TEST

Sample received: 11-Jan-17
Test date: 23-Jan-17

The test has not been witnessed by the Sponsor.



5. SPECIMEN DESCRIPTION

The description of the specimen given below has been prepared from information provided by the Sponsor.

Product Tested	9mm thick Fibre Cement Board	
Fire side	One side of fibre cement board surface	
Product Description	C board is a 100% asbestos free fibre cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of cement and silica with a reinforcing fibre known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of autoclave process.	
Product Details	Product Name	C Board
	Product Reference	Fibre Cement Board
	Manufacturer	ASK Gypsum Factory Ltd Made in KSA
	Colour	Grey
	Thickness, mm	9
	Density, kg/m ³	1355
Dimensions per panel	2400 x 600 x 9mm (l x w x thk) (measured)	
No. of panel	3	
Total dimension	7200 x 600 x 9mm (l x w x thk) (measured)	
Specimen placement	3 sections of fiber cement boards were butt jointed end-to-end. The test specimen was placed directly to the tunnel ledges with the fibre cement board surface towards the flame source.	

The test specimen was sampled by Mr. Suresh Kumar of TBWIC on 27 November 2016 and was submitted by the Sponsor for testing as part of product certification process.

6. METHOD OF TEST

6.1. Placing of test specimen

The test specimen consisted of 3 sections of fiber cement boards. The dimension per panel was 2400 x 600 x 9mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7200 x 600 x 9mm (l x w x thk).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600mm (l x w), were placed at the back of the sample to protect the furnace lid assembly.

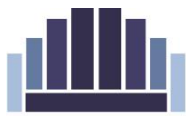
6.2. Test Method

The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The fibre cement board surface (fire side) was exposed to a flaming exposure during the 10 minute test duration.

Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).

6.3. Conditioning

After delivery on 16-Jan-17, the specimen was stored in room temperature for 5 days prior to the test ranging from 20.2 to 25.8°C and 45 to 55% relative humidity.



7. OBSERVATION

Test Data and Observation

Observations	
Ignition Time (min:sec)	None
Time to maximum flame front advance (min:sec)	None
Maximum flame spread (ft)	None
Time to end of tunnel reached (min:sec)	Not Reached
Maximum temp recorded at the exposed thermocouple located near the end of the tunnel (°F / °C)	560/293
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	None
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	None
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	0
Smoke Area (%A*min)	2.71
Red Oak Smoke Area (%A*min)	85.2

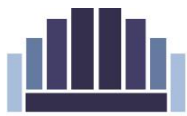
8. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

The test results are:

FLAME SPREAD INDEX (FSI)	0
SMOKE DEVELOPED INDEX (SDI)	5

Results are valid for the tested configuration only.



9. CLASSIFICATIONS

The following information is designed to help put these test results into context. Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by regulatory agencies to approve materials for various applications. For example, the International Building Code 2015, Section 803.1.1 requires that:

Interior wall and ceiling finish materials shall be classified in accordance with ASTM E84 or UL 723-10th Ed. 2008. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.

Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.

Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.

Note that the above example is the IBC requirement for interior wall and ceiling finishes only; your application may be different.



10. LIMITATIONS

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 the testing materials that remain in place

Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared/Tested By:

Romano Parungao
Fire Testing & Inspection Engineer

Reviewed By:

Fredilyn Paragoso
Fire Testing Support Engineer

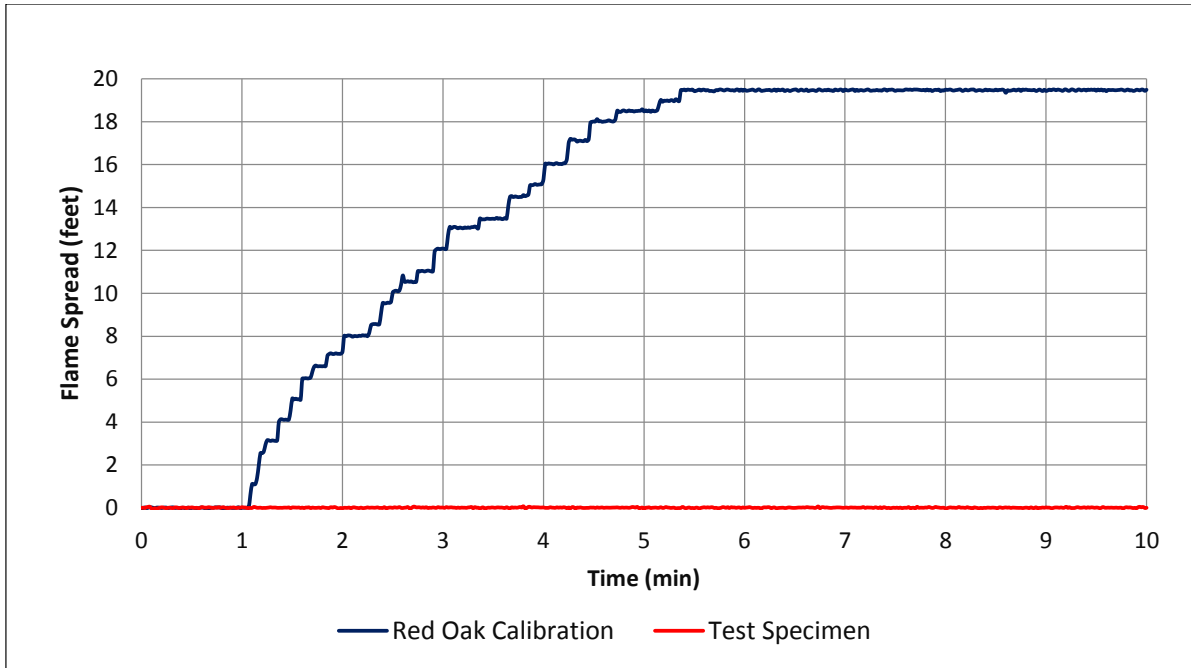
Approved By:

David Campbell, GFireE
Regional Director of Fire Compliance

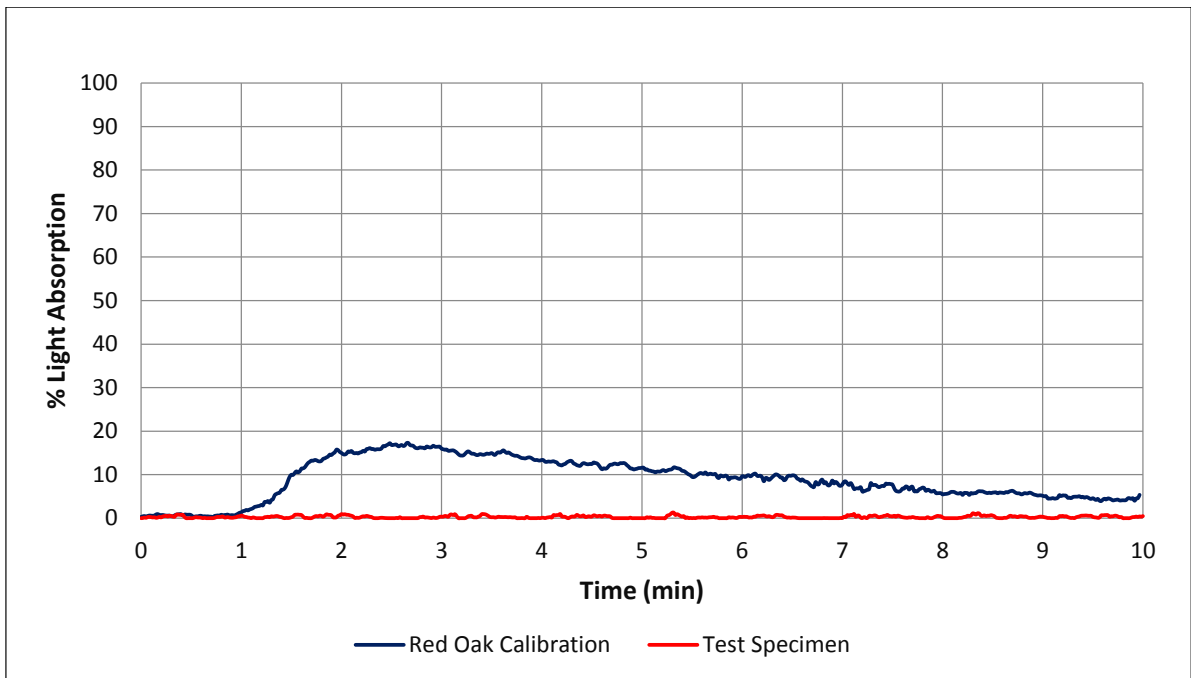




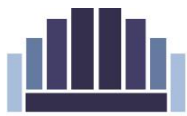
11. APPENDIX 1- GRAPHS



Graph 1: Flame Spread Index (FSI)



Graph 2: Smoke Developed Index (SDI)



12. APPENDIX 2- PICTURES



Photo 1: Specimen before the test
(Fire side)

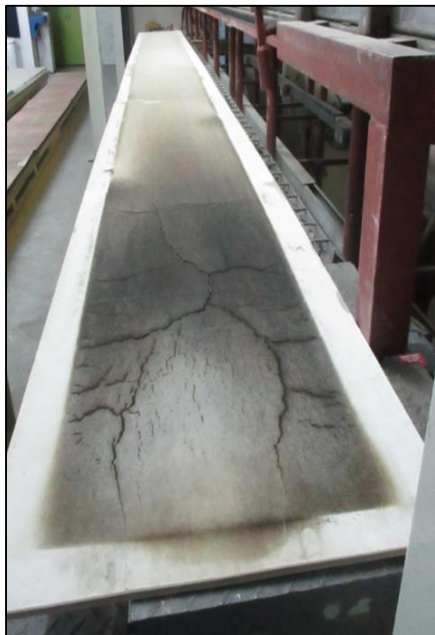


Photo 2: Specimen after the test
(located near the fire end)



Photo 3: Specimen after the test
(located near the exhaust end)

- End of test report -

TEST REPORT

REACTION TO FIRE TEST

TEST SPONSOR:

ASK Gypsum Factory Ltd

Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556

Jeddah 23513-2509, Kingdom of Saudi Arabia

T: +966 (12) 61300 00

Website: www.gboard-sa.com

TESTED MATERIAL/ASSEMBLY:

12mm thick Fibre Cement Board

TEST STANDARD:

ASTM E84-16: Standard Test Method for Surface Burning Characteristics of Building Materials



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 16-Jan-16
Issue Date: 30-Jan-17
Test Reference No.: QH147-3

PO BOX 26385, DUBAI UAE

T +971 (0)4 333 2692

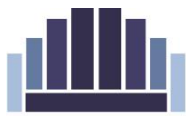
admin@bell-wright.com

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www.cwct.co.uk

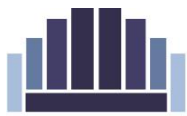


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1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of 12mm thick Fibre Cement Board as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

2. SPONSOR

Name: ASK Gypsum Factory Ltd
Address: Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia
T: +966 (12) 61300 00
Website: www.gboard-sa.com

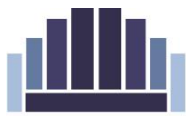
3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1
Dubai, UAE
T: +971 (0)4 333 7992 | +971 (0)4 821 5777
Website: www.bell-wright.com

4. DATE OF TEST

Sample received: 11-Jan-17
Test date: 16-Jan-17

The test has not been witnessed by the Sponsor.



5. SPECIMEN DESCRIPTION

The description of the specimen given below has been prepared from information provided by the Sponsor.

Product Tested	12mm thick Fibre Cement Board	
Fire side	One side of fibre cement board surface	
Product Description	C board is a 100% asbestos free fibre cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of cement and silica with a reinforcing fibre known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of autoclave process.	
Product Details	Product Name	C Board
	Product Reference	Fibre Cement Board
	Manufacturer	ASK Gypsum Factory Ltd Made in KSA
	Colour	Grey
	Thickness, mm	12
	Density, kg/m ³	1309
Dimensions per panel	2400 x 600 x 12mm (l x w x thk) (measured)	
No. of panel	3	
Total dimension	7200 x 600 x 12mm (l x w x thk) (measured)	
Specimen placement	3 sections of fiber cement boards were butt jointed end-to-end. The test specimen was placed directly to the tunnel ledges with the fibre cement board surface towards the flame source.	

The test specimen was sampled by Mr. Suresh Kumar of TBWIC on 27 November 2016 and was submitted by the Sponsor for testing as part of product certification process.

6. METHOD OF TEST

6.1. Placing of test specimen

The test specimen consisted of 3 sections of fiber cement boards. The dimension per panel was 2400 x 600 x 12mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7200 x 600 x 12mm (l x w x thk).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600mm (l x w), were placed at the back of the sample to protect the furnace lid assembly.

6.2. Test Method

The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The fibre cement board surface (fire side) was exposed to a flaming exposure during the 10 minute test duration.

Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).

6.3. Conditioning

After delivery on 11-Jan-17, the specimen was stored in room temperature for 5 days prior to the test ranging from 20.2 to 25.8°C and 45 to 55% relative humidity.



7. OBSERVATION

Test Data and Observation

Observations	
Ignition Time (min:sec)	None
Time to maximum flame front advance (min:sec)	None
Maximum flame spread (ft)	None
Time to end of tunnel reached (min:sec)	Not Reached
Maximum temp recorded at the exposed thermocouple located near the end of the tunnel (°F / °C)	547/286
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	None
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	None
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	0
Smoke Area (%A*min)	2.52
Red Oak Smoke Area (%A*min)	85.2

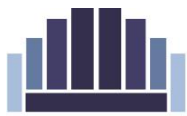
8. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

The test results are:

FLAME SPREAD INDEX (FSI)	0
SMOKE DEVELOPED INDEX (SDI)	5

Results are valid for the tested configuration only.



9. CLASSIFICATIONS

The following information is designed to help put these test results into context. Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by regulatory agencies to approve materials for various applications. For example, the International Building Code 2015, Section 803.1.1 requires that:

Interior wall and ceiling finish materials shall be classified in accordance with ASTM E84 or UL 723-10th Ed. 2008. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.

Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.

Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.

Note that the above example is the IBC requirement for interior wall and ceiling finishes only; your application may be different.



10. LIMITATIONS

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 the testing materials that remain in place

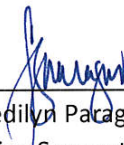
Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared/Tested By:


Romano Parungao
Fire Testing & Inspection Engineer

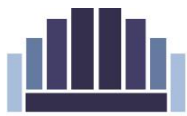
Reviewed By:


Fredilyn Pacagoso
Fire Testing Support Engineer

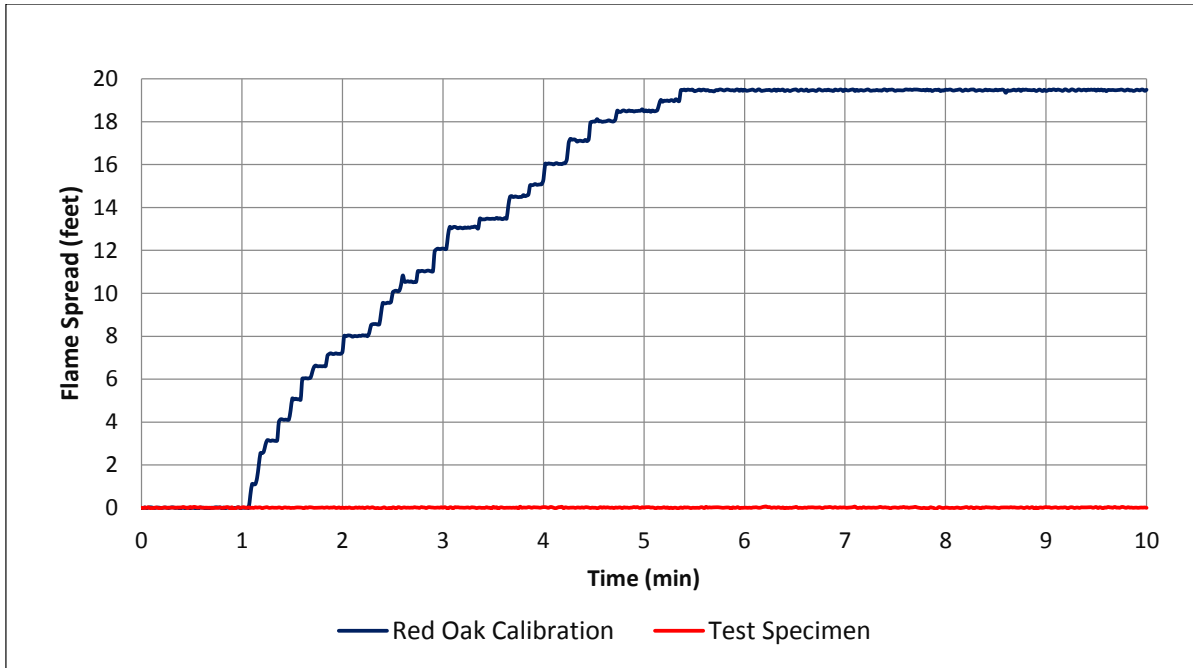
Approved By:


David Campbell, GFireE
Regional Director of Fire Compliance

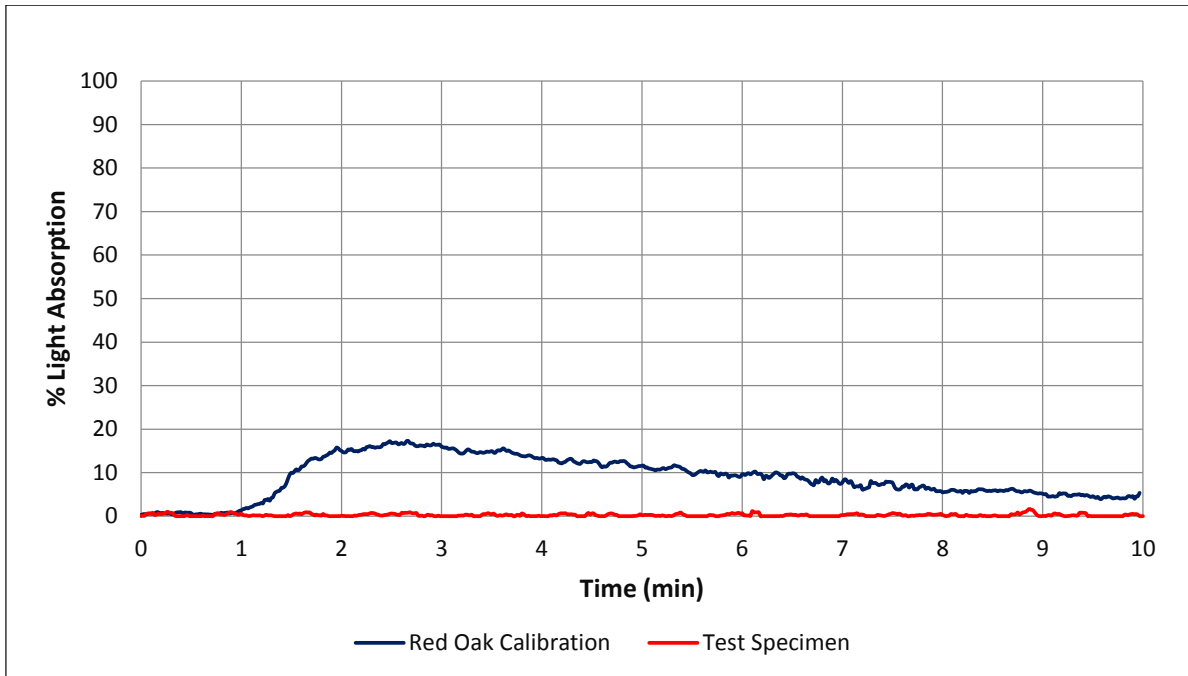




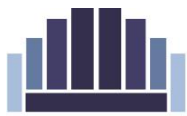
11. APPENDIX 1- GRAPHS



Graph 1: Flame Spread Index (FSI)



Graph 2: Smoke Developed Index (SDI)



12. APPENDIX 2- PICTURES



Photo 1: Specimen before the test
(Fire side)



Photo 2: Specimen after the test
(located near the fire end)



Photo 3: Specimen after the test
(located near the exhaust end)

- End of test report -

TEST REPORT

REACTION TO FIRE TEST

TEST SPONSOR:

ASK Gypsum Factory Ltd

Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556

Jeddah 23513-2509, Kingdom of Saudi Arabia

T: +966 (12) 61300 00

Website: www.gboard-sa.com

TESTED MATERIAL/ASSEMBLY:

18mm thick Fibre Cement Board

TEST STANDARD:

ASTM E84-16: Standard Test Method for Surface Burning Characteristics of Building Materials



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 16-Jan-17
Issue Date: 30-Jan-17
Test Reference No.: QH147-4

PO BOX 26385, DUBAI UAE

T +971 (0)4 333 2692

admin@bell-wright.com

www.bell-wright.com

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ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

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www.ukas.com



GCC Accreditation Center (GAC) – Testing Laboratory: **ATL-0017**
www.GCC-accreditation.org



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www.thetradeCouncil.com

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www.asfp.org.uk

Member of Centre for Window and Cladding Technology

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The work which is the subject of this report falls wholly or partly under the accreditations of **ISO 17025 UKAS and ISO 17025 GAC.**

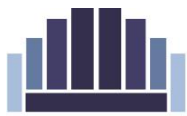


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1. INTRODUCTION

Determination of the flame spread index and the smoke developed index of 18mm thick Fibre Cement Board as per ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

2. SPONSOR

Name: ASK Gypsum Factory Ltd
Address: Prince Faysal Bin Fahd Street, Al Chate District, P.O. Box: 6556
Jeddah 23513-2509, Kingdom of Saudi Arabia
T: +966 (12) 61300 00
Website: www.gboard-sa.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1
Dubai, UAE
T: +971 (0)4 333 7992 | +971 (0)4 821 5777
Website: www.bell-wright.com

4. DATE OF TEST

Sample received: 11-Jan-17
Test date: 16-Jan-17

The test has not been witnessed by the Sponsor.



5. SPECIMEN DESCRIPTION

The description of the specimen given below has been prepared from information provided by the Sponsor.

Product Tested	18mm thick Fibre Cement Board	
Fire side	One side of fibre cement board surface	
Product Description	C board is a 100% asbestos free fibre cement board manufactured in Saudi Arabia by ASK Gypsum Factory Ltd from a homogenous mixture of cement and silica with a reinforcing fibre known as Cellulose (a plant extract) or pulp added in versatile doses, using the latest technology of autoclave process.	
Product Details	Product Name	C Board
	Product Reference	Fibre Cement Board
	Manufacturer	ASK Gypsum Factory Ltd Made in KSA
	Colour	Grey
	Thickness, mm	18
	Density, kg/m ³	1381
Dimensions per panel	2400 x 600 x 18mm (l x w x thk) (measured)	
No. of panel	3	
Total dimension	7200 x 600 x 18mm (l x w x thk) (measured)	
Specimen placement	3 sections of fiber cement boards were butt jointed end-to-end. The test specimen was placed directly to the tunnel ledges with the fibre cement board surface towards the flame source.	

