

engineering affordability

KOTO ICF (Insolated Concrete Form)

Address: No. 3A, Jalan Teknologi , Taman Sains, Kota Damansara, 47810 Petaling Jaya, Selangor – Malaysia

Web: www.kotocorp.com Email: info@kotocorp.com



OVerview O

About us:

- We are an affordable housing wall, roof and floor panel manufacturer
- KOTO started in 1974 in Australia
- We have presence in many countries around the world
- We pride ourselves in our product

Mission & Value:

- We are committed to decreasing carbon footprint
- An affordable home should really be affordable
- Protect environment with energy efficient housing material





O3 our solution



KOTO building solutions



KOTO industrial building solution (IBS) is a comprehensive building system designed, engineered, and manufactured to consistently produce high-quality, affordable, sustainable housing and buildings. KOTO panels are engineered as the enabler for such innovation.

KOTO IBS Key Features:

i. High Quality

- a. Non-combustible
- b. Water-resistant
- c. Light weight
- d. Temperature retention
- e. Energy efficiency
- f. Easy logistic
- g. Ideal for Earthquake-zones
- h. High acoustical quality

ii. Affordable

- a. Lower construction cost
- b. Fastest building time
- c. Lower maintenance cost
- d. Transportable anywhere
- e. Least skilled labor required
- f. No skilled labor needed

iii. Sustainable

- a. Energy efficient
- b. Minimum wastage
- c. Less carbon footprint
- d. Minimal cement usage
- e. Easy to maintain and renovate
- f. Environment friendly

KOTO STEM PANELS Key Features:

EPS is a great example of an efficient use of natural resources, since it has a very low input of raw material (98% of air). The production process is also energy and water-efficient and produces little waste.

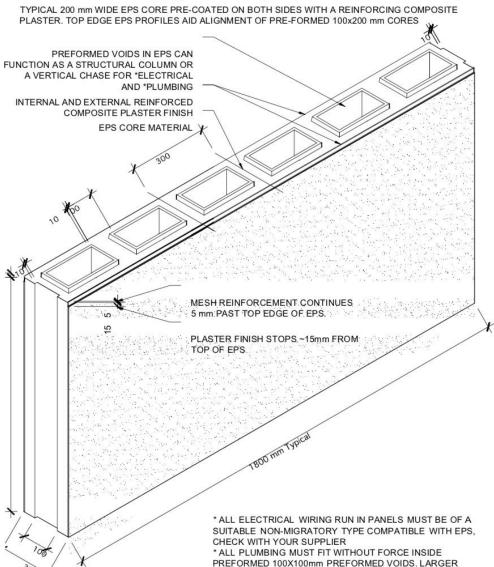
- i. Affordable
- ii. Easy to build
- iii. Build Fast
- iv. Acoustical advantage
- v. Non-combustible
- vi. Water resistant
- vii. Light weight
- viii. Temperature Retention
- ix. Energy efficient
- x. Ideal for earthquake zone

KOTO TYPICAL K-PANEL ISOMETRIC VIEW



SCALE 1:10

(Core hole configuration may vary from that shown here)



PLUMBING MUST NOT BE USED IN LOAD BEARING WALLS



O4 our process





Ol design & pricing

You work closely with a team of KOTO architects and project managers to select and modify a plan suited to your building site, budget and preferences. After a comprehensive site visit, KOTO conducts an analysis of zoning and building permit requirements and helps position the structure on your property. Our architects then develop schematic and site plans incorporating necessary modifications along with a comprehensive specification document detailing materials, options and finishes. Upon completion of the documentation, a fixed price for the components provided by KOTO is developed, along with an estimate for all elements provided by others.

02 logistics

During this phase we work together with your team to organize the logistics in terms of delivery of panels to your construction site. It is noteworthy that given how lightweight and flexible KOTO ICF panels are, there is absolutely no requirement of heavy machinery such as canes or the likes when building with KOTO IFC panels, other than figuring out the method of transportation of KOTO ICF panels and peripherals to your construction site, including not easily accessible locations, such as forests and hilly areas.

