

The superior characteristics of Q-CON



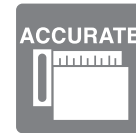
Energy saving

Q-CON is 4-8 times more energy efficient than solid clay brick. It will reduce the transference of heat from outside to inside of the building. Your air conditioner will run less often and you can save up to 30% on your electric bill compare to clay brick house.



Lightweight

Q-CON is 2-3 times lighter than solid clay brick and 4-5 times and lighter than normal concrete without losing any strength. The total mass of your foundation can considerably be reduced. It will obviously help you reduce your construction costs.



Accurate

Q-CON has precise dimensions, helping the builders produce nicely smooth finishes. It comes with many sizes that you can choose to fit in your projects.



Easily worked

Q-CON is easy to use. No special skill is required to do such works. You can easily cut, saw, plane, drill for embedding electrical pipes or water pipes by using general working tools.



Rapid assembly

Q-CON is bigger but lighter, makes it more convenient for transportation. Consequently, your projects can be completed with Q-CON 2-3 times faster than using clay brick.



Noise resistant

The structure of Q-CON provides superior acoustic applications. It helps reducing all the noise from outside to inside of the buildings better than clay brick.



Fire resistant

It can resist fire 2-4 times longer than clay brick, so that it will help reducing all injuries and damages to you and your assets.



Non-toxic

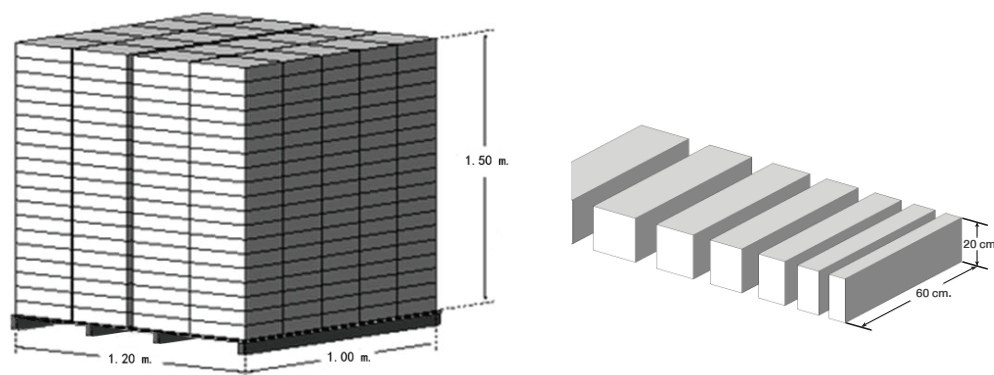
Q-CON is a non-toxic material, so you can work without harm. After burned, it will not generate smoke or any toxic fumes.



Long life

Q-CON is durable. It will be good in any kind of weather and all circumstances. It cannot be worn away easily.

► 1. Product and package standard



Quantity per Pallet

Block Thickness (cm.)	Width x Length (cm.)	Block/Sq.m.	Block/Pallet	Sq.m./Pallet
7.5	20 x 60	8.33	200	24
10	20 x 60	8.33	150	18
12.5	20 x 60	8.33	120	15
15	20 x 60	8.33	100	12
17.5	20 x 60	8.33	80	10
20	20 x 60	8.33	70	9
25	20 x 60	8.33	60	7

Usage of Q-CON Thin-bed Mortar

Block Thickness (cm.)	Kg./Sq.m.	Sq.m./Bag
7.5	1.5	33
10	2	25
12.5	2.5	20
15	3	16
17.5	3.5	14
20	4	12.5

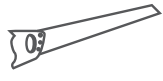
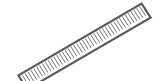
Usage of Q-CON Plastering Mortar

Plastering Thickness (cm.)	Kg./Sq.m.	Sq.m./Bag
5	8.9	5.6
7	12.5	4.0
10	17.8	2.8
15	26.7	1.9
20	35.7	1.4

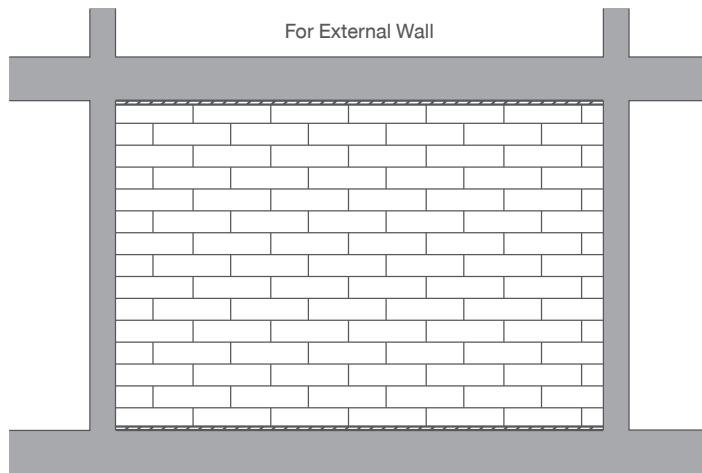
Remark : Constructed by using Q-CON notched trowel, thin-bed mortar and plastering mortar (50 kg./bag)

► 2. Tool and equipment

Using appropriate tools and equipment will be able to work easier and faster and the wall will be stronger. It is able to save more cement, energy and other expenses. Customers can purchase the product from Q-CON directly or from its agent across the country.

Tool & Equipment		Usage
	Q-CON Notched Trowel	Uses for spreading Q-CON thin-bed mortar to unite block together. Its size must be appropriate with thickness of the blocks.
	Mixing Paddle	Uses with an electrical drill to mix mortar. It spends only 1-2 minutes to mix.
	Rubber Mallet	Uses for adjusting level and alignment of blocks without damaging them.
	Hand Saw	Uses for cutting blocks into desired size.
	Rasp	Uses for polishing blocks to be more even and smoother.
	Metal Strap	Uses for attaching Q-CON wall with a structure, such as a structural column, etc.
	Slotting Steel	Uses for scraping a wall surface in order to embed conduits or water pipes within the wall.
	Angle Steel	Uses for marking a line in order to cut a block.
	Sandpaper Trowel	Uses for polishing a wall to make its surface smoother, in case of installing an unplastering wall.

