CHINA UNION BUILDING MATERIALS

中聯建築材料有限公司

KINGTEC

KT BOARD

DURABLE FIBRE CEMENT BOARD

Web: www.chinaunion.org Tel: 5596 7709

Lin Ma Hang Road, Man Kam To, Sheung Shui, New Territories Lot DD518

SAFETY · ECONOMY · EXQUISITE

Product | KINGTEC KT Board System

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In public buildings and high traffic areas,the crowd pressure is extremely immense.The inner walls must be able to stand the challenges in the corridor of schools, in the aisles of hospitals or in sports facilities. For dry construction solutions in these highly frequented areas CUBM has developed a high performance fibre cement board which would also take care of water attack: KINGTEC KT Panel

Test Repoet

PROPERTIES	KINGTEC KT PANEL
Neutral designation	Fibre Cement 100% asbestos free
Material class	Non-combus tible Acc. To BS 476: Part 4 1970
Surface spread of flame	Class 1 Acc. To BS 476: Part 7 1997
Building Regulations	Class O
Classification	Acc. To BS 476: Part 6 1989
Raw density	Approx. 1200 kg/m3
Thermal conductivity	Approx. 0.6 W/mk
Coefficient of expansion	-2.0 X 1 ff 5 m/mk
Linear expansion rate	0.1%
Water Content	≤10
Water Absor ption Capacity	34%
Expansion when under water (100% saturation)	0.11%
Minimum radius of curvature	1500mm for 6mm thick CUBM KT Panel
Flexural strength	F
Longitudinal	12.5 N/mm2
Transverse	10.5 N/mm2
Board sizes	1220 x 2440 mm
Thicknesses	9mm, 12mm Other thickness upon request
Edge detail	Taper along the long side for taping & jointing
Tilability	Max.tile weight 32kg/sq.m
Sound insulation function:	46DB (InDoor) 46DB (OutDoor)

The Problem

- High stress of buildings and their walls, causedth rough high traffic special load (e.g. hospitals)a ndv andaislm (e.g. Schools)
- High renovation requirement in public buildings
- Security, robustness, longevity and quality needs
- Special demandosn soundprotection and fire protection

The solution: KINGTEC KT Panel

- Composed of inorganic raw material such as cement, silica and cellulose fibre
- High scratch resistance, impact resistance Smooth surface
- Autoclaved to create stable properties Simple joint treatment for tapered board edge
- High bending strength, low water absorption rate

Test Report Certificate



KINGTEC KT Panel is the idea board for water resistance, impact-resistance, abuse resistance in public buildings such as school or hospitals, where robustness, longevity and quality are particularly important. It is well qualified for internal and external environment.

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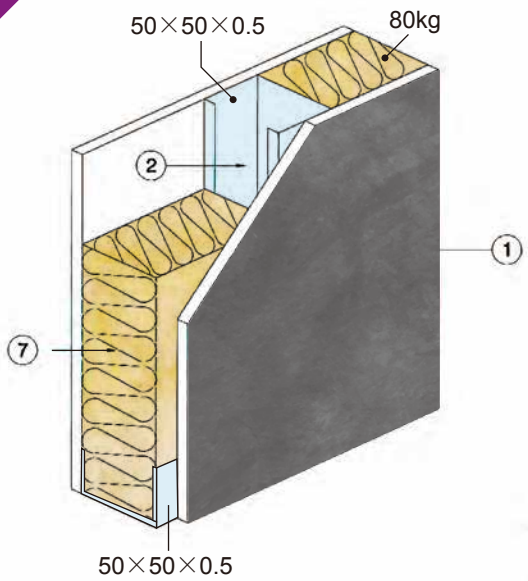
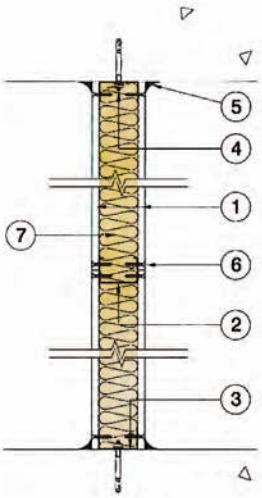
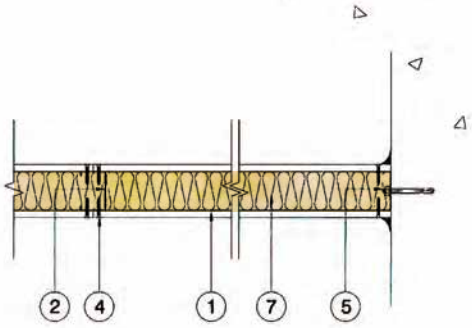
KINGTEC FIRE / IMPACT RESISTANT FIBRE CEMENT BOARD PARTITION SYSTEM







Technical Data:

1-Hour fire rating, integrity & insulation

Accord ing to BS 476: Part22, BS476: Part20 with fire risk from both sides

Overall partition thickness = 68mm

(when 75mm wide stud is used, with 50mm thick 100kg/m3 BNS rockwool)

1. KINGTEC KT Panel fibre cement board, 9mm thick
2. 50mm x 50mm x 0.5mm C Stud at 610mm centres
3. 50mm x 0.5mm U channel
4. Nai/able plug at 600mm centres
5. Fire resistant mastic
6. Dywall screw at 250mm centres
7. 50mm thick, 80kg/m3, BNS rockwool

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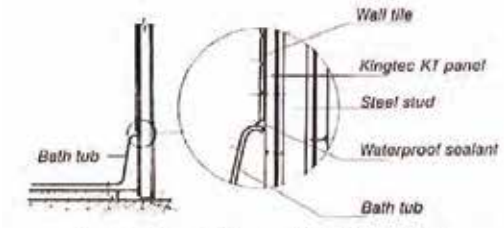
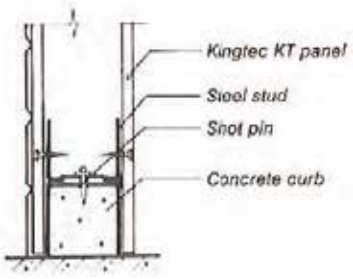
KINGTEC KT Board
WET AREA APPLICATION

The main function of constructions in damp and humid areas is to prevent water or moisture penetration into internal walls, floors and ceilings. Damp or humid areas shouldm always be built from materia that can withstand moisture and water. KINGTEC KT Panel composed of fibre cement is processed by high pressure. It is stable and water resistant, and has been developed f or demanding applications such as the following:

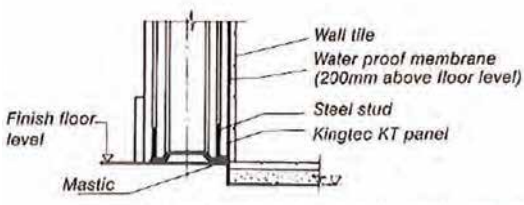
- Bathrooms
- Car washes
- Cold stores
- Hospitals
- Hotels
- Kitchens
- Laundries
- Leisure centres
- Sports centres
- Swimming pools
- Prefabr icated units with tiled walls



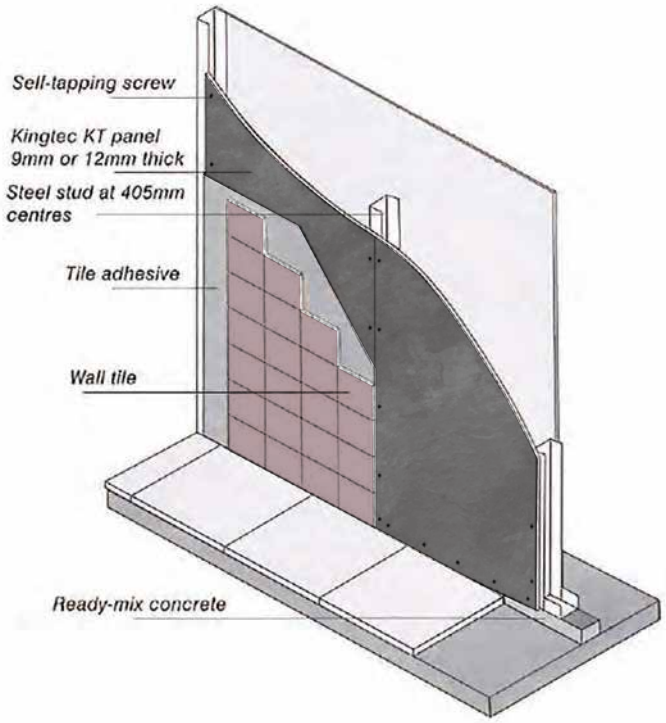
Conjunction between bath tub and wall



Wall anti water permeating contruction



Wall anti water permeating contruction



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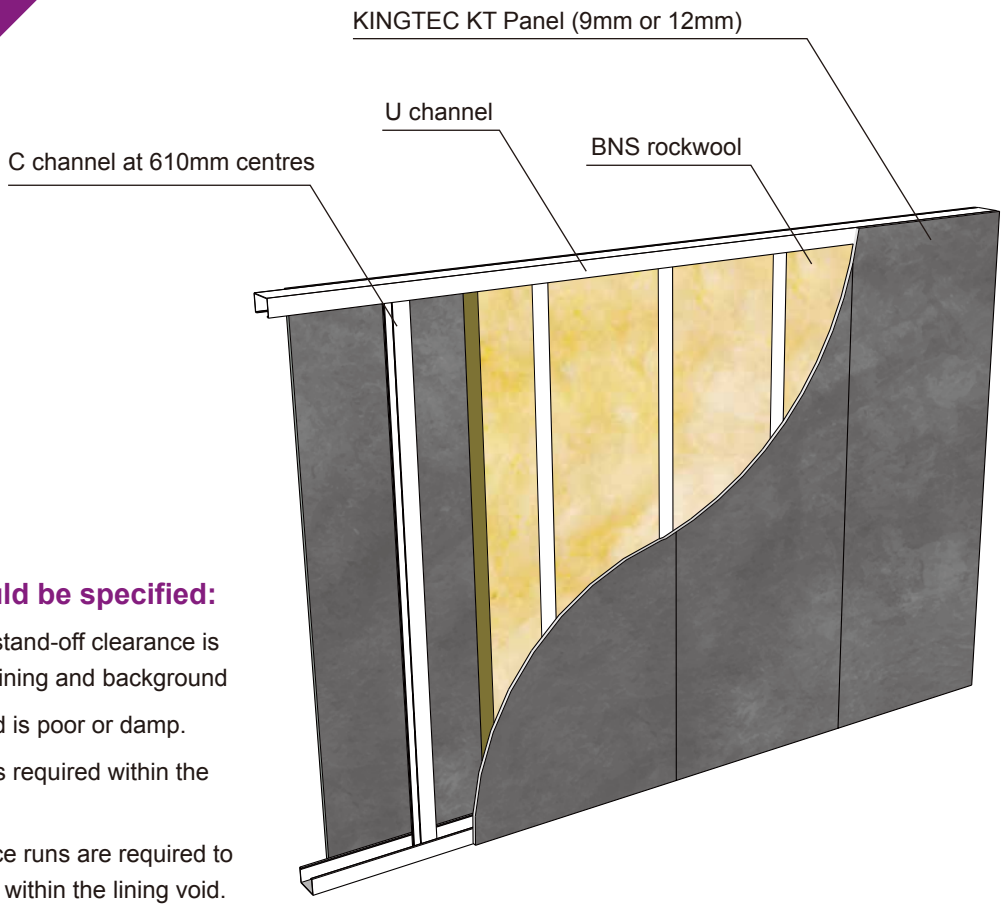
KINGTEC KT Board WALL LINING SYSTEM



Wall Liner should be specified:

- Where a variable stand-off clearance is required between lining and background
- Where background is poor or damp.
- Where insulation is required within the wall lining void.
- Where deep service runs are required to be accommodated within the lining void.