03 construction

At the start of Phase Three, your building will begin production at a climate controlled manufacturing facility. The KOTO Team will work closely with the local contractor to finalize all related costs. The contractor will schedule the site work and begin work on the foundation, driveway and utility hookups. Fabricated components will be shipped to the site, and installed according to the extensively detailed plans.



05 our projects



FELDA - Chini Timur - walk up apartments





FELDA - Chini Timur - landed single storey





Rimbunan Kaseh - Kuala Lipis - farm manager house





PNG - Port Moresby





Tanzania houses





Chalets - Tioman





Rainbow Village - Sepang









Rembunan Kaseh - Seremban





Rembunan Kaseh - Perlis





Sample house - Kuala Lumpur





Bird house - Kota Marudu

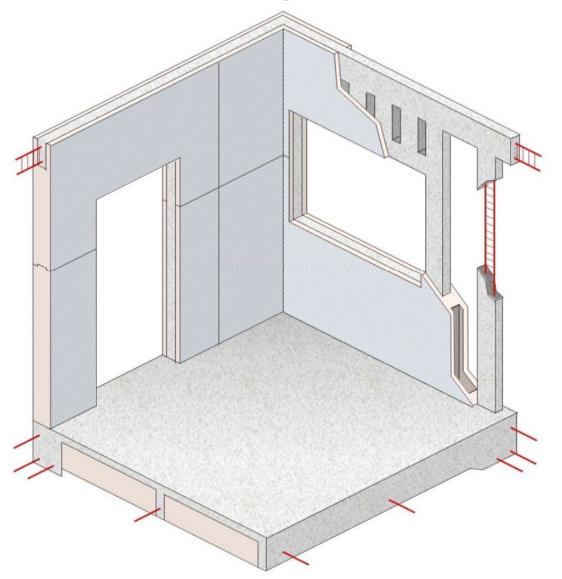




KOTO panel strength

KOTO Integrated Building System

Building Details







KOTO form shape and technical specifications

кото

TYPICAL K-PANEL ISOMETRIC VIEW

SCALE 1:10

(Core hole configuration may vary from that shown here)

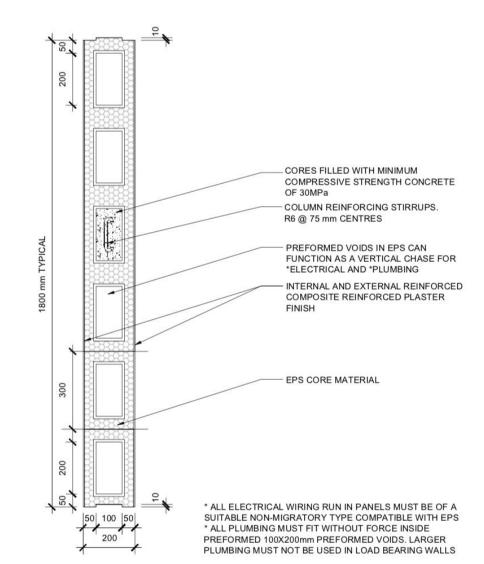
TYPICAL 200 mm WIDE EPS CORE PRE-COATED ON BOTH SIDES WITH A REINFORCING COMPOSITE PLASTER, TOP EDGE EPS PROFILES AID ALIGNMENT OF PRE-FORMED 100x200 mm CORES PREFORMED VOIDS IN EPS CAN FUNCTION AS A STRUCTURAL COLUMN OR A VERTICAL CHASE FOR *ELECTRICAL AND *PLUMBING INTERNAL AND EXTERNAL REINFORCED COMPOSITE PLASTER FINISH **EPS CORE MATERIAL** MESH REINFORCEMENT CONTINUES 5 mm PAST TOP EDGE OF EPS. PLASTER FINISH STOPS, ~15mm FROM TOP OF EPS * ALL ELECTRICAL WIRING RUN IN PANELS MUST BE OF A SUITABLE NON-MIGRATORY TYPE COMPATIBLE WITH EPS, CHECK WITH YOUR SUPPLIER * ALL PLUMBING MUST FIT WITHOUT FORCE INSIDE PREFORMED 100X100mm PREFORMED VOIDS, LARGER PLUMBING MUST NOT BE USED IN LOAD BEARING WALLS