► 3. Maximum length of Q-CON wall without tie column / tie beam (For External wall)

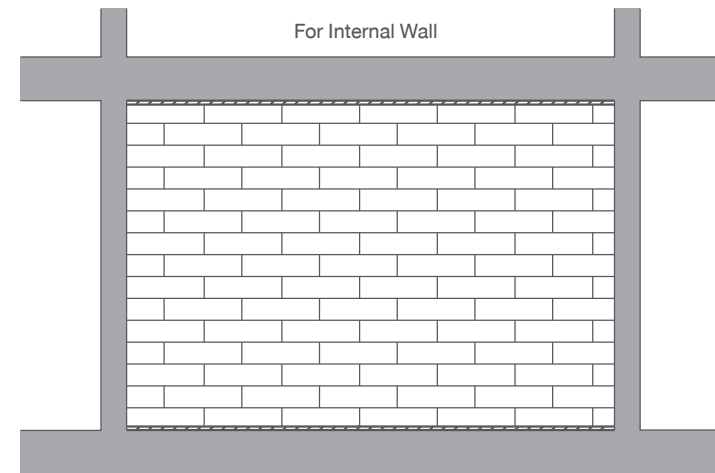


Height (m.)	Maximum length of the wall without tie column / tie beam (m.)					
	Q-CON Block Thickness (cm.)					
	7.5	10	12.5	15	17.5	20
2.50	2.9	4.7	6.4	8.0	9.2	9.2
2.75	2.6	4.5	5.8	7.7	9.2	9.2
3.00	2.4	4.3	5.3	6.6	8.5	9.2
3.25	2.1	3.7	5.0	6.1	7.7	9.2
3.50	1.4	3.4	4.3	5.7	6.8	9.2
3.75	-	2.9	3.8	5.1	6.0	9.2
4.00	-	2.3	3.0	4.4	5.1	8.5
4.50	-	1.1	2.0	3.2	4.7	7.7
5.00	-	-	1.4	2.6	4.3	6.4
5.50	-	-	-	2.0	3.4	5.1
6.00	-	-	-	1.2	2.6	4.3

Remark : - All edges of wall must be attached with a structural column or a structural beam.

- In case of top of a wall is not constructed to reach the upper floor or beam. A tie beam must be casted on top along the wall.
- Structural column and Q-CON wall must be fastened together with Ø6 mm. x 20 cm. steel rods alternately every 2 block height (40 cm.)

► 4. Maximum length of wall without tie column / tie beam (m.) (For Internal wall)



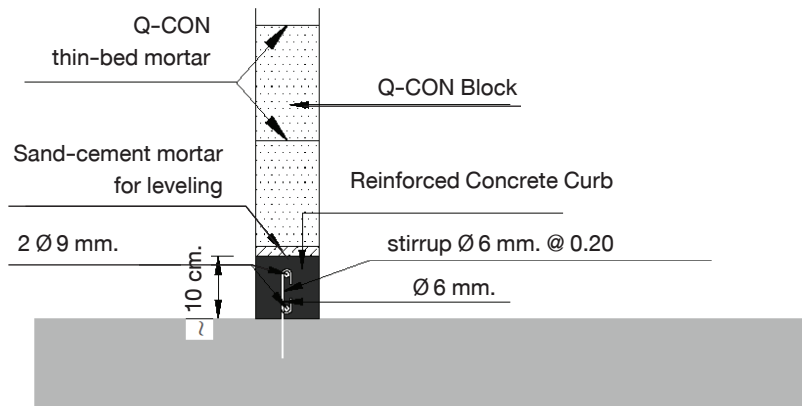
Height (m.)	Maximum length of wall without tie column / tie beam (m.)					
	Q-CON Block Thickness (cm.)					
	7.5	10	12.5	15	17.5	20
2.50	4.2	6.3	8.0	10.0	10.8	10.8
2.75	3.7	6.0	7.2	9.6	10.8	10.8
3.00	3.4	5.7	6.6	8.2	10.0	10.8
3.25	3.0	4.9	6.2	7.6	9.0	10.8
3.50	2.0	4.5	5.4	7.1	8.0	10.8
3.75	-	3.8	4.8	6.4	7.0	10.8
4.00	-	3.0	3.8	5.5	6.0	10
4.50	-	1.5	2.5	4.0	5.5	9.0
5.00	-	-	1.8	3.2	5.0	7.5
5.50	-	-	-	2.5	4.0	6.0
6.00	-	-	-	1.5	3.0	5.0

Remark : - All edges of wall must be attached with a structural column or a structural beam.

- In case of top of a wall is not constructed to reach the upper floor or beam. A tie beam must be casted on top along the wall.
- Structural column and Q-CON wall must be fastened together with Ø6 mm. x 20 cm. steel rods alternately every 2 block height (40 cm.)

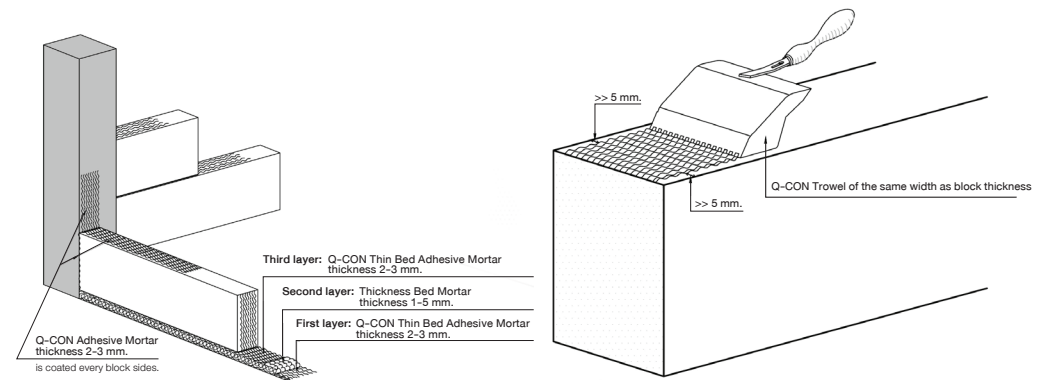
► 5. Instruction for installing Q-CON wall

