


The logo consists of the text "Q-CON" in a bold, black, sans-serif font, centered within a solid orange rectangular background.

Q-CON

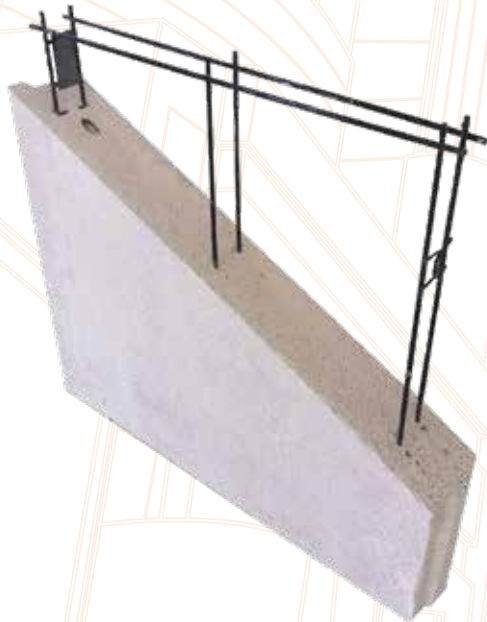
A single, white, rectangular wall panel is shown standing upright. It has a smooth, slightly reflective surface and is positioned in the foreground, partially overlapping the orange background and the building facade.

Q-CON WALL PANEL

- Lightweight and Easy to Work
- Fast Installation and Clean Site
- Thermal, Sound and Fire Resistance
- Enviro-Friendly and Energy Saving

Q-CON Wall Panel

Q-CON Wall Panels are lightweight, steel reinforced, groove & tongue panels that can be easily installed by your normal on-site installers. They are suitable to be used as both external and internal walls.



- Non-combustible : up to four hour fire rating
- Outstanding thermal and acoustic insulation qualities increase levels of comfort and save on energy cooling costs
- General installers can install Q-CON Wall Panel more than 30 sq.m. per team
- Steel reinforcing is specially coated to prevent corrosion and provides maximum durability

Product Specification

Specification	Report	Unit
Dry Density	600 - 700	Kg / m ³
Working Density	600 - 700	Kg / m ³
Wind Load	50 - 180	Kg / m ²
Compressive Strength	> 40	Kg / m ²
Water Absorption	< 40%	by volume



Testing	Report	Unit
Fire Resistance	4.00	Hr.
Thermal Conductivity	0.115	W / mk.
STC Rating	38 - 43	dB
Tensile Strength	> 500	N / mm ²

Package size

Q-CON Wall Panel are steel reinforced (start from) 7.5 cm thick and are available in lengths of 1.50 m to 4.0 m of width of 60 cm. 3.0 m.

Table of Size, Weight and Packaging

Size W x L x H (cm.)	Weight Kg / m ²	Packaging Pc / Pallet
60 x 300 x 7.5	53	8
60 x 300 x 10	70	6



Q-CON Wall Panel



Groove



Tongue

Cautions

Mortar-stirrer : Attached it firmly with drill.

Saw / Leveling Plane : Beware of sharp point.

Quality Inspection



Passed BS5234
Standard Guaranteed

Tools & Accessories



1. Thin-bed Mortar



2. Drill



3. Wireless-Drill



4. Trowel



5. Level



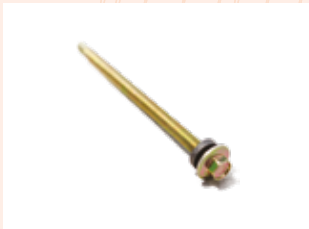
6. Tapeline



7. Chalk Line



8. Wedge



9. Tapping Screw



10. Steel plug



11. Steel angle 7.5 x 7.5 x 30 cm



12. Arc Trowel



13. Rubber hammer



14. Steel hammer



15. Mortar-stirrer



16. Trolley

Cautions

Mortar-Stirrer : Stirrer Must be attached firmly.
Saw and Rasp : Be careful of sharp instruments.

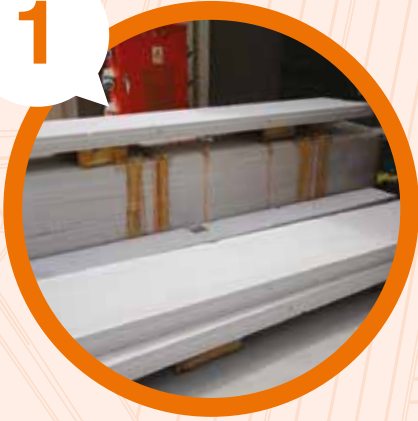
Tools & Accessories

1. Sand paper #400, #200
2. Leveling plane (Rasp)
3. Panel Lever
4. Circular Saw



Pre-installation

1



Check sizes and quantities of Q-CON Wall Panel.