KOTO TYPICAL K -PANEL PLAN VIEW

SCALE 1:10

TYPICAL 200 mm WIDE EPS CORE PRE-COATED ON BOTH SIDES WITH A REINFORCING COMPOSITE PLASTER. TOP EDGE EPS PROFILES AID ALIGNMENT OF PRE-FORMED 100x200 mm CORES



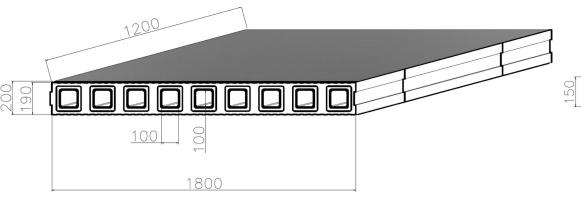
KOTO ICF sizes and dimensions

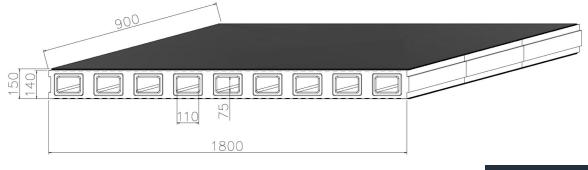








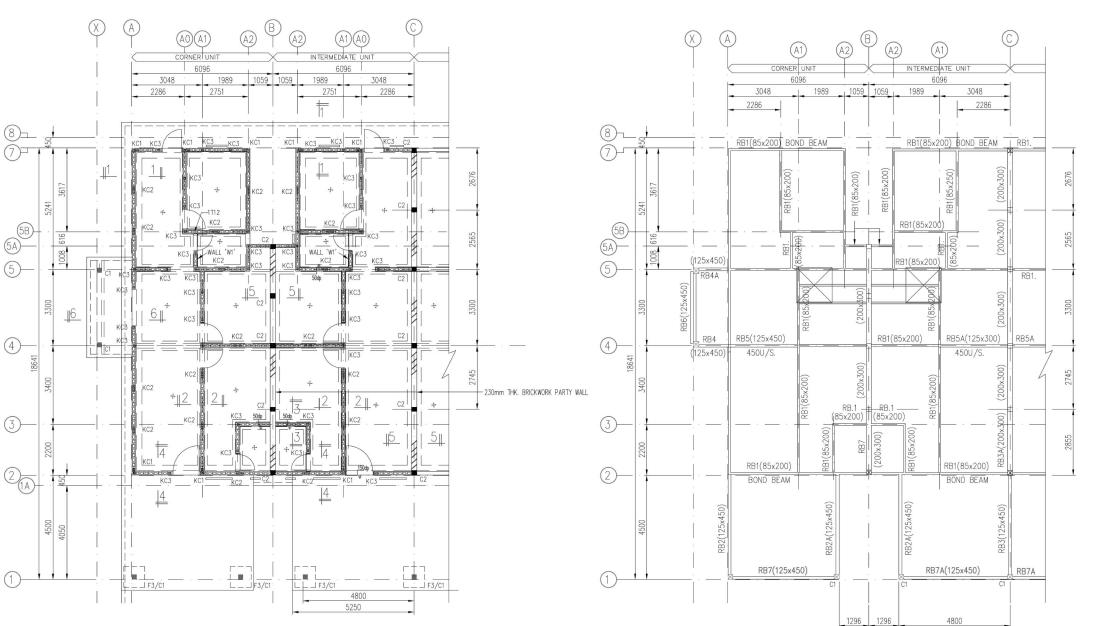




KOTO panel lightweight and reinforced









typical plans using KOTO ICF panels

RAFT FOUNDATION KEY PLAN (W/O SPLIT LEVEL) (SCALE = 1:100)