1. Using inappropriate tools will cause a poor binding area, stumble wall and waste of materials.
2. The maximum length for Q-CON wall without casting a tie column must be applied as shown in the table in Page 5 for an internal wall and the table in Page 4 for an external wall.
3. For 7.5 cm. thickness wall, tie beams and tie columns are needed to be cast around the window or door frame similar to clay brick work.
4. Check the consistency of the thin-bed mortar periodically. In case of the mortar is too fluid it will drop down. If it too concentrates, it will not bind with block surface.
5. In case of the block level is not even, a rasp should be used to smoothen the surface.
6. For quick installation, we suggest to lay the first layer of all walls on the first day in order to allow them to be level and stable, and then continue installing the next layer on the next day.
7. For bathroom or flooding area, a 10 cm. height reinforced concrete curb should be casted before laying Q-CON Block. Starting with sand-cement mortar for leveling.

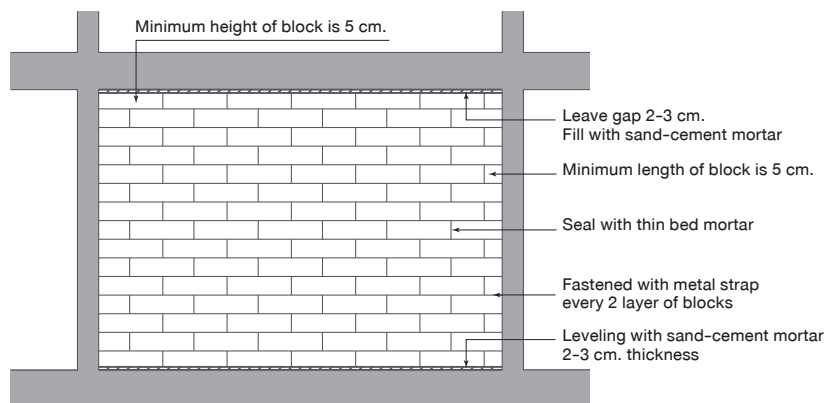
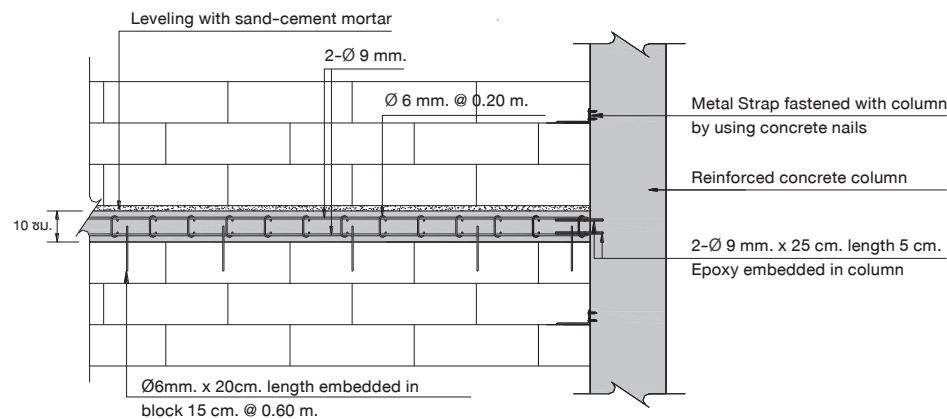
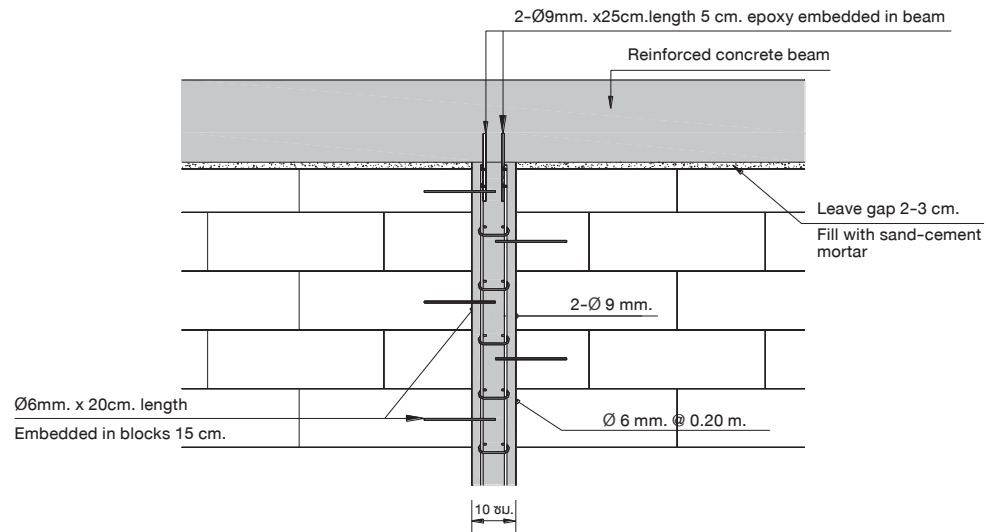


► 6. How to install Q-CON wall

1. Sweep off all dust along the wall line with a brush to ensure adhesion of the thin-bed mortar.
2. Start with spreading Q-CON thin-bed mortar along the wall line for the first layer.
3. Mix sand-cement mortar by pouring water in a bucket then add cement and blend them together with a mixing paddle that connected with an electrical drill.
4. Place a full width 2-3 cm. depth of sand-cement mortar by using a masonry trowel.
5. Spread Q-CON thin-bed mortar along sides of a Q-CON block and on the structural column surface by using a Q-CON notched trowel. And then place the block on the sand-cement mortar.