2



Check location to install in construction drawing.

3



Check tools and equipment.

How to install

1

Clean and mark the wall alignment by using a chalk tape.



- 2** Clean Q-CON Wall Panel and move to the marked point.



- 3** Mix thin-bed mortar and apply it on structure column.



- 4** Lift the Wall Panel and push it to attach the column.



- 5** Insert a foam sheet between floor and top of the Panel.



6

Use lever to lift Q-CON Wall Panel until top of the panel reach the upper floor then insert a wood wedge under the panel.



7

Use steel angle to fasten the panel with floors on both upper and lower side of the panel by using steel plugs and screws.



8

Apply thin-bed mortar on side of the first panel then lift the next wall panel to attach and do the same as the previous steps.



9

Continue install wall panels until the gap can be closed by the last panel.



10

Measure the gap and cut the last panel to fit in then install it in place.



11

Fill the gap under the panels with sand-cement mortar.



12

Fill all gaps between each panel with thin-bed mortar, wait until the mortar dry then rub with sandpaper #400.



13

Finishing all gaps again with skim coat then rub with sandpaper #200.

**14**

Finish Q-CON Wall Panel Installation



Cautions

- Use for installing Wall Panel only. Please follow the steps in installation guide. Do not use Wall Panel as load bearing structure.
- Do not eat or breathe dust from cutting the product.
- Q-CON Wall Panels are designed and instructed to use in domestic only. Installation outside Thailand should be responsibilities of designer, engineer and installor.

Lifting Q-CON Wall Panel to High-rise building

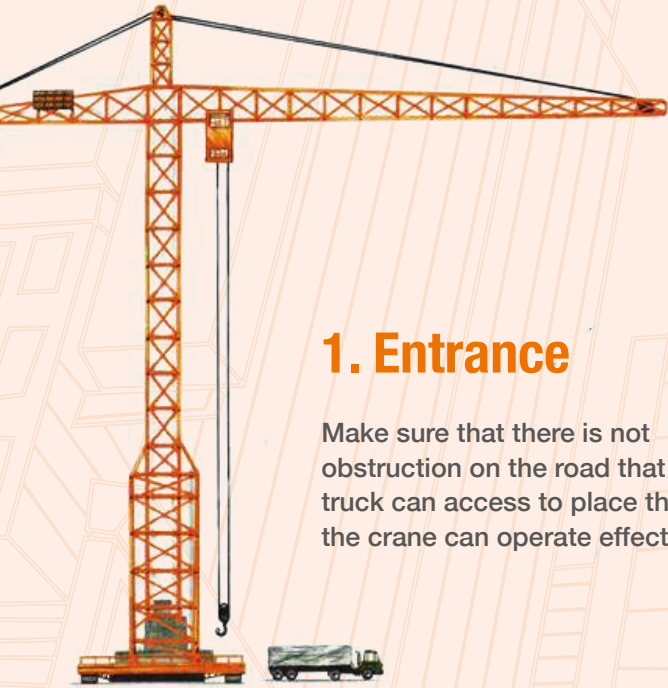
Q-CON Wall Panels are transported from factory to a construction site by using a truck or a trailer depends on conditions of each construction site. In case the vehicle does not have a crane to lift panels. The construction should provide a crane to lift the panels to stock area.

Generally, there are 2 methods for moving building materials to high-rise building (Condominium, Apartment, Office building)

1. Tower Cranes



2. Mobile Cranes



1. Entrance

Make sure that there is not obstruction on the road that the truck can access to place that the crane can operate effectively.

Equipment and Preparation



2. Softbelt

Proper length of soft belts should be used to lift Q-CON Wall Panel. Normally the length of soft belt should longer than 8 m. to avoid them damaging Wall Panel's surface.



3. Loading

There is a loading area to place Wall Panels on the targeted floor then the Wall Panels can be moved into the building.

4. Hand Lift

Hand lift can be used for moving Wall Panels from loading into the building.



5. Safety Belt

Safety belts must be used for all operators at the loading area.

How to move Q-CON Wall Panel

1

There is no obstruction besides of the truck.

**2**

Check the conditions of the packaging to make sure that it will not fail while being lifted in the air.