This system utilizes metal channel and bracket components to form a rigid framework for cement board. Technical recommendation shall be seeked from manufacturer for nonstandard situation.

'U' Mounting Brackets prov ide a variable stand-off from the background. The lining void facilitates the introduction of thermal or sound insulation and provides containment for service runs. 'C' Channel forms the main wall lining stud which has extra wide flanges promoting strength and greater sealing for vapour resistance and board attachment.

The system is capable of overriding substantial irregularities in the background.

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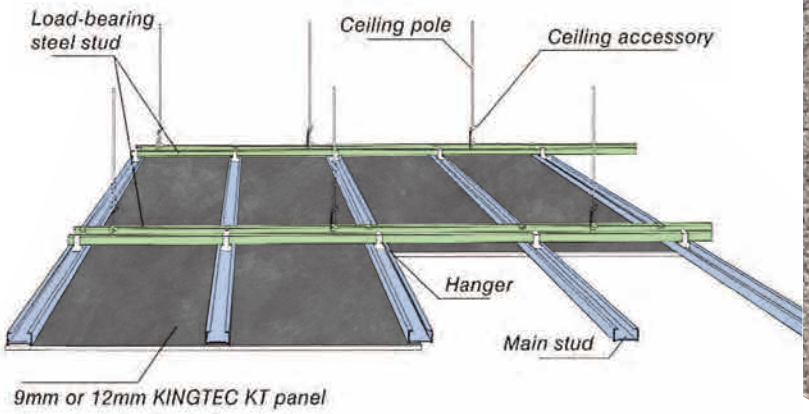
KINGTEC KT Board CLINING SYSTEM

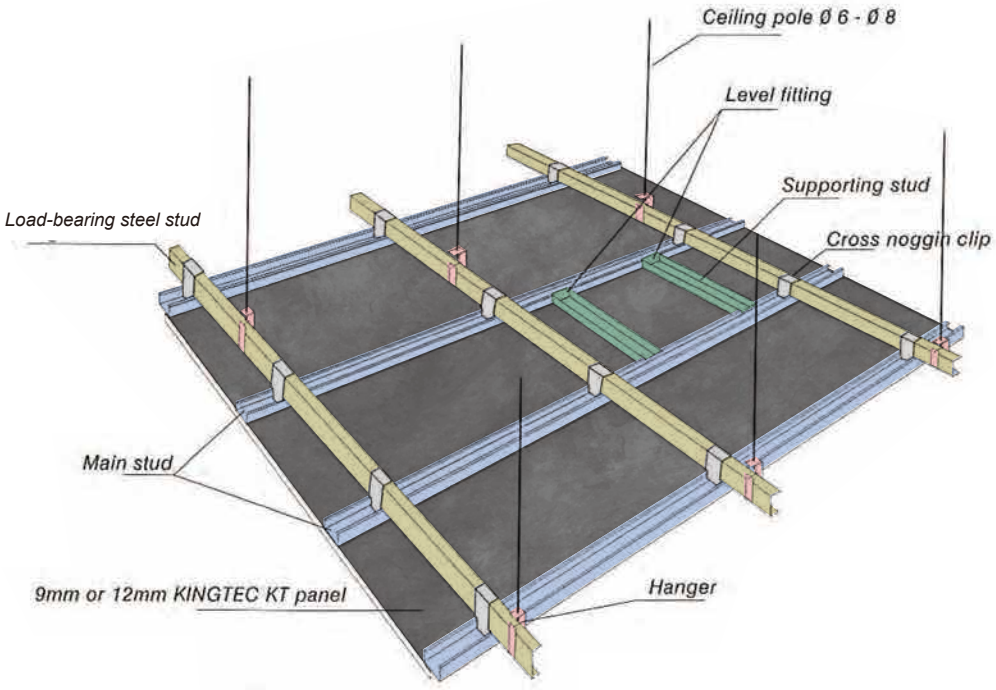
KINGTEC KT Panel can combine with different kinds of channel to form ceilings / bulkheads. These ceilings are simple to install. They are designed for various decoration effect and harsh environments such as high temperature, high humidity

C-Form Channel Ceiling

This ceiling system can be designed to various 3-D modeling with gradual pattern effects. It is popular for large sized ceiling over 50m²and spans in excess of 4m and for deeper ceiling void over 450mm. C-shaped Channel ceiling should be considered when the imposed load is 80-100kg. Where strict deflection is required, the cei ling frame arrangement shall be checked by qualified structural engineer.



C-Form ceiling system for large area (over 50 sq.m)



Lightweight ceiling system for small area (less than 50 sq.m)

Lightweight Ceiling

This ceiling system is designed for simplicity and minimum ceiling void. It is suitable for small ceiling less than 50m² and spans less than 4m.

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Fixing and fastenings

KINGTEC KT Panel shall be fixed to steel or timber studs by countersunk cutting head screw.

Because of its strength it is easy to attach different hangers to KINGTEC KT Panel. Fastenings for heavy attachments should be centered on internal studwork.

Installation:

KINGTEC KT Panel requires careful installation to ensure that its full potential is realized.
In areas where tiling is required, it is essential to comply with the relevant codes of practice on board dryness and the secure and rigid bracing of the boards for tiling.

Fix ing procedure:

1

KINGTEC KT Panel should be fixed to either timber or steel studs at 610mm maximumcen tres. All framing must be straight, plumb and true, and must provide firm support for the boards.

2

Cut the boards 5mm shorter than the floor-to-ceiling height, and butt them firmly against the ceiling.

3

Fix screws or nails, commencing at the centre of the board and working towards the edges.

4

Fix further boards, allowing a 3mm gap betw een boards. Joints on both sides of the partition should be on the same stud to facilitate sealing.

5

Seal joints with a silicone sealer.

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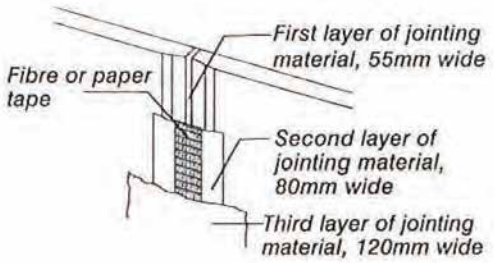
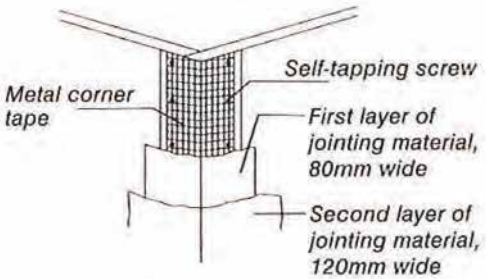
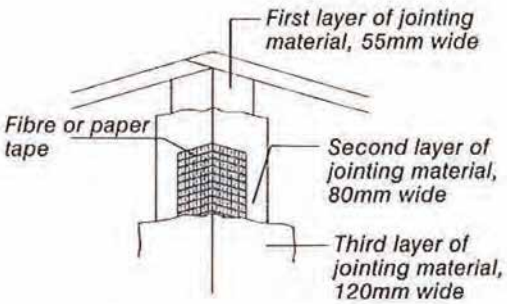
Seamless jointing



Taper edge jointing



Wall corner (outside) surface jointing



Wall corner (inside) surface jointing

Decoration

Painting & Papering:

Any conventional paints can be used. Alkali resistant primers are not necessary. Water based paints (with a watered down first coat) or oil-based paints can be applied to all products using proprietary primer/ top coat systems as recommended by paint manufacturers.
When papering KINGTEC KT Panel, size to seal against suction and improve slip, then hang papers or vinyl in the normal way.

Plastering:

If a skim finish is desired, fix textured side out, apply a sealing coat of universal primer and allow to dry. Follow with a second coat. Apply plaster while this coat is wet and tacky. All times strictly follow plaster/jointing compound manufacturer's instructions for applying to fibre cement boards.

Tiling:

Minimum 9mm thick boards should be used. Supports should be maximum 400mm centres with cross noggins at transverse board joints. Seal the boards with RVA Countersunk corrosion resistant screws should be used to fix boards at 200mm centres. Fix tiles in strict accor dance with manufacturer's recommendations.

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Decoration

1. Basic knowledge

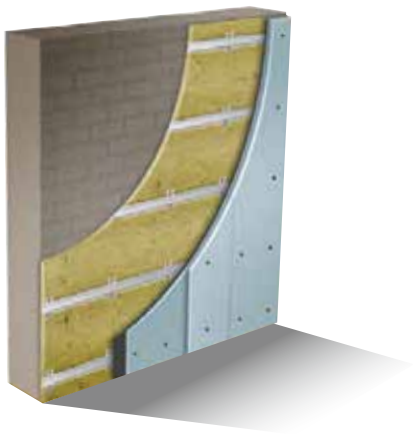
Sound is the vibration of an object that is felt through the human auditory organ. Acoustics involves many disciplines such as natural science, psychology, and art.

The normal hearing frequency range of the human ear is 20 - 20KHz, 5OOHz and below is low frequency, 500Hz - 2000Hz is medium frequency, and 2000Hz is high frequency. The sound level is used to describe the size of the sound, which is calculated by adding the sound of each frequency. Generally, the A sound level is used. The hearing sound level range of the human ear is 0-120dB. Below 15dB is an extremely quiet environment, 25-30dB is a quiet environment, 30-35dB is a quiet environment, and above 40-50dB is a noisy environment.

Noise damages hearing, affects health, and interferes with work and normal life, so it should be controlled.

The sound insulation of a wall is an indicator of the wall's ability to isolate noise. The larger the value, the better the sound insulation effect.

2.Principle of air sound insulation



Drywall adopts double-layer wall or multi-layer composite structure, leaving a certain air gap between the wall surfaces. Due to the elastic layer effect of the air layer, the sound insulation of the total wall can exceed the mass law and meet the requirements of the design specifications.