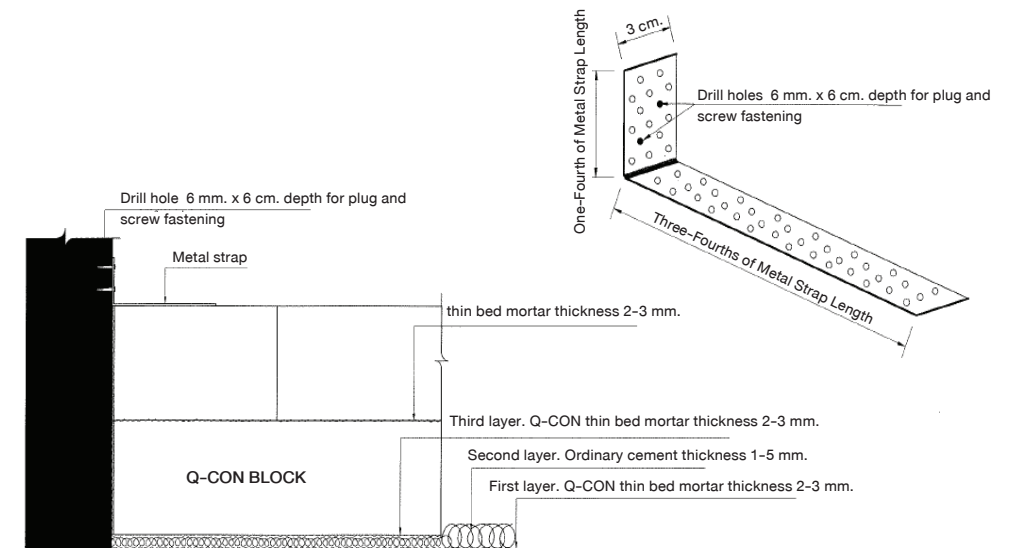
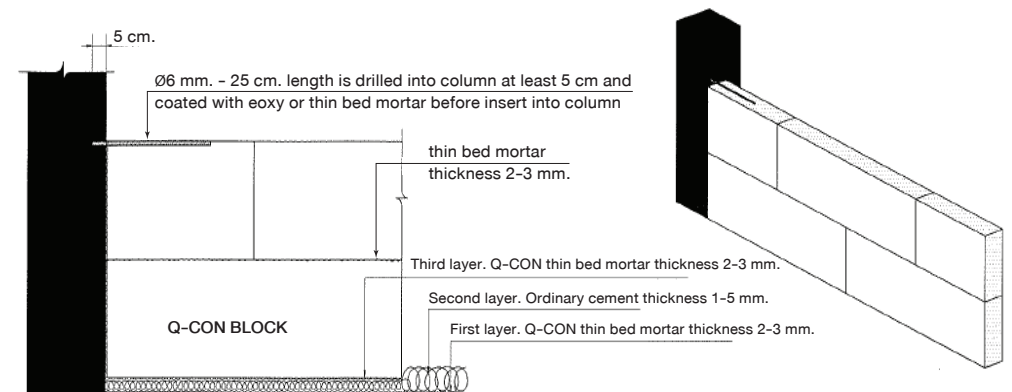


6. Use a rubber mallet and a water level to adjust leveling, both from a vertical and a horizon line. Spread Q-CON thin-bed mortar in the same manner in order to install the next blocks.
7. For the second row, blocks must be installed at least 10 cm. overlap.
8. Use a Q-CON handsaw to cut blocks into desire sizes.
9. Every 2 rows of blocks, Q-CON blocks and column must be bound to structural column with a steel rod (Ø6 mm. x25 cm.) or a metal strap. The steel rod must be hammered into column at least 5 cm. depth.
10. Continue installing the next row of blocks with the same procedure as 4 – 8 until it the upper reaches a beam of floor.
11. Leave a gap around 2 – 3 cm. under the beam or floor level and then fill the gap with sand-cement mortar.
12. For the wall that longer or higher than specified in the tables (page 4-5), tie column or tie beam must be casted as details in the following pictures.



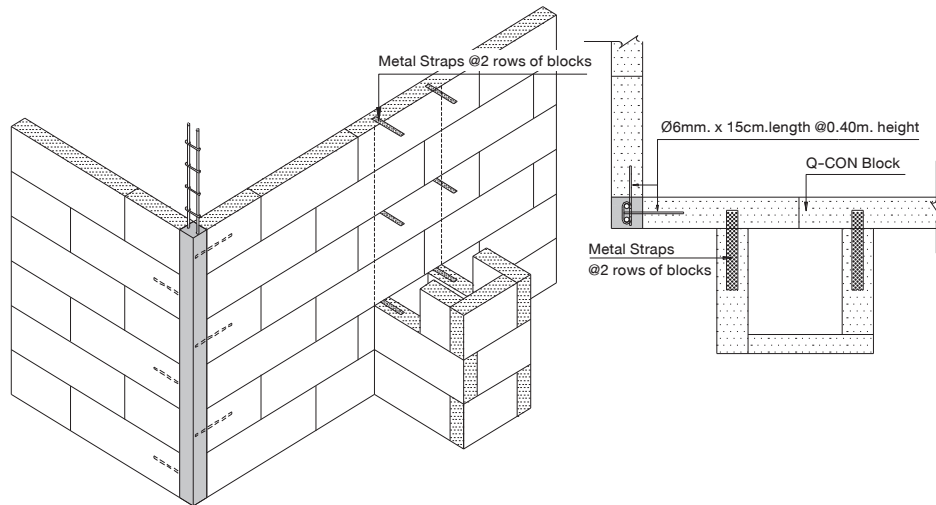
7. Binding Q-CON Block wall with reinforced concrete structure

Use Ø6 mm. steel rod at least 25 cm. drill and hammered into structural column at least 5 cm. depth or use a metal strap fastened with concrete nails every 2 rows of blocks.