**3**

Insert soft belts under pallets at the designed positions.

**4**

Lift Wall Panels to the loading area and then use hand lift to move Wall Panel into the building.

SAFETY FIRST

Q-CON

CAUTIONS

Q-CON WALL PANEL

To transfer panels



Move the pallet by using hand lift or fork lift and check the packaging before moving.

- ✓ Pallet strap is tight
- ✓ Pallets must be in good condition.
- ✓ Move one pallet at a time.
- ✓ Do not move pallet on sloping areas over 36 degrees and rough area to prevent fall.



Move the pallet by using crane and check the packaging before moving.

- ✓ Pallet strap is tight
- ✓ Pallets must be in good condition.
- ✓ Move one pallet at a time.



Move the pallet by workers.

- ✓ Beware of falling objects when moving
- ✓ Lift the product with the right manner in order to reduce muscle injuries.
- ✓ It is required at least 2 persons to lift the product.
- ✓ Do not throw or bump the product in order to prevent product damage and injuries.

Installation procedures



It is required at least 2 persons to install Q-CON Wall Panel. Study and follow the technical installation manual.

Storage



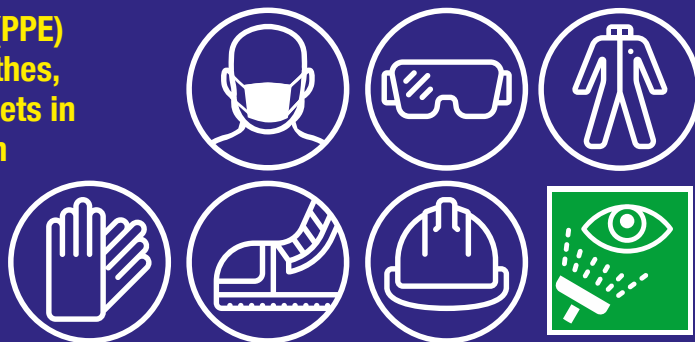
Avoid keeping the products outdoors over 30 days in order to prevent deterioration of packaging from humidity and weather.



Stack packs no higher than two packs height or no higher than 1.7 m. to prevent falling.

SAFETY

Wear standard personal protective equipment (PPE) e.g. dust mask, safety glasses, safety work clothes, work gloves, safety shoes and helmet. If dust gets in eyes, don't rub your eyes. Rinse cautiously with water for several times. If eyes irritation persists, get medical advice/attention.



How to use

Wall panel is suitable to be used for non-load bearing wall for both external and internal walls. Install wall panel by using specific tools and equipment for autoclaved lightweight concrete only.

Product Description

Q-Con wall panel is an autoclaved lightweight concrete with reinforced steel. The steel is coated with rust protection.

Quality Construction Products Co., Ltd.

Bangpa-in Industrial Estate, 144 Moo 16, Udomsorasayuth Rd., Bangkrasan, Bangpa-in, Ayutthaya 13160

Q-CON Call Center : Tel. 0 3525 8999 , 0 3522 1271 #212 Fax. 0 3522 1270 , 0 3522 1273

SCG Contact Center : Tel. 0 2586 2222

Website : www.qcon.co.th E-mail : qcon@qcon.co.th

Reference No. FSRC-017/48

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FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY
FIRE SAFETY RESEARCH CENTER



- TYPE OF TEST** : DETERMINATION OF THE FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION
- TEST SPECIMEN** : Wall Panel (Class GB33; Size 60 x 300 x 10 cm)
The specimen is a 3x3 m wall consisting of 60x300x10 cm Class GB33 wall panels connected with each other by 2-3 mm thick Q-CON mortar. The wall panels were covered with 10 mm thick Q-CON mortar on both sides. The specimen was provided and installed by the client.
- CLIENT** : Quality Construction Products Public Co., Ltd.
- DATE OF TEST** : July 26, 2005
- TEST MACHINE** : Large-scale vertical furnace (Fire Tester III) at the Fire Safety Research Center, Department of Civil Engineering, Chulalongkorn University. The furnace is capable of producing a standard temperature-time relationship according to several fire resistance standards including BS 476 Part 20: 1987
- TEST METHOD** : The testing procedures follow the British Standard BS 476: Fire tests on building materials and structures.
BS 476 Part 20: 1987 : Method for determination of the fire resistance of elements of construction (general principles)
BS 476 Part 22: 1987 : Methods for determination of the fire resistance of non-loadbearing elements of construction Section 5: Determination of the fire resistance of partitions.
- TEST RESULTS** : The non-loadbearing element of construction described above has the fire resistance of each criterion for the period stated:
(The test results are good only for the specimen tested.)