Placing sound-absorbing materials in the air layer of the drywall will further improve the sound insulation of the drywall. Rock wool and glass wool have good sound absorption performance and can be used as filling materials in soundproof drywall.

The flexible sealing connection structure of the drywall not only ensures the elastic layer effect of the air layer, but also effectively avoids the existence of sound bridges (sound bridges cause sound reduction).

The drywall uses two boards of different thicknesses or densities to prevent the two boards from matching at the same time. The matching valleys of the two panels are staggered, thereby improving the sound insulation performance of the wall.

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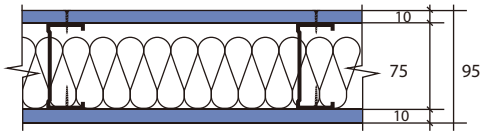
3. Inspection standards

The air sound insulation of KT partition walls complies with the "Building Sound Insulation Evaluation Standard" (GB/T19889.3-2005)
KT partition wall air sound insulation testing complies with the "Sound Insulation Measurement of Acoustic Buildings and Building Components" (GB/T19889.3-2005)

Airborne sound insulation standards

Building Type	Partition area	Calculate sound insulation			
		Special	Level 1	Level 2	Level 3
Residential	Resident/Resident (partition wall)	-	≧50	≧45	≧40
SCHOOL	Classroom/Classroom	-	≧50	≧45	≧40
	Ward/ward	-	≧45	≧40	≧35
	Sick room/noise room	-	≧50	≧50	≧45
hospital	Operating room/ward	-	≧50	≧45	≧40
	Operating room/noise room	-	≧50	≧50	≧45
	Audiometry Room/Other Rooms	-		≧50	
Hotel	Guest Rooms/Guest Rooms	≧50	≧45	≧40	≧40
	Guest Rooms/Corridor (including door)	≧40	≧40	≧35	≧30

46 DB



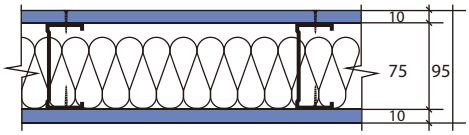
System Functions (Outdoor)

System Features (DB)	fire resistance limit (h)	wall thickness (mm)
46	2	95

System Description

Single layer : 10mm KIngtec KT BOARD
Metal Stud : 75mm Steel Stud
Recommended area : Interior Partition Wall

50 DB



System Functions (Indoor)

System Features (DB)	fire resistance limit (h)	wall thickness (mm)
50	2	95

System Description

Single layer : 10mm KIngtec KT BOARD
Metal Stud : 75mm Steel Stud
Recommended area : Interior Partition Wall
Restroom Partitio n Wall

Sound insulation prediction

Based on the accumulation of a large number of sound insulation test databases, dry wall sound insulation prediction is carried out as a design guide. The relationship between the actual sound insulation of the wall on site and the laboratory test value is complicated by influencing factors (such as the influence of lateral sound transmission, etc.). In the design, when using laboratory test data, a margin should be left based on the actual situation.

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中国认可
国际互认
检测
TESTING
CNAS L0230

检 测 报 告

TEST REPORT

BETC-BZ1-2023-01636

产品名称
Name of Product　金特KT板（纤维水泥平板）

委托单位
Client　宜春市金特建材实业有限公司

检测类别
Test Category　型式检验

建研院检测中心有限公司
CABR TESTING CENTER CO.,LTD
国家建筑工程质量检验检测中心
National Center for Quality Inspection & Test of Building Engineering

2023-000003

建研院检测中心有限公司

CABR TESTING CENTER CO.,LTD

国家建筑工程质量检验检测中心

NATIONAL CENTER FOR QUALITY INSPECTION & TEST OF BUILDING ENGINEERING

委托编号(Commission No.):2023-000003

报告编号(No. of Report):BETC-BZ1-2023-01636

委托单位(Client)		宜春市金特建材实业有限公司		
地 址(ADD.)		------	样品编号(NO.)	BZ1-2023-01636
样品(Sample)	名 称(Name)	金特KT板（纤维水泥平板）	状 态(State)	正常
	商 标(Brand)	金特	规格型号(Type/Model)	厚度9mm
生产单位(Manufacturer)		宜春市金特建材实业有限公司		
送样日期(Date of delivery)		2023-07-21	数 量(Quantity)	(2440×1220×9)mm 3张整板等
工程名称(Name of engineering)		------		
检测(Test)	项 目(Item)	外观质量、形状偏差、尺寸偏差、石棉成分、吸水率、湿涨率、不透水性、抗冲击强度、饱和胶层剪切强度、抗折强度、燃烧性能A1级、表观密度。	地 点(Place)	平谷实验基地
	仪 器(Instruments)	微机控制电子万能试验机、不燃性试验炉、烘箱、量热仪（氧弹热量计）、X射线衍射仪、显微镜、XCJ-4摆锤冲击仪、电子天平	日 期(Date)	2023-07-31～08-24
检 测 依 据(Test based on)		GB/T 7019-2014《纤维水泥制品试验方法》 GB/T 23263-2009《制品中石棉含量测定方法》 等		
判 定 依 据(Criteria based on)		JC/T 412.1-2018《纤维水泥平板 第1部分：无石棉纤维水泥平板》		

检 测 结 论(Conclusion)

经检测，该样品所检项目第1～10项的检测结果符合JC/T 412.1-2018《纤维水泥平板 第1部分：无石棉纤维水泥平板》中B类型式检验的技术指标要求；第11项的检测结果符合GB 8624-2012《建筑材料及制品燃烧性能分级》中平板状建筑材料及制品燃烧性能等级为A(A1)级的技术指标要求；第12项的检测结果详见报告第3页。

（本页以下无正文）

备 注	1. 型式检验样品由委托方提供。 2. 出厂日期：2023年05月10日。 3. 批量150张。			
批准(Approval)	审核(Verification)	主检(Chief tester)	联系电话(Tel.)	报告日期(Date)
			010-80910384	2023-08-28

序号	检测项目		检测依据	技术指标（B 类）	检测结果	单项评定
1	外观质量	正表面	GB/T 7019-2014 5	不得有裂纹、分层、脱皮	无裂纹、分层、脱皮	符合
		背面			无裂纹、分层、脱皮	符合
		掉角		长度方向≤20mm 宽度方向≤10mm 且一张板≤1 个	无掉角	符合
		掉边		掉边深度≤5mm	无掉边	符合
2	形状偏差	厚度不均匀度,%	GB/T 7019-2014 4	≤6	3	符合
		边缘直线度,mm/m		≤2	1	符合
		对角线差,mm		≤5	1	符合
		平整度,mm（单面砂光）		≤0.3（砂光面）	0.1	符合
3	尺寸偏差	长度 L,mm	GB/T 7019-2014 4	±5	+1 0	符合
		宽度 H,mm		±3	+1 0	符合
		厚度 e,mm（无网纹板）		±0.4	+0.2 −0.2	符合
4	石棉成分		GB/T 23263-2009	不得检出石棉成分	无石棉成分	符合
5	吸水率,%		GB/T 7019-2014 6	≤40	34	符合
6	湿涨率,%		GB/T 7019-2014 8	DS 板≤0.25	0.11	符合

序号	检测项目		检测依据	技术指标（B 类）		检测结果	单项评定
7	不透水性		GB/T 7019-2014 7	24h 检验后板底面允许出现潮湿痕迹，但不应出现水滴。		24h 检验后板底面有潮湿痕迹、无水滴。	符合
8	抗冲击强度,kJ/m²		GB/T 7019-2014 11	C5：≥2.6		3.7	符合
9	饱和胶层剪切强度,kPa		GB/T 12954.1-2008	≥345		1816	符合
10	抗折强度,MPa（无涂面层）	R2 级	GB/T 7019-2014 10	≥AL=7.4（$\bar{L}$=7）		8.3	符合
		单块最低强度		≥4.9		6.2	符合
11	燃烧性能	炉内温升,℃	GB/T 5464-2010	A(A1)级	≤30	1	符合
		持续燃烧时间,s			= 0	0	符合
		质量损失率,%			≤50	20	符合
		总热值 PCS,MJ/kg	GB/T 14402-2007		≤2.0	0.6	符合
12	表观密度,g/cm³		GB/T 7019-2014 6	————		1.28	——

（本页以下无正文）

备 注	此栏空白

样品说明：金特 KT 板（纤维水泥平板）（委托方提供）。

送检样品照片

资料仅供参考 不做验收使用

备 注	第 11 项燃烧性能试验结果只与制品的试样在特定试验条件下的性能相关，不能将其作为评价该制品在实际使用中潜在火灾危险性的唯一依据。

No. L0230

TEST REPORT

NO. BETC-NH-2006-10

SPECIMEN:	KINGTEC KT BOARD (PARTITION)
TEST SPONSOR:	KINGTEC BUILDING MATERIALS INDUSTRIAL CO.,LTD.
TEST CATEGORY:	SAMPLING
REPORT DATE:	JANUARY 12, 2006

BUILDING ENGINEERING TESTING CENTER
CHINA ACADEMY OF BUILDING RESEARCH

SUMMARY:

Test Sponsor:	Kingtec Building Materials Industrial Co.,Ltd.
Manufacture:	Kingtec Building Materials Industrial Co.,Ltd.
Sampling by:	Yuanzhou Yichun Bureau of Quality and Technical Supervision
Specimen:	KINGTEC KT Board (Partition)
Trade Mark:	KINGTEC
Reference:	2440mm(W)×1220mm(H)×8mm(T)
Date of Receiving:	January 4, 2006
Test Item:	Fire Resistance
According to:	BS476 Part 20:1987, BS476 Part 22:1987
Test Lab:	The fire Lab of BBTC, CABR
Test Facility:	Vertical Fire Test Furnace, 7 Type K Thermocouples for the Furnace Temperature and 5 Type K Thermocouples for the Unexposed Face, Pressure Sense Head, A 6mm Diameter Gap Gauge, A 25mm Diameter Gap Gauge, Cotton Pad, A Rove Thermocouple
Date of Test:	January 6, 2006

CONCLUSION:

KINGTEC KT Board (Partition) has been subjected to a fire resistance test in accordance with BS 476:Part 22:1987, clause 5. The specimen satisfied the performance requirements specified in the standard for the periods stated below:

Integrity: **No less than 60minutes**
Insulation: **No less than 60minutes**

The test ceased after a period of 61 minutes.

SIGNATURE:

Reported by: Verified by: Authorized by:

Yu Tong
Engineer, Fire Test Lab

Yi Shi
Director, Fire Test Lab

ZhenGang Lu
Director of Fire Department

REPORT ISSUED: January 12, 2006

TEST PROCEDURE

1 INTRODUCTION

According to the sponsor requirement, a fire resistance test was undertaken on KINGTEC KT Board (Partition) to determine the period of time for which it would satisfy the criterion of BS476 Part 22:1987 clause 5 for partition.