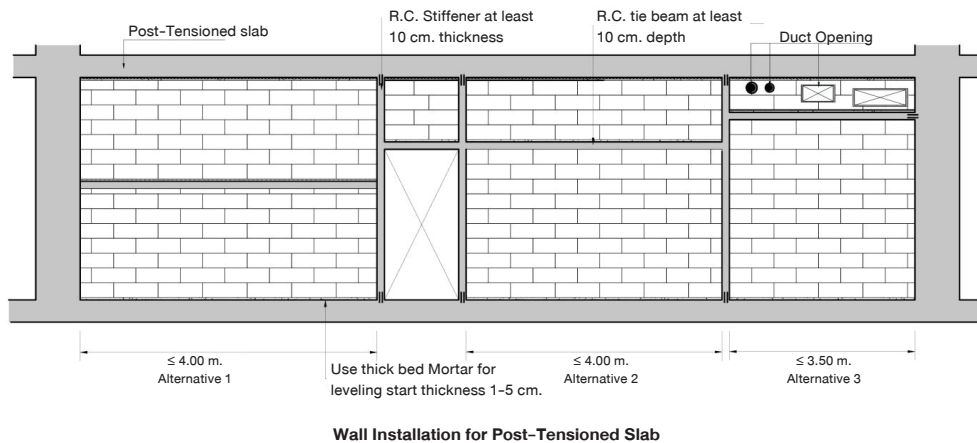
► 8. Interlocking wall and wall joint

In case of leaving a line of wall to be installed later, it can be prepared by inserting metal straps every 2 rows of blocks. This interlocking method can be applied for Q-CON block 10 cm. thickness or more and the total length of all sides of the wall must not exceed the maximum length that specified in the tables (page 4-5)

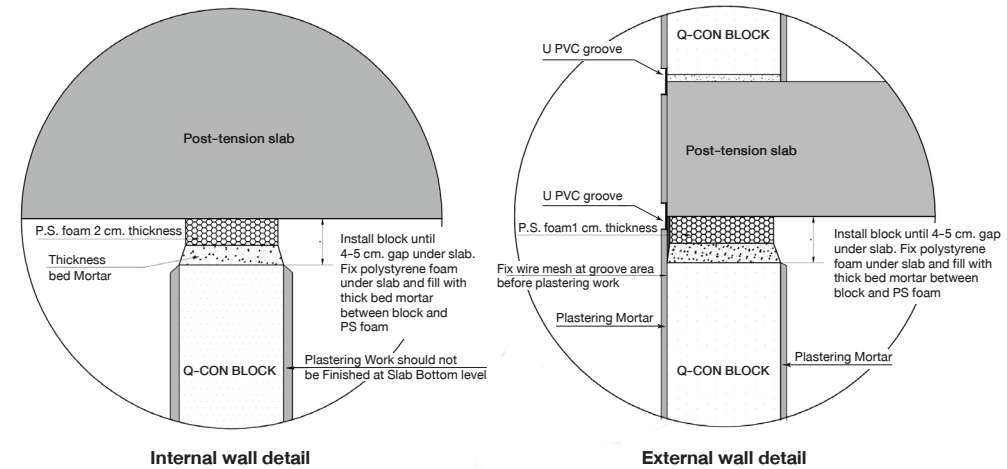


► 9. Installing Q-CON wall on post-tension slab

For installing Q-CON wall on post-tension slab or steel structure which large deflection occurs, 4-5 cm. minimum gap should be left and then insert a flexible material such as a foam sheet and avoid plastering to reach the upper slab or make a groove joint between the wall and the slab.



Wall Installation for Post-Tensioned Slab



► 10. How to install Q-CON Lintel

For opening on wall, such as a door or a window, the wall which its thickness is equal to or more than 7.5 cm. Q-CON Lintels are recommended to be used instead of casting reinforced concrete tie beam for time saving. Place Q-CON Lintel over the opening. (to avoid wall load pressing on the frame). The bearing length or support length of lintel on blocks for the both sides must be applied as mentioned in the table below.

Suggested Bearing Length for Lintel

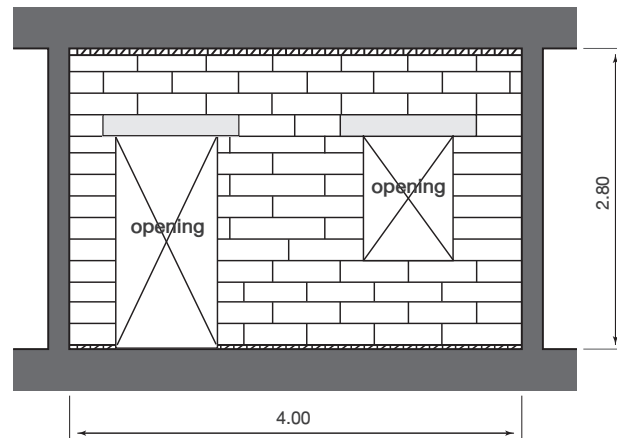
Thickness (cm.)	Height (cm.)	Length (m.)	Bearing Length (cm.)	
			Q-CON Block (7.5 cm.)	Q-CON Block (10 cm. and more)
7.5, 10, 12, 15, 20	20	1.20, 1.50, 1.80, 2.10, 2.40, 2.70, 3.00, 3.30, 3.60	40	15-30

Suggested Length of Lintel

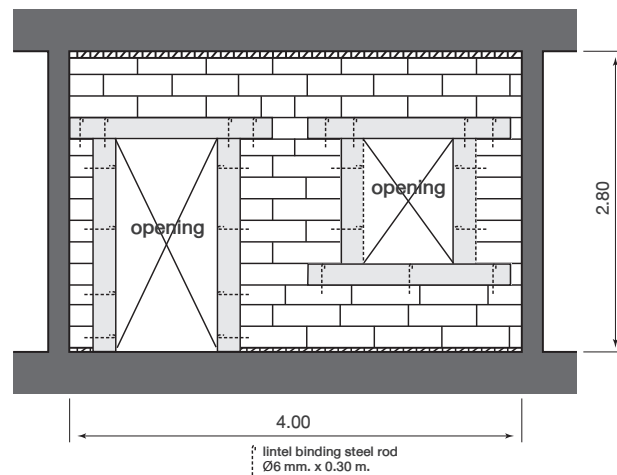
Q-CON Block (7.5 cm.)		Q-CON Block (10 cm. and more)	
Opening Size (m.)	Lintel Length (m.)	Opening Size (m.)	Lintel Length (m.)
Less than 0.40	1.20	Less than 0.9	1.20
0.40 - 0.70	1.50	0.90 - 1.10	1.50
0.70 - 1.00	1.80	1.10 - 1.40	1.80
1.00 - 1.30	2.10	1.40 - 1.70	2.10
1.30 - 1.60	2.40	1.70 - 2.00	2.40
1.60 - 1.90	2.70	2.00 - 2.10	2.70
1.90 - 2.20	3.00	2.10 - 2.40	3.00
2.20 - 2.50	3.30	2.40 - 2.70	3.30
2.50 - 2.80	3.60	2.70 - 3.00	3.60