The test specimen was sampled by Mr. Suresh Kumar of TBWIC on 27 November 2016 and was submitted by the Sponsor for testing as part of product certification process.

6. METHOD OF TEST

6.1. Placing of test specimen

The test specimen consisted of 3 sections of fiber cement boards. The dimension per panel was 2400 x 600 x 18mm (l x w x thk.) and was butt jointed end-to-end. The total dimensions of the specimen were 7200 x 600 x 18mm (l x w x thk).

Several sections of cement board butt jointed end-to-end with overall dimensions of 7350 x 600mm (l x w), were placed at the back of the sample to protect the furnace lid assembly.

6.2. Test Method

The specimen was installed horizontally in the Steiner Tunnel and supported by the ledges. The fibre cement board surface (fire side) was exposed to a flaming exposure during the 10 minute test duration.

Flame spread and density of the smoke are measured and recorded while the results are computed against the standard calibration materials (cement board and red oak flooring).

6.3. Conditioning

After delivery on 11-Jan-17, the specimen was stored in room temperature for 5 days prior to the test ranging from 20.2 to 25.8°C and 45 to 55% relative humidity.



7. OBSERVATION

Test Data and Observation

Observations	
Ignition Time (min:sec)	None
Time to maximum flame front advance (min:sec)	None
Maximum flame spread (ft)	None
Time to end of tunnel reached (min:sec)	Not Reached
Maximum temp recorded at the exposed thermocouple located near the end of the tunnel (°F / °C)	544/284
Dripping (min:sec)	None
Flaming on the floor (min:sec)	None
After flame on the top (min:sec)	None
After flame on the floor (min:sec)	None
Delamination (min:sec)	None
Sagging (min:sec)	None
Shrinkage (min:sec)	None
Fallout (min:sec)	None
FS*Time Area (ft*min)	0
Smoke Area (%A*min)	5.75
Red Oak Smoke Area (%A*min)	85.2

8. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with ASTM E84; Standard Test Method for Surface Burning Characteristics of Building Materials.

The test results are:

FLAME SPREAD INDEX (FSI)	0
SMOKE DEVELOPED INDEX (SDI)	5

Results are valid for the tested configuration only.



9. CLASSIFICATIONS

The following information is designed to help put these test results into context. Flame Spread Index and Smoke Developed Index results from an ASTM E84 test are often used by regulatory agencies to approve materials for various applications. For example, the International Building Code 2015, Section 803.1.1 requires that:

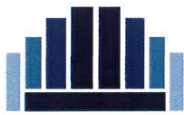
Interior wall and ceiling finish materials shall be classified in accordance with ASTM E84 or UL 723-10th Ed. 2008. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: Flame spread index 0 - 25; smoke-developed index 0 - 450.

Class B: Flame spread index 26 - 75; smoke-developed index 0 - 450.

Class C: Flame spread index 76 - 200; smoke-developed index 0 - 450.

Note that the above example is the IBC requirement for interior wall and ceiling finishes only; your application may be different.



10. LIMITATIONS

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 the testing materials that remain in place

Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared/Tested By:

Romano Parungao
Fire Testing & Inspection Engineer

Reviewed By:

Fredilyn Paragoso
Fire Testing Support Engineer

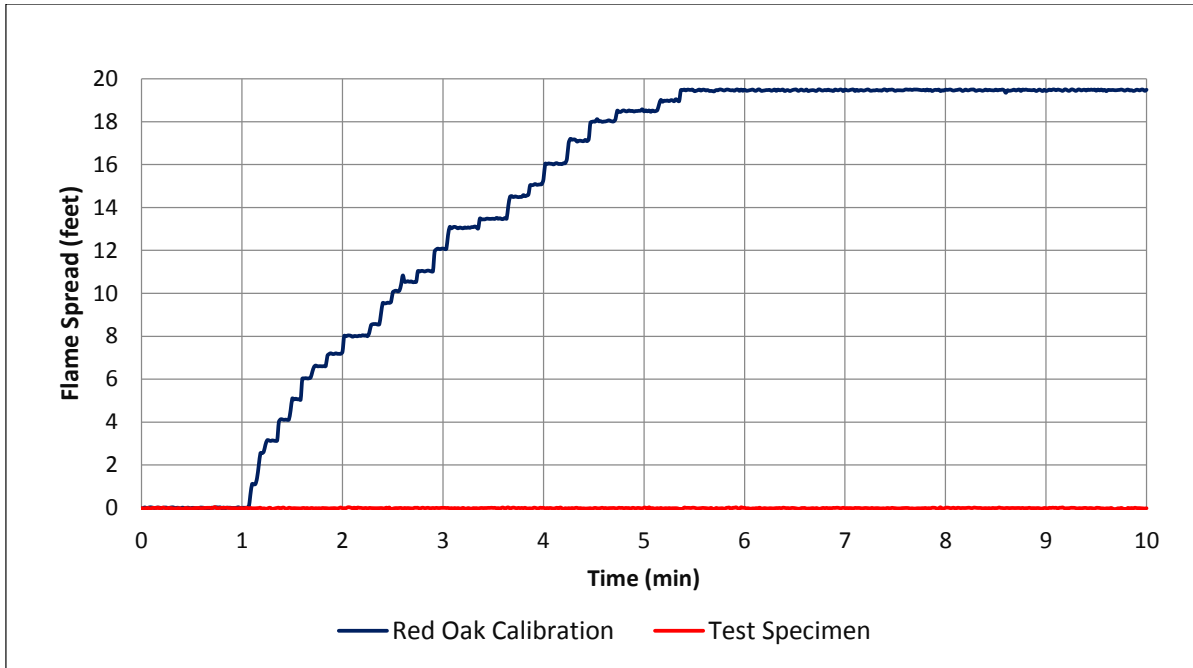
Approved By:

David Campbell, GFireE
Regional Director of Fire Compliance

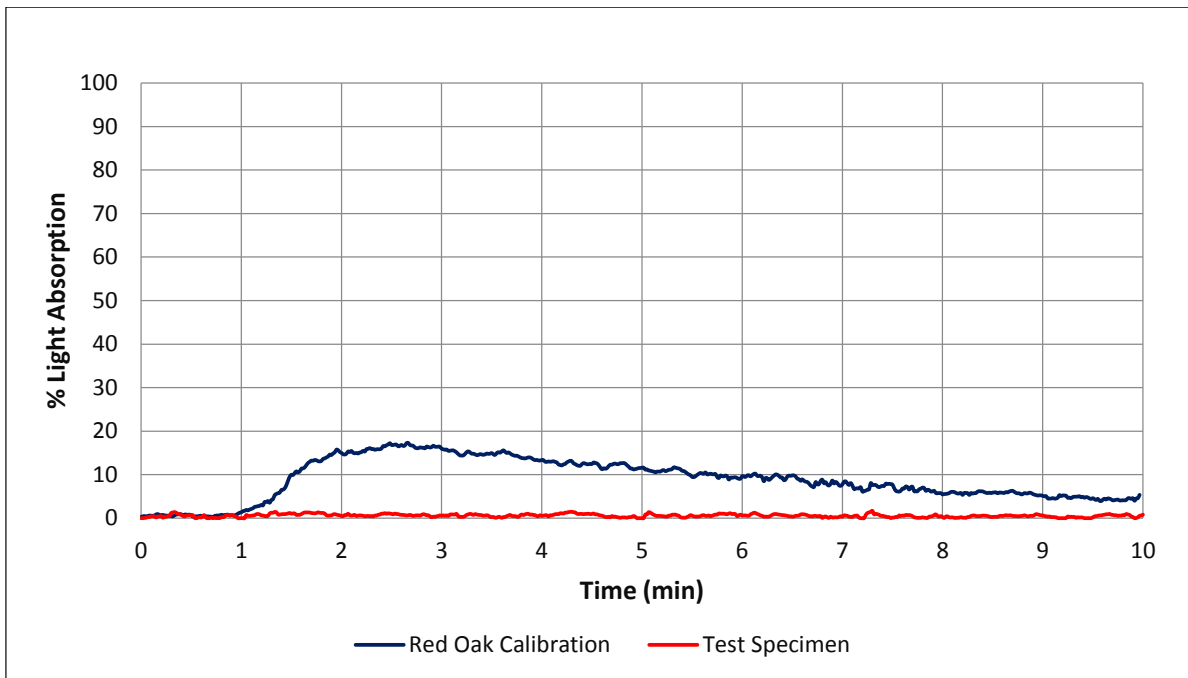




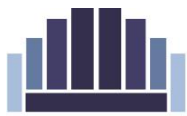
11. APPENDIX 1- GRAPHS



Graph 1: Flame Spread Index (FSI)



Graph 2: Smoke Developed Index (SDI)



12. APPENDIX 2- PICTURES



Photo 1: Specimen before the test
(Fire side)



Photo 2: Specimen after the test
(located near the fire end)



Photo 3: Specimen after the test
(located near the exhaust end)

- End of test report -

TEST REPORT

FIRE RESISTANCE TEST OF CONSTRUCTION ASSEMBLIES

Test Sponsor:

ASK Gypsum Factory Ltd.
P.O. Box 31381
Light Industrial Area
Yanbu, Kingdom of Saudi Arabia
T: +966 2 613 0000 | +966 (12) 61300 00 Ext. 102
www.gboard-sa.com

Test Assembly:

Non-loadbearing 12mm thick single layer cement board wall partition with rockwool infill.

Test Standard:

ASTM E119-16a; Standard Test Methods for Fire Tests of Building Construction and Materials

ASTM E2226-15b: Standard Practice for Application of Hose Stream



Test Date: 11-Jan-17
Issue Date: 16-Mar-17
Reference No: QH147-5

PO BOX 26385, DUBAI UAE T +971 (0)4 333 2692 fire@bell-wright.com www.bell-wright.com

DUBAI ABU DHABI DOHA



Accreditation

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

United Kingdom Accreditation Service (UKAS) - Testing Laboratory: **4439**
www.ukas.com



4439

GAC

GCC Accreditation Center (GAC) – Testing Laboratory: **ATL-0017**
www.GCC-accreditation.org



ACCREDITED
TESTING
ISO/IEC 17025:2005
No. ATL 0017

Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

www.egolf.org.uk

Member of International Trade Council

www.thetradecouncil.com

Member of Association for Specialist Fire Protection

www.asfp.org.uk

Member of Centre for Window and Cladding Technology

www.cwct.co.uk



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1. INTRODUCTION

Determination of the fire resistance of a non-loadbearing 12mm thick single layer cement board wall partition with rockwool infill according to:

ASTM E119-16a: Standard Test Methods for Fire Tests of Building Construction and Materials

ASTM E2226-15b: Standard Practice for Application of Hose Stream

2. SPONSOR

Name: ASK Gypsum Factory Ltd.
Address: P.O. Box 31381
Light Industrial Area
Yanbu, Kingdom of Saudi Arabia
T: +966 2 613 0000 | +966 (12) 61300 00 Ext. 102
gboard-sa.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th streets,
Jebel Ali Industrial Area 1,
P.O. Box 26385, Dubai, U.A.E.
T: +971 (0) 4 333 26 92, F: +971 (0) 4 333 26 93
www.bell-wright.com

4. DATE OF TEST

Installation Date: 8-Jan-17 to 9-Jan-17
Fire Test Date: 11-Jan-17

The test has been witnessed by:

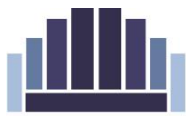
Name	Company	Contact Number
Mr. S. Connelly	SIG – ME LLC	+971 52 415 4698
Mr. Ishwaridas Shetty		+971 52 739 6507
Mr. Leslie Soares	ASK Gypsum Factory Ltd.	+971 50 920 2407

5. CONSTRUCTION

5.1. General Description of the Assembly

The non-loadbearing 12mm thick single layer cement board wall partition consisted of galvanized steel framing system made of 49 x 32 x 8 x 0.55mm (web x depth x flange x thk.) C-channel studs and 51 x 25 x 0.55mm (web x depth x thk.) tracks, 12mm thick cement board fixed to either side, and 50 kg/m³ rockwool infill.

The galvanized steel tracks were fixed to the horizontal and vertical perimeter of the test frame opening using Ø4.2x50mm self-tapping screws and washers with plastic anchors, spaced a maximum of 100mm from the ends and nominally 600mm C/C. The galvanized steel studs were fixed vertically within the head and sill tracks, spaced nominally 600mm C/C, and fixed in place



using $\varnothing 13$ mm Gyproc Waferhead Jackpoint Screws. Horizontal sections of steel track were cut and fixed between the C-channel studs, using the same $\varnothing 13$ mm screws, at heights of 800, 1600, and 2400mm above the sill of the specimen.

The cement boards were fixed to the framing system using $\varnothing 4.2 \times 45$ mm and $\varnothing 4 \times 32$ mm coated self-tapping steel screws. For the board installation, 100mm wide strips of cement board were fixed to either side of all members of the framing system using the 32mm long screws, then full size boards were fixed over top of them using the 45mm long screws. All screws were spaced at a maximum of 100mm from the ends and 300mm C/C. Before the full size boards were installed to the interior and exterior faces of the specimen, the edges were slightly tapered using a grinder, so as to make space for the jointing tape and jointing compound.

After the installation of the unexposed boards, rockwool insulation of density 50kg/m^3 was fitted between the studs and tracks of the framing system. It was not fastened, but pressure fitted between the framing members.

DAP FIRE STOP silicone sealant was applied around the perimeter of the framing system on the exposed face of the specimen, before the installation of the boards. After the installation of the interior and exterior layers of boards, cement jointing compound and fiber tape were applied over all meeting edges of the boards, and the jointing compound was applied over the screw heads and around the perimeter of the specimen on both the exposed and unexposed faces.

The overall dimension of specimen was $3048 \times 3048 \times 99$ mm (w x h x thk).

For full details of the test specimen, refer to Appendix 1 & 2.

5.2. Supporting Construction

Non-loadbearing 12mm thick single layer cement board wall partition with rockwool infill was installed on to a restraint frame made of steel and dense refractory castable (Density 2000kg/m^3) with an opening of 3048×3048 mm (10ft x 10ft) (w x h).

6. SPECIMEN VERIFICATION

6.1. Specimen Definition

The laboratory has not been involved in the selection of the specimen.

The choice and the definition of the specimen have been made by the ASK Gypsum Factory Ltd.

6.2. Specimen Installation

Installation of the specimen: ASK Gypsum Factory Ltd.

Supporting Construction: TBWIC

7. METHOD OF TEST

7.1. Verification of the Test Specimen

The construction has been verified by TBWIC based on a detailed survey and with the technical information supplied by ASK Gypsum Factory Ltd.

The cement boards were marked and signed by Suresh Kumar from TBWIC (Certification Body) on 27th November, 2016.



7.2. Conditioning

The specimen was delivered on 8-Jan-17 and installed from 8-Jan-17 to 9-Jan-17. The specimen was covered with tarpaulin after installation and stored in ambient conditions at temperatures ranging between 17°C and 27°C and 26% to 83% humidity.

8. FIRE TEST

8.1. Conditions and Test Situation

The resistance to fire test was carried out in accordance with ASTM E119-16a and the hose stream application was carried out in accordance with ASTM E2226-15b.

8.2. Measurements (for graphs and data, refer to Appendix 3)

The time-temperature curves have been controlled using nine thermocouples distributed in the furnace.

The furnace thermocouples were placed at 6in. (152mm) from the exposed face of the specimen and this distance has been maintained throughout the entire test duration.

The ambient temperature at the commencement of the test was 17.6°C.

The pressure in the furnace was controlled at -4 Pa at its relative position in the furnace in order to maintain neutral pressure at the top of the specimen.

Deflections have been measured and recorded (see Appendix 4).

9. OBSERVATION

9.1. Pre-Test Observations

The specimen was found satisfactory and fit to be tested.

9.2. Fire Test Observations

Time (min:sec)	Specimen Observations
0:00	The test was started.
5:13	Very light smoke was witnessed escaping from the right vertical edge of the specimen, at mid-height.
7:15	Moisture/fluid was observed bubbling along the intersection of the specimen and the sill of the test frame opening.
8:37	Moisture lines were observed forming along the board joint below B1.
15:00	The specimen was stable. The moisture lines seen on the boards had mostly dried out. No smoke issuing was observed.
15:00	A small crack was seen at the joint between B1, B3, and B4.
37:50	More small cracks were forming between B3 & B4.
45:00	The specimen was stable. Very small cracks were observed forming in the jointing compound in various places over the specimen.
60:00	The test was stopped, as agreed upon with the sponsor, and the hose stream was started within 90 seconds of the end of the fire-endurance test.



9.3.Hose Stream Test Observation

Time (min:sec)	Specimen Observations
0:00	The hose stream test was started.
1:00	The hose stream test was stopped. The specimen had been subject to the impact, erosion, and cooling effects for 1:00 minute at 30 psi. No through opening or voids allowing the projection of water were observed on the exposed or unexposed faces

9.4.After Hose Stream Test Observations

9.4.1.UNEXPOSED FACE OBSERVATIONS

The boards and jointing compound on the unexposed face of the specimen were entirely intact, with only small cracks observed in the jointing compound and no signs of burning. Small amounts of dampness in the jointing compound along the sill were observed, but no through holes allowing the projection of water through the specimen were observed.

9.4.2.EXPOSED FACE OBSERVATIONS

The boards of the exposed face and the rockwool infill in the cavity between the boards had almost entirely washed away. The remaining interior face of the boards on the unexposed face had signs of charring, but no voids or through-holes allowing the projection of water were observed.

10.CORRECTION FACTOR

When the indicated period is 1/2h or over, determined by the average or maximum temperature rise on the unexposed surface, a correction shall be applied for variation of the furnace exposure from that prescribed, where it will affect the classification, by multiplying the indicated period by two thirds of the difference in area between the curve of average furnace temperature and the standard curve for the first three fourths of the period and dividing the product by the area between the standard curve and a base line of 20°C (68°F) for the same part of the indicated period, the latter area increased by 1800 °C .min (3240 °F.min) to compensate for the thermal lag of the furnace thermocouples during the first part of the test. For a fire exposure in the test higher than standard, the indicated resistance period shall be increased by the amount of correction. For a fire exposure in the test lower than standard, the indicated resistance period shall be similarly decreased for fire exposure below standard. The correction is accomplished by mathematically adding the factor, C, to the indicated resistance period.

The correction can be expressed by the following equation:

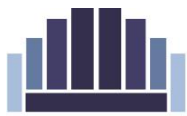
$$C = 2I(A - A_s) \div 3(A_s + L)$$

Where:

C = Correction, in the same units as *I*

I = Indicated fire-resistance period

A = Area under the curve of indicated average furnace temperature for the first three fourths of the indicated period



- A_s = Area under the standard furnace curve for the same part of the indicated period, and
- L = Lag correction in the same units as A and A_s (SI: 30°C·h or 1800°C·h, BG: 54°F·h or 3240°F·h)

In accordance with the ASTM E119 test standard, a calculation for any correction to the indicated fire resistance period was done. The correction factor was then mathematically added to the indicated fire resistance period, yielding the fire resistance period achieved by this specimen:

Time Correction Values		
Item	Description	Test value
C	Correction factor	.22 minutes (13.01 seconds)
I	Indicated fire-resistance	60 minutes
A	Area under the curve of indicated average furnace temperature for the first three fourths of the indicated period	46736 (°C·min)
A_s	Area under the standard furnace curve for the same part of the indicated period	46474 (°C·min)
L	Lag correction	1800 (°C·min)



11. SUMMARY OF RESULTS

The non-loadbearing non-loadbearing 12mm thick single layer cement board wall partition with rockwool infill has been evaluated in accordance with ASTM E119-16a; Standard Test Methods for Fire Tests of Building Construction and Materials and ASTM E2226-15b; Standard Practice for Application of Hose Stream.

The requirements of the standards were satisfied for:


FIRE TEST RATING
1 HOUR

12. RECOMMENDATION

Thomas Bell-Wright International Consultants recommend that the relevance of test reports should be considered after a period of five years.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared By:




 Brett W. Shinn
 Fire Testing Engineer

Reviewed By:



 Daisan Dippi
 Laboratory Operations Manager
 & Senior Fire Testing Engineer

Approved By:



 David Campbell, GFireE
 Regional Director of Fire Compliance





13.APPENDIX 1 – DESCRIPTION OF SPECIMEN

Overall	
Type	Non-loadbearing 12mm thick single layer cement board wall partition with rockwool infill.
Dimensions	3048 x 3048 x 99mm (w x h x thk.)

Steel Tracks	
Material	Galvanized Steel - Grade Z2 (Galvanizing RNR 052-GS)
Manufacturer	Sigma Factory for Steel Products
Reference	G-Frame RNR 052-GS
Dimension	As Shown 3000mm long
Fixing method & Application	<p>The galvanized steel tracks were used along the head, sill, and both vertical edges, as well as along horizontal studs at heights of 800, 1600, and 2400mm above the sill of the specimen. Small lengths of track were used to extend the 3000mm lengths to cover the 3048mm width and height of the test frame opening.</p> <p>The perimeter tracks were fixed in place using $\varnothing 4.2 \times 50$mm self-tapping screws and washers with plastic anchors spaced a maximum of 100mm from the edges and 600mm C/C. The horizontal studs were fixed between the vertical C-channel studs using $\varnothing 13$mm Gyproc Waferhead Jackpoint Screws.</p> <p>Vertical C-channel studs were fixed within the head and sill tracks using the same $\varnothing 13$mm Gyproc Waferhead Jackpoint Screws, spaced nominally at 600mm C/C.</p> <p>DAP® Fire Stop Fire-Rated Silicone Sealant was used around the perimeter of the tracks on the exposed side of the specimen, before the installation of the boards.</p>
Evidence of survey	Information provided by the sponsor and verified by TBWIC.