2 TEST SPECIMEN CONSTRUCTION

2.1 The specimen erected onto the test frame. The installation drawing is as shown in figure 3. The component of the specimen is listed in Annex A.

2.2 The drawings, figure 4 to figure 8, and the description Annex A are based upon a detailed survey of the specimen and the information supplied by the sponsor.

2.3 The specimen was fixed a couple of days before testing.

3 TEST METHOD AND THE INSTRUMENTS

3.1 The furnace was controlled so that its mean temperature and the pressure complied with the requirements for clause 3 of BS 476:Part20: 1987.

3.2 Seven thermocouples were suitably positioned away from the specimen 100mm within the vertical furnace to enable the furnace temperature to be monitored and controlled.

3.3 A pressure head was positioned at the point 500mm below the furnace roof in order to measuring the overpressure in the furnace. After the first five minutes of testing and for the remainder of the test, the furnace pressure was controlled so that it complied with the requirements of BS476: Part 20: 1987, Clause 3.2.2. The pressure differential, relative to the laboratory atmosphere was 18 (±2) Pa.

3.4 Five surface thermocouples were attached to the unexposed face of specimen. The positions of all the unexposed face thermocouples are shown in Figure 3. A roving thermocouple was available to measure the temperatures on the unexposed surface that might appear to be hotter than the temperatures indicated by the fixed thermocouples.

3.5 The position measuring the deflection of the specimen is at the point of mid height and mid width of the specimen.

3.6 Observations were made on the general behavior of the specimen, including the

maximum deflection during the test. The roving thermocouple, cotton pads and the gap gauges were used, if considered appropriate. Any flaming on the unexposed surface of the specimen was recorded.

3.7 Photographs for the unexposed test specimen face were taken prior to test and periodically throughout the test. A photograph for the exposed test specimen face was taken after the test.

4 PERFORMANCE CRITERIA

KINGTEC KT Board (Partition) shall be determined with respect to integrity and insulation respectively according to clause 5.6.1 of BS476 Part 22:1987, clause 10.3 and clause 10.4 of BS476 Part 20:1987. The criteria for failure shall be as follows:

Integrity:

(a) during the test, the cotton pad provisions apply.
(b) during the test, the 6mm gap gauge provisions apply to any gap other than at sill level(BS 476 Part 20, clause 10.3.2(b), the 6mm diameter gap gauge can penetrate a through gap such that the end of the gauge projects into the furnace and the gauge can be moved in the gap for a distance of at least 150mm);
(c) during the test, the 25mm gap gauge provisions apply to any gap(BS 476 Part 20, clause 10.3.2(b), the 25mm diameter gap gauge can penetrate a through gap such that the end of the gauge projects into the furnace);
(d) during the test, the requirements concerning sustained flaming apply.

Insulation:

(a) if the mean unexposed face temperature increases by more than 140℃ above its initial value;
(b) if the temperature recorded at any position on the unexposed face, either by a fixed thermocouple or by the roving thermocouple subject to the following provisions is in excess of 180℃ above the initial mean unexposed face temperature;
(c) when integrity failures occur.

5 TEST RESULTS

5.1 The graph in figure 1 shows the mean furnace temperature-time curve of test specimen in relation to the standard curve. Table 1 shows the temperature rise of the furnace. In addition, it shows the percentage difference between the area under the standard curve and the area under the furnace curve compared with the percentage tolerance allowable within the standards.

5.2 The ambient air temperature in the vicinity of the test construction was 4.5℃ at the

start of the test with +2°C variation during the test.

5.3 The figure 2 shows the mean temperature rise for the unexposed side. Table 2 shows the temperature rise for the unexposed of specimen according to the thermocouples.

5.4 Table 3 shows observations for the specimen behaviors of the unexposed face during the test.

5.5 Photographs of the specimen are shown in Plates 1 to 5.

6 EVALUATION

6.1 Integrity – At 60 minutes, the integrity failure did not occur

6.2 Insulation – At 60 minutes, the insulation failure did not occur.

7 CONCLUSIONS

KINGTEC KT Board (Partition) was satisfy the criterion of BS476 Part 22:1987 for the following period:

Integrity: **No less than 60 minutes**
Insulation: **No less than 60 minutes**

8 LIMITATION

8.1 The results relate only to the behavior of the specimen of the element of construction under particular condition of test. They are not intended to be sole criteria for assessing the potential fire performance of the element in use, nor do they reflect the actual behavior in fires.

8.2 Appendix A of BS 476:Part 20:1987 provides guidance information on the application of fire resistance tests and the interpretation of test data. The test result only applies to the product that is equal or less than the overall size of the specimen and the thickness is the same or greater than the specimen. Meanwhile, the material and the structure is also the same with the specimen. Application of the results to the product, which the overall size is larger than the specimen's, or the component is different, should be review and propose an appraisal report.

(No text on this page hereinafter)

9 NOTICE

The specification of fire test methods may be developed or the products quality control may be requested. Therefore, for the test reports over five years old, both the manufacture and the users should consider whether they are applicability or not.

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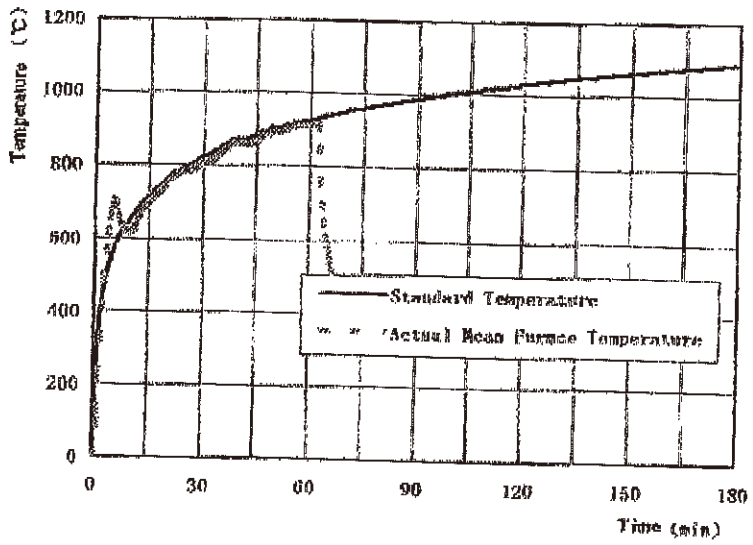

Figure 1 Actual Mean Furnace and Standard Temperature/Time Curve

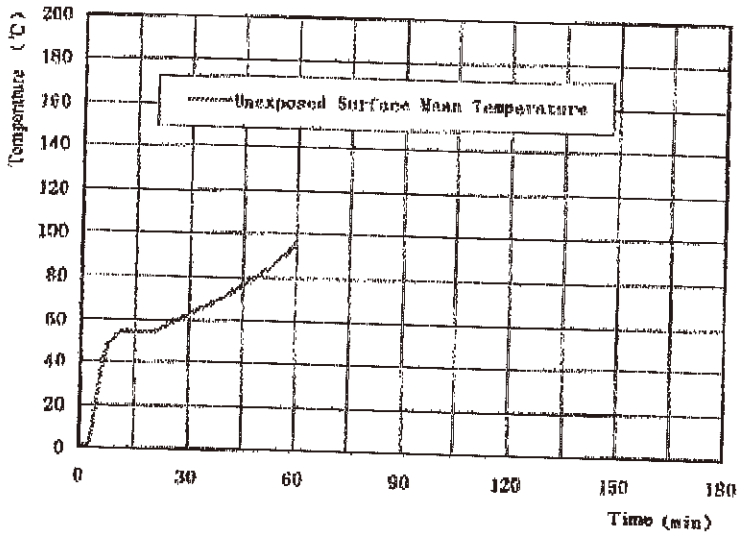

Figure 2 Unexposed Surface Mean Temperature/Time Curve

(No text on this page hereinafter)

Table 1 Standard and Actual Furnace Temperatures, Temperature Tolerance

Time (minutes)	Standard Furnace Temperatures (℃)	Actual Furnace Temperatures (℃)	BS 476 Tolerance (%)	Percentage Difference (%)
1	329.2	226.3		
2	424.5	408.0		
3	482.3	557.5		
4	523.9	651.0		
5	556.4	705.1	±15	5.2
6	583.1	668.0		
7	605.8	637.0		
8	625.5	623.7		
9	642.8	619.2		
10	658.4	620.1	±10	4.9
12	685.4	667.5		
14	708.3	696.6		
16	728.2	716.8		
18	745.7	726.6		
20	761.4	757.2		
22	775.6	773.6		
24	788.5	784.5		
26	800.5	789.9		
28	811.5	798.1		
30	821.8	807.7	±5	0.1
32	831.4	815.0		
34	840.5	832.4		
36	849.0	848.7		
38	857.1	859.9		
40	864.7	859.7		
42	872.0	859.5		
44	879.0	863.1		
46	885.6	879.2		
48	892.0	886.2		
50	898.1	900.3		
52	903.9	899.3		
54	909.6	909.8		
56	915.0	911.9		
58	920.3	912.3		
60	925.3	914.9		

(No text on this page hereinafter)

Table 2 Individual and Mean Unexposed Temperatures Risc(℃) of the Specimen

Time (min)	Thermocouple No					Mean Temp (℃)
	10#	11#	12#	16#	19#	
5	21.5	8.0	29.4	30.3	32.3	24.3
10	51.9	36.0	53.5	60.9	61.6	52.8
15	54.9	42.3	54.5	60.2	58.3	54.0
20	54.8	43.0	54.1	59.8	59.3	54.2
25	58.2	44.0	61.0	65.5	63.9	58.5
30	61.6	50.7	64.8	69.8	66.0	62.6
35	63.2	55.1	67.8	76.9	72.0	67.0
38	64.8	55.4	70.0	79.9	76.7	69.4
40	66.2	56.8	72.9	81.5	79.4	71.4
45	71.1	59.8	80.4	86.8	86.6	76.9
50	75.7	63.0	84.7	91.4	93.0	81.6
55	80.9	66.8	89.9	97.0	103.5	87.6
60	85.4	70.2	99.5	107.4	120.2	96.5

Table 3 Observations for the specimen behaviors during the test

Time (min)	Observations
0	The test was started.
20	The deflection measured was 38mm.
30	The unexposed face was accidented and the deflection measured was -6mm.
38	The crack appeared near the point A_1 see figure 3.
60	The deflection measured was -116mm. The width of the crack did not exceed 6mm.
61	The test ceased.