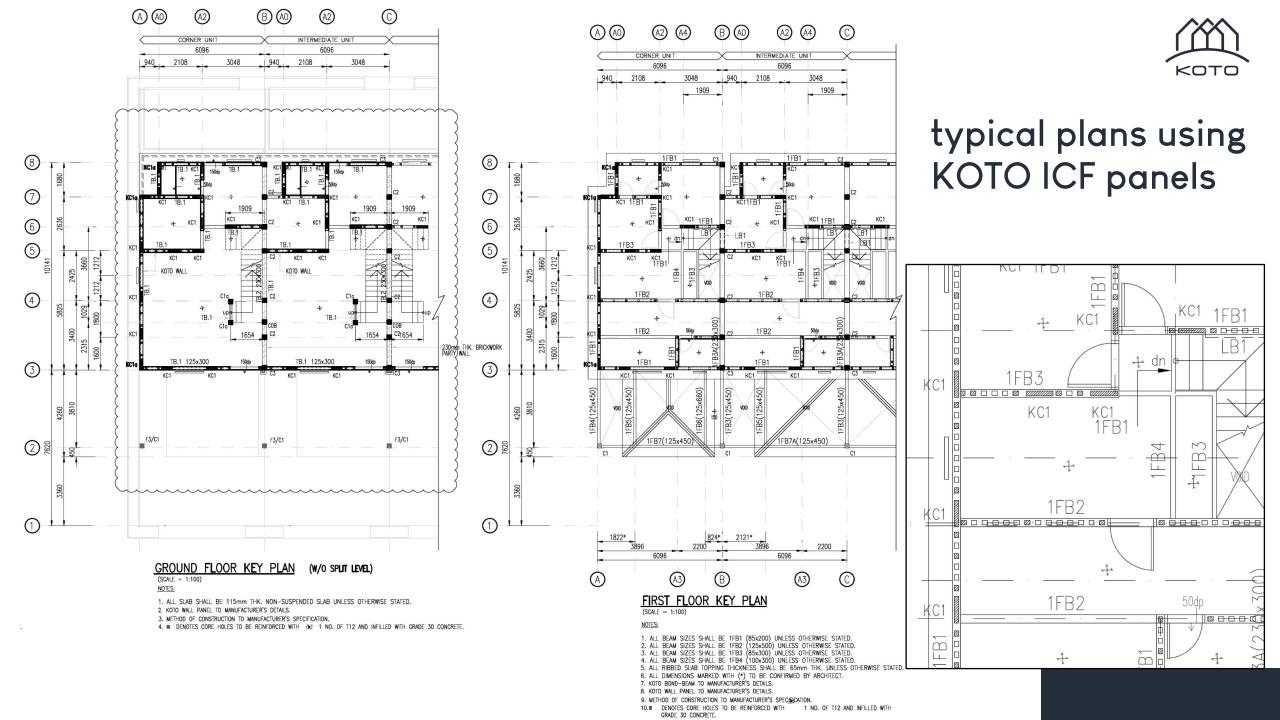
NOTES:

- 1. ALL SLAB THICKNESS SHALL BE 115mm THK. UNLESS OTHERWISE STATED.
- 2. KOTO WALL PANEL TO MANUFACTURER'S DETAILS.
- 3. METHOD OF CONSTRUCTION TO MANUFACTURER'S SPECIFICATION.
- METHOD OF CONSTRUCTION TO MANUFACTURE
 SOIL BEARING WORKING CAPACITY = 100kPa

ROOF KEY PLAN

(SCALE = 1:100)

NOTE: ROOF TRUSS TO MANUFACTURER DETAIL, AND SUBJECT TO ENGINEER'S APPROVAL,



06 accreditations

KOTO

SIRIM fire test



(Company No.: 199601037981 (410334-X)) No.1, Persiaran Dato' Menteri, Section 2, P.O.BOX 7035, 40700 Shah Alam, Selangor Darul Ehsan, Malaysia. Fax: 03-55446464 www.sirim-qas.com.my





TEST REPORT

REPORT NO.: 2020FE0365

PAGE: 1 OF 18

This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bhd. and tested by SIRIM QAS International Sdn. Bhd. This Test Report shall not be reproduced, except in full and shall not be used for any purpose by any means or forms (including but not limited to advertising purposes) without written approval from the Chief Executive Officer of, SIRIM QAS International Sdn. Bhd. Please refer the last page for Conditions Relating to the Use of Test Report.

THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant KOTO ASIA SDN. BHD (716332-P).,

3A Jalan Teknologi.

Taman Sains, Kota Damansara, 47810 Petaling Jaya,

Selangor Darul Ehsan. (Attn.: Mr. Tan Jen Hwa)

Manufacturer Same as above

Product **KOTO Insulated Concrete Form**

Reference Standard/ Method of test BS 476: Part 22: 1987

Methods for determination of the fire resistance of non-load bearing elements of

Clause 5 - Determination of fire resistance of partition

Hose Stream test utilizing the test methodology given in ASTM Standard E2226-10: Rating: 2 hours

Standard Practice for Application of Hose Stream

Description of test specimen Panel thickness: 180 mm

Date Received : 13 March 2020 J20201440186

Job No.

Fire Resistance Test Overall test result

> : 120 minutes Integrity

Insulation : 77 minutes (failure occurred)

Hose Stream Test

The wall panel system maintained its integrity with no development of any hole, crack or other penetrating that allows the passage of water from the hose stream and wetting on the unexposed surface of the test assembly.

Issued date 24 August 2020

Approved Signatory:

(KHAIRUL ANWAR KAMARUDDIN) **Testing Executive**

FIRE PROTECTION SECTION

Fire Protection Section

Testing Services Department

Fire Dept. approval



CIDB IBS approval



Standard Rujukan: Sah Sehingga: Reference Standard:

19 JANUARY 2022

CIDB IBS SDN BHD 55200 Kuala Lumpur

TEL: 03-92816909 FAX:03-92815870

www.ibscentre.com.my

DATUK IR-ELIAS ISMAIL Timbalan Ketua Eksekutif I

Pendaftaran ini hendaklah diperbaharui selewat-lewatnya 30 hari sebelum tarikh tamat tempoh.

ENGINEERING INSPECTION





- **US** patent
- thermal test
- comprehensive strength test
- surface spread of flame test

MS ISO/JEC 17025

strength

(12) United States Design Patent (10) Patent No.:

(45) Date of Patent: ** Jul. 23, 2013

Primary Framiner - Cynthia M Chin

FIG. 2 is a bottom isometric view of FIG. 1.

Oppedahl Patent Law Firm LLC

D374,257 S * 10*1996 Schmidt et al.
D356,499 S * 71*998 Larws
\$3,25,394 A * 10*1998 Barton et al.
D401,028 S * 12*1998 Barton et al.
D407,710 S * 22*090 Krog
D420,710 S * 22*000 Ustra
5,382,548 B2* 27*013 Maggiore et al. (54) BUILDING BLOCK

(71) Applicant: Kaine Telford, Kuala Lumpur (MY) (72) Inventor: Kaine Telford, Kuala Lumpur (MY) (73) Assignce: Kaine Telford, Kuala Lumpur (MY)

(51) LOC (9) Cl.

Foreign Application Priority Data Apr. 17, 2012 (MY) 12-00485-0101

(52) U.S. Cl. (58) Field of Classification Search ... D21/484, 485, 486, 489, 491, 494,

D21/495 499 500 504: 446/69 85 102 128: 434/208, 259, 403; 273/153, 156, 160; 428/174 See application file for complete search history

References Cited

U.S. PATENT DOCUMENTS D48,860 S * 4/1916 Gilbert D252,951 S * 9/1979 Schuring 4,249,336 A * 2/1981 Moe et al. 4,547,160 A * 10/1985 Labelle D308,706 S * 6/1990 Mikkelsen D308,790 S * 7/1995 Schmidt et al.