C-Channel Studs	
Material	Galvanized Steel
Manufacturer	Sigma Factory for Steel Products
Reference	G-Frame STD 050-GS
Dimension	As Shown 3000 mm long
Fixing method	<p>The studs were fixed vertically within the head and sill tracks using $\varnothing 13\text{mm}$ Gyproc Waferhead Jackpoint Screws on both the exposed and unexposed faces. The 3000mm long channels were extended using smaller pieces of channel to make the length of the 3048mm high test frame opening.</p> <p>100mm wide strips of cement board were fixed to both the interior and exterior faces of the framing members using $\varnothing 4.2 \times 32\text{mm}$ coated self-tapping screws, then a layer of full sized boards was fitted over top of the strips and fixed with $\varnothing 4 \times 45\text{mm}$ screws of the same time. Both screws were spaced a maximum of 100mm from the edges and nominally 300mm C/C.</p> <p>Rockwool infill of density 50 kg/m^3 and thickness 50mm was pressure fitted between the studs and tracks of the framing system.</p>
Evidence of survey	Information provided by the sponsor and verified by TBWIC

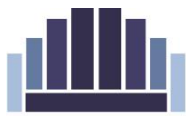
Rockwool Infill	
Material	Mineral Fiber Insulation
Manufacturer	Saudi Rockwool Factory
Dimension	Cut from 1200 x 600 x 50 mm (h x w x thk.) slabs
Density	50 kg/m^3 (Stated)
Fixing method	The rockwool slabs were cut to size to be pressure fitted between the vertical and horizontal framing members. They were installed after the unexposed layer of gypsum was installed.
Evidence of survey	Information provided by the sponsor and verified by TBWIC



Cement Boards	
Material	Non-Asbestos Fiber Cement
Manufacturer	ASK Gypsum Factory Ltd.
Dimension	1200 x 2400 x 12mm (w x thk. x h)
Density	1411.6 kg/m ³ (Measured) 1300 kg/m ³ (Stated)
Moisture Content	8.1% (Measured)
Fixing method	<p>100 mm wide strips of cement boards were fixed to all framing members on the exposed and unexposed face of the specimen using Ø4.2x32mm coated self-tapping screws, then full size boards were fixed over top of them using Ø4.2x45mm screws of the same type. The meeting edges on the exterior face of the cement boards were ground down to have a tapered edge to make space for cement jointing compound and fiber tape.</p> <p>The jointing compound and fiber tape were applied over all meeting edges of the boards. First, a pass of jointing compound was made, then the fiber tape was infused within it, and a second pass of jointing compound was applied over top of it on both the exposed and unexposed faces of the specimen. The jointing compound was also used over top of the screw heads and around the perimeter of the specimen on both the exposed and unexposed faces.</p>
Evidence of survey	Information provided by the sponsor and verified by TBWIC

Sealant	
Material	Single Component Neutral Cure Silicon
Manufacturer	DAP® Products Incorporated
Appearance	Limestone Gray
Reference	DAP® Fire Stop Fire-Rated Silicone Sealant
Fixing method	The silicone sealant was applied, as a bead, around the perimeter of the framing system on the exposed face of the specimen, before the installation of the cement boards.
Evidence of survey	Information provided by the sponsor and verified by TBWIC

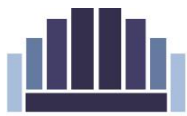
Fiber Tape	
Material	Fiber Joint Tape
Reference	Self-Adhesive Fiber Mesh Joint Tape
Manufacturer	Ayhaco
Fixing method	The fiber jointing tape was applied over the meeting edges of all cement boards on both the exposed and unexposed faces. First, a pass of cement jointing compound was applied, then the fiber tape was infused within it, then a second pass of jointing compound was applied.
Evidence of survey	Information provided by the sponsor and verified by TBWIC



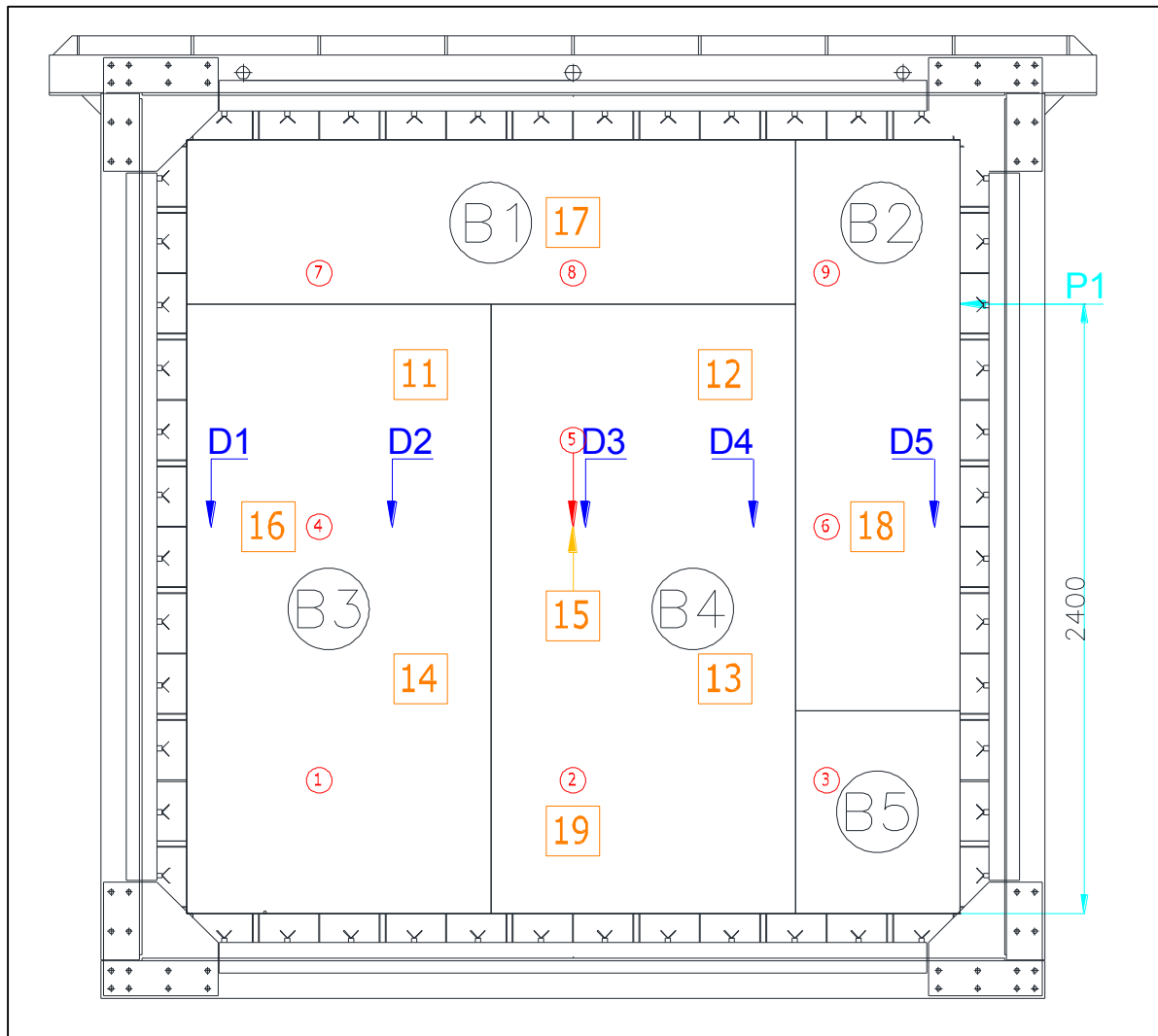
Cement Jointing Compound	
Material	Single Component Neutral Cure Silicon
Manufacturer	DAP® Products Incorporated
Reference	C-Coat
Appearance	Limestone Gray
Fixing method	The jointing compound was used over all the meeting edges of the cement boards, in tandem with the jointing tape, as well as over all screw heads and around the perimeter of the specimen on both the exposed and unexposed faces. Two passes were used with the jointing tape. A first pass was made, which was infused with the jointing tape, then a second pass was applied over top of it.
Evidence of survey	Information provided by the sponsor and verified by TBWIC

Cement Board Screws	
Material	Steel (AISI – 1022)
Manufacturer	Corroshield Construction Fasteners
Reference	BOTAPP™ BT 10-16x32mm – W & BT10-16x45mm-W
Fixing method	Two lengths of screw fixing were used to fix the cement boards to the galvanized steel framing system: Ø4.2x32mm and Ø4.2x45mm screws. The 32mm long screws were used to fix the 100mm wide strips of cement board to the framing system, and the 45mm long screws were used to fix the full size boards over top of them, on both the exposed and unexposed faces. Both screws were fixed at a maximum of 100mm from the ends and nominally 300mm C/C.
Evidence of survey	Information provided by the sponsor and verified by TBWIC

Framing Screws	
Material	Steel
Manufacturer	Gyproc Saint-Gobain
Reference	13mm Wafer Head Jack Point Screws
Fixing method	The framing screws were used to fix the vertical C-channel studs within the head and sill tracks, and then to fix the intermediate studs (made of cut sections of track) to the vertical studs at the intermediate heights.
Evidence of survey	Information provided by the sponsor and verified by TBWIC

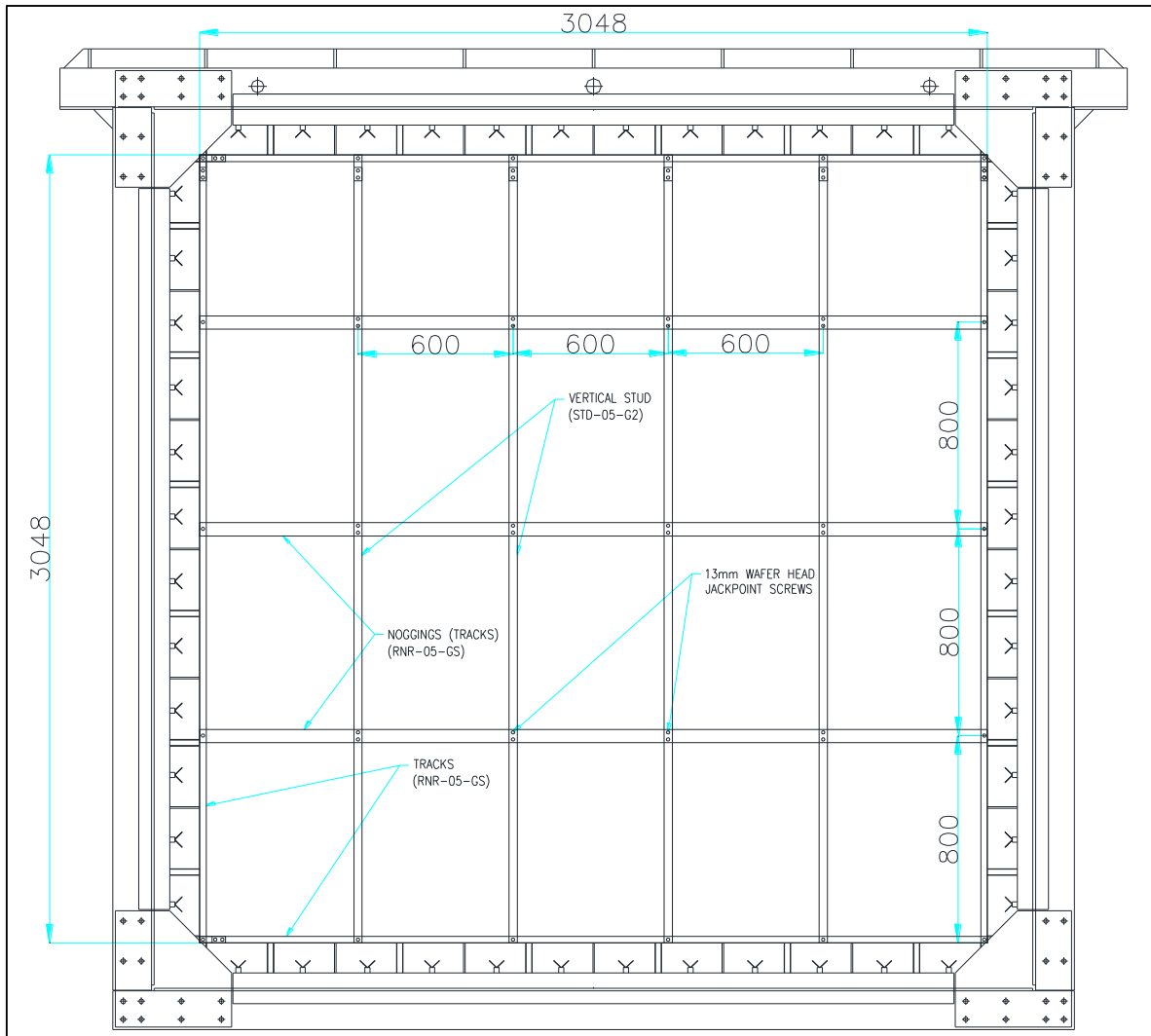


14.APPENDIX 2 – DRAWINGS

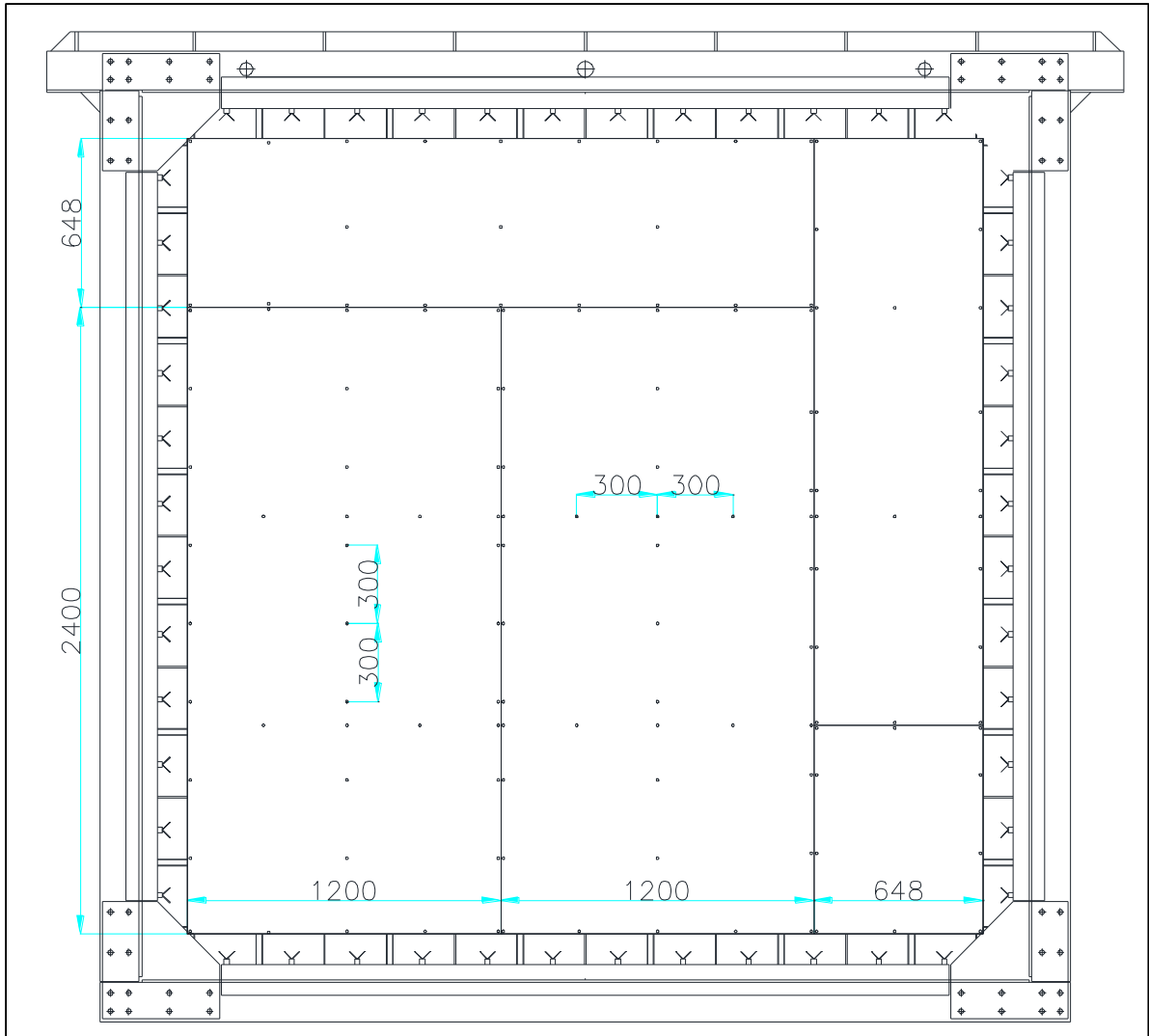
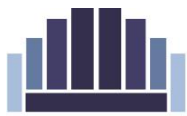


Drawing 1: Overall instrumentation and board labels of the specimen.

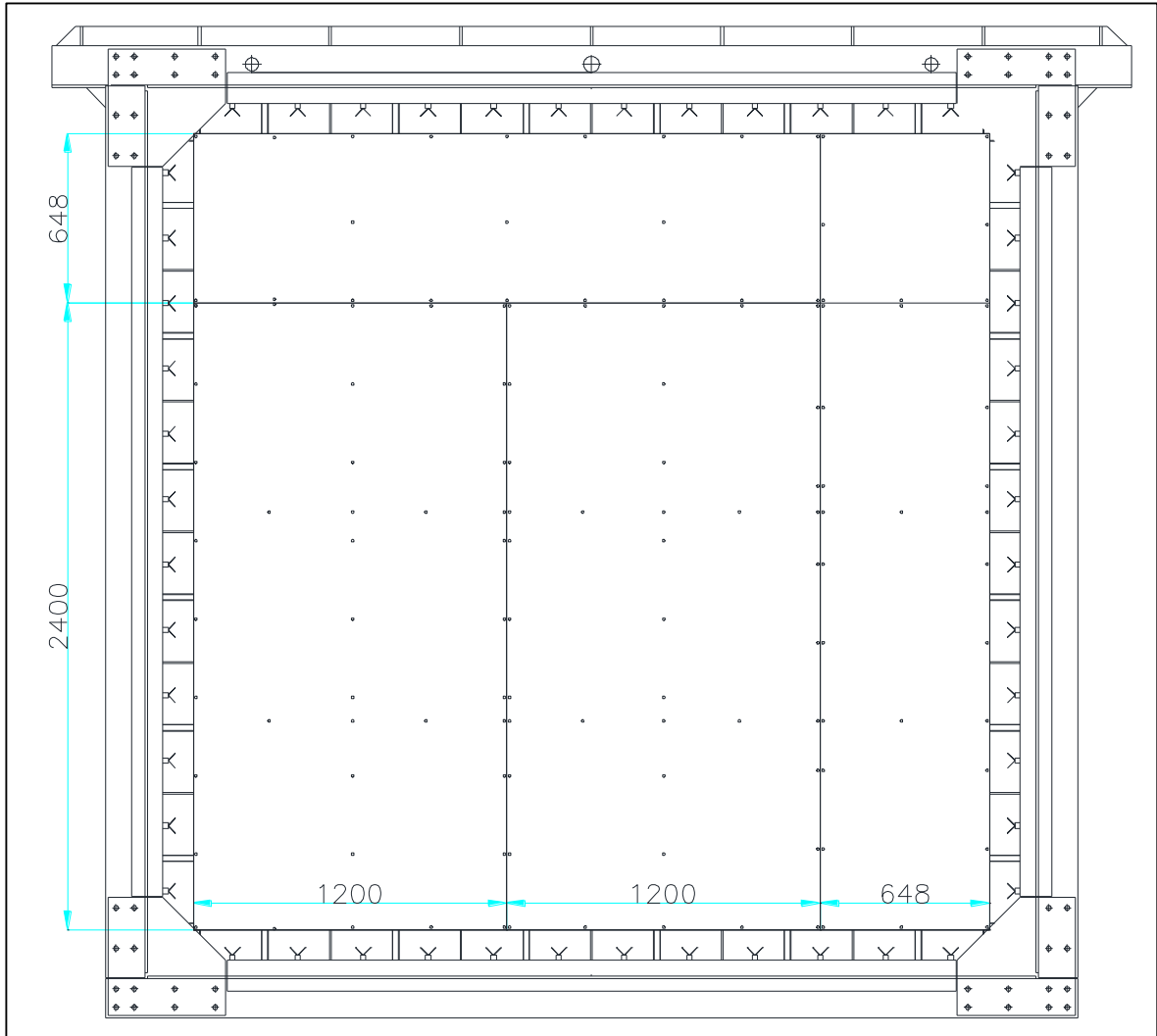
INSTRUMENTATION	
P1	Furnace pressure probe locations
Tc1 - Tc9	Thermocouples to measure furnace temperature
Tc11 – Tc19	Thermocouples to measure the temperature on the unexposed face of the specimen
D1 – D5	Deflection measurement points



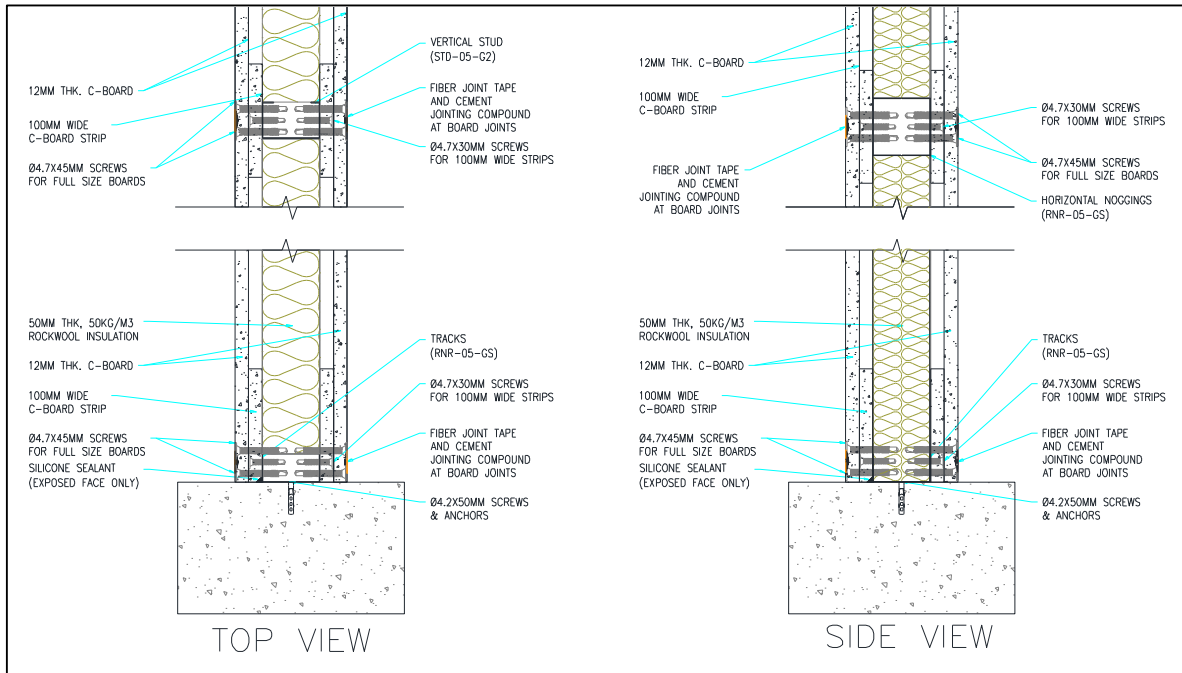
Drawing 2: The overall layout of the framing system.
(Drawing produced by TBWIC)