• suggested bearing length for each thickness of lintel

Q-CON Lintel installation (for 10 cm. and more than 10 cm thickness block)

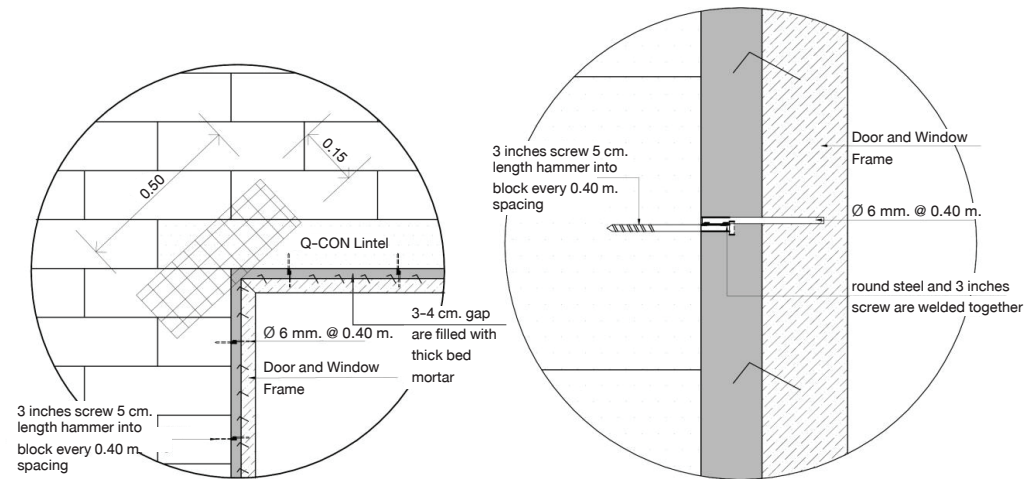


Q-CON Lintel installation (for 7.5 cm. thickness block)



► 11. Window frame and door frame installation

Installation of a window frame and a door frame can be done either before or after wall construction. Using Q-CON Lintel, the construction will be much faster. Window or door frame can be fixed with Q-CON wall by using 3" screw hammered into Q-CON block every 40 cm. height and welded with Ø6 mm. steel rod that hammered into the door frame as shown in the detail pictures.



Window and door frame installation detail

► 12. Embedding conduit and water pipe

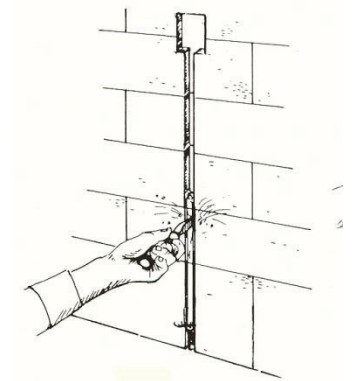
1. Mark a line on the wall as shown in Picture 1.
2. Use a radius saw to cut a concrete along the line; its depth must be appropriate to bury a pipe (the maximum depth must be not be more than 1/3 of the block's thickness).
3. Extract blocks with a chisel (Picture 3).



Picture 1

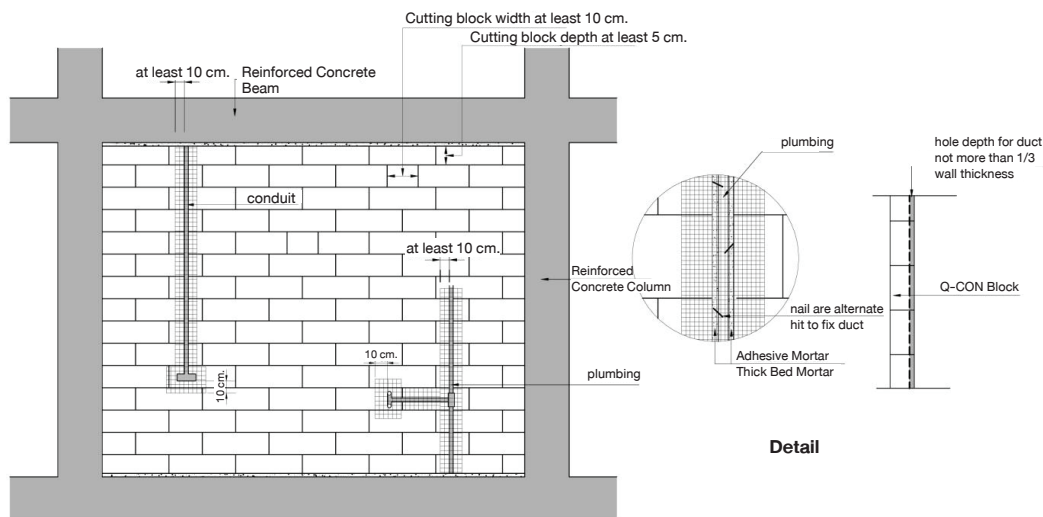


Picture 2

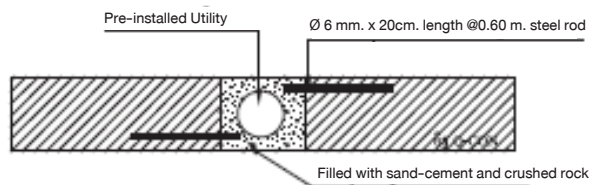


Picture 3

4. Embed a pipe into the groove and fasten with nails, sweep all dust and then fill it with sand-cement mortar before cover with a wire mesh and plastering with plastering mortar.