FIG. 4 is a bottom plan view of FIG. 1 is a front side elevation FIG. 5 is a cross sectional view taken along line 5-5 of FIG. 3. FIG. 6 is a cross sectional view taken along line 6-6 of FIG. 3. FIG. 7 is a side elevation view of the left side of FIG. 1, the right side being a mirror image thereof. FIG. 8 is a front side elevation view of FIG. 1.

(74) Attorney, Agent, or Firm - Margaret L. Polson;

(57) CLAIM
The ornamental design for a building block, as shown and

DESCRIPTION

FIG. 1 is a top isometric view of my new design for a building

FIG. 9 is a back side elevation view of FIG. 1; and, FIG. 10 is a close up top plan view of the front end of the building block.

1 Claim, 3 Drawing Sheet





TEST REPORT

PAGE: 1 OF 3 This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Blnd. and exted by SIRIM QAS International Sdn. Blnd. This test report shall not be reporteduced, occur in full and shall not be used for advertibing purposes by any ansons we for the state of KOTO CORP.PTY.LTD 144 Granite St. Geebung OLD.4034 KOTO CORP.PTY.LTD K-BLOCK PANEL

Adopt to MS 26: Part 2:199 Method of test Method of testing Concrete Part 2: Method of testing hardened concrete. Section three: Method for determination of the compressive strength of

Three numbers of K-BLOCK cubes were received for testing.

Job no./Ref. no

Approved Signatorie



TEST REPORT

PAGE: 2 OF 3

This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bhd. and tested by SIRIM QAS International Sdn. Bhd. This test report shall not be reproduced, except in full and shall not be used for advertising purposes by any means or forms without written approval from Executive Director, SIRIM QAS International Sdn. Bhd.

K-BLOCK PANEL 200 MS 26: Part 2 :1991

Method of testing Concrete Part 2: Method of testing hardened concrete

Section three: Method for determination of the compressive strength of

Product Description K-BLOCK Panel is a lightweight fire retardant insulated Block Panel, complete with vertical core holes at 200 mm centres to allow for the insertion of reinforcement to form a column and beam structure.

Both vertical faces of the K-Block Panel are mechanically coated with a high impact resistant proprietary intellectual property mineral composite

coating,manufactured by Koto Corp.

Reference	Dimension (mm)	Compressive Load (kN)	Compressive Strength (N/mm²)	
1	155 x 158 x 195	300	12.0	
2	157 x 154 x 195	334	14.0	
3	155 x 157 x 196	412	17.0	



mm

(FAIZ MOHD YUSUF)

REPORT NO: 2008CB1404 PAGE: 1 OF 9

KOTO CORP Brisbane, Qld 4034, K-Block Panel Method of Test Thermal Insulation – Determination of Steady-State Thermal Transmission Properties – Guarded Hotbox Method. K-Block Panel is a lightweight fire retardant insulated Clock Panel, complete with vertical core holes at 200mm centres to allow for insertion of reinforced concrete or reinforcement to form a column and beam structure. Both vertical faces of the K-Block Panel are mechanically coated with a high impact resistant proprietary intellectual property mineral composite coating, manufactured by Koto Corp. Model Serial Number : K-BP200

of the yard

CY M RAIA NOR SIHA RAIA ARD HANAN uct Certification, Inspection & Testing Departmen

REPORT NO.: 2008CB1404 PAGE: 9 OF 9

Title	Data		
	Test 1	Test 2	Test 3
Mean air temperature in low temperature room. θca (° C.)	0.653	0.652	0.876
Mean air temperature in heating box. θha (° C.)	20.637	20.595	20.762
Mean surface temperature in low temperature room. θcs (° C.)	0.359	0.338	0.345
Mean surface temperature in heating box. θhs (° C.)	20.937	20.868	20.643
Q = QH + QF - QL (W)	16.163	17.110	16.553
Area of test body. (m²)		1.0	
Measured thickness of test body. (m)		0.2	
Correction value of surface heat transmission. (m². K /W)		0.016	
Resistance of heat transmission on air. R _a (m ² .K /W)	1.252	1.182	1.217
Average resistance of heat transmission on air. R _s (m³,K/W)	0.217		
Average of thermal transmittance. U (W/m².K)	0.822		
Resistance of heat transmission on surface. R _S (m ² .K /W)	1.289	1.216	1.242
Average resistance of heat transmission on surface $R_S\left(m^2.K/W\right)$	1.249		
Average of thermal conductivity k (W / m,K)	0.16		