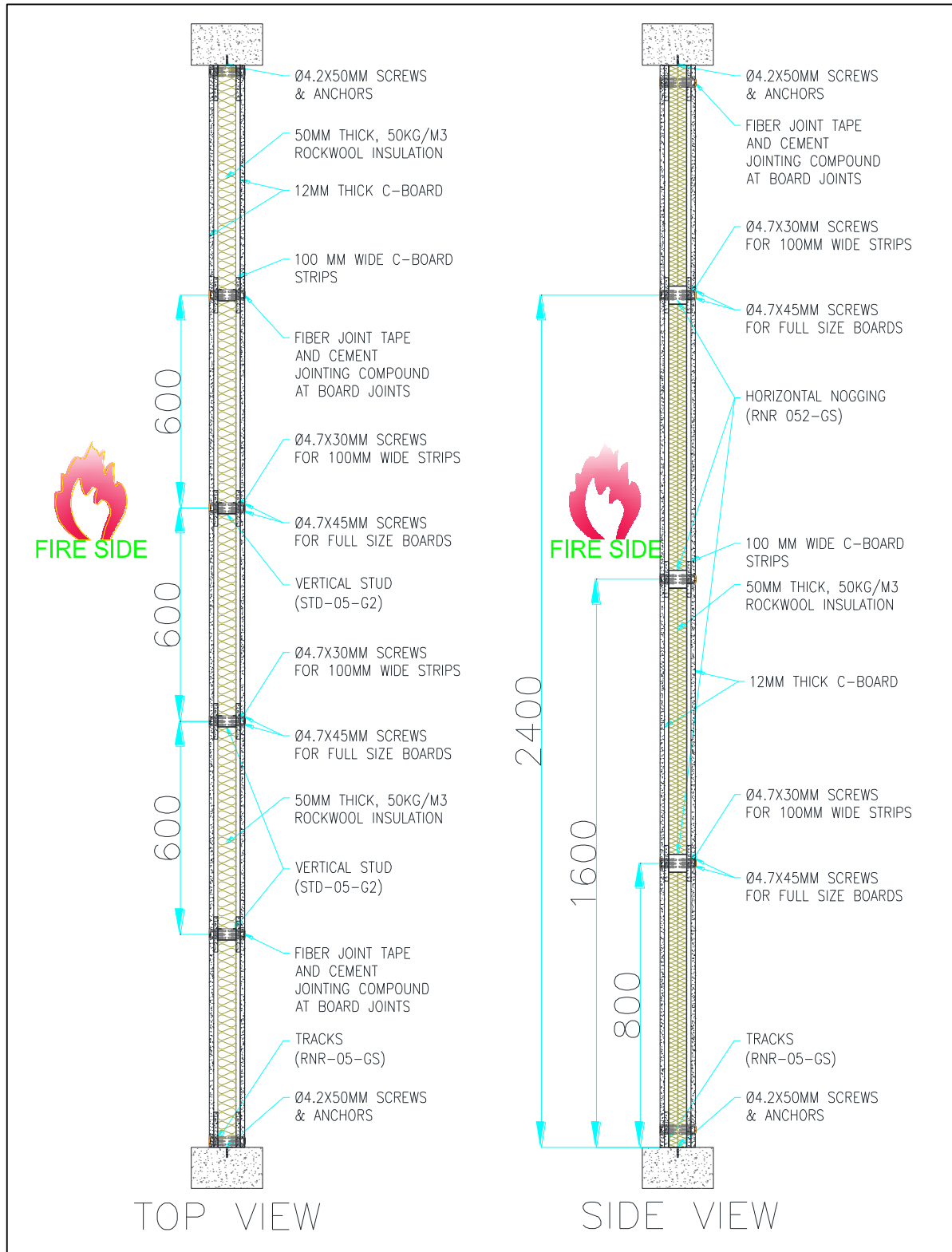
Drawing 3: The layout and orientation of boards on the unexposed face, as seen from the unexposed face.
(Drawing produced by TBWIC)



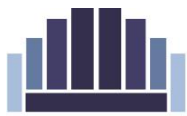
Drawing 4: The layout and orientation of boards on the exposed face (As seen from the unexposed face).
(Drawing produced by TBWIC)



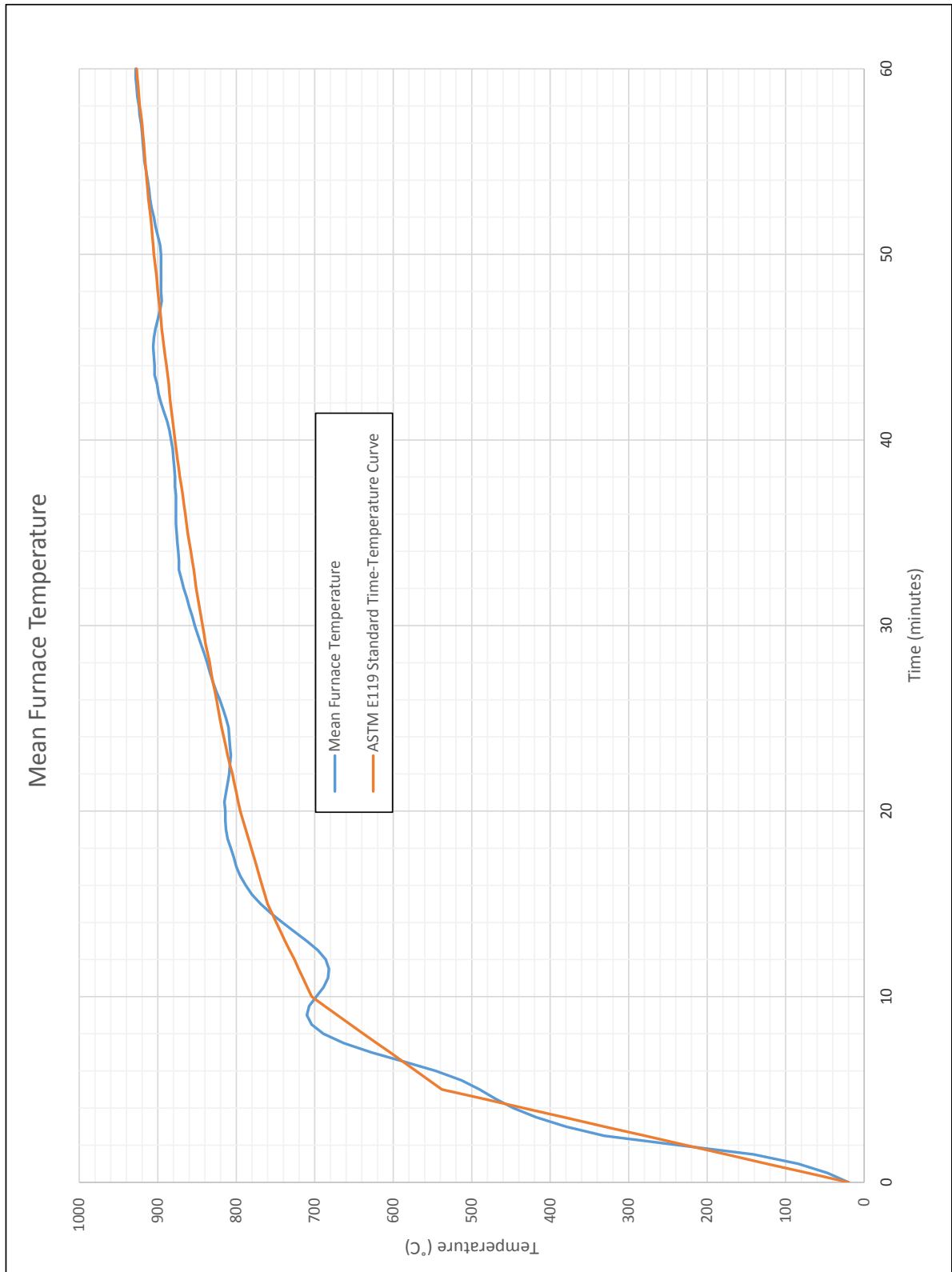
Drawing 5: Top and Side section details of both the termination detail and intermediate fixing details.
(Drawing produced by TBWIC)



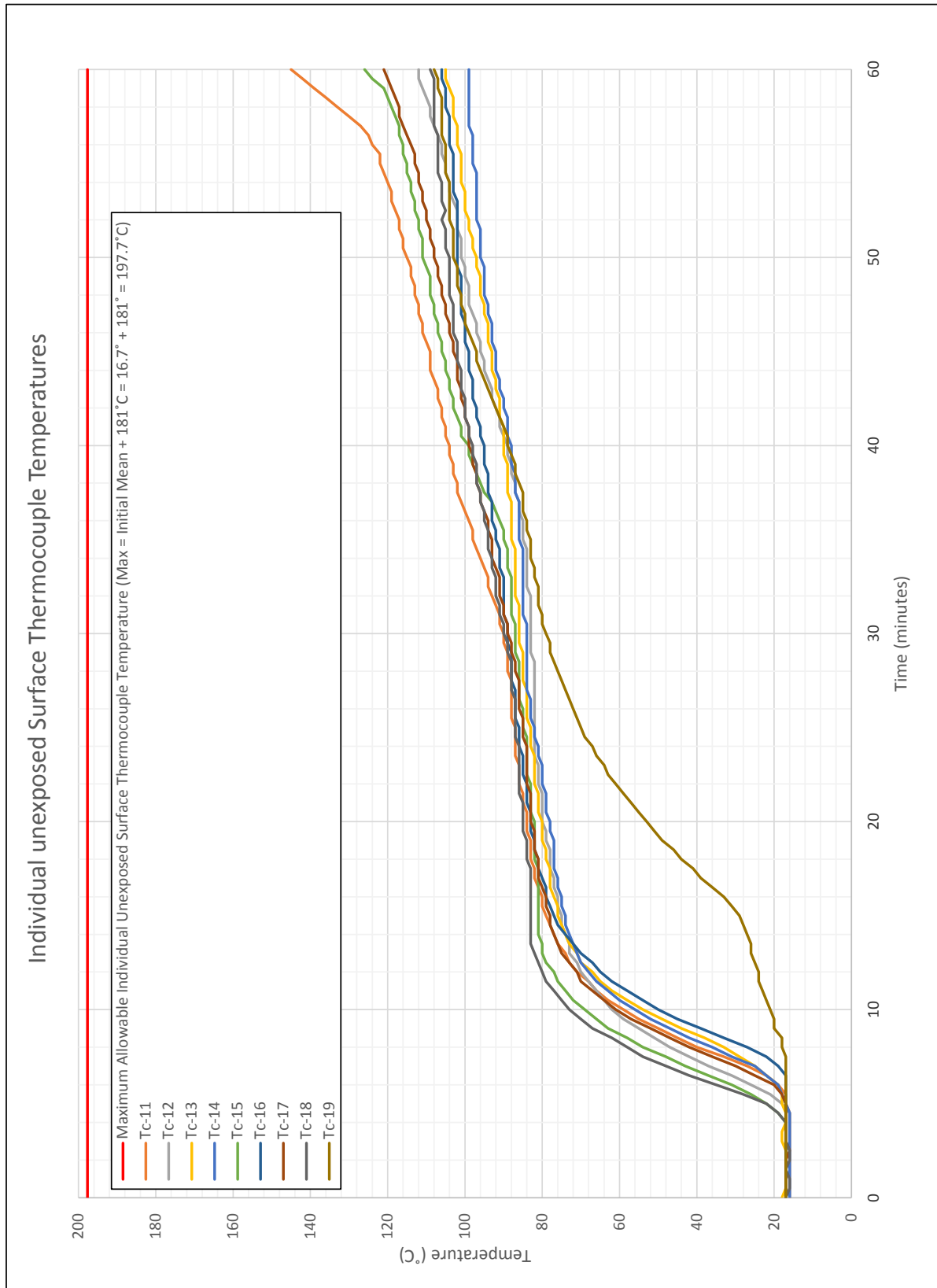
Drawings 6: Top and Side-section views of the test specimen.



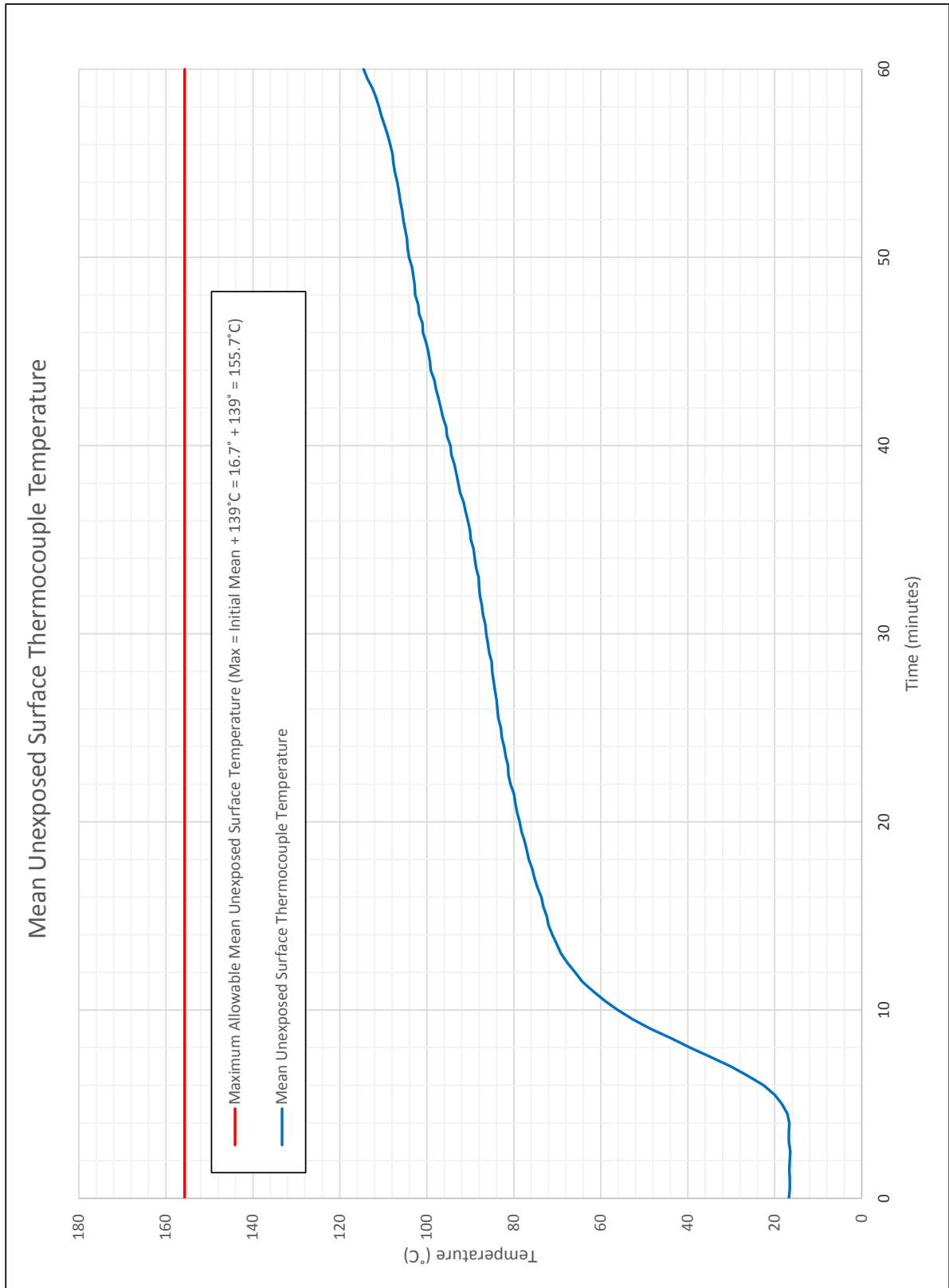
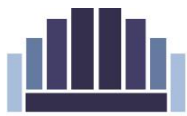
15.APPENDIX 3 – GRAPHS



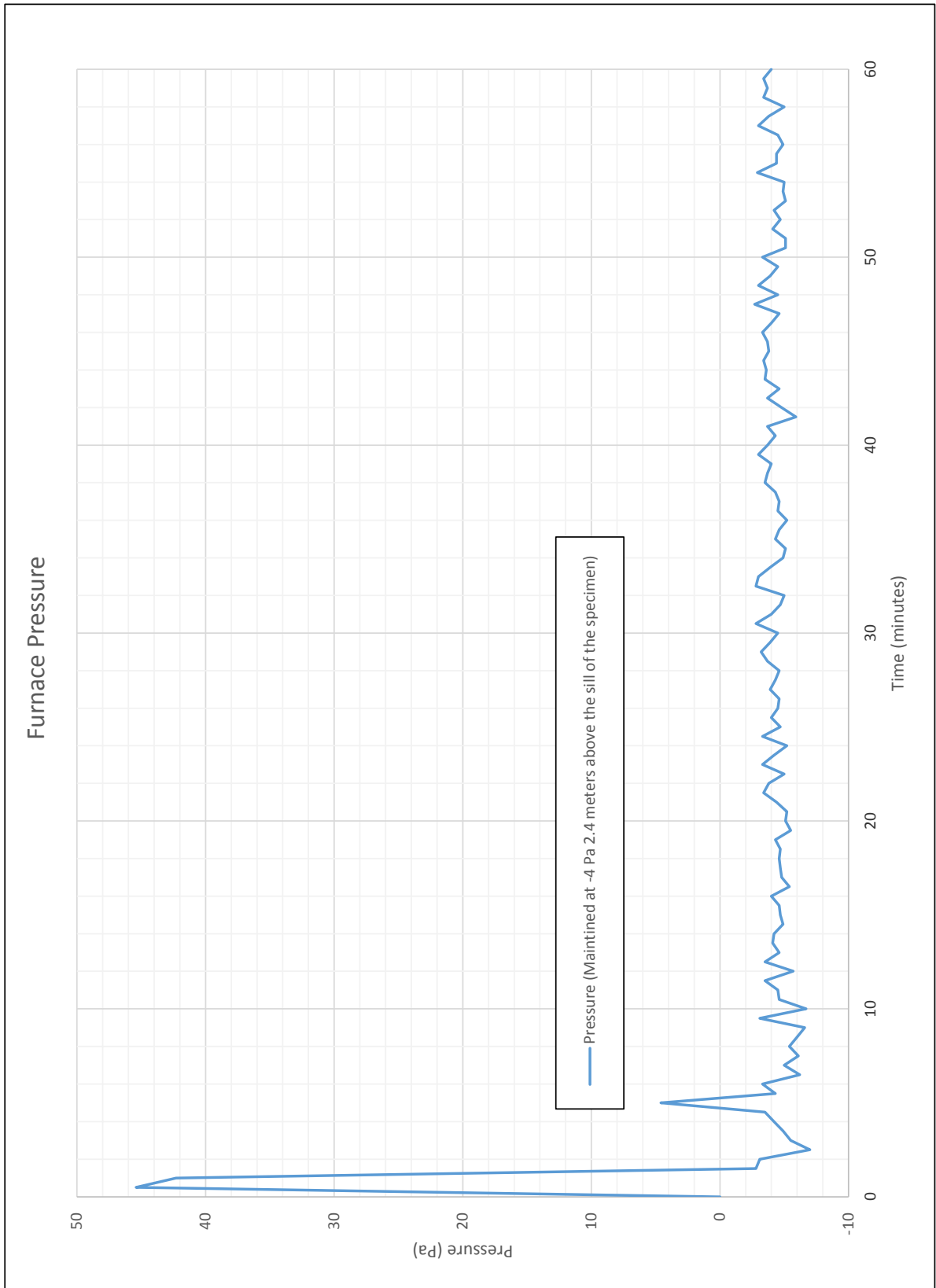
Graph 1: Mean Furnace Temperature



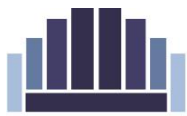
Graph 2: Rise in Temperature at Individual Unexposed Surface Points



Graph 3: Average Rise in Unexposed Surface Temperature



Graph 4: Furnace Pressure



16. APPENDIX 4 – DEFLECTION

The following table shows the deflection measurements in mm. recorded during the test.

(+) are for measurements going into the furnace.

(-) are for measurements coming out of the furnace.

Partition wall deflection measurement:

Time (mins)	Deflection Point				
	D1	D2	D3	D4	D5
0:00	0	0	0	0	0
10:00	2	7	7	11	4
20:00	4	12	11	16	3
30:00	5	24	25	27	3
45:00	7	47	55	55	6
60:00	7	46	51	47	6



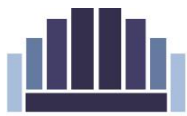
17.APPENDIX 5 – CONSTRUCTION PHOTOGRAPHS



Picture 1: A photo of a vertical c-channel stud being set in the horizontal sill track.



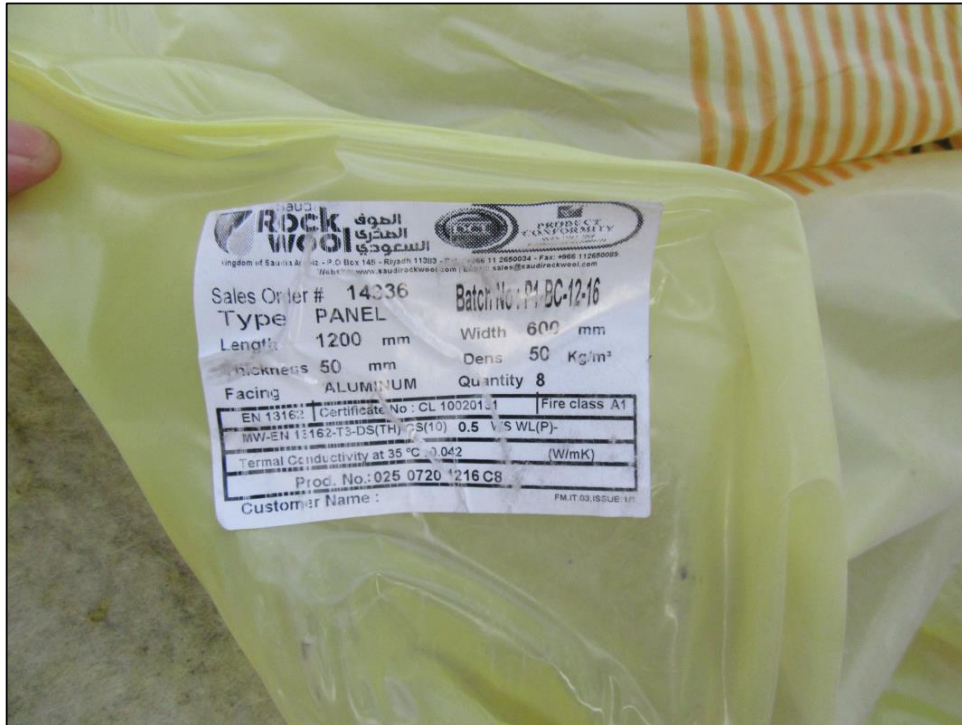
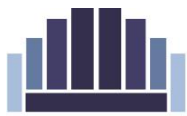
Picture 2: A photo of the tracks being used as horizontal studs and as the vertical termination stud, as well as being lengthened to fit the 3048mm wide test frame.



Picture 3: A photo of the sealant that was used around the perimeter of the framing system on the exposed face of the specimen.



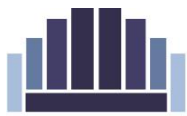
Picture 4: A photo of the rockwool insulation partially installed, as well as the 100mm wide cement board strips on both the exposed and unexposed face of the specimen.



Picture 5: A photo of the product label for the rockwool insulation.