Criteria	Fire Resistance (hr:min)	Remarks
Insulation	4:00	The test was terminated after 4:00 hrs. The average temperature of the unexposed face of the specimen did not exceed 140 °C above its initial value of 31 °C.
Integrity	4:00	No visible sign of damage or leak of the specimen and no passage of flame or gases hot enough to ignite the cotton pad.



(Associate Prof. Dr. Boonchai Stitmanathum)
On Behalf of Head of Civil Engineering Department

Date: August 31, 2005

Tested by *Thanyawat Pothisiri*
(Assistant Prof. Dr. Thanyawat Pothisiri)





**Faculty of Engineering
Chulalongkorn University**

- Type of Test** : Bending Test of Reinforced Lightweight Concrete Panels
- Specimen** : Three 60x300x7.5 cm reinforced lightweight concrete wall panels (G4).
The specimens were prepared by the client.
- Client** : Quality Construction Products Public Company Limited
Bangpa - in Industrial Estate : 144 Moo 16, Udomsorayath Rd.,
Bangkrasan, Bangpa - in, Ayutthaya 13160 Thailand
- Test Machine** : 500-ton Amsler Universal Testing Machine/ 5-ton Proving Ring
- Date of Test** : February 20, 2013
- Test Procedure** : Reinforced lightweight concrete panel specimen was installed on the universal testing machine for bending test with span length of 1.90 meters. The load was increasingly applied at two points each at distance 0.475 m from mid-span (according to TIS 1510-2541) until the maximum force was attained. The load was measured by a 5-ton proving ring. The deflection at mid-span was recorded every load increment of 4.71 kg.
- Test Results** : Results from the test are shown in the table below.
(The test results are good only for those specimens tested.)

Specimen no.	Maximum Load (kg)	Maximum Load per area (kN/sq.m.)
1	400.3	2.17
2	353.2	1.92
3	306.1	1.66

According to TIS 1510-2541, the deflection at design load shall not exceed $L/300$ (=6.33 mm) and the maximum load shall not be less than 1.5 times the design load.

February 20, 2013

 (Assoc. Prof. Dr. Tirawat Boonyateer)

Test by

 (Assoc. Prof. Dr. Phoosak Pheimsorn)

On Behalf of Head of Civil Engineering Department

CHAPTER 1 INTRODUCTION

1.1 GENERAL

At the request of Quality Construction Products Public Co., Ltd, the Structural Engineering Laboratory, Structural Engineering Field of Study, School of Engineering and Technology, Asian Institute of Technology were engaged to carry out the strength and robustness performance of partitions. Partition grade can be derived when all the relevant tests are applied to the test specimen. The methods of test are given for stiffness, hard and soft body impacts, door slamming, crowd pressure, lightweight anchorages (pull-out and pull-down), heavyweight anchorages (wash basin and wall cupboard). All testing programs are conformed to BS 5234: Part 2: 1992. Partitions are graded according to the level of activity in adjacent spaces and the degree of care likely to be exercised by people that described in Table 1.1.

Table 1.1 Partition Grades by Categories of Duty

Grade	Category of Duty	Examples
Light duty (LD)	Adjacent space only accessible to persons with high incentive to exercise care. Small chance of accident occurring or of misuse.	Domestic accommodation
Medium duty (MD)	Adjacent space moderately used primarily by persons with some incentive to exercise care. Some chance of accident occurring and of misuse.	Office accommodation
Heavy duty (HD)	Adjacent space frequently used by the public and others with little incentive to exercise care. Chances of accident occurring and of misuse.	Public circulation areas Industrial areas
Severe duty (SD)	Adjacent space intensively used by the public and others with little incentive to exercise care. Prone to vandalism and abnormally rough use.	Major circulation areas Heavy industrial areas

1.2 OBJECTIVES OF TESTING AND EVALUATION

The main objective of the test will be to determine the strength and robustness performance of partition system and to classify the performance grade of different types of partition systems.



CHAPTER III SUMMARY OF TEST RESULTS

3.1 PERFORMANCE REQUIREMENT

For a partition to conform to an individual performance requirement, a specimen partition shall be tested by the method given in the relevant test and shall satisfy criteria for test performance that falls within the criteria given in the Tables 3.1 and 3.2.