5. Install Q-CON wall near a large preinstalled utility pipe.

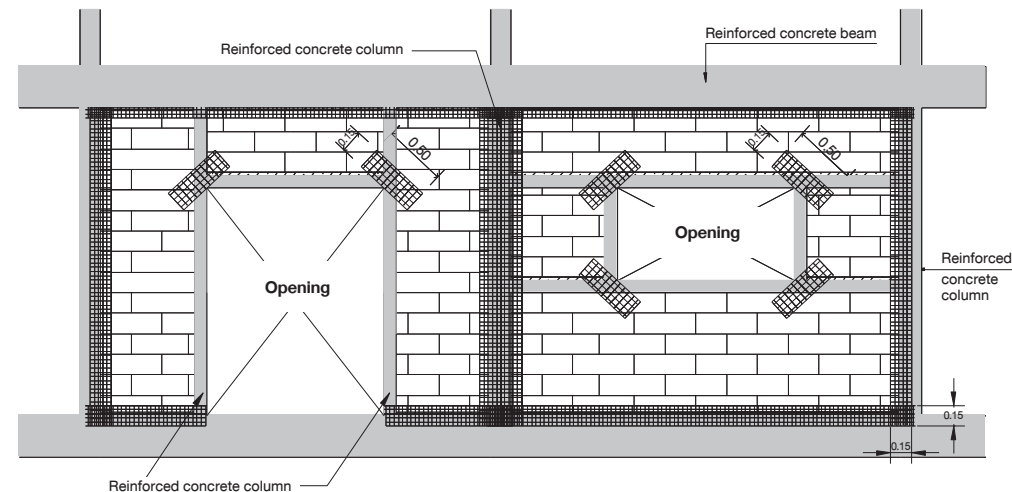


Utility pipe is larger than 1/3 of wall thickness

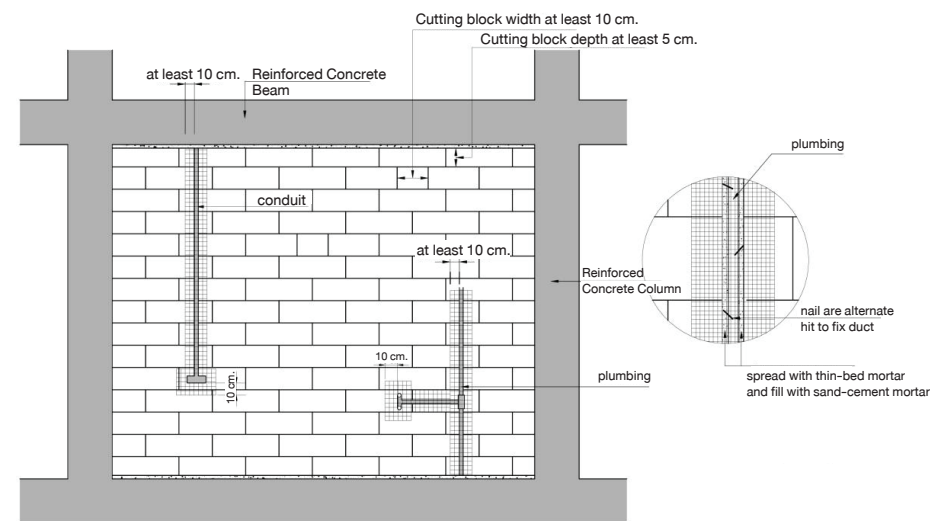
► 13. Wire mesh installation

The position that is recommended to install wire mesh:

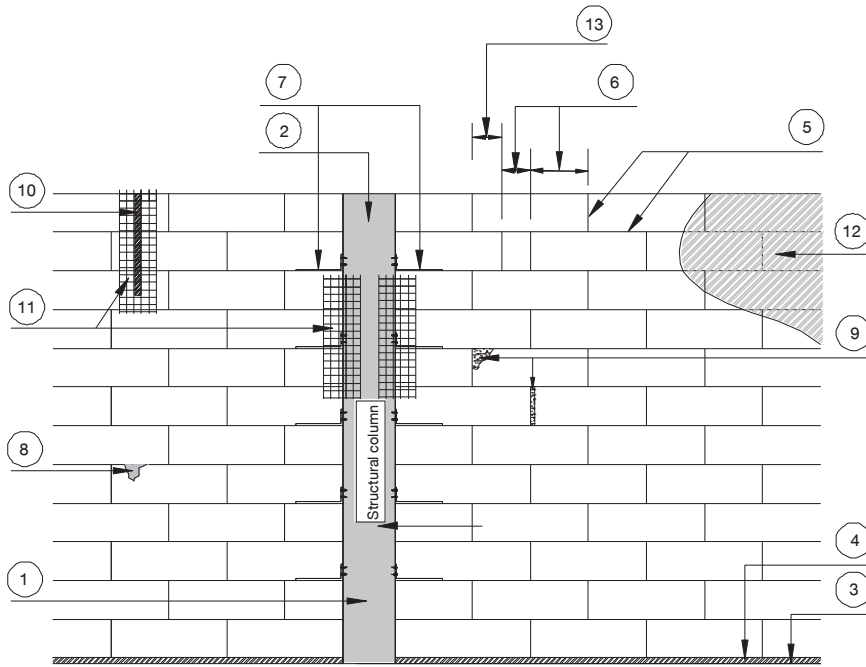
1. The corner of a window's frame. Cut wire mesh into 15x50 cm. and attach them on both sides of the corner of the window's frame.
2. The joint between Q-CON wall and a reinforced concrete beam tie beam and tie column. Cut wire mesh into 15 cm. (width) and attach along the line of the column or beam (Wire mesh # 1.25 x 1.25 cm.)



3. Use wire mesh to cover along the conduits or water pipe system. The edges of wire mesh should cover offset from the grooved line at least 10 cm. each side. The depth of the groove should not more than 1/3 of block's thickness.