Picture 6: A photo of the cement jointing compound being used on the meeting edges of the boards, and the jointing compound being used alone on the screw heads and specimen perimeter.



18.APPENDIX 6 – TEST PHOTOGRAPHS



Picture 7: The specimen at the beginning of the test.



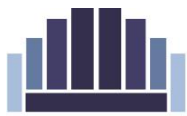
Picture 8: The specimen at 15:00 minutes.



Picture 9: The specimen at 32:00 minutes.



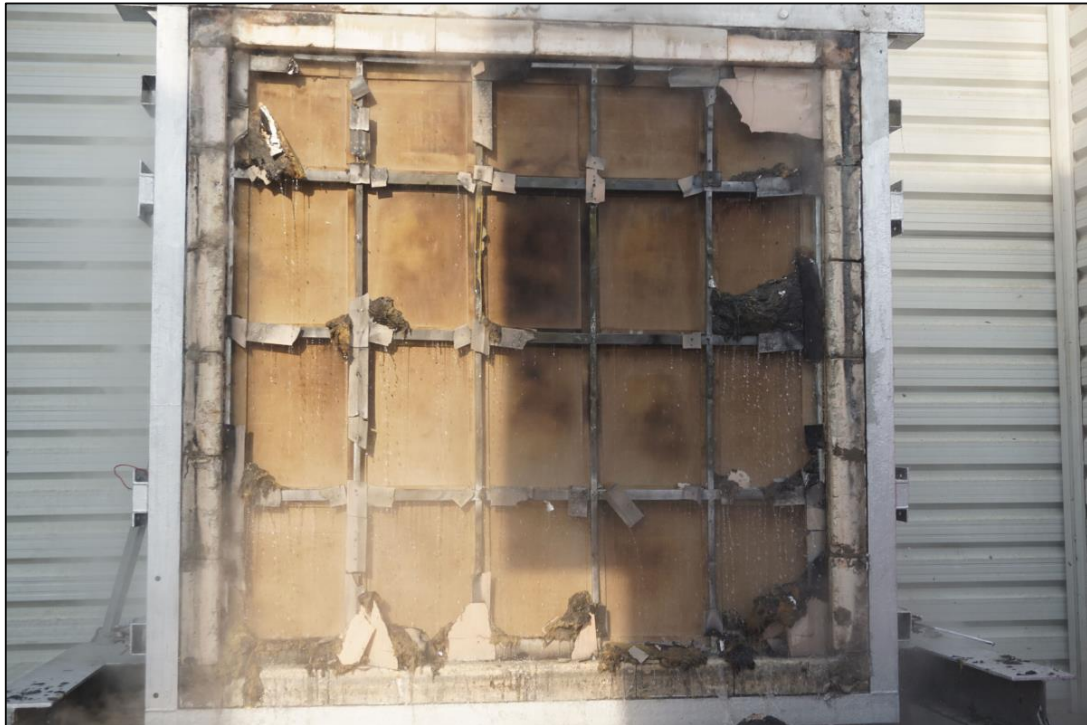
Picture 10: The specimen at 45:00 minutes.



Picture 11: The specimen immediately before the end of the test.



Picture 12: The exposed face of the specimen immediately before the hose stream test. =



Picture 13: The exposed face of the specimen immediately following the hose stream test.



Picture 14: The extend of moisture collection on the unexposed face of the specimen immediately following the hose stream test.

----- End Of Test Report -----



REPORT ON DETERMINATION OF UNIT WEIGHT OF C BOARD

Page 1 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-3
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (18 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Drying period : 24 hrs
Supplier : Client Tested by : JR
Drying Temperature : 90±2° C

Test Data

Test description	Units	Results
Unit Weight	Kg/m ²	24.8

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 6
Method variation : None
Remarks : None



Raja Kumar
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REPORT ON DETERMINATION OF DENSITY OF C BOARD

Page 2 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-3
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (18 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Drying period : 24 hrs
Supplier : Client Tested by : JR
Drying Temperature : 90±2° C

Test Data

Test description	Units	Results
Density	kg/m ³	1381

Test method : ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 6
Method variation : None
Remarks : None



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REPORT ON DETERMINATION OF DIMENSIONS OF C BOARD

Page 3 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-2
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (18 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Tested by : JR
Supplier : Client

Test Data

Test Name	Test Method	Unit	Results
Mean Length	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 7	mm	2439
Mean Width		mm	1220
Mean Total Thickness		mm	17.92

Method variation : None
Remarks : None


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REPORT ON FLEXURAL STRENGTH OF C BOARD

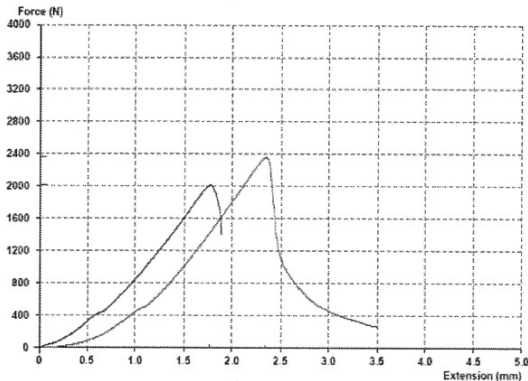
Page 4 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514909 SN 1/1
Contractor	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Consultant	: NP	Sample No	: 16-514909/1-4
Project Name	: NP	Client Ref. No.	: PO BU5-1060-16
Project No.	: NP	Date sample Received	: 11/10/2016
Structure Reference	: NP	Date test started	: 22/10/2016
Sample Description	: C Board (18 mm)	Date test completed	: 22/10/2016
Sample Size	: 305 x 152 x 18 mm	Report Date	: 29/10/2016
Source of sample	: Client	Sample brought in by	: Client
Sampled by	: Client	Speed of Machine	: 25 mm/min
Test Condition	: Equilibrium	Testing Room Temperature	: 23°C
Length of test Specimen	: 305 mm	Relative Humidity	: 50%
Span length	: 254 mm	Tested by	: JR

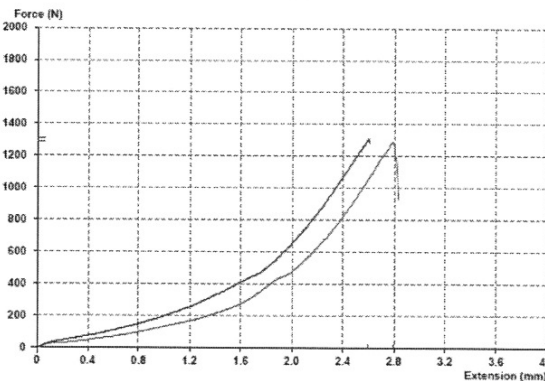
Test Data

Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514909/1	Longitudinal	150.7	17.95	2358	18.50	17.09
16-514909/2		151.2	17.98	2012	15.68	
16-514909/3	Transversal	152.2	17.94	1287	10.01	10.12
16-514909/4		151.4	17.95	1311	10.24	

Longitudinal



Transversal



Test Method : **ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 5**
 Test method variation : None
 Remarks : A fully automatic computerised UTM (Ref-UTM-2) was used to carry out this test.

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Raja Kumar
 Deputy Tech Manager



REPORT ON DETERMINATION OF MOISTURE CONTENT OF C BOARD

Page 5 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 19/10/2016
Sample Description : C Board (18 mm) Date Test Completed : 20/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Room Temperature : 23°C
Date of Sampling : NP Relative Humidity : 50±5%
Sampled By : Client Drying period : 24 hrs
Drying Temperature : 90±2° C Tested by : JR

Test Data

Test Name	Test Method	Results
Moisture Content (%)	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 10	4.91

Method Variation : None
Remarks : None



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REPORT ON DETERMINATION OF WATER ABSORPTION OF C BOARD

Page 6 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date test started : 19/10/2016
Sample Description : C Board (18 mm) Date test completed : 22/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Room Temperature : 23°C
Sampled by : Client Relative Humidity : 50±5%
Immersion period : 48 hours Drying period : 24 hrs
Drying Temperature : 90±2° C Tested by : JR

Test Data

Test Name	Units	Results
Water Absorption	%	28.74

Test Method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 9
Method Variation : None.
Remarks : None


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REPORT ON DETERMINATION OF WATERTIGHTNESS OF C BOARD

Page 7 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1
Consultant : NP Sample brought in by : Client
Project Name : NP Date sample received : 11/10/2016
Project No. : NP Date test started : 16/10/2016
Sample Description : C Board (18 mm) Date test completed : 17/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Sampled by : Client Specimen size : 610 x 508 mm
Manufacturer/Source : Client Hight of water : 50 mm
Supplier : Client Thickness of Specimen : 18 mm
Test duration : 24 hrs Tested by : JR

Test Data

Test description	Results
WaterTightness	No water drops found on the under side of the sheet.

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 11
Method variation : None
Remarks : None


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Email: mld@eim.ae Website: www.mlab.ae



REPORT ON DETERMINATION OF MOISTURE MOVEMENT OF C BOARD

Page 8 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 16/10/2016
Sample Description : C Board (18 mm) Date Test Completed : 17/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Temperature : 23°C
Size of Specimen : 76 X 305 mm Relative Humidity : 90±5%
Sampled By : Client Tested by : JR

Test Data

Test Name	Test Method	Results
Linear Change (%)	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 8	0.06

Method Variation : None

Remarks : None


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Raja Kumar
Deputy Tech Manager



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REPORT ON DETERMINATION OF DIRECT SCREW WITHDRAWAL OF C BOARD

Page 11 of 12

Client : ASK Gypsum Factory Ltd Report No : 514909 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514909/1
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 01/11/2016
Sample Description : C Board (18 mm) Date Test Completed : 01/11/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 02/11/2016
Source : Client Testing Room Temperature : 24°C
Sample brought in by : Client Relative Humidity : 50±5%
Sampled By : Client Tested by : JR
Diameter of Screw : 3.50 mm
Speed of machine : 1.5 mm/min

Test Data

Sample ID	Test Standard	Test Name	Unit	Test Result
16-514909/1	ASTM D 1037-12, Clause 16	Direct Screw Withdrawal	N	1415

Method Variation : None

Remarks : None



Authorized Signatory
Raja Kumar
Deputy Tech Manager

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REPORT ON PH VALUE OF FIBER CEMENT BOARD

Page : 12 of 12

Client : Ask Gypsum Factory
Address : P.O. Box 31382, Yaubu, KSA
Contractor : NP
Consultant : NP
Project name : NP
Project No. : NP
Project Location : NP
Sample Description : **Fiber Cement Board (300x300x18mm)**
Source : Client
Client's Ref. : PO BU5-1060-16
Sampling date/time : 11/10/2016
Sampled by : Client
Sample brought by : Client

Report No. : **514909** SN 1/1
Lab.Sample No. : **16-514909/12**
Lab Project No. : **P-3714**
Sampling Certificate : NP
Sampling Method : NP
Sample Size (No.) : 1
Lot No. : NP
Lot Size (m³) : NP
Date received : 11/10/2016
Date test Started : 12/10/2016
Date Test Completed : 13/10/2016
Report Date : 15/10/2016
Tested by : MSH

TEST DATA:

Test Name	Test Method	Unit	Results
pH Value @ 25°C	BS 1377: Part 3: 1990 Cl. 9 Amd. 9028:1996	-	11.7

Preparation Method : BS 1377: Part 3: 1990 Amd. 9028-96
Test method variation : None
Remarks : None



Syed N. Rizvi
Authorized Signatory
007
سيد نواز رضوي
Syed N. Rizvi
Manager (OGEC)

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R-FCB-01
Issue No. 1
Issued on: 30/10/2016



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REPORT ON DETERMINATION OF FREEZE-THAW RESISTANCE OF C BOARD

Page 1 of 2

Client : ASK Gypsum Factory Ltd
Address : Jeddah, Saudi Arabia
Contractor : NP
Consultant : NP
Project Name : NP
Project No. : NP
Sample Name : C Board (18 mm)
Sender's No. : PO BU5-1060-16
Source of Sample : Client
Size of Specimen : 305 x 152 mm
Thickness of specimen : 18 mm
Sampled by : Client
Sample brought in by : Client

Report No : 514909 SN 1/1
Lab Project No : P-3714
Sample No : 16-514909/1-8
Date of Sampling : NP
Date Sample Received : 11/10/2016
Date Test Started : 19/10/2016
Date Test Completed : 16/11/2016
Report Date : 19/11/2016
Water temperature : 5°C
Freeze Temperature : -20±2°C
Thaw Temperature : 20±2°C
No. of cycles : 50
Span length (mm) : 254
Tested by : JR

Introduction

ASK Gypsum Factory appointed MLab for determination of Freeze-Thaw resistance of C Board in accordance with ASTM C 1185-03. Two set of C board was immersed in water at 5°C for 48 hours, after immersion period one set of specimens were tested for flexural strength. The another set of specimens were sealed in a plastic bag and cool it at -20±2°C for one hour and thaw at 20±2°C for one hour. The Freeze-Thaw cycle was repeated for 50 cycles. Upon completion of Free-Thaw cycles the specimes were tested for flexural strength in saturated condition in accordance with ASTM C 1185-03 section 5.

Test Data for Flexural Strength

Control Specimens						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514909/1	Longitudinal	151.3	17.88	1480	11.7	11.6
16-514909/2		152.2	17.90	1477	11.5	
16-514909/3	Transversal	152.6	17.91	806	6.27	6.39
16-514909/4		151.2	17.93	830	6.51	

After Freeze-Thaw condition						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514909/5	Longitudinal	151.7	17.93	1237	9.66	9.63
16-514909/6		151.9	17.91	1227	9.59	
16-514909/7	Transversal	151.1	17.93	699	5.48	5.46
16-514909/8		152.7	17.89	698	5.44	

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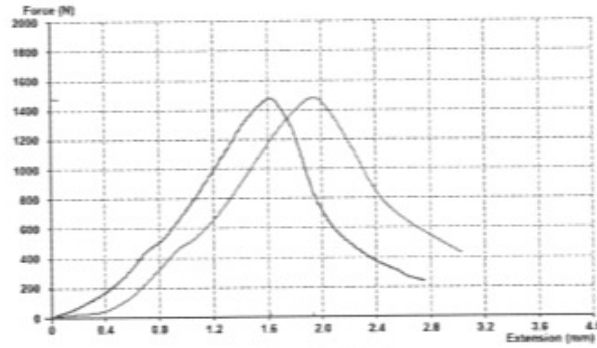


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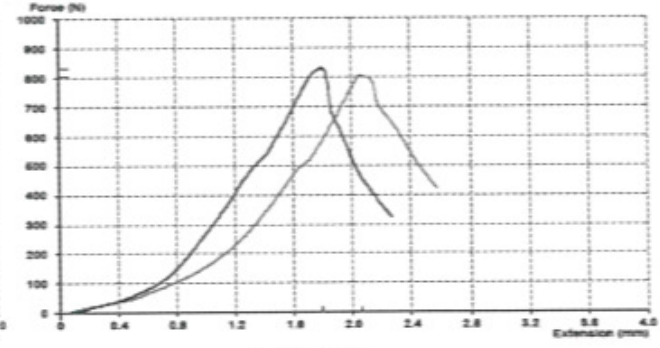


Test Graph:

Control Specimens Test

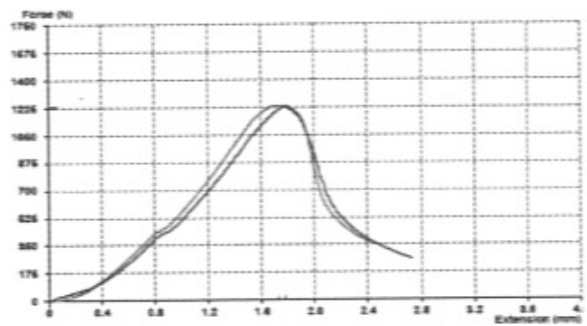


Longitudinal

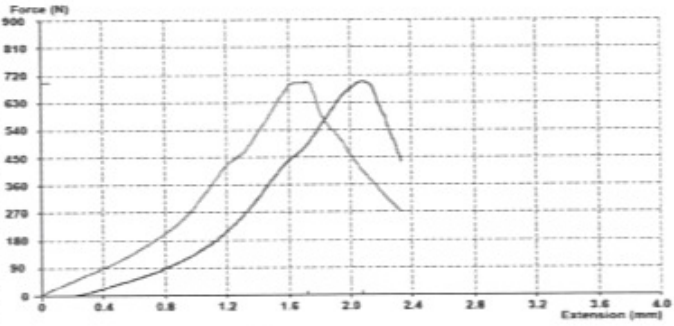


Transverse

After Freeze-Thaw condition Test



Longitudinal



Transverse

Summary:

Test Name	Results (MPa)		Ratio of retained Strength (%)
	Controlled	After Freeze-Thaw condition	
Flexural Strength , Longitudinal	11.6	9.63	83.0
Flexural Strength, Transversal	6.39	5.56	87.0

Test Standard : ASTM C1186-08(Reapproved 2012), ASTM C1185-03
 Method Variation : None
 Remarks : A Fully automatic computerized UTM was used for tensile property.



Authorized Signatory
 راجا كومار
 Raja Kumar
 Deputy Tech Manager

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REPORT ON DETERMINATION OF UNIT WEIGHT OF C BOARD

Page 1 of 12

Client : ASK Gypsum Factory Ltd Report No : 514907 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514907/1-3
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (12 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Drying period : 24 hrs
Supplier : Client Tested by : JR
Drying Temperature : 90±2°C

Test Data

Test description	Units	Results
Unit Weight	Kg/m ²	16.3

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 6
Method variation : None
Remarks : None



Authorized Signatory
012 راجا كومار
Raja Kumar
Deputy Tech. Manager

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REPORT ON DETERMINATION OF DENSITY OF C BOARD

Page 2 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514907 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514907/1-3
Consultant	: NP	Sample brought in by	: Client
Project Name	: NP	Date sample received	: 11/10/2016
Project No.	: NP	Date test started	: 19/10/2016
Sample Description	: C Board (12 mm)	Date test completed	: 19/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date	: 29/10/2016
Sampled by	: Client	Drying Temperature	: 90±2°C
Manufacturer/Source	: Client	Drying period	: 24 hrs
Supplier	: Client	Tested by	: JR

Test Data

Test description	Units	Results
Density	kg/m ³	1309

Test method : ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 6
Method variation : None
Remarks : None

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REPORT ON DETERMINATION OF DIMENSIONS OF C BOARD

Page 3 of 12

Client : ASK Gypsum Factory Ltd Report No : 514907 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514907/1-2
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (12 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Tested by : JR
Supplier : Client

Test Data

Test Name	Test Method	Unit	Results
Mean Length	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 7	mm	2439
Mean Width		mm	1219
Mean Total Thickness		mm	12.42

Method variation : None
Remarks : None


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Raja Kumar
Deputy Tech Manager



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REPORT ON FLEXURAL STRENGTH OF C BOARD

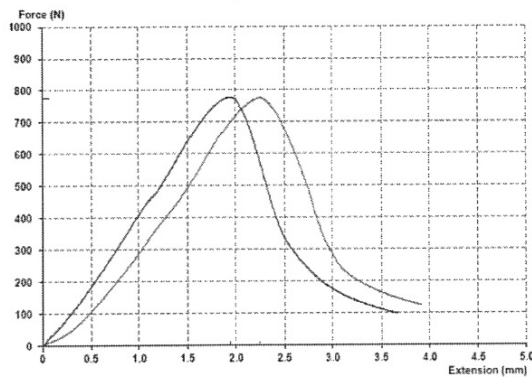
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Client : ASK Gypsum Factory Ltd Report No : 514907 SN 1/1
Contractor : Jeddah, Saudi Arabia Lab Project No : P-3714
Consultant : NP Sample No : 16-514907/1-4
Project Name : NP Client Ref. No. : PO BU5-1060-16
Project No. : NP Date sample Received : 11/10/2016
Structure Reference : NP Date test started : 22/10/2016
Sample Description : C Board (12 mm) Date test completed : 22/10/2016
Sample Size : 305 x 152 x 12 mm Report Date : 29/10/2016
Source of sample : Client Sample brought in by : Client
Sampled by : Client Speed of Machine : 25 mm/min
Test Condition : Equilibrium Testing Room Temperature : 23°C
Length of test Specimen : 305 mm Relative Humidity : 50%
Span length : 254 mm Tested by : JR

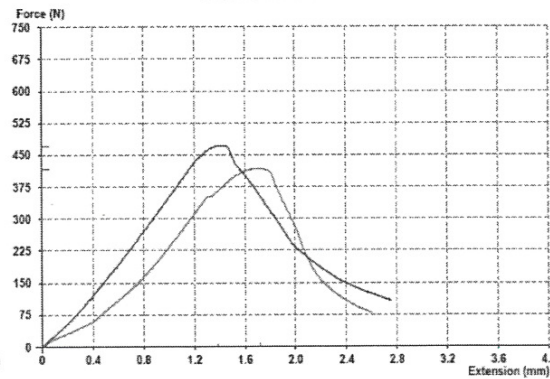
Test Data

Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514907/1	Longitudinal	151.8	12.40	775	12.65	12.74
16-514907/2		150.7	12.37	777	12.84	
16-514907/3	Transversal	151.7	12.41	420	6.85	7.24
16-514907/4		151.7	12.44	470	7.63	

Longitudinal



Transversal



Test Method : ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 5
Test method variation : None
Remarks : A fully automatic computerised UTM (Ref-UTM-2) was used to carry out this test.



Authorized Signatory
Raja Kumar
Tech. Manager

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REPORT ON DETERMINATION OF MOISTURE CONTENT OF C BOARD

Page 5 of 12

Client : ASK Gypsum Factory Ltd Report No : 514907 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514907/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 19/10/2016
Sample Description : C Board (12 mm) Date Test Completed : 20/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Room Temperature : 23°C
Date of Sampling : NP Relative Humidity : 50±5%
Sampled By : Client Drying period : 24 hrs
Drying temperature : 90±2°C Tested by : JR

Test Data

Test Name	Test Method	Results
Moisture Content (%)	ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 10	9.86

Method Variation : None
Remarks : None


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REPORT ON DETERMINATION OF WATER ABSORPTION OF C BOARD

Page 6 of 12

Client : ASK Gypsum Factory Ltd
Address : Jeddah, Saudi Arabia
Contractor : NP
Consultant : NP
Project : NP
Sample Description : **C Board (12 mm)**
Client Ref. No. : PO BU5-1060-16
Source : Client
Sampled by : Client
Immersion period : 48 hours
Drying temperature : 90±2°C

Report No : **514907 SN 1/1**
Lab Project No : **P-3714**
Sample No : 16-514907/1-3
Date Sample Received : 11/10/2016
Date test started : 19/10/2016
Date test completed : 22/10/2016
Report Date : 29/10/2016
Testing Room Temperature : 23°C
Relative Humidity : 50±5%
Drying period : 24 hrs
Tested by : JR

Test Data

Test Name	Units	Results
Water Absorption	%	31.98

Test Method : **ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 9**
Method Variation : None.
Remarks : None


Authorized Signatory
012
راجا كومار
Raja Kumar
Deputy Tech. Manager



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REPORT ON DETERMINATION OF WATERTIGHTNESS OF C BOARD

Page 7 of 12

Client	: ASK Gypsum Factory Ltd	Report No :	514907 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No :	P-3714
Contractor	: NP	Sample No :	16-514907/1
Consultant	: NP	Sample brought in by :	Client
Project Name	: NP	Date sample received :	11/10/2016
Project No.	: NP	Date test started :	15/10/2016
Sample Description	: C Board (12 mm)	Date test completed :	16/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date :	29/10/2016
Sampled by	: Client	Specimen size :	610 x 508 mm
Manufacturer/Source	: Client	Hight of water :	50 mm
Supplier	: Client	Thickness of Specimen :	12 mm
Test duration	: 24 hrs	Tested by :	JR

Test Data

Test description	Results
WaterTightness	No water drops found on the under side of the sheet.