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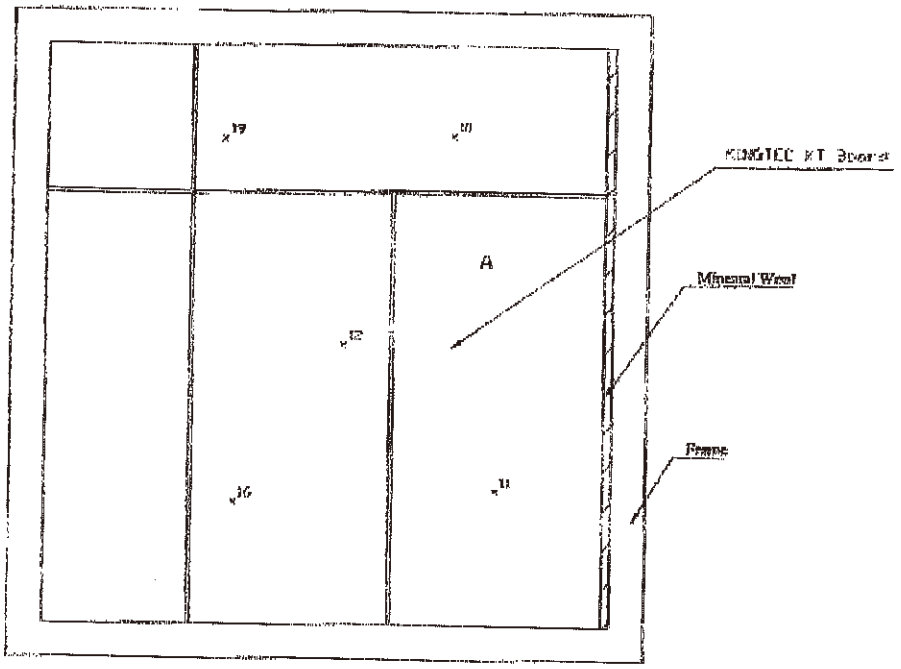