1) Thermal Conductivity (k - value) Resistance of Heat Transmission on air $(R_s - value)$ = 0.22 m^2 .K/W Resistance of Heat Transmission on surface (Rs - value) = 1.25 m^2 .K/W Average of thermal transmittance. (U value) = 0.82 W/m^2K

Notes: The R-value of above test result, which presented in S.I units, can be converted to the U.S. R-value by multiplying the R-value with 5.67446 ft. F/Btu.





TEST REPORT

PAGE: 1 OF 3 This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bhd. and tested by SIRIM QA International Sdn. Bhd. This test report shall not be reproduced, except in full and shall not be used for advertising purposes by any means of forms without written approval from Excentive Director, SIRIM QAS International Sdn. Bids. Please refer overlast for Conditions Relatin

Applicant	1	KOTO CORP.PTY.LTD. 144 Granite St. Geebung QLD.4034 AUSTRALIA.
Manufacturer	:	KOTO CORP.PTY.LTD.
Product	:	K-BLOCK PANEL
Reference Standard/ Method of test	:	Adopt to ASTM E 72-98 Standard Methods of Conducting Strength Tests of Panels for Building Construction. Clause 9: Compressive Load
Description of sample	:	One unit of K-BLOCK Panel was received for testing. (Refer to page 2) Serial number :K-BP200
Date received	:	09.09.2008
Job no./Ref. no.	:	J20085041334/SQAS/CBMT/T.REC/CSL/11
Issued date	:	1 2 SEP 2008
Approved Signatories		



TEST REPORT

This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bld. and tested by SIRIM QAS International Sdn. Bld. This test report shall not be reproduced, except in full and shall not be used for advertising purposes by any

TEST RESULTS:

K-RLOCK PANEL Sample Size

2420 mm x 1200 mm x 200 mm Adopt to ASTM E 72-98
Standard Methods of Conducting Strength Tests of Panels for Building

Clause 9: Compressive Load
K-BLOCK Panel is a lightweight fire retardant insulated Bloc Panel, complete with vertical core holes at 200 mm centres to allow for the insertion of reinforcement to form a column and beam structure. Both vertical faces of the K-Block Panel are mechanically coated with a high impact resistant proprietary intellectual property mineral composite coating,manufactured by Koto Corp

Reference Test Results Remarks The Panel was subjected to the maximum capacity of the testing frame.No signs of failure appeared









REPORT NO.: 2014FE0416 PAGE 1 OF 4 IRIS KOTO (M) SDN. BHD.

Lot 4030 Jalan Satu D, Kampung Baru Subang, 40150 Shah Alam, ISIS KOTO (M) SDN. BHD.

Jalan 3, Kampung Baru Subang, 40150 Shah Alam, Selangor Darul Ehsan.

KOTO INSULATED PANEL BS 476 : Part 7: 1997 Fire Test on Building Materials and Structures Part 7: Surface Spread of Flame Test.

Surface Coating

Descriptions of sample as claimed by the submitter: Refer to page 2.

The specimens were tested with the face side exposed to the specified heating cond of the fire test.

08.09.2014 Date Received

Job No./ Ref No J20141440431 /SQAS/FPS/15/1-6

Classification of Surface Spread of Flame Test







engineering affordability

KOTO INTERNATIONAL SDN. BHD.

Address: No. 3A, Jalan Teknologi , Taman Sains, Kota Damansara, 47810 Petaling Jaya, Selangor – Malaysia

Web: www.kotocorp.com Email: info@kotocorp.com