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 11
Method variation : None
Remarks : None


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REPORT ON DETERMINATION OF MOISTURE MOVEMENT OF C BOARD

Page 8 of 12

Client : ASK Gypsum Factory Ltd
Address : Jeddah, Saudi Arabia
Contractor : NP
Consultant : NP
Project : NP
Sample Description : **C Board (12 mm)**
Client Ref. No. : PO BU5-1060-16
Source : Client
Date of Sampling : NP
Sampled By : Client
Drying Temperature :
Report No : **514907 SN 1/1**
Lab Project No : **P-3714**
Sample No : 16-514907/1-3
Date Sample Received : 11/10/2016
Date Test Started : 16/10/2016
Date Test Completed : 17/10/2016
Report Date : 29/10/2016
Testing Temperature : 23°C
Relative Humidity : 90±5%
Size of Specimen : 76 X 305 mm
Tested by : JR

Test Data

Test Name	Test Method	Results
Linear Change (%)	ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 8	0.09

Method Variation : None
Remarks : None


Authorized Signatory



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REPORT ON DETERMINATION OF DIRECT SCREW WITHDRAWAL OF C BOARD

Page 11 of 12

Client : ASK Gypsum Factory Ltd Report No : 514907 SN 1/1
Address : Jeddah,Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514907/1
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 01/11/2016
Sample Description : C Board (12 mm) Date Test Completed : 01/11/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 02/11/2016
Source : Client Testing Room Temperature : 24°C
Sample brought in by : Client Relative Humidity : 50±5%
Sampled By : Client Tested by : JR
Diameter of Screw : 3.50 mm
Speed of machine : 1.5 mm/min

Test Data

Sample ID	Test Standard	Test Name	Unit	Test Result
16-514907/1	ASTM D 1037-12, Clause 16	Direct Screw Withdrawal	N	742

Method Variation : None
Remarks : None



Authorized Signatory



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REPORT ON PH VALUE OF FIBER CEMENT BOARD

Page : 12 of 12

Client : Ask Gypsum Factory
Address : P.O. Box 31382, Yaubu, KSA
Contractor : NP
Consultant : NP
Project name : NP
Project No. : NP
Project Location : NP
Sample Description : **Fiber Cement Board (300x300x12mm)**
Source : Client
Client's Ref. : PO BU5-1060-16
Sampling date/time : 11/10/2016
Sampled by : Client
Sample brought by : Client

Report No. : **514907** SN 1/1
Lab.Sample No. : **16-514907/12**
Lab Project No. : **P-3714**
Sampling Certificate : NP
Sampling Method : NP
Sample Size (No.) : 1
Lot No. : NP
Lot Size (m³) : NP
Date received : 11/10/2016
Date test Started : 12/10/2016
Date Test Completed : 13/10/2016
Report Date : 15/10/2016
Tested by : MSH

TEST DATA:

Test Name	Test Method	Unit	Results
pH Value @ 25°C	BS 1377: Part 3: 1990 Cl. 9 Amd. 9028:1996	-	9.9

Preparation Method : BS 1377: Part 3: 1990 Amd. 9028-96
Test method variation : None
Remarks : None



Syed N. Rizvi
Authorized Signatory
007
سيد نواز رضوي
Syed N. Rizvi
Manager (OGEC)

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R-FCB-01

Issue No.1

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Certificate Number: SNR 30362926/4/Q



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REPORT ON DETERMINATION OF FREEZE-THAW RESISTANCE OF C BOARD

Page 1 of 2

Client	: ASK Gypsum Factory Ltd	Report No :	514907 SN 1/1
Address	: Jeddah,Saudi Arabia	Lab Project No :	P-3714
Contractor	: NP	Sample No :	16-514907/1-8
Consultant	: NP	Date of Sampling :	NP
Project Name	: NP	Date Sample Received :	11/10/2016
Project No.	: NP	Date Test Started :	19/10/2016
Sample Name	: C Board (12 mm)	Date Test Completed :	16/11/2016
Sender's No.	: PO BU5-1060-16	Report Date :	19/11/2016
Source of Sample	: Client	Water temperature :	5°C
Size of Specimen	: 305 x 152 mm	Freeze Temperature :	-20±2°C
Thickness of specimen	: 12 mm	Thaw Temperature :	20±2°C
Sampled by	: Client	No. of cycles:	50
Sample brought in by	: Client	Span length (mm):	254
		Tested by :	JR

Introduction

ASK Gypsum Factory appointed MLab for determination of Freeze-Thaw resistance of C Board in accordance with ASTM C 1185-03. Two set of C board was immersed in water at 5°C for 48 hours, after immersion period one set of specimens were tested for flexural strength. The another set of specimens were sealed in a plastic bag and cool it at -20±2°C for one hour and thaw at 20±2°C for one hour. The Freeze-Thaw cycle was repeated for 50 cycles. Upon completion of Free-Thaw cycles the specimes were tested for flexural strength in saturated condition in accordance with ASTM C 1185-03 section 5.

Test Data for Flexural Strength

Control Specimens						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Fixeural Strength (MPa)
16-514907/1	Longitudinal	152.6	12.40	605	9.82	9.61
16-514907/2		151.6	12.39	574	9.40	
16-514907/3	Transversal	151.6	12.41	374	6.10	5.91
16-514907/4		153.2	12.40	354	5.73	

After Freeze-Thaw condition						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Fixeural Strength (MPa)
16-514907/5	Longitudinal	151.5	12.43	493	8.02	7.97
16-514907/6		151.7	12.42	486	7.91	
16-514907/7	Transversal	150.7	12.29	272	4.55	4.77
16-514907/8		151.5	12.39	304	4.98	



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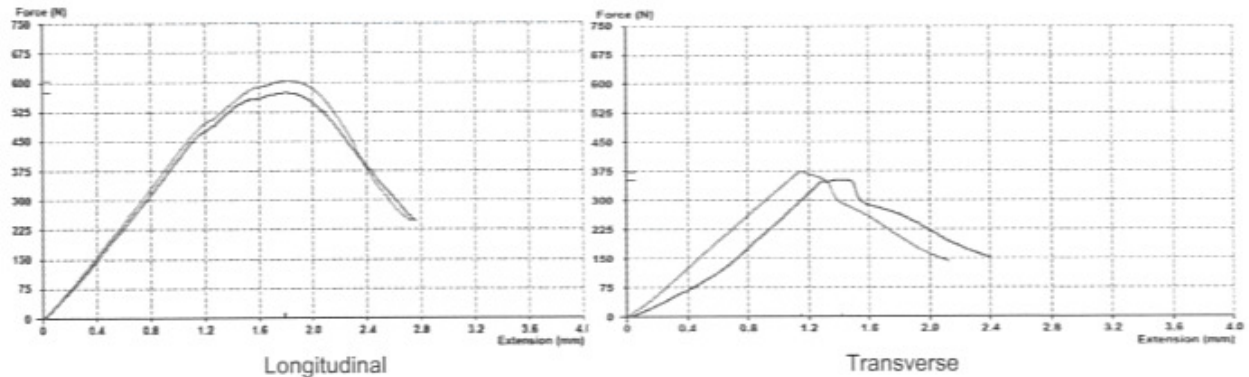
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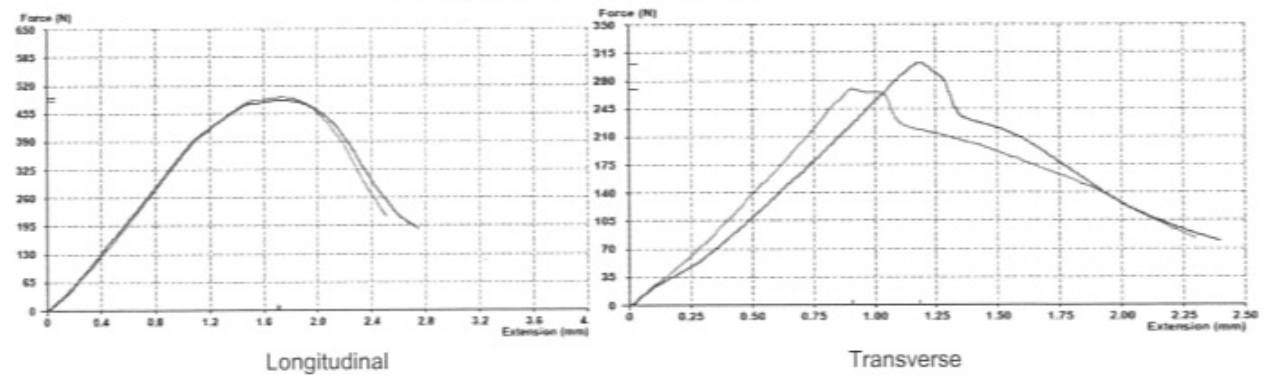
Test Graph:

Page 2 of 2

Control Specimens Test



After Freeze-Thaw condition Test



Summary:

Test Name	Results (MPa)		Ratio of retained Strength (%)
	Controlled	After Freeze-Thaw condition	
Flexural Strength , Longitudinal	9.6	7.97	82.9
Flexural Strength, Transversal	5.91	4.77	80.7

Test Standard : ASTM C1186-08(Reapproved 2012), ASTM C1185-03
 Method Variation : None
 Remarks : A Fully automatic computerized UTM was used for tensile property.



Authorized Signatory
 راجا كومار
 Raja Kumar
 Youth Tech Manager

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REPORT ON DETERMINATION OF UNIT WEIGHT OF C BOARD

Page 1 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514906 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514906/1-3
Consultant	: NP	Date of Sampling	: NP
Project Name	: NP	Sample brought in by	: Client
Project No.	: NP	Date sample received	: 11/10/2016
Sample Description	: C Board (9 mm)	Date test started	: 19/10/2016
Client Ref. No.	: PO BU5-1060-16	Date test completed	: 19/10/2016
Sampled by	: Client	Report Date	: 29/10/2016
Manufacturer/Source	: Client	Drying Temperature	: 90±2° C
Supplier	: Client	Tested by	: JR
Drying period	: 24 hrs		

Test Data

Test description	Units	Results
Unit Weight	Kg/m ²	12.1

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 6
Method variation : None
Remarks : None


Authorized Signatory

راجا كومار
Raja Kumar
Deputy Tech Manager



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REPORT ON DETERMINATION OF DENSITY OF C BOARD

Page 2 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514906 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514906/1-3
Consultant	: NP	Date of Sampling	: NP
Project Name	: NP	Sample brought in by	: Client
Project No.	: NP	Date sample received	: 11/10/2016
Sample Description	: C Board (9 mm)	Date test started	: 19/10/2016
Client Ref. No.	: PO BU5-1060-16	Date test completed	: 19/10/2016
Sampled by	: Client	Report Date	: 29/10/2016
Manufacturer/Source	: Client	Drying Temperature	: 90±2° C
Supplier	: Client	Tested by	: JR
Drying period	: 24 hrs		

Test Data

Test description	Units	Results
Density	kg/m ³	1355

Test method : ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 6
Method variation : None
Remarks : None


Authorized Signatory

راجا كومر
Raja Kumar
Tech Manager



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REPORT ON DETERMINATION OF DIMENSIONS OF C BOARD

Page 3 of 12

Client : ASK Gypsum Factory Ltd Report No : 514906 SN 1/1
Address : Jeddah,Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514906/1-2
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (9 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Tested by : JR
Supplier : Client

Test Data

Test Name	Test Method	Unit	Results
Mean Length	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 7	mm	2439
Mean Width		mm	1220
Mean Total Thickness		mm	9.02

Method variation : None
Remarks : None


Authorized Signatory
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Raja Kumar
Deputy Tech. Manager



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REPORT ON FLEXURAL STRENGTH OF C BOARD

Page 4 of 12

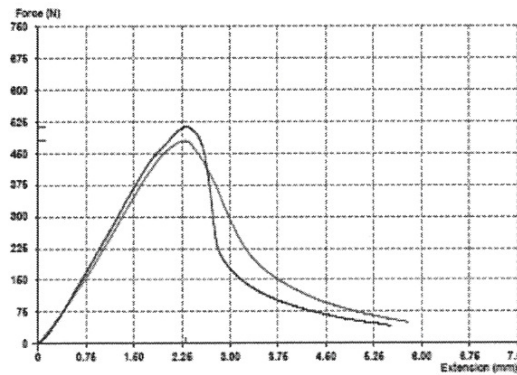
Client : ASK Gypsum Factory Ltd
Contractor : Jeddah, Saudi Arabia
Consultant : NP
Project Name : NP
Project No. : NP
Structure Reference : NP
Sample Description : C Board (9 mm)
Sample Size : 305 x 152 x 9 mm
Source of sample : Client
Sampled by : Client
Test Condition : Equilibrium
Length of test Specimen : 305 mm
Span length : 254 mm

Report No : 514906 SN 1/1
Lab Project No : P-3714
Sample No : 16-514906/1-4
Client Ref. No. : PO BU5-1060-16
Date sample Received : 11/10/2016
Date test started : 22/10/2016
Date test completed : 22/10/2016
Report Date : 29/10/2016
Sample brought in by : Client
Speed of Machine : 25 mm/min
Testing Room Temperature : 23°C
Relative Humidity : 50%
Tested by : JR

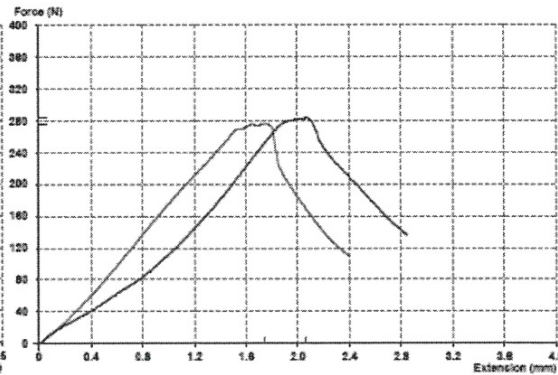
Test Data

Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514906/1	Longitudinal	151.9	9.01	478	14.77	15.20
16-514906/2		152.5	9.04	511	15.62	
16-514906/3	Transversal	152.4	9.01	275	8.47	8.55
16-514906/4		152.3	9.04	282	8.63	

Longitudinal



Transversal



Test Method : ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 5
Test method variation : None
Remarks : A fully automatic computerised UTM (Ref-UTM-2) was used to carry out this test.



Raja Kumar
Raja Kumar
Tech Manager

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REPORT ON DETERMINATION OF MOISTURE CONTENT OF C BOARD

Page 5 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514906 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514906/1-3
Consultant	: NP	Date Sample Received	: 11/10/2016
Project	: NP	Date Test Started	: 19/10/2016
Sample Description	: C Board (9 mm)	Date Test Completed	: 20/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date	: 29/10/2016
Source	: Client	Testing Room Temperature	: 23°C
Date of Sampling	: NP	Relative Humidity	: 50±5%
Sampled By	: Client	Drying Temperature	: 90±2° C
Drying period	: 24 hrs	Tested by	: JR

Test Data

Test Name	Test Method	Results
Moisture Content (%)	ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 10	6.78

Method Variation : None
Remarks : None


Authorized Signatory
راجا كومار
Raja Kumar
Deputy Tech. Manager



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REPORT ON DETERMINATION OF WATER ABSORPTION OF C BOARD

Page 6 of 12

Client : ASK Gypsum Factory Ltd
Address : Jeddah, Saudi Arabia
Contractor : NP
Consultant : NP
Project : NP
Sample Description : **C Board (9 mm)**
Client Ref. No. : PO BU5-1060-16
Source : Client
Sampled by : Client
Immersion period : 48 hours
Drying period : 24 hrs

Report No : **514906 SN 1/1**
Lab Project No : **P-3714**
Sample No : 16-514906/1-3
Date Sample Received : 11/10/2016
Date test started : 19/10/2016
Date test completed : 22/10/2016
Report Date : 29/10/2016
Testing Room Temperature : 23°C
Relative Humidity : 50±5%
Drying Temperature : 90±2° C
Tested by : JR

Test Data

Test Name	Units	Results
Water Absorption	%	29.54

Test Method : **ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 9**
Method Variation : None.
Remarks : None

Authorized Signatory

راجا كومار
Raja Kumar
Quality Tech Manager



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REPORT ON DETERMINATION OF WATERTIGHTNESS OF C BOARD

Page 7 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514906 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514906/1
Consultant	: NP	Sample brought in by	: Client
Project Name	: NP	Date sample received	: 11/10/2016
Project No.	: NP	Date test started	: 16/10/2016
Sample Description	: C Board (9 mm)	Date test completed	: 17/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date	: 29/10/2016
Sampled by	: Client	Specimen size	: 610 x 508 mm
Manufacturer/Source	: Client	Hight of water	: 50 mm
Supplier	: Client	Thickness of Specimen	: 9 mm
Test duration	: 24 hrs	Tested by	: JR

Test Data

Test description	Results
WaterTightness	No water drops found on the under side of the sheet.

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 11
Method variation : None
Remarks : None

Authorized Signatory
012 راجا كومار
Raja Kumar
Deputy Tech Manager



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Certificate Number: SNR 30362926/4/Q





REPORT ON DETERMINATION OF MOISTURE MOVEMENT OF C BOARD

Page 8 of 12

Client : ASK Gypsum Factory Ltd Report No : 514906 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514906/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 16/10/2016
Sample Description : C Board (9 mm) Date Test Completed : 17/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Temperature : 23°C
Size of Specimen : 76 X 305 mm Relative Humidity : 90±5%
Sampled By : Client Tested by : JR

Test Data

Test Name	Test Method	Results
Linear Change (%)	ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 8	0.10

Method Variation : None
Remarks : None


Authorized Signatory
راجا كومار
Raja Kumar
Deputy Tech. Manager



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REPORT ON DETERMINATION OF DIRECT SCREW WITHDRAWAL OF C BOARD

Page 11 of 12

Client : ASK Gypsum Factory Ltd Report No : 514906 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514906/1
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 01/11/2016
Sample Description : C Board (9 mm) Date Test Completed : 01/11/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 02/11/2016
Source : Client Testing Room Temperature : 24°C
Sample brought in by : Client Relative Humidity : 50±5%
Sampled By : Client Tested by : JR
Diameter of Screw : 3.50 mm
Speed of machine : 1.5 mm/min

Test Data

Sample ID	Test Standard	Test Name	Unit	Test Result
16-514906/1	ASTM D 1037-12, Clause 16	Direct Screw Withdrawal	N	553

Method Variation : None
Remarks : None


Authorized Signatory

012 راجا كومار
Raja Kumar
Deput. Tech. Manager



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REPORT ON PH VALUE OF FIBER CEMENT BOARD

Page : 12 of 12

Client : Ask Gypsum Factory
Address : P.O. Box 31382, Yaubu, KSA
Contractor : NP
Consultant : NP
Project name : NP
Project No. : NP
Project Location : NP
Sample Description : **Fiber Cement Board (300X300X09mm)**
Source : Client
Client's Ref. : PO BU5-1060-16
Sampling date/time : 11/10/2016
Sampled by : Client
Sample brought by : Client

Report No. : **514906** SN 1/1
Lab.Sample No. : **16-514906/12**
Lab Project No. : **P-3714**
Sampling Certificate : NP
Sampling Method : NP
Sample Size (No.) : 1
Lot No. : NP
Lot Size (m³) : NP
Date received : 11/10/2016
Date test Started : 12/10/2016
Date Test Completed : 13/10/2016
Report Date : 15/10/2016
Tested by : MSH

TEST DATA:

Test Name	Test Method	Unit	Results
pH Value @ 25°C	BS 1377: Part 3: 1990 Cl. 9 Amd. 9028:1996	-	11.0

Preparation Method : BS 1377: Part 3: 1990 Amd. 9028-96
Test method variation : None
Remarks : None



Syed N. Rizvi
Authorized Signatory
007
سيد نواز رضوي
Syed N. Rizvi
Manager (OGEC)

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R-FCB-01

Issue No.1

Issue on: 30/10/2016

Certificate Number: SNR 30362926/4/Q



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REPORT ON DETERMINATION OF FREEZE-THAW RESISTANCE OF C BOARD

Page 1 of 2

Client	: ASK Gypsum Factory Ltd	Report No	: 514906 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514906/1-8
Consultant	: NP	Date of Sampling	: NP
Project Name	: NP	Date Sample Received	: 11/10/2016
Project No.	: NP	Date Test Started	: 19/10/2016
Sample Name	: C Board (9 mm)	Date Test Completed	: 16/11/2016
Sender's No.	: PO BU5-1060-16	Report Date	: 19/11/2016
Source of Sample	: Client	Water temperature	: 5°C
Size of Specimen	: 305 x 152 mm	Freeze Temperature	: -20±2°C
Thickness of specimen	: 9 mm	Thaw Temperature	: 20±2°C
Sampled by	: Client	No. of cycles	: 50
Sample brought in by	: Client	Span length (mm)	: 254
		Tested by	: JR

Introduction

ASK Gypsum Factory appointed MLab for determination of Freeze-Thaw resistance of C Board in accordance with ASTM C 1185-03. Two set of C board was immersed in water at 5°C for 48 hours, after immersion period one set of specimens were tested for flexural strength. The another set of specimens were sealed in a plastic bag and cool it at -20±2°C for one hour and thaw at 20±2°C for one hour. The Freeze-Thaw cycle was repeated for 50 cycles. Upon completion of Free-Thaw cycles the specimes were tested for flexural strength in saturated condition in accordance with ASTM C 1185-03 section 5.