X ---- Position of thermocouple points on the unexposed face

Figure 3 General Figure

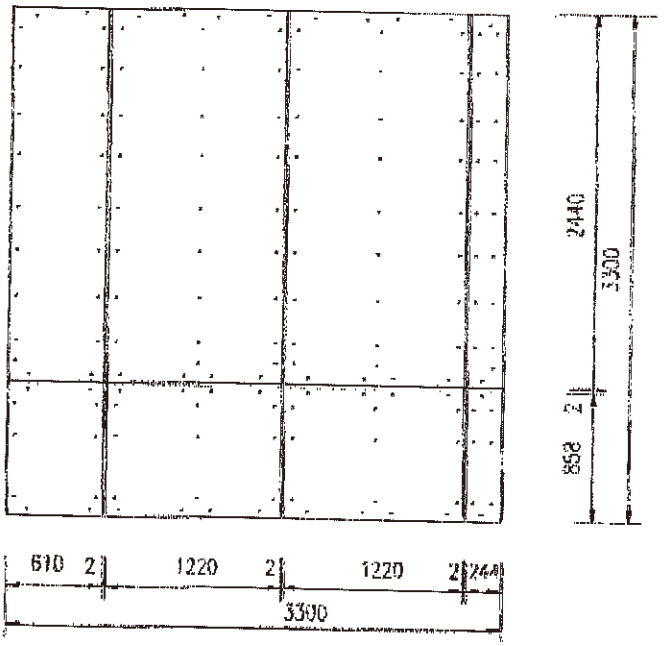

Figure 4 Exposed Side Elevation

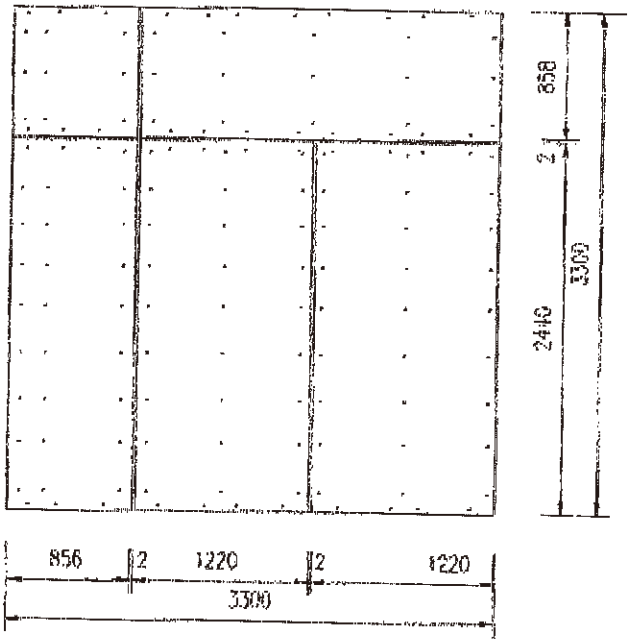

Figure 5 Unexposed Side Elevation

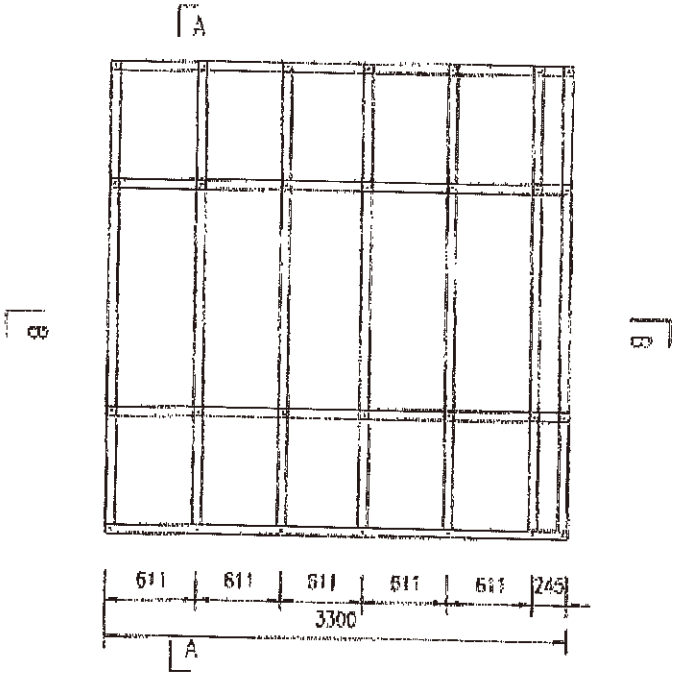

Figure 6 Steel Channel Frame

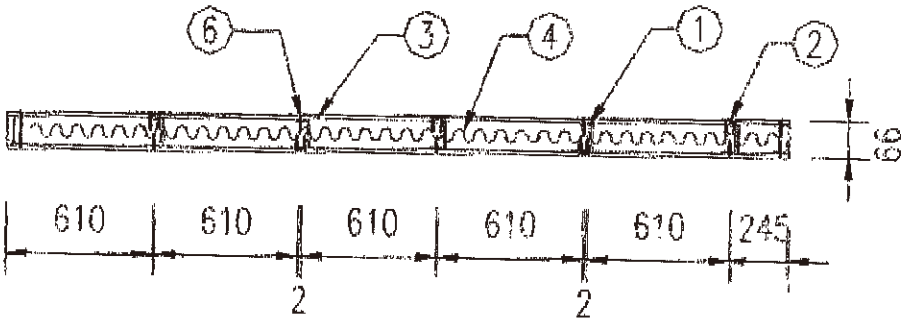

Figure 7 Section A-A

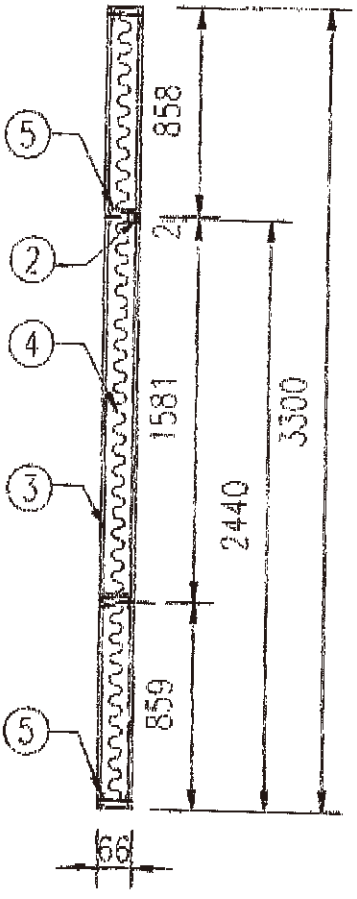

Figure 8 Section B-B

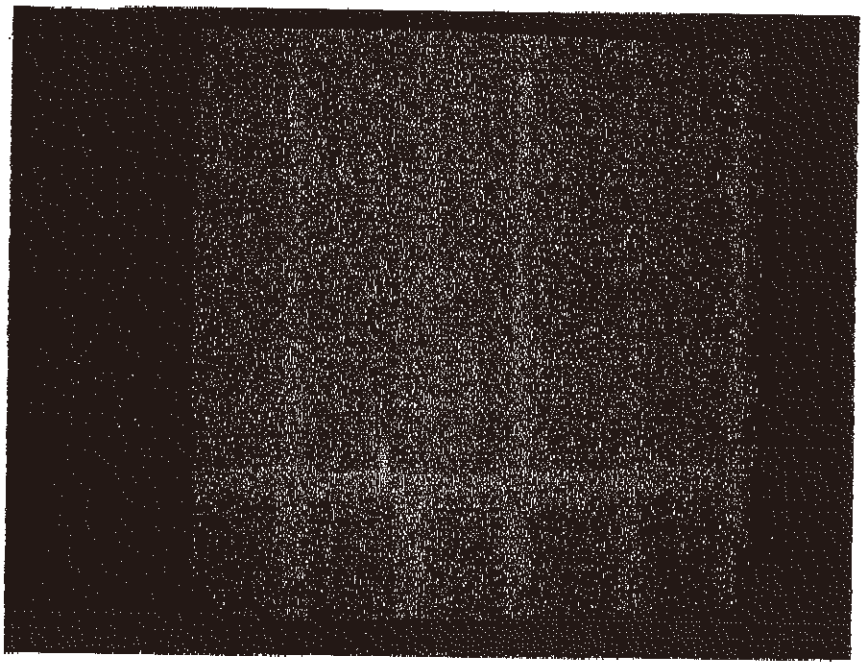

Plate 1 Exposed face prior to testing

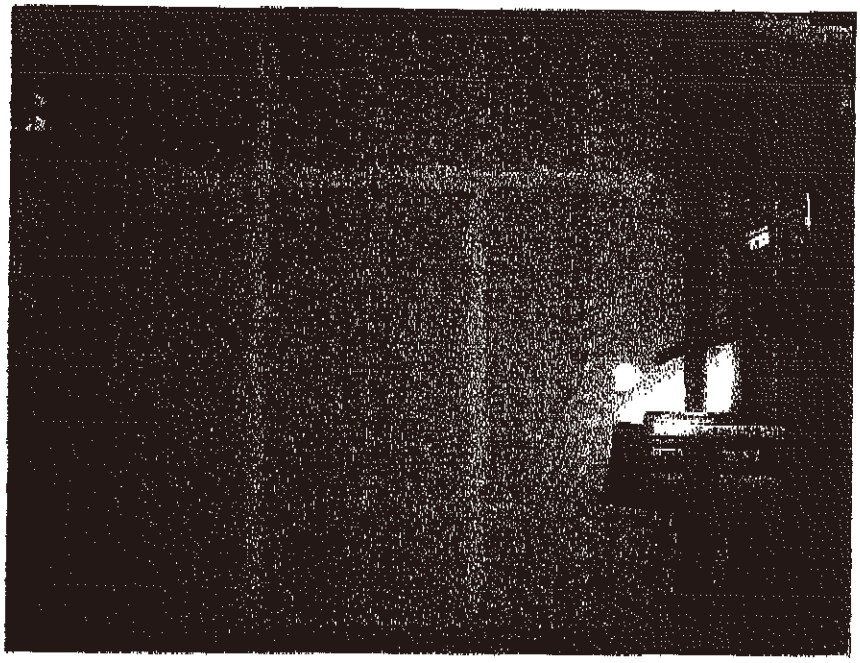

Plate 2 Unexposed face prior of testing

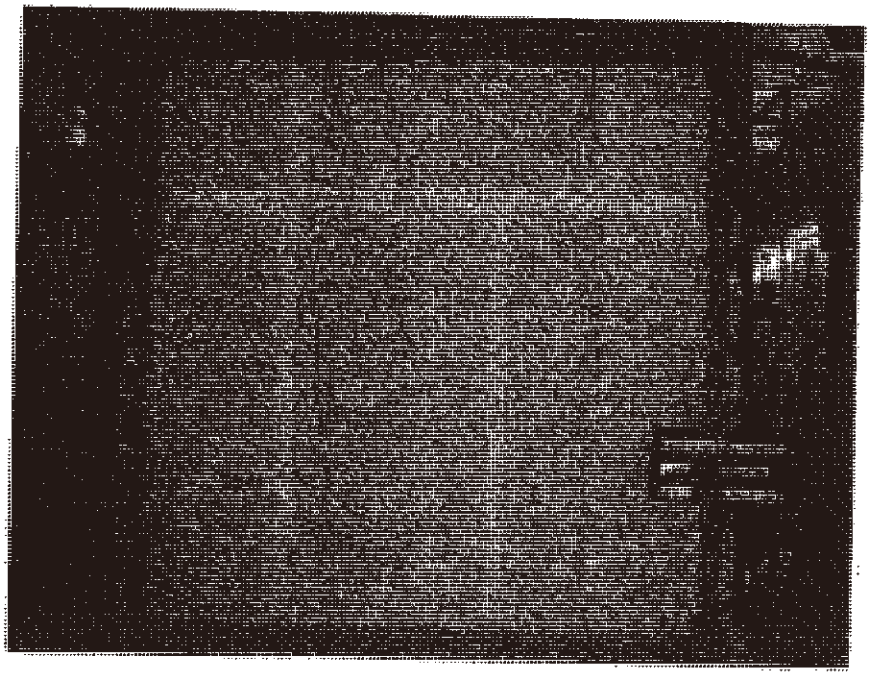

Plate 3 Unexposed face after 30 minutes of testing

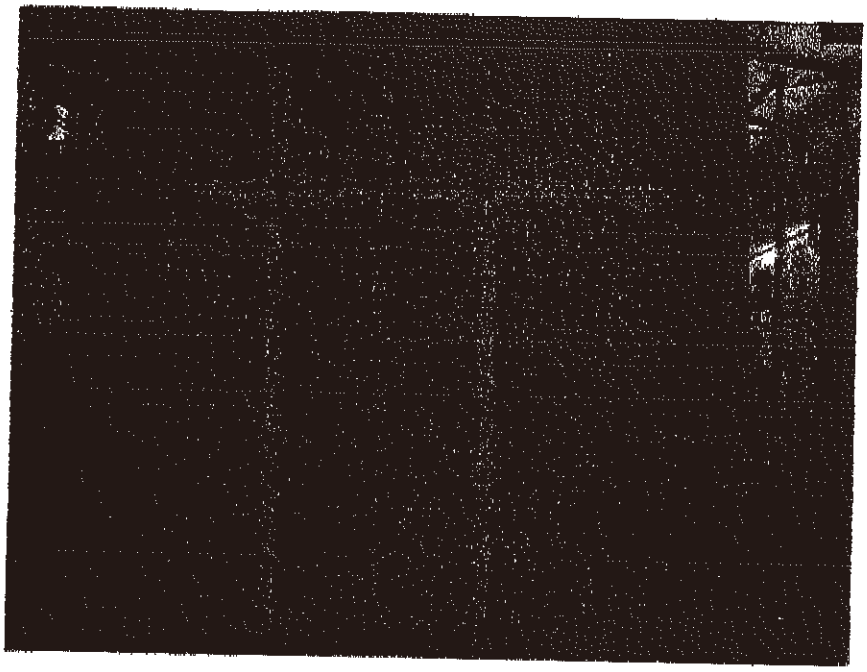

Plate 4 Unexposed face after 60 minutes of testing

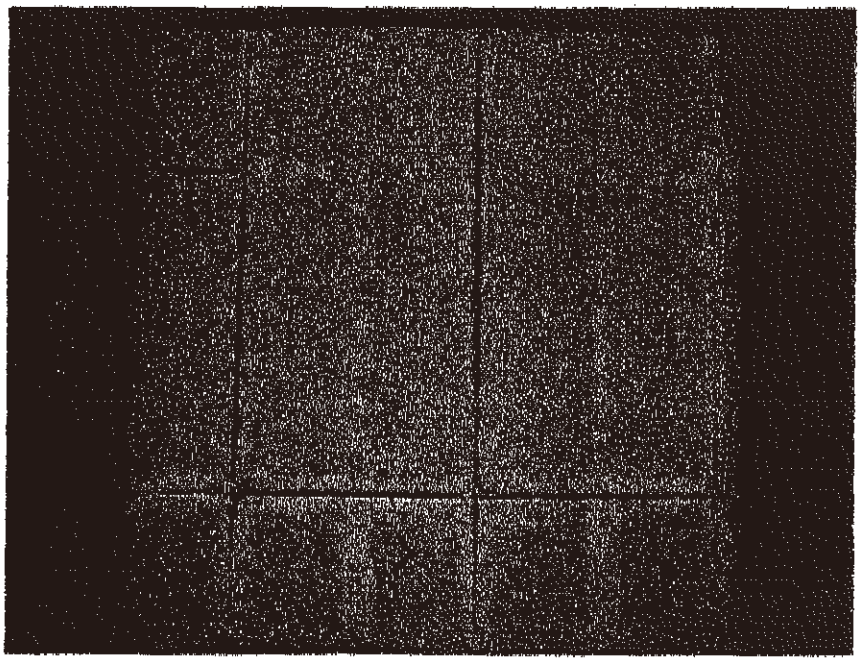

Plate 5 Exposed face after the test

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Annex A

Schedule of components (Refer to Figures 4 to 8. All values are nominal unless stated otherwise. All other details are as stated by the sponsor)

Item		Description
1. Steel Stud		
Material	:	GMS C type
Size	:	50mm x 50mm x 0.5mm
2. Grouted		
Materials and Mixture	:	Gypsum : 108# Gel : water = 100 : 8 : 100
3. Board		
Reference	:	KINGTEC KT Board
Thickness	:	8mm
4. Insulation		
Material	:	Mineral Wool
Thickness	:	50mm
Density	:	80kg/m^3
5. Steel Channel		
Material	:	GMS U type
Size	:	50mm x 40mm x 0.5mm
6. Screw		
Type	:	Self tapping screw
Size	:	M3.5
Spacing	:	200mm~250mm

(No text on this page hereinafter)

Notes of Report

1. This test report shall be invalid without the official seal.
2. Any duplicate of this test report without an original official seal shall be invalid.
3. Any test report without the signature titled "Authorized by", "Verified by" and "Reported by" shall be invalid.
4. Any alteration without the official approval shall be invalid.
5. Any objection to this test report shall be submitted to the issuer of this test report within 15 days upon receipt this test report.
6. Generally commissioned and subcontracted testing is only responsible to the samples submitted.

Add: No.30 Beisanhuan East Road, Beijing 100013, P.R.China

Tel: (8610)-84281336

(8610)-84272233 Ext 2235

Fax: (8610)-84288515

E-mail: betc@sina.com

TEST REPORT

Your Ref: Email dated 28 Jun 2006

Date: 04 Jul 2006

Our Ref: 54S063476/2B/LGJ

DID: 68653783

Fax: 68621433

NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services". The terms and conditions governing the issue of this report are set out as attached within this report.

PSB Corporation

SUBJECT:

Non-combustibility test on "Kingtec KT Board" Kingtec quartz cement fibre board material submitted by Kingtec (Hong Kong) Building Materials Industrial Co., Ltd. on 30 May 2006.

TESTED FOR:

Jinte Constructional Material Industrial Limited Company
368 Ping An Road, Yichun City
Jiangxi Province
People's Republic of China

Attn: Mr Shi Po De

DATE OF TEST:

28 Jun 2006 and 29 Jun 2006

PURPOSE OF TEST:

To determine whether the material is non-combustible when it is exposed to the conditions of the test specified in British Standard 476: Part 4: 1970 "Fire Test on Building Materials and Structures - Non-combustibility Test for Materials".
The test was conducted at PSB Corporation fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.
fire propagation for products".

PSB TEST Your Peace of Mind

ISO 9001 JQA-QMA 1004D

ACCREDITED LABORATORY SAC-SINGLAS

LA-2001-0212-A
LA-2001-0213-F
LA-2001-0214-E
LA-2001-0215-B
LA-2001-0216-G
LA-2001-0217-G

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

PSB Corporation

DESCRIPTION OF SAMPLES:

36 pieces of sample, said to be "Kingtec KT Board" (1335kg/m^3) Kingtec quartz cement fibre board material, each of nominal size of 40mm x 40mm x 9mm thickness were received. 6 blocks of specimen, each of nominal test size of 40mm x 40mm x 50mm thickness were prepared.

TEST PROCEDURE:

Specimens were exposed to the specified heating conditions (750 ± 10°C) in a furnace conforming to Clause 6 and illustrated in Figure 1, 2 and 3 of the Standard. The furnace was heated and its temperature stabilized at 750 ± 10°C for more than 10 minutes. One specimen was then inserted in the furnace, the whole operation was performed in less than 5 seconds. The temperature of the specimens and the furnace were measured by two separate Chromel/Alumel thermocouples continuously for 20 minutes on the chart of a recorder. The flaming time of the specimen was determined by a stop watch. The procedure was repeated twice for two other specimens, one at each time.