Table 3.1 Summary of grade requirements and performance levels

Requirement	Units	Grade				Criteria
		LD	MD	HD	SD	
Stiffness	mm.	25	20	15	10	Maximum deflection
	mm.	5	3	2	1	Maximum residual deformation
Small hard body impact:						
- Surface damage	N.m	3	3	6	10	Judgment of indent
- Perforation	N.m	3 ¹⁾	5	15	30	No perforation of facing
Large soft body impact:						
- Damage	N.m	20	20	40	100	2 mm. maximum deformation
- Structural damage	N.m	60	60	120	120	No collapse or dislocation
Door slam	No.	20	20	100	100	No damage and 1 mm Maximum displacement

1) No requirement for this grade

Table 3.2 Summary of tests for crowd pressure, lightweight anchorages and heavyweight anchorages

Requirement	Units	Performance level	Criteria
Crowd pressure:	kN/m.	0.75, 1.5 or 3.0	No collapse or dangerous damage
Lightweight anchorages:			
Pull-out	N	100 minimum	Shim retained
Pull-down	N	250 minimum	Shim retained and 2 mm maximum displacement
Heavyweight anchorages:			
Wash basin	N	500 minimum	5 mm maximum deflection 1 mm max residual deformation
	N	1,000 to 1,500 range	20 mm maximum deflection 1 mm max residual deformation
Wall cupboard	N	2,000 to 4,000 range	5 mm. maximum deflection 1 mm max residual deformation



Strength and Robustness Performance of Partition System

3.2 SUMMARY OF TEST RESULTS

The test results on strength and robustness performance of partition system is summarized and shown in Table 3.2.1. The detail of testing results is also presented in Appendix A.

Table 3.2.1 summary of tests results for partition systems

Requirement tested	Grade performance achieved			
	LD	MD	HD	SD
Stiffness				Tested*
Surface damage by small hard body impact: Straight partition				Tested*
Surface damage by small hard body impact: Right angle junction				Tested*
Resistance to damage by large soft body impact: Straight partition				Tested*
Perforation by small hard body impact: Straight partition				Tested*
Resistance to structural damage by large soft body impact				Tested*
Door Slamming				Tested*

Remark: Show "Tested*" under grade tested.

SUMMARY OF OTHER TESTS ON PARTITION SPECIMEN	
Requirement tested	Performance achieved
Crowd pressure	3.08 kN/m.
Lightweight anchorage-Pull-out	Pass
Lightweight anchorage-Pull-down	Pass
Heavyweight anchorages – (Wash basin)	765 N*
Heavyweight anchorages – (Wash cupboard)	3,001 N*

Remark: * the maximum applied load in the tests.



TESTING



PULL DOWN TEST

The bracket was pulled down from the partition at the load of 1,156 N.



PULL OUT TEST

The bracket was pulled out from the partition at the load of 445 N.



TESTING THE HEAVYWEIGHT ANCHORAGE

By eccentric downward loading (Wash basin).



TESTING THE HEAVYWEIGHT ANCHORAGE

By eccentric downward loading (Wall cupboard).



PARTITION STIFFNESS TEST

No damage was found after testing.



DOOR SLAM TEST

Crack patterns at top corner of the door after testing 20 times.



LARGE SOFT BODY IMPACT TEST

No crack was found after testing.



SMALL HARD BODY IMPACT TEST

Measurement of diameter and depth of indentation.

Various Application of Q-CON Wall Panel

- Cladding for heat protection
- Horizontal Installation
- Till Mount Installation



HOSPITAL



Bangkok Hospital Chiang Rai

LOW RISE



Condo The Cube
Pracha Uthit



Condo The Lazio



Condo The Win



Condo Beach Front Lawai



Condo The Diamond
Nawa Nakhon-Taladthai



Condo Happy Condo



Condo The Cube
Chaengwattana



Condo The Excel Groove



Hotel B2 Hat Yai



Hotel Beach Patong



Hotel Ramada Phuket



Hotel Water Park Khao Lak



Hotel Chada at Nakorn



The Empire



Hotel Heritage Patong



Miami Bang-pu

HIGH RISE



Hotel Landmark Waterfront



**Condo The Room
Chareonkrung 30**



Condo The Tree Sukhumvit 71



J Condo

HOUSING



Homeowner Built Tak



Modular House



Cozii Pracha Uthit Village



Tassanee Village



Jakpaisarn Village

OTHER PROJECTS



Siam Paragon



Terminal 21 Korat



Ratdawan Market



Singha water factory



Nopakaohomemart Warehouse

Q-CON



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