Test Data for Flexural Strength

Control Specimens						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flxeural Strength (MPa)
16-514906/1	Longitudinal	152.9	9.01	357	11.0	10.9
16-514906/2		151.5	9.03	354	10.9	
16-514906/3	Transversal	152.5	9.02	209	6.42	6.60
16-514906/4		151.5	9.01	219	6.78	

After Freeze-Thaw condition						
Specimen No.	Test Direction	Width mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Fixeural Strength (MPa)
16-514906/5	Longitudinal	152.5	9.03	325	9.96	9.65
16-514906/6		152.5	9.05	306	9.33	
16-514906/7	Transversal	152.6	9.01	198	6.09	5.65
16-514906/8		151.4	9.03	169	5.22	



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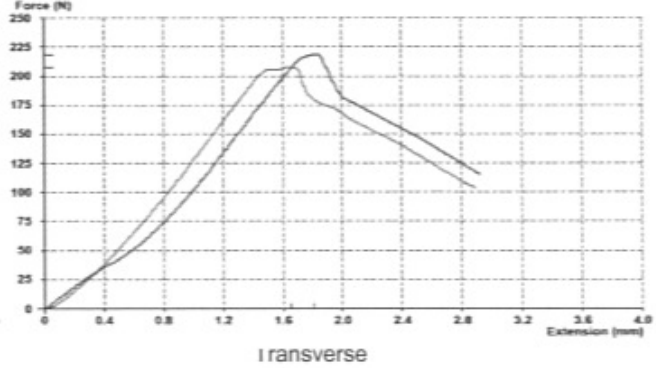
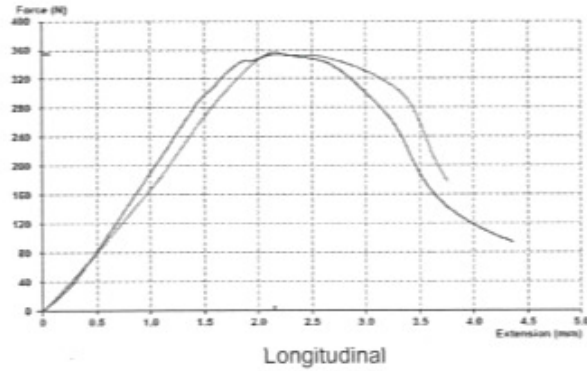


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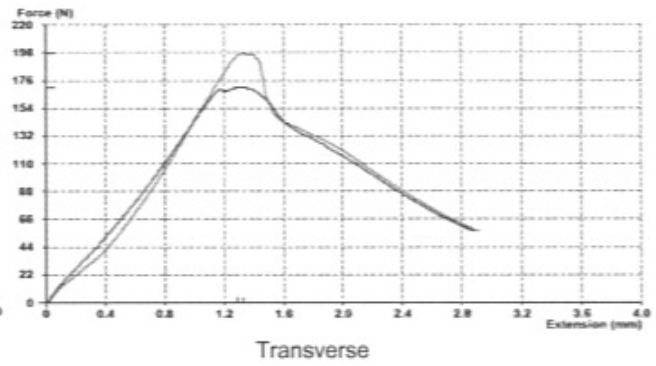
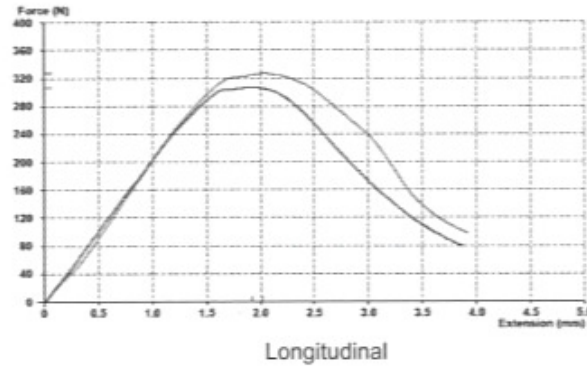
Test Graph:

Page 2 of 2

Control Specimens Test



After Freeze-Thaw condition Test



Summary:

Test Name	Results (MPa)		Ratio of retained Strength (%)
	Controlled	After Freeze-Thaw condition	
Flexural Strength , Longitudinal	11.0	9.65	88.0
Flexural Strength, Transversal	6.60	5.65	85.6

Test Standard : ASTM C1186-08(Reapproved 2012), ASTM C1185-03
 Method Variation : None
 Remarks : A Fully automatic computerized UTM was used for tensile property.



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REPORT ON DETERMINATION OF UNIT WEIGHT OF C BOARD

Page 1 of 12

Client : ASK Gypsum Factory Ltd Report No : 514905 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514905/1-3
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (6 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Drying period : 24 hrs
Supplier : Client Tested by : JR
Drying Temperature : 90±2° C

Test Data

Test description	Units	Results
Unit Weight	Kg/m ²	7.7

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 6
Method variation : None
Remarks : None


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Raja Kumar
Deputy Tech Manager



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REPORT ON DETERMINATION OF DENSITY OF C BOARD

Page 1 of 2

Client : ASK Gypsum Factory Ltd Report No : 525697 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-525697/1-3
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 29/12/2016
Sample Description : C Board (6 mm) Date test started : 02/01/2017
Client Ref. No. : PO BU5-1233-16 Date test completed : 03/01/2017
Sampled by : Client Report Date : 04/01/2017
Manufacturer/Source : Client Drying period : 24 hrs
Supplier : Client Tested by : JR
Drying Temperature : 90±2° C

Test Data

Test description	Units	Results
Density	kg/m ³	1308

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 6
Method variation : None
Remarks : None



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REPORT ON DETERMINATION OF DIMENSIONS OF C BOARD

Page 3 of 12

Client : ASK Gypsum Factory Ltd Report No : 514905 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514905/1-2
Consultant : NP Date of Sampling : NP
Project Name : NP Sample brought in by : Client
Project No. : NP Date sample received : 11/10/2016
Sample Description : C Board (6 mm) Date test started : 19/10/2016
Client Ref. No. : PO BU5-1060-16 Date test completed : 19/10/2016
Sampled by : Client Report Date : 29/10/2016
Manufacturer/Source : Client Tested by : JR
Supplier : Client

Test Data

Test Name	Test Method	Unit	Results
Mean Length	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 7	mm	2439
Mean Width		mm	1219
Mean Total Thickness		mm	6.21

Method variation : None
Remarks : None


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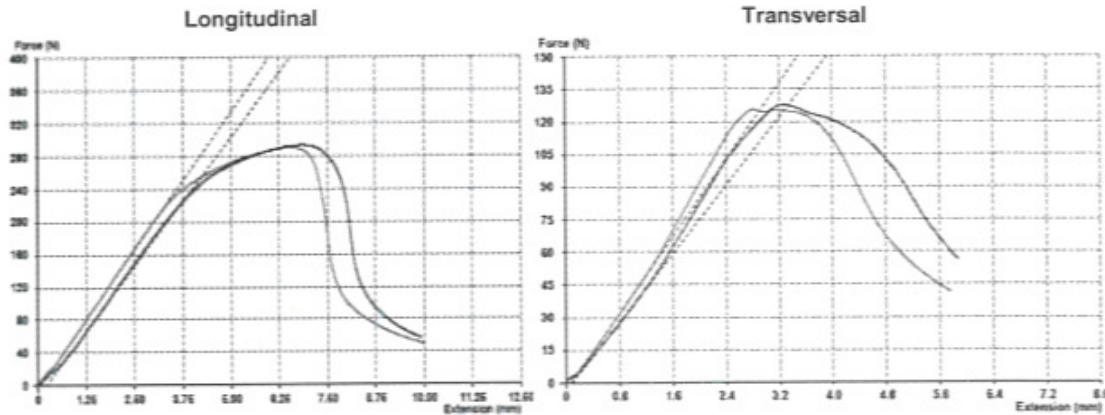
REPORT ON DETERMINATION OF MODULUS OF ELASTICITY OF C BOARD

Page 2 of 2

Client : ASK Gypsum Factory Ltd Report No : 525697 SN 1/1
Contractor : Jeddah, Saudi Arabia Lab Project No : P-3714
Consultant : NP Sample No : 16-525697/1-4
Project Name : NP Client Ref. No. : PO BU5-1233-16
Project No. : NP Date sample Received : 29/12/2016
Structure Reference : NP Date test started : 02/01/2017
Sample Description : C Board (6 mm) Date test completed : 02/01/2017
Sample Size : 305 x 152 x 6 mm Report Date : 04/01/2017
Source of sample : Client Sample brought in by : Client
Sampled by : Client Speed of Machine : 25 mm/min
Test Condition : Equilibrium Testing Room Temperature : 23°C
Length of test Specimen : 305 mm Relative Humidity : 50%
Span length : 254 mm Tested by : JR

Test Data

Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Modulus of Elasticity (MPa)	Average Modulus of Elasticity (MPa)
16-525697/1	Longitudinal	151.4	6.13	290	7952	7660
16-525697/2		151.7	6.14	293	7368	
16-525697/3	Transversal	150.4	6.14	125	5183	4845
16-525697/4		150.9	6.18	128	4506	



Test Method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 5
Test method variation : None
Remarks : A fully automatic computerised UTM (Ref-UTM-2) was used to carry out this test.

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Deputy Tech. Manager



REPORT ON FLEXURAL STRENGTH OF C BOARD

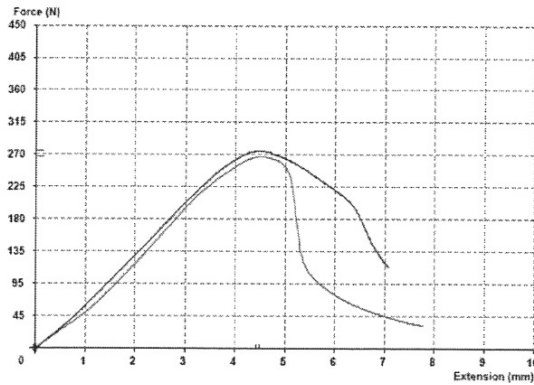
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Client : ASK Gypsum Factory Ltd Report No : 514905 SN 1/1
Contractor : Jeddah, Saudi Arabia Lab Project No : P-3714
Consultant : NP Sample No : 16-514905/1-4
Project Name : NP Client Ref. No. : PO BU5-1060-16
Project No. : NP Date sample Received : 11/10/2016
Structure Reference : NP Date test started : 22/10/2016
Sample Description : C Board (6 mm) Date test completed : 22/10/2016
Sample Size : 305 x 152 x 6 mm Report Date : 29/10/2016
Source of sample : Client Sample brought in by : Client
Sampled by : Client Speed of Machine : 25 mm/min
Test Condition : Equilibrium Testing Room Temperature : 23°C
Length of test Specimen : 305 mm Relative Humidity : 50%
Span length : 254 mm Tested by : JR

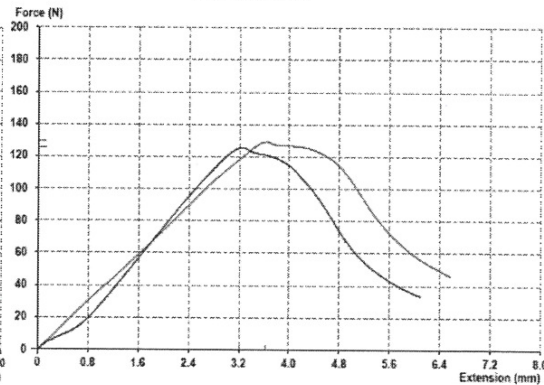
Test Data

Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514905/1	Longitudinal	150.5	6.10	268	18.21	18.75
16-514905/2		150.4	6.01	275	19.29	
16-514905/3	Transversal	153.4	6.20	127	8.21	8.11
16-514905/4		153.6	6.22	125	8.01	

Longitudinal



Transversal



Test Method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 5
Test method variation : None
Remarks : A fully automatic computerised UTM (Ref-UTM-2) was used to carry out this test.

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راجا كومار
Raja Kumar
Lab Manager



REPORT ON DETERMINATION OF MOISTURE CONTENT OF C BOARD

Page 5 of 12

Client : ASK Gypsum Factory Ltd Report No : 514905 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514905/1-3
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 19/10/2016
Sample Description : C Board (6 mm) Date Test Completed : 20/10/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 29/10/2016
Source : Client Testing Room Temperature : 23°C
Date of Sampling : NP Relative Humidity : 50±5%
Sampled By : Client Drying period : 24 hrs
Drying Temperature : 90±2° C Tested by : JR

Test Data

Test Name	Test Method	Results
Moisture Content (%)	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 10	6.66

Method Variation : None
Remarks : None



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Raja Kumar
Deputy Tech Manager

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REPORT ON DETERMINATION OF WATER ABSORPTION OF C BOARD

Page 6 of 12

Client : ASK Gypsum Factory Ltd
Address : Jeddah, Saudi Arabia
Contractor : NP
Consultant : NP
Project : NP
Sample Description : **C Board (6 mm)**
Client Ref. No. : PO BU5-1060-16
Source : Client
Sampled by : Client
Immersion period : 48 hours
Drying Temperature : 90±2° C

Report No : **514905 SN 1/1**
Lab Project No : **P-3714**
Sample No : 16-514905/1-3
Date Sample Received : 11/10/2016
Date test started : 19/10/2016
Date test completed : 22/10/2016
Report Date : 29/10/2016
Testing Room Temperature : 23°C
Relative Humidity : 50±5%
Drying period : 24 hrs
Tested by : JR

Test Data

Test Name	Units	Results
Water Absorption	%	39.12

Test Method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 9
Method Variation : None.
Remarks : None


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REPORT ON DETERMINATION OF WATERTIGHTNESS OF C BOARD

Page 7 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514905 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514905/1
Consultant	: NP	Sample brought in by	: Client
Project Name	: NP	Date sample received	: 11/10/2016
Project No.	: NP	Date test started	: 19/10/2016
Sample Description	: C Board (6 mm)	Date test completed	: 20/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date	: 29/10/2016
Sampled by	: Client	Specimen size	: 610 x 508 mm
Manufacturer/Source	: Client	Hight of water	: 50 mm
Supplier	: Client	Thickness of Specimen	: 6 mm
Test duration	: 24 hrs	Tested by	: JR

Test Data

Test description	Results
WaterTightness	No water drops found on the under side of the sheet.

Test method : ASTM C 1186-08 (Reapproved 2012) /ASTM C 1185-03 Section 11
Method variation : None
Remarks : None


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REPORT ON DETERMINATION OF MOISTURE MOVEMENT OF C BOARD

Page 8 of 12

Client	: ASK Gypsum Factory Ltd	Report No	: 514905 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514905/1-3
Consultant	: NP	Date Sample Received	: 11/10/2016
Project	: NP	Date Test Started	: 16/10/2016
Sample Description	: C Board (6 mm)	Date Test Completed	: 17/10/2016
Client Ref. No.	: PO BU5-1060-16	Report Date	: 29/10/2016
Source	: Client	Testing Temperature	: 23°C
Size of Specimen	: 76 X 305 mm	Relative Humidity	: 90±5%
Sampled By	: Client	Tested by	: JR

Test Data

Test Name	Test Method	Results
Linear Change (%)	ASTM C 1186-08 (Reapproved 2012) / ASTM C 1185-03 Section 8	0.11

Method Variation : None
Remarks : None


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Saputy Tech Manager



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REPORT ON DETERMINATION OF DIRECT SCREW WITHDRAWAL OF C BOARD

Page 11 of 12

Client : ASK Gypsum Factory Ltd Report No : 514905 SN 1/1
Address : Jeddah, Saudi Arabia Lab Project No : P-3714
Contractor : NP Sample No : 16-514905/1
Consultant : NP Date Sample Received : 11/10/2016
Project : NP Date Test Started : 01/11/2016
Sample Description : C Board (6 mm) Date Test Completed : 01/11/2016
Client Ref. No. : PO BU5-1060-16 Report Date : 02/11/2016
Source : Client Testing Room Temperature : 24°C
Sample brought in by : Client Relative Humidity : 50±5%
Sampled By : Client Tested by : JR
Diameter of Screw : 3.50 mm
Speed of machine : 1.5 mm/min

Test Data

Sample ID	Test Standard	Test Name	Unit	Test Result
16-514905/1	ASTM D 1037-12, Clause 16	Direct Screw Withdrawal	N	407

Method Variation : None
Remarks : None



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REPORT ON PH VALUE OF FIBER CEMENT BOARD

Page : 12 of 12

Client : Ask Gypsum Factory
Address : P.O. Box 31382, Yabu, KSA
Contractor : NP
Consultant : NP
Project name : NP
Project No. : NP
Project Location : NP
Sample Description : **Fiber Cement Board (300x300x06mm)**
Source : Client
Client's Ref. : PO BU5-1060-16
Sampling date/time : 11/10/2016
Sampled by : Client
Sample brought by : Client

Report No. : **514905** SN 1/1
Lab.Sample No. : **16-514905/12**
Lab Project No. : **P-3714**
Sampling Certificate : NP
Sampling Method : NP
Sample Size (No.) : 1
Lot No. : NP
Lot Size (m³) : NP
Date received : 11/10/2016
Date test Started : 12/10/2016
Date Test Completed : 13/10/2016
Report Date : 15/10/2016
Tested by : MSH

TEST DATA:

Test Name	Test Method	Unit	Results
pH Value @ 25°C	BS 1377: Part 3: 1990 Cl. 9 Amd. 9028:1996	-	10.6

Preparation Method : BS 1377: Part 3: 1990 Amd. 9028-96
Test method variation : None
Remarks : None



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R-FCB-01
Issue No.1
Issued on: 30/10/2016





REPORT ON DETERMINATION OF FREEZE-THAW RESISTANCE OF C BOARD

Page 1 of 2

Client	: ASK Gypsum Factory Ltd	Report No	: 514905 SN 1/1
Address	: Jeddah, Saudi Arabia	Lab Project No	: P-3714
Contractor	: NP	Sample No	: 16-514905/1-8
Consultant	: NP	Date of Sampling	: NP
Project Name	: NP	Date Sample Received	: 11/10/2016
Project No.	: NP	Date Test Started	: 19/10/2016
Sample Name	: C Board (6 mm)	Date Test Completed	: 16/11/2016
Sender's No.	: PO BU5-1060-16	Report Date	: 19/11/2016
Source of Sample	: Client	Water temperature	: 5°C
Size of Specimen	: 305 x 152 mm	Freeze Temperature	: -20±2°C
Thickness of specimen	: 6 mm	Thaw Temperature	: 20±2°C
Sampled by	: Client	No. of cycles	: 50
Sample brought in by	: Client	Span length (mm)	: 254
		Tested by	: JR

Introduction

ASK Gypsum Factory appointed MLab for determination of Freeze-Thaw resistance of C Board in accordance with ASTM C 1185-03. Two set of C board was immersed in water at 5°C for 48 hours, after immersion period one set of specimens were tested for flexural strength. The another set of specimens were sealed in a plastic bag and cool it at -20±2°C for one hour and thaw at 20±2°C for one hour. The Freeze-Thaw cycle was repeated for 50 cycles. Upon completion of Free-Thaw cycles the specimens were tested for flexural strength in saturated condition in accordance with ASTM C 1185-03 section 5.

Test Data for Flexural Strength

Control Specimens						
Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514905/1	Longitudinal	153.3	6.17	167	10.9	11.1
16-514905/2		153.7	6.14	172	11.3	
16-514905/3	Transversal	153.6	6.16	85.8	5.61	5.63
16-514905/4		153.6	6.10	84.8	5.65	

After Freeze-Thaw condition						
Specimen No.	Test Direction	Width (mm)	Thickness (mm)	Maximum Load (N)	Flexural Strength (MPa)	Average Flexural Strength (MPa)
16-514905/5	Longitudinal	153.0	6.15	144	9.47	9.83
16-514905/6		153.2	6.16	156	10.2	
16-514905/7	Transversal	153.5	6.15	78.0	5.12	4.84
16-514905/8		153.6	6.18	70.2	4.56	



Results relate only to the item tested.

This report shall not be reproduced except in full, without written approval of the laboratory.

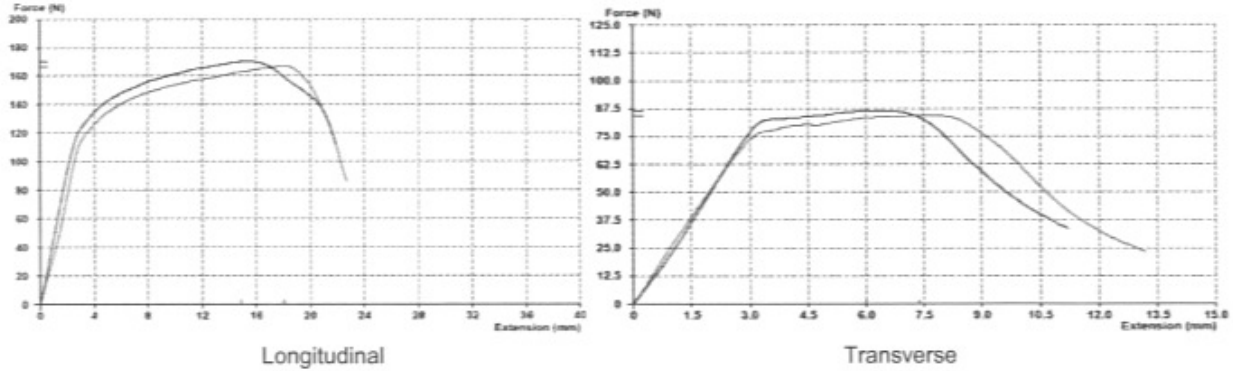
Certificate Number: SNR 30362926/A/Q



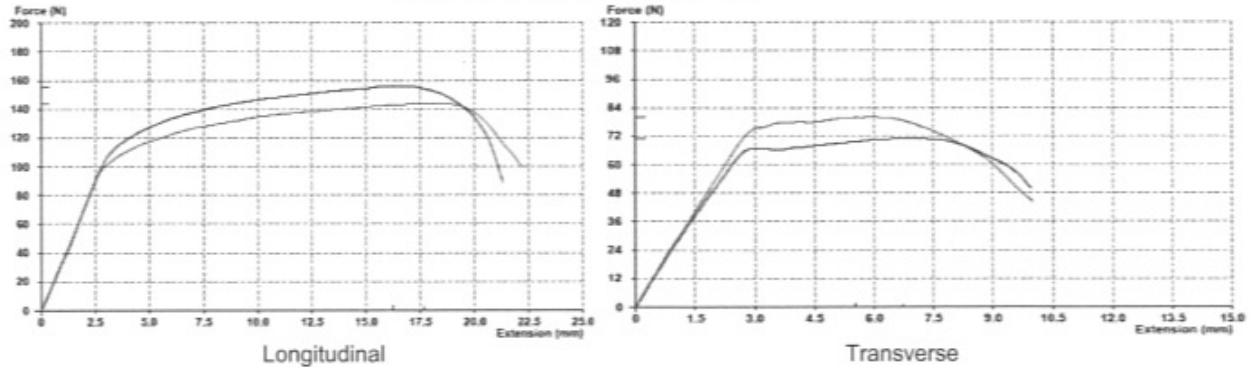
Test Graph:

Page 2 of 2

Control Specimens Test



After Freeze-Thaw condition Test



Summary:

Test Name	Results (MPa)		Ratio of retained Strength (%)
	Controlled	After Freeze-Thaw condition	
Flexural Strength , Longitudinal	11.1	9.83	88.5
Flexural Strength, Transversal	5.6	4.84	85.9

Test Standard : ASTM C1186-08(Reapproved 2012), ASTM C1185-03
 Method Variation : None
 Remarks : A Fully automatic computerized UTM was used for tensile property.