RESULTS:

Description	Specimen 1	Specimen 2	Specimen 3	Requirements
Time of continuous flaming (sec.)	0	0	0	<10
Temperature rise of furnace (°C)	22	32	13	<50
Temperature rise of sample (°C)	0	0	0	<50
Classification	Non-combustible	Non-combustible	Non-combustible	-

CONCLUSION:

A non-combustibility test for materials in accordance with British Standard 476 Part 4 : 1970 has been performed on the material as described in this report and the classification of the sample is non-combustible.

Mah Poh Huat
Associate Engineer

Chan Lung Toa
Product Manager
(Fire Safety & Security Products)
Mechanical

PSBCorporation

This Report is issued under the following conditions:

1. Results of the testing/calibration in the form of a report will be issued immediately after the service has been completed or terminated.

2. Unless otherwise requested, a report shall contain only technical results. Analysis and interpretation of the results and professional opinion and recommendations expressed thereupon, if required, shall be clearly indicated and additional fee paid for, by the Client.

3. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that PSB Corporation approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that PSB Corporation in any way "guarantees" the later performance of the product/equipment.

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10. Unless otherwise stated, the tests are carried out in PSB Corporation Pte Ltd, No.1 Science Park Drive Singapore 118221.

June 2006

TEST REPORT

PSB Corporation

Your Ref: -

Date: 02 Feb 2006

Our Ref: 54S060243/OKH

Page: 1 of 5

DID: 68653783

Fax: 68621433

NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services". The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT:

Large scale surface spread of flame test on "Kingtec KT Board" Kingtec quartz cement fibre board material submitted by Jinte Constructional Material Industrial Limited Company in Yichun City on 19 Dec 2005.

TESTED FOR:

Jinte Constructional Material Industrial Limited Company in Yichun City
368 Ping An Road, Yichun City
Jiangxi Province
People's Republic of China

Attn: Mr Shi Zi De

DATE OF TEST:

23 Dec 2005

PURPOSE OF TEST:

To determine the tendency of the surface of a material or a combination of materials to support the spread of flame across its surface and to classify the surface according to the test given in British Standard 476 : Part 7 : 1997.
The test was conducted at PSB Corporation fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.

PSB TEST Your Peace of Mind

JQA-QMA 10028

ilac-MRA ACCREDITED LABORATORY SAC-SINGLAS

LA-2001-0213-A
LA-2001-0213-F
LA-2001-0214-E
LA-2001-0215-B
LA-2001-0216-G
LA-2001-0217-G

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

DESCRIPTION OF SAMPLES:

9 pieces of sample, said to be "Kingtec KT Board" Kingtec quartz cement fibre board material, each of nominal size of 885mm x 270mm x 9mm thickness were received. The bulk density of the sample was found to be about 1335kg/m^3.

TEST PROCEDURE:

Prior to test, the specimens were prepared and conditioned in accordance with paragraphs 5.3 to 5.6 of the standard and secured to a specimen holder as described in paragraph 6.3.

Six specimens were tested with either face exposed to the specified thermal radiation from the apparatus described in paragraph 6.1 of the standard. The intensity of the radiated heat incident on the specimen varies with distance from the hotter end, so that when the specified calibration panel is mounted in the place to be occupied by the specimen, the irradiance of the radiometer is as given in Table 1. The test was terminated when the flame front reached the 825mm reference line, or after 10 minutes has elapsed, whichever is the shorter.

Table 1 : Irradiance Along Horizontal Reference Line on the Calibration Board

Distance along reference line from inside edge of specimen holder	Irradiance kW/m^2		
mm	specified	min.	max.
75	32.5	32.0	33.0
225	21.0	20.5	21.5
375	14.5	14.0	15.0
525	10.0	9.5	10.5
675	7.0	6.5	7.5
825	5.0	4.5	5.5

PSB Corporation

RESULTS OF TEST:

Specimen No.	1	2	3	4	5	6
Spread of flame at first 1½ minutes (mm)	0	0	0	0	0	0
Distance (mm)	Time of spread of flame to indicated distance (minutes • seconds)					
Start of flaming	nil	nil	nil	nil	nil	nil
75	-	-	-	-	-	-
165	-	-	-	-	-	-
190						
215						
240						
265						
290						
375						
455						
500						
525						
600						
675						
710						
750						
785						
825						
865						
Time of maximum spread of flame (minutes • seconds)	-	-	-	-	-	-
Distance of maximum spread of flame (mm)	0	0	0	0	0	0
Comments	None					

PSB Corporation

Classification of Surface Spread of Flame

Classification	Spread of flame at 1.5 min.		Final spread of flame	
	Limit (mm)	Limit for one specimen in sample (mm)	Limit (mm)	Limit for one specimen in sample (mm)
Class 1	165	165 + 25	165	165 + 25
Class 2	215	215 + 25	455	455 + 45
Class 3	265	265 + 25	710	710 + 75
Class 4	Exceeding the limits for class 3			

CONCLUSION:

In accordance with the class definitions specified in the Standard, the test results show that the sample tested has a Class One Surface Spread of Flame.

REMARKS:

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. The sample was tested with either face exposed to the heat and backed with calcium silicate board.

Mah Poh Huat
Associate Engineer

Chan Lung Toa
Product Manager
(Fire Safety & Security Products)
Mechanical

This Report is issued under the following conditions:

1. Results of the testing/calibration in the form of a report will be issued immediately after the service has been completed or terminated.

2. Unless otherwise requested, a report shall contain only technical results. Analysis and interpretation of the results and professional opinion and recommendations expressed thereupon, if required, shall be clearly indicated and additional fee paid for, by the Client.

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10. Unless otherwise stated, the tests are carried out in PSB Corporation Pte Ltd, No.1 Science Park Drive Singapore 118221.

May 2005

TEST REPORT

Your Ref: Email dated 28 Jun 2006

Date: 04 Jul 2006

Our Ref: 54S063476/1B/OKH

DID: 68663783

Fax: 68621433

NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services". The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT:

Fire propagation test on "Kingtec KT Board" Kingtec quartz cement fibre board material submitted by Kingtec (Hong Kong) Building Materials Industrial Co., Ltd. on 30 May 2006.

TESTED FOR:

Jinte Constructional Material Industrial Limited Company
368 Ping An Road, Yichun City
Jiangxi Province
People's Republic of China

Attn: Mr Shi Po De

DATE OF TEST:

21 Jun 2006

PURPOSE OF TEST:

To determine the Index of Performance of the material when it is exposed to the conditions of the test specified in British Standard 476 : Part 6 : 1989 "Method of test for fire propagation for products".
The test was conducted at PSB Corporation fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.

PSB TEST ®
Your Peace of Mind

ISO 9001
JQA-QMA 10040

ACCREDITED LABORATORY
SAC-SINGLAS

LA-2001-0212-A
LA-2001-0213-F
LA-2001-0214-E
LA-2001-0215-B
LA-2001-0216-G
LA-2001-0217-G

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

PSB Corporation

DESCRIPTION OF SAMPLES:

6 pieces of sample, said to be "Kingtec KT Board" (1335kg/m^3) Kingtec quartz cement fibre board material, each of nominal size of 225mm x 225mm x 9mm thickness were received.

TEST PROCEDURE:

Three specimens were tested with either face exposed to the specified heating conditions, in an apparatus conforming to paragraph 5 and illustrated in Figures 1 to 3 of the Standard.

The calibration and test procedures were as defined in paragraphs 8 and 9 respectively, of the specification. The apparatus was calibrated prior to test and the actual calibration curve obtained is shown in Figure 1 of this report.

RESULTS OF TEST:

The mean temperature rise above ambient obtained from three specimens is also shown in Figure 1 (i.e. with the actual calibration curve). The mean temperature readings for the material and the calibration curve were obtained at the following intervals from the start of the test: at 1/2 minute intervals up to 3 minutes, at 1 minute intervals from 4 to 10 minutes, and at 2 minutes intervals from 12 to 20 minutes.

PSBCorporation

RESULTS OF TEST: (Cont'd)

From these readings, the index of performance for the material was determined as follows:

$$s_1 = \sum_{t=0.5}^{t=3} \frac{\Theta_s - \Theta_c}{10t}; \quad s_2 = \sum_{t=4}^{t=10} \frac{\Theta_s - \Theta_c}{10t}$$

and $$s_3 = \sum_{t=12}^{t=20} \frac{\Theta_s - \Theta_c}{10t};$$

$$S = s_1 + s_2 + s_3$$

where S = Index of performance for each of the specimens tested and s_1, s_2 and s_3 are sub-indices

t = Time in minutes from the origin at which readings are taken.

Θ_s = Temperature rise in deg. C for the specimen at time, t

Θ_c = Temperature rise in deg. C for the calibration sheet at time, t

In computations only the positive value of $\frac{\Theta_s - \Theta_c}{10t}$ was used.

PSB Corporation

RESULTS OF TEST: (Cont'd)

The following test results were obtained for each specimen tested:

Specimen	Sub-Indices			Index of Performance
	s_1	s_2	s_3	S
A	0.3	0.0	0.0	0.3
B	0.1	0.0	0.0	0.1
C	0.2	0.0	0.0	0.2

CONCLUSION:

The test results obtained for the sample tested are as follows:

Index of overall performance, I = 0.2
(Fire propagation index)

Sub-index, i_1 = 0.2

Sub-index, i_2 = 0.0

Sub-index, i_3 = 0.0

REMARKS:

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. The sample was tested with either exposed to the heat and backed with calcium silicate board.

Mah Poh Huat
Associate Engineer

Chan Lung Toa
Product Manager
(Fire Safety & Security Products)
Mechanical

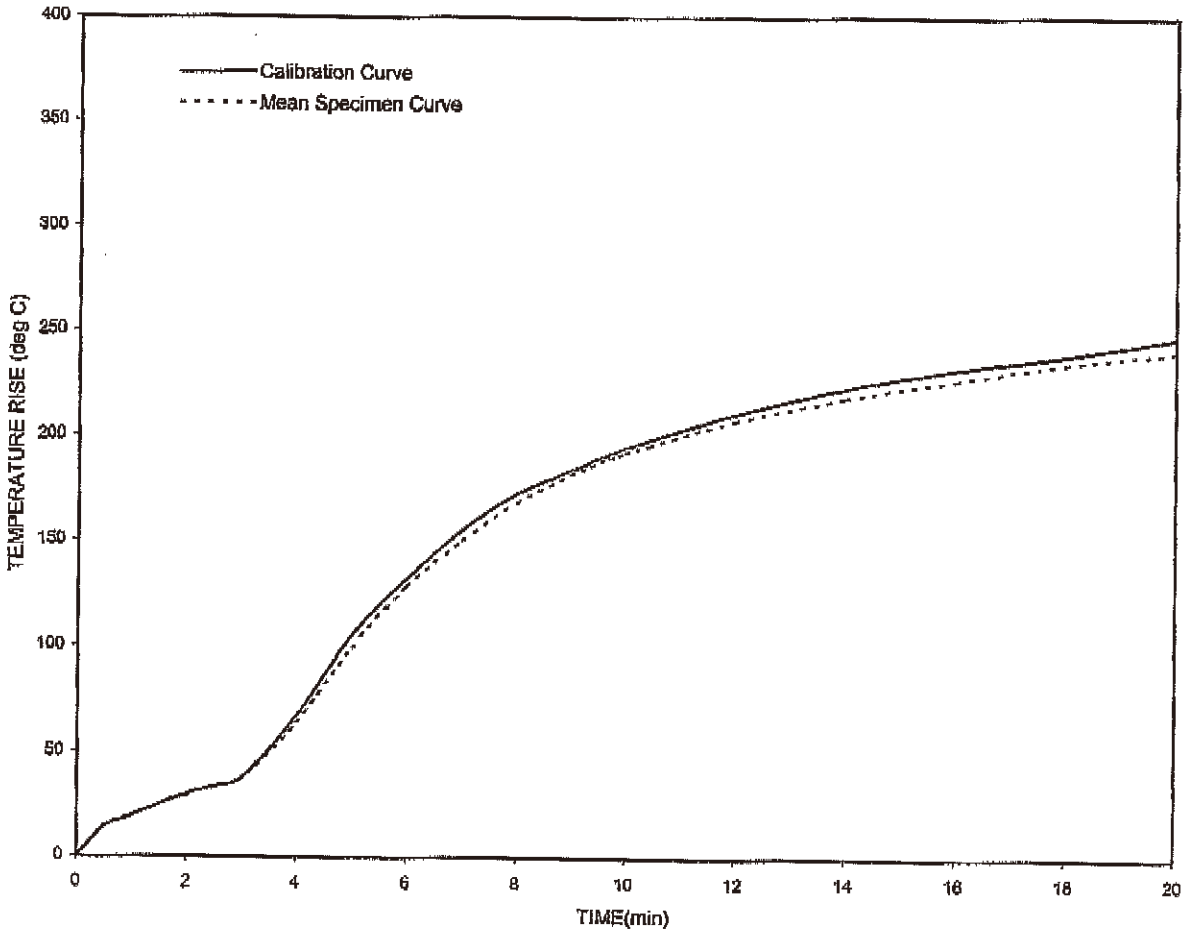

FIGURE 1 : COMPARISON OF MEAN SPECIMEN AND CALIBRATION CURVES

This Report is issued under the following conditions:

1. Results of the testing/calibration in the form of a report will be issued immediately after the service has been completed or terminated.

2. Unless otherwise requested, a report shall contain only technical results. Analysis and interpretation of the results and professional opinion and recommendations expressed thereupon, if required, shall be clearly indicated and additional fee paid for, by the Client.

3. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that PSB Corporation approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that PSB Corporation in any way "guarantees" the later performance of the product/equipment.

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June 2006

CMA 160002000930
CNAS 中国认可 国际互认 检测 TESTING CNAS L3117

报 告 编 号：A19-253
Series Number

检 测 报 告

TEST REPORT

检测项目：
Test Item 空气声隔声

委托单位：
Entrusting Unit 宜春市金特建材实业有限公司

检测类别：
Test Type 委托检测

清华大学建筑环境检测中心

Center for Building Environment Test, Tsinghua University

2019 年 09 月 04 日

地 址：北京市海淀区清华大学建筑环境检测中心（旧土木馆 204） 邮政编码：100084

电话/传真：010-62783909 E-Mail: center09@mail.tsinghua.edu.cn

清华大学建筑环境检测中心

Center for Building Environment Test, Tsinghua University

检 测 报 告

Test Report

正文共 4 页, 其中第2-4页为图表 第 1 页

样品名称	金特KT板			规格尺寸	2440mm×1220mm×10mm
报告编号	A19-253	样品编号	A19-253	注册商标	金特
委托单位	宜春市金特建材实业有限公司				
生产单位	宜春市金特建材实业有限公司				
送样日期	2019年08月12日			送 样 人	
检测日期	2019年09月03日			检测类别	委托检测
检测项目	空气声隔声			送样数量	15.0m^2
检测依据	GB/T 19889.3-2005/ISO140-3:1995《声学 建筑和建筑构件隔声测量 第3部分：建筑构件空气声隔声的实验室测量》				
检测地点	清华大学建筑环境检测中心隔声室				
检测结论	该样品检测结果： 依据 GB/T 50121-2005《建筑隔声评价标准》5.1.1中建筑构件空气声隔声性能分级判定：该构件采用频谱修正量C(频谱1)时，计权隔声量为R_w+C=50dB，隔声性能分级为7级；该构件采用频谱修正量C_{tr}(频谱2)时，计权隔声量为R_w+C_{tr} =46dB，隔声性能分级为6级。 （公章） 2019年 09月 04日				
备注					

检测： 审核： 批准：

清华大学建筑环境检测中心

Center for Building Environment Test, Tsinghua University

检 测 报 告

Test Report

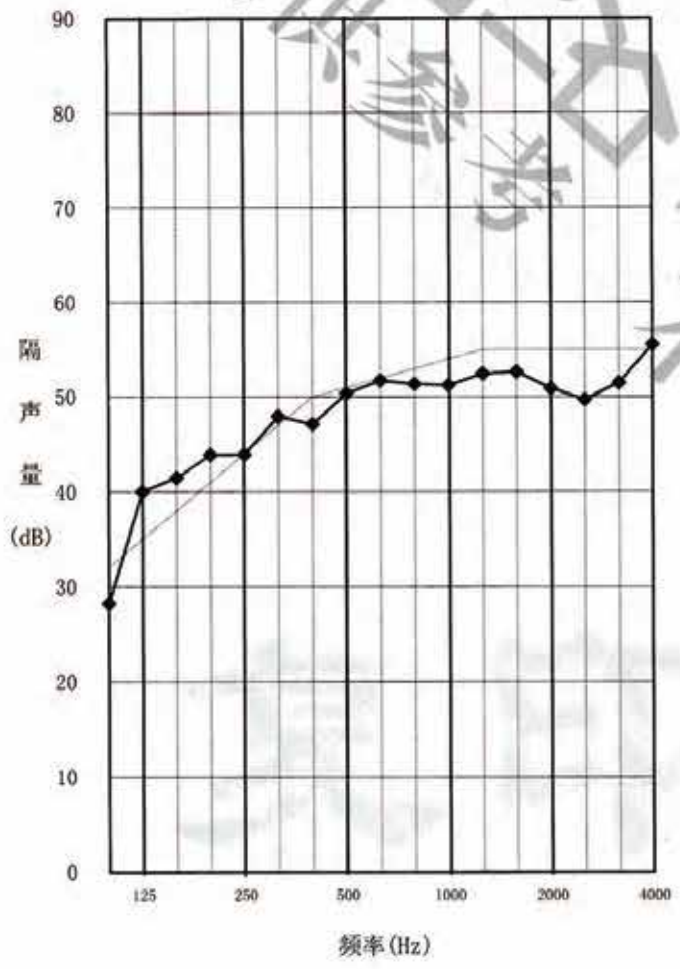
报告编号	A19-253	构造厚度	约101mm
尺寸与安装方法	4m×2.5m共10m^{2}按照施工规范安装	检测仪器	RTA840系统

检测结果

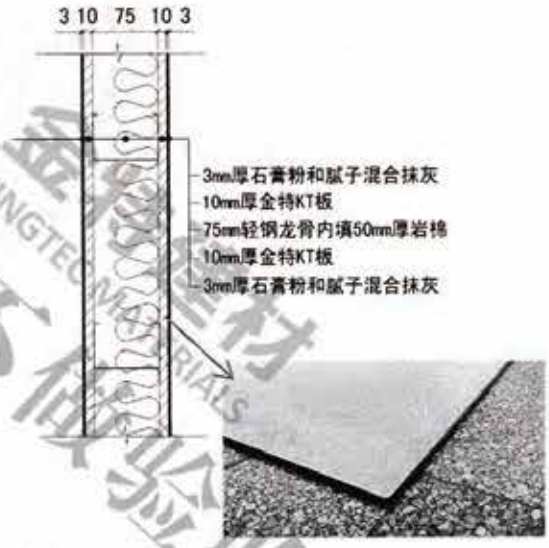
频率/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	$R_w(C;C_{tr})$
隔声量/dB	28.2	40.0	41.4	43.9	43.9	47.9	47.1	50.3	51.7	51.4	51.2	52.5	52.7	50.9	49.7	51.5	55.5	51(-1; -5)

注：1、R_w为国家标准GB/T50121-2005计权隔声量。

2、C,C_{tr}为频谱修正量(C用于建筑物内部两个空间之间，C_{tr}用于建筑物内部空间与外部空间之间)。



材料构造示意图:



说明:

1、该金特KT板面密度约为14.7kg/m^2，
规格尺寸：2440mm×1220mm×10mm；

2、50mm厚岩棉容重约：80kg/m^3；

3、实验构造如上图所示，样品实物图见后。

清华大学建筑环境检测中心

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Center for Building Environment Test, Tsinghua University

检 测 报 告

Test Report

报告编号	A19-253	检测仪器	RTA840系统

样品实物图

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Center for Building Environment Test, Tsinghua University

检 测 报 告

Test Report

报告编号	A19-253	检测仪器	RTA840系统

按国家标准GB/T50121-2005《建筑隔声评价标准》建筑物空气声隔声性能分级见下表，自2005年10月1日实施。原《建筑隔声评价标准》GBJ121-88同时废止。

建筑构件空气声隔声性能分级

等级	范围
1级	20dB≤ R_w+C_j <25dB
2级	25dB≤ R_w+C_j <30dB
3级	30dB≤ R_w+C_j <35dB
4级	35dB≤ R_w+C_j <40dB
5级	40dB≤ R_w+C_j <45dB
6级	45dB≤ R_w+C_j <50dB
7级	50dB≤ R_w+C_j <55dB
8级	55dB≤ R_w+C_j <60dB
9级	R_w+C_j ≥60dB

注：C_j为频谱修正量，用于内部分隔构件时，C_j为C，用于围护构件时，C_j为C_{tr}。

不同种类的噪声源及其宜采用的频谱修正量

噪声源种类	宜采用的频谱修正量
日常活动(谈话、音乐、收音机和电视)	C（频谱1）
儿童游戏	
轨道交通，中速和高速	
高速公路交通，速度＞80km / h	
喷气飞机，近距离	
主要辐射中高频噪声的设施	
城市交通噪声	C_{tr}(频谱2)
轨道交通，低速	
螺旋桨飞机	
喷气飞机，远距离	
Disco音乐	
主要辐射低中频噪声的设施	

清华大学建筑环境检测中心