Authorized Signatory
 راجا كومار
 Raja Kumar
 Deputy Tech Manager

Results relate only to the item tested.

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Certificate Number: SNR 30362926/4/Q



ماتيريال لاب- دبي، صندوق بريد: 114717 هاتف: +971 4 3405678، فاكس: +971 4 3405677
 ماتيريال لاب لخدمات الفحص ذ.م.م. - أبوظبي: صندوق بريد: 61831، هاتف: +971 2 5503040، فاكس: +971 2 5503041
 Material Lab - Dubai, P.O. Box: 114717, Tel. + 971 4 3405678, Fax: + 971 4 3405677
 Material Lab Testing Services L.L.C. - Abu Dhabi: P.O. Box - 61831, Tel. + 971 2 5503040 Fax: +971 2 5503041

Email: mld@eim.ae Website: www.mlab.ae

Test Report

Report Number:150324002SHF-BP-1

Applicant Name: Ask Gypsum Factory

Original Report Date: May 22, 2015

Applicant Address: Light Industrial Area Yanbu Al-Sinayah PO.Box: 31381 Yanbu, KSA

Attn: Mrs. Elsy Labban

Sample Description:

Product: Fiber cement board
Model: 9mm thickness
Samples Quantity: 129 pcs
Sample ID: S150324002SHF-001~129
Date Received: 2015-03-18
Date Test Conducted: 2015-03-24~2015-05-22

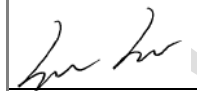
Tests Conducted:

Test Methods: ASTM C1186-2012, ASTM C518-2010, ISO 8336-2009(E), BS 476-5:1979 and BS 476-6:1989+A1:2009.

Conclusion:

For details refer to attached page(s).
The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

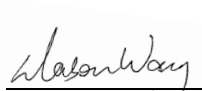
Should you have any queries about the test report, please contact:

Approved by:

Sun Sun
Assistant Manager

Checked by:

Jodie Zhou
Technical Supervisor

Prepared by:

Mason Wang
Engineer

Test Items, Method and Results:

Tabel.1 Test Result for ASTM C1186-2012																		
Character	Result	Requirement ¹	Verdict															
Flexural Strength ²	Wet Strength: 21.0MPa Equilibrium Strength: 21.0MPa Grade III	<table border="1"> <thead> <tr> <th>Grade</th> <th>Wet Strength, (MPa), min</th> <th>Equilibrium Strength, (MPa), min</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>4</td> <td>4</td> </tr> <tr> <td>II</td> <td>7</td> <td>10</td> </tr> <tr> <td>III</td> <td>13</td> <td>16</td> </tr> <tr> <td>IV</td> <td>18</td> <td>22</td> </tr> </tbody> </table>	Grade	Wet Strength, (MPa), min	Equilibrium Strength, (MPa), min	I	4	4	II	7	10	III	13	16	IV	18	22	Grade III
		Grade	Wet Strength, (MPa), min	Equilibrium Strength, (MPa), min														
		I	4	4														
		II	7	10														
		III	13	16														
IV	18	22																
Density	Nominal value: 1.55~1.65g/cm ³ Measured value: 1.65g/cm ³	Comply with the value stated by the manufacturer.	Pass															
Water Absorption	Average value: 18.5%	No requirement	N/A															
Water Tightness	No any formation of drops of water	No any formation of drops of water	Pass															
Moisture Movement	Linear change in length: 0.12% Linear change in width: 0.12%	No requirement	N/A															
Moisture Content	Average value: 6.6%	No requirement	N/A															
Surface Burning	Flame spread index: 0 Smoke developed index: 0	Flame spread index=0 Smoke developed index≤5	Pass															
Freeze/Thaw Resistance ²	No visible cracks or structural alteration Initial flexural strength: 21.0MPa After conditioned: 24.8MPa The ratio of retained strength: 118.1%	No visible cracks or structural alteration such as to affect their performance in use. The ratio of retained strength shall be at least 80%	Pass															

Tabel.1 Test Result for ASTM C1186-2012

Character	Result	Requirement ¹	Verdict
Warm Water Resistance ²	No visible cracks or structural alteration Initial flexural strength: 21.0MPa After conditioned: 19.7MPa The ratio of retained strength: 84.2%	No visible cracks or structural alteration such as to affect their performance in use. The ratio of strengths shall be reported.	N/A
Heat Rain Resistance	No visible cracks or structural alteration	No visible cracks or structural alteration	Pass

Note:

1. The requirements were according to ASTM C1186. The test method was conducted with ASTM C1185.
2. The test span was 254mm.

Tabel.2 Test Result for ASTM C518-2010

Character	Mean Temperature	Temperature difference	Result
Thermal Conductivity	25°C	20°C	0.19774 W/m·K

Tabel.3 Test Result for ISO 8336-2009(E)

Character	Result	Requirement	Verdict
Soak-Dry ¹	Initial flexural strength: 18.4MPa After conditioned: 16.7MPa The ratio of retained strength: 0.82	Category B: $R_L \geq 0.75$.	Pass

Note:

1. The test span was 200mm.

Tabel.4 Test Result for BS 476-5:1979						
Character	Result				Requirement	Verdict
Ignitability	Description	Specimens				Pass
		1	2	3		
	1. Time of flaming after removal of test flame	0	0	0		
	2. Burning of test specimen extending to the edges	No	No	No	Do not extent to any edge during flame application or within 10 sec period after removal of test flame.	

Note:

1. The test was conducted with either face exposed to the flame source.
2. This test was conducted at the external approved facility, located at Singapore.

Tabel.5 Test Result for BS 476-6:1989+A1:2009						
Character	Index of Performance				Result	
Fire propagation	Specimen	Sub-indices			Index of Performance	Index of overall performance, $I=0.1$ (Fire propagation index) Sub-index, $i_1=0.0$ Sub-index, $i_2=0.1$ Sub-index, $i_3=0.0$
		s_1	s_2	s_3	S	
	A	0.0	0.0	0.0	0.0	
	B	0.0	0.0	0.0	0.0	
	C	0.0	0.2	0.0	0.2	

Note:

1. The test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.
2. This test was conducted at the external approved facility, located at Singapore.

Appendix A: Sample photos



Sample received

The End of Report

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.



Gen. Manager - H. Al-Hoty

1 N / 1428

23 N / 1428

المدير العام - هاني الحوطي

24 N / 1428

25 N / 1428



ASK GYPSUM FACTORY LTD.

Saudi Arabia

Ref.No.27000247

Date: 21.06.2017

Page 1 of 1

PLM ANALYSIS REPORT ON SUSPECTED ASBESTOS MATERIAL

Sampled by : Client
Analysis Date : 21/06/2017

Analyzed by : HR
Sampling date : 20/06/2017

Test Method Reference:

The Asbestos test was carried out by EPA 600/R-93/116 method using polarized light Microscopy.

Sample Number	27000247-01
Sample Appearance	
Color	White
Texture	Fibrous
Description	Cement Board
Asbestos Content %	
Chrysotile	Not detected
Amosite	Not detected
Crocidolite	Not detected
Others	Not detected
Non-Asbestos Material (%)	
Cellulose	-
Fiber Glass	-
Others	100%

NAEEM ZAIDI, M. Sc.
Manager
Materials Analysis Department
For AL HOTY-STANGER LTD.CO.

FAIZAN RASOOL
Geologist, Asbestos Div.
Materials Analysis Department
For AL HOTY-STANGER LTD.CO.

**Regional Offices and Laboratories Saudi Arabia**

Jubail Tel.: (03) 341-6791 Fax : 341-0642
Hafuf Tel.: (03) 586-3210 Fax : 487-1420
Riyadh Tel.: (01) 478-4292 Fax : 479-2058
Jeddah Tel.: (02) 660-1924 Fax : 665-6742
Yanbu Tel.: (04) 322-5495 Fax : 391-7471

U. A. E.

Abu Dhabi Tel.: (02) 554-2234 Fax : 554-7015
Dubai Tel.: (04) 347-2201 Fax : 347-2727
Jebel Ali Tel.: (04) 881-8461 Fax : 881-8461
Sharjah, Kalba Tel.: (09) 277-9543 Fax : 277-9545



ISO 9001

BUREAU VERITAS
Certification

Certificate Number - 227141

المكاتب الإقليمية والمختبرات المملكة العربية السعودية

الجبيل تلفون : ٦٧٩١-٣٣٤١ (٠٣) فاكس : ٠٦٤٢-٣٤١
المشرف تلفون : ٣٢١٠-٥٨٦ (٠٣) فاكس : ١٤٢٠-٥٨٧
الرياض تلفون : ٤٢٩٢-٤٧٨ (٠١) فاكس : ٢٠٥٨-٤٧٩
جدة تلفون : ١٩٢٤-٢٦٦٠ (٠٢) فاكس : ٦٦٥-٦٧٤٢
ينبع تلفون : ٥٤٩٥-٣٢٢ (٠٤) فاكس : ٧٤٧١-٣٩١

الإمارات العربية المتحدة

أبو ظبي تلفون : ٢٢٣٤-٢٥٥٤ (٠٢) فاكس : ٧٠١٥-٥٥٤
دبي تلفون : ٢٢٠١-٣٤٧ (٠٤) فاكس : ٢٧٢٧-٣٤٧
جبل علي تلفون : ٨٤٦١-٨٨١ (٠٤) فاكس : ٨٨١-٨٤٦١
الشارقة، كلبا تلفون : ٥٩٤٣-٢٧٧ (٠٩) فاكس : ٩٥٤٥-٢٧٧



SECTION - 8

○ **Project Approvals.**

1. Al Uthaim Mall – Riyadh
2. Bayat Plaza - Jeddah
3. Aramco Offices - Dhahran
4. Pecsra Offices - Madinah Hajj City
5. Marriott Hotel - Jeddah
6. KAP – 4 (under approval)
7. Heritage Camel Project – Aramco
8. Al-Rimal Gated Community
9. Al Imam University (under approval)
10. Al Khaleej Mall - Riyadh
11. Aramco Residential Houses – Ras Tanura and Udhailiyah (Under approval)
12. Saudi Aramco – Dhahran Portable Offices.
13. Jeddah University – Computer Science & IT P-II Jed University CNAM 105B).
14. Saudi Courts.

Note: - we already have approval for another product made by same company. Please find enclosed.



Community Service Projects Department

Projects Execution Division
Bldg. No. 3137 LIP Road, Dhahran KSA 31311

SUBMITTAL REVIEW STATUS

Project Title	BI No.	Contract No.	Date:	Report No.
Dhahran Portable Offices	10-02438	6600037881	7/2/2017	0728

SUBMITTAL INFORMATION

CONTRACTOR:	Ahmed Y. Al Yami Est.	<div style="border: 2px solid black; padding: 10px; font-size: 2em; font-weight: bold;">1</div>
MANUFACTURER:	ASK GYPSUM FACTORY	
VENDOR:	AL DAMEGH FACTORY	
DOCUMENT TYPE:	Material	
DOCUMENT NO.	AYA-013-002.22	
REFERENCES:	Sec 13122	
DOCUMENT TITLE:	Cement Fiber Board (Contractor's Response 1)	
ISSUE DATE:	Thursday, June 22, 2017	
DATE RECEIVED:	Thursday, June 22, 2017	
DISCIPLINE:	Architectural Cost Impact (TQC only):	

Document Review Status Code:

- 1. Approved as submitted; work may proceed.
- 2. Approved with condition(s); work may proceed, do not resubmit.
- 3. Approved as noted; work may proceed, subject to incorporation of comments and/or resubmit to grant Code 1.
- 4. Revise and resubmit; work may not proceed.
- 5. Rejected; submit another proposal.
- 6. Review not required.
- 7. For information only.

Remarks:

See attached e-mail from CSPD-ESG containing approval for this material.





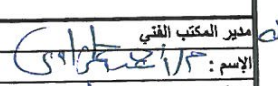
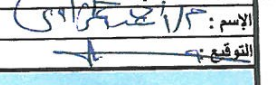





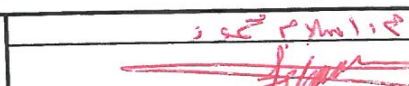
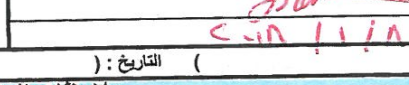
Important Notice:

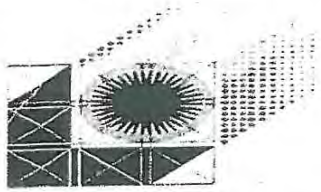
The Project Engineer's approval does not in anyway relieve the acceptance or approval of design details, calculations, analysis, test methods or material developed or selected by the Concessionaire/Supplier/Vendor from full compliance with contractual obligations.

Issued by:

Anthony C. Martinez
Barrett, Graeme N
 (graeme.barrett@aramco.com)
 Project Lead Engineer



 <p>المالك: المملكة العربية السعودية وزارة العدل</p>		 <p>الإستشاري شركة الإتحاد الهندسي السعودي - خطيب و علمي</p>		 <p>Assad Said For Contracting Co. LTD. Paid Capital : 5 R 10 000 000 C.R. - 10873</p>	
<p>مشروع خادم الحرمين الشريفين - الملك عبد الله بن عبد العزيز - لتطوير مرفق القضاء - مشروع إنشاء المحاكم بعدد (22) محكمة نموذج 14 قاضي</p>					
الموقع		عام		رقم الوارد للوزارة: () التاريخ: ()	
35-00-01		كود المبني:			
نموذج تقديم المواد MATERIALS SUBMITTAL					
<input checked="" type="checkbox"/> تقديم جديد <input type="checkbox"/> إعادة تقديم		رقم التقديم السابق: تاريخ التقديم السابق:		رقم التقديم الحالي: (MS-537) تاريخ التقديم الحالي: 27 December 2017	
سبب التقديم		ملاحظات		الإعتماد	
<input type="checkbox"/> لطم <input checked="" type="checkbox"/> مدني		<input type="checkbox"/> ميكانيكا <input type="checkbox"/> كهرباء <input type="checkbox"/> إنشائي <input type="checkbox"/> معماري		<input type="checkbox"/> ميكانيكا <input type="checkbox"/> كهرباء <input type="checkbox"/> إنشائي <input type="checkbox"/> معماري	
المجال		تكميف		إختبارات	
المرفقات		عينات		شهادات	
المواد / الأدوات		معلومات فنية		مواصفات	
م	إسم المادة / الرقم / الوصف	المصدر	المصنع / المورد	رقم المواصفة	كود اعتماد الإستشاري
Cement Board					
1	C Board Cement Boards	KSA	Root group Arabia مجموعة الجزور العربية	sec.8	B
المقاول					
		مدير المكتب الفني:  الإسم:  التوقيع: 			
<p>1- كما نتج من اعتماد الراجح النسبي C-board سمانا ASK بتركيب 9 12 قاسم 2- ادعاء بأداء المواصفات والامتثال للمواصفات مع طلب الاعتماد 3- يجب تقديم Delivery Note مع عينات خضعت لاختبار الضغط 4- ضمان قبول خزنها في الموقع أو تقديم المادة المزمع استخدامها 5- توقيع صاحبها في المواصفات المرغوب 6- يستخدم نظام التخزين المجهز بالاصحاح الجبس</p>					
الإسم:  مدير المشروع:  التوقيع:  التاريخ: 		الإسم:  التوقيع:  التاريخ: 2018/11/18			
		رقم الوارد للوزارة: () التاريخ: ()			
ملاحظات المالك					
الإسم: مدير الإدارة المختصة: التوقيع: التاريخ:					



System Entry Date Stamp

JEDDAH UNIVERSITY
CONSTRUCTION SUPERVISION CONTRACT
ZUHAIR FAYEZ PARTNERSHIP CONSULTANTS
ROUTING FORM

(Rev. Date: July 10, 2012)



Project Name : Computer Science & IT P-II Jed Univ (CNAM105B)
 Project ID : CNAM 105B X Contractor : Maidat Contracting Co.
 Reference No : AMT-010 Revision No : 1 Date : 6-May-17
 Subject : **FIBER CEMENT BOARD FOR CEILING (ASK GYPSUM FACTORY)**
 Specification & BOQ Reference :

DOCUMENTS	DRAWINGS	MATERIALS
Specify : <input type="checkbox"/> Handover Documents	<input type="checkbox"/> Design Drawings <input type="checkbox"/> Shop Drawings <input type="checkbox"/> As Built Drawings	<input checked="" type="checkbox"/> Material Technical Data <input checked="" type="checkbox"/> Samples <input type="checkbox"/> Handover of Spare Materials

Attachments (Hard Copies & PCM)

Documents	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Soft Copy / CD	<input type="checkbox"/> Yes <input type="checkbox"/> No
Drawings	<input type="checkbox"/> Yes <input type="checkbox"/> No	Samples	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Technical Data	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Others	

Position	Initial	Hard Copy		Actions
		Received	Sent	
Contractor	<i>[Signature]</i>	8/5/17	6-5-2017	Check Multiple Reviewers option through PCM
Sr. Construction Engineer	<i>[Signature]</i>	8/5/17	8/5/17	Forward BIC to Reviewers through PCM
Document Control	<i>[Signature]</i>	8/5/17	8/5/17	Check PCM and forward Hard Copy to BIC

Reviewers (BIC)	Initial	Received	Sent	Initial Approval				Remarks
				A	B	C	D	
<input checked="" type="checkbox"/> Architectural	<i>[Signature]</i>	08/5/17	08/5/17	<input checked="" type="checkbox"/>				
<input type="checkbox"/> Structural								
<input type="checkbox"/> Mechanical								
<input type="checkbox"/> Electrical								
<input type="checkbox"/> Contract Administrator								
<input type="checkbox"/> PCM & Planning								
<input type="checkbox"/> Quality Assurance								
<input type="checkbox"/> Safety								
<input type="checkbox"/> Surveying								
<input type="checkbox"/> Others								

ZFP Construction Manager	<i>[Signature]</i>	10/5/17	B	<input type="checkbox"/> Proceed (KAU Review) <input type="checkbox"/> Rejected
Technical Services Manager	<i>[Signature]</i>	10/5/17	✓	
KAU Project Manager				
ZFP Project Manager				

Sr. Construction Engineer			Release BIC to Contractor through PCM
Document Control			Release Hardcopy to Contractor
Contractor	<i>[Signature]</i>	11-5-2017	

Final Approval Code:

A - Approved C - Revise and Resubmit
 B - Approved As Noted, Resubmittal Not Required D - Not Approved

Change Analysis

No Changes No Effect on Cost/Schedule Modifies Cost Modifies Schedule

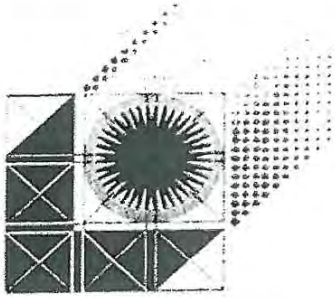
Documentation

Review & Approval

Validation

Record

Approved samples (signed by Consultant & Contractor) should be received by project SCE and to be saved in sample room at site.



System Entry Date Stamp

JEDDAH UNIVERSITY

Computer Science & IT P-II Jed Univ (CNAM105B)

ZUHAIR FAYEZ PARTNERSHIP CONSULTANTS

MATERIAL SUBMITTAL

Sheet 2 of 3



Contract No.: CNAM 105B X

Title: Computer Science & IT P-II Jed Univ (CNAM105B)

Contractor: Maidat Contracting Co.

Transmittal No.: AMT-010

Transmittal Date:

06/05/2017

Subject: FIBER CEMENT BOARD FOR CEILING (ASK GYPSUM FACTORY)

Document Type:



Material Submittal



O&M Manual



Sample

ZFP REPLY:

- * follow B.O.Q. specs.
- * fiber cement board is approved by Technical sect No. (46) as per Description and specifications.
- * submit Delivery Note with M.I.R before start the work
- * Mockup sample at site is requested.
- * sample approved by certificate given in the Technical Data sheet.

[Signature]
 08/05/2017
 Carl B

Transmittal to SDC (Material)

Submittal
 Resubmittal

Date 15/3/2018	Project Code		Project Title Sharma Complex Tabuk	Trans. No. TB1750-MAT-AR-0074	Department			
	SDC	TB-1750-1A1B01			AR	S	ME	EE
	Contr.	P-2000						
To <input checked="" type="checkbox"/> Resident Engineer <input type="checkbox"/> Head Office <input type="checkbox"/> Others				From SBG ABCD SDC# 074A11				

Contractor Use

Item No.	Division	Item Description (Type, Size, Capacity, Specific Use, Etc.)	(Name, Manufacturer or Designer)	Dwg. No., Catalog No. Brochure No., Others	No. of Copies
1	ABC	BOO1 : Technical submittal/ material submittal of ASK Gypsum Factory.			
	a)	Gypsum board (2 copies)	M/s. ASK Gypsum Factory	catalogue	3
	b)	Cement board (1 copy)		CD	
				Samples	
		for your kind approval			

Submitted by Eng. Fathi AL Hussaini

Name

Title

Signature

Samples

Enclosures: catalogue + CD

Items: 3

Saudi Diyar Use

Item #	1						
Code	2						
Reviewed By	A.G						

Action Code

- No Exceptions Taken
- Make Corrections as Noted
- Attend and Resubmit
- Rejected

See Remarks

Remarks:

- Installation shall only proceed when Action Code is 1 or 2.
- Action Code 3, shall be resubmitted within time limit set in the contract.
- Review does not relieve the Contractor from Responsibility of Compliance with all requirements of contract documents.

Special Instructions

- Messrs ASK Gypsum Factory is accepted as a manufacturer
- Submitted sample board is accepted in general
- Exact thickness, profiles and their location according to space and site requirements to be verified in detail, for our approval.
- Mock-up sample will be required on site for SDC approval.

Reviewed by:

AMIR EL GAMLY Pr. Sr. Architect

Name

Title

Signature

Date

15/3/2018

Signed off by:

Name : Ameen Diab

Title : Resident Engr.

Signature

Date

15/3/2018



SECTION - 9

- **Warranty**



Build Natural

Warranty Letter

Dedicated to customer service and quality, we **ASK Gypsum Factory Ltd.** hereby certify that our Fibre Cement Board "**Cboard**" is manufactured in compliance with ASTM C1186 and meets the technical requirements of projects' specification according to International Standards.

This product has a 10 years warranty against manufacturing defects from date of purchase. Further, this warranty only covers defects in material and workmanship.



Limitation of liability: *Cboard's* entire liability with respect to this product shall be limited to the price of the product. In no event shall *Cboard*, its agents or employees, be liable for direct, indirect special, consequential or incidental damages arising out of the use of, or inability to use this product, even if *Cboard* has been advised of the possibility of such damages. *Cboard* is a registered trademark of ASK Gypsum Factory Ltd.

ASK Gypsum Factory Ltd.

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Tel: +966 12 6130000
Fax (Jeddah) Ext:101
Fax (Yanbu) Ext:102

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فاكس (جدة) تحويل: ١٠١
فاكس (ينبع) تحويل: ١٠٢