► 14. Check list before starting plastering work



1. The lengths of wall without tie column are following the recommended guide. (page 4,5)
2. Spread Q-CON thin-bed mortar on the floor for the first layer.
3. Place 2-3 cm. thickness of sand-cement mortar for leveling.
4. Use thin-bed mortar to adhere each block.
5. Install each row by placing blocks in overlap length at least 10 cm.
6. Use metal straps or steel rods (Ø6 mm. x 25 cm. length) every 40 cm. height or 2 rows of blocks to fix Q-CON wall with structural column.
7. Sweep away surplus mortar before it set or harden.
8. Repair damaged blocks by filling with Q-CON thin-bed mortar.
9. The depth of groove must not deeper than 1/3 of the block's thickness.
10. Cover with a wire mesh along the pipe line before plastering work.
11. Plaster with Q-CON plastering mortar around 1.0 cm. thickness. (not thicker than 1.5 cm.)
12. The minimum length of block that can be used is 10 cm.

► 15. Plastering with Q-CON Plastering Mortar

The Q-CON plastering mortar is made especially for plastering AAC block. It has special bonding, high water retention, fine texture, smooth surface, easy for plastering work and durable to crack. It's appropriate for plastering with 0.5 – 1.0 cm. thickness. It can be used for plastering on a rough concrete wall.

Preparation: Check Q-CON wall as the list in Page 16 (Topic 14) and clean the wall by brushing away dust and spray with water.

Plastering: Plastering in two layers (for 0.3 – 0.8 mm. per layer). After plastering the first layer, leave it until it almost dries and starts to plaster the second layer until it's smooth then spray with water again. If you plastering a wall thicker than 1.5 cm. and finish it within one day, it will cause the wall to crack. The plastering must be separated into layers, each layer must not be thicker than 1.5 cm. per day. Leave the first layer over night and continue the work until meet the required thickness. In case of plastering thicker than 1.5 cm., wire mesh is required to be attached every 1.5 cm. thickness of plastering.

► 16. Finishing without plastering

The finishing can be done by various methods, such as texturing, covering with wallpaper, granite, etc. The finishing be implemented by spraying and rolling paint. The details can be obtained from technical and service division.

► 17. Wall tiling

Tiling on Q-CON wall can be done by using Q-CON adhesive mortar. Spread adhesive mortar on the wall with a tiling trowel (one bag of a mortar (50 kg.) can tile approx 4 – 10 sq.m.). During each tiling, a mortar should be spread not more than one square meter and should be complete within 15 minutes.



► 18. Q-CON Thin-Bed Mortar

Special Characteristics

- Consists of special substances that increase its bonding strength so installer can work continuously and smoothly.
- Its texture is fine, smooth and easy to use.
- High water retention, no need to sprinkle water on the block.
- Save materials and manpower, Use only 2 – 3 mm. thickness of mortar.
- Great for installing tiles and granite which require special bonding strength.



► 19. Q-CON Plastering Mortar

Special Characteristics

- Consists of special additives for water retention and decrease cracking.
- Fine texture, smooth and easy to plaster.
- Prevent heat to penetrate into the building.
- Able to plastering on rough concrete surface.



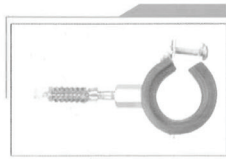
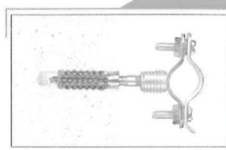
▶ 20. Hanging materials on Q-CON wall with plugs or bolts

Items or equipment can be hanged or fixed on Q-CON wall effectively by using normal plugs. For hanging heavy equipment expansion bolts should be used. The expansion bolt must be made by galvanized iron or nylon which is specially designed that provided by Q-CON or our agents.

พุกสำหรับอิฐมวลเบา Q-CON Metal expansion fixing FMD



- ออกแบบพิเศษด้วยโลหะบางและคมเพื่อยึดกับวัสดุที่มีความหนาแน่นน้อย
- เวลาใช้งานให้เจาะรูนำให้เล็กกว่าพุกเสมอ
- พุกเบอร์ 6 ใช้ดอกเจาะรู $\varnothing$ 4-5 มม. ให้เจาะลึก 34-38 มม.
- พุกเบอร์ 8 ใช้ดอกเจาะรู $\varnothing$ 6-7 มม. ให้เจาะลึก 40-46 มม.



วิธีการติดตั้งพุก FMD

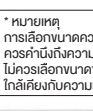
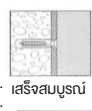
- กรณีที่อิฐมวลเบาฉาบแล้ว
 - เจาะลึกเท่ากับความหนาของปูนฉาบ (จนถึงเนื้ออิฐมวลเบา)
 - พุกเบอร์ 6 ใช้ดอกเจาะรู $\varnothing$ 5-6 มม.
 - พุกเบอร์ 8 ใช้ดอกเจาะรู $\varnothing$ 7-8 มม.



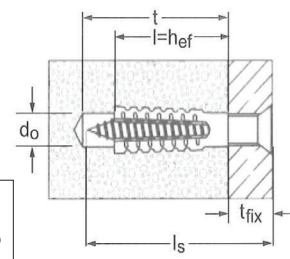
ดอกพุกเข้าไป
ในชั้นงานให้จบ

จนสามารถ
ไปขันงาน

- การเจาะอิฐมวลเบา (ไม่ควรใช้ระบบกรแทก)
 - ใช้ดอกเล็กกว่าขนาด $\varnothing$ ของพุกอย่างน้อย 1 เบอร์เสมอ
 - ควรเจาะลึกมากกว่าความยาวของพุก 2-3 มม.
 - พุกเบอร์ 6 ใช้ดอก $\varnothing$ 4-5 มม. ให้เจาะลึก 34-38 มม.
 - พุกเบอร์ 8 ใช้ดอก $\varnothing$ 6-7 มม. ให้เจาะลึก 40-46 มม.



*หมายเหตุ
การเลือกขนาดความยาวของพุก
ควรคำนึงถึงความหนาของอิฐมวลเบา
ไม่ควรเลือกขนาดของพุกที่มีความยาว
ใกล้เคียงกับความหนาของอิฐมวลเบา



TECHNICAL DATA

Type	Art-No. ID	d _o เส้นผ่า ศูนย์กลาง (mm.)	t ความลึกของรู ที่จะ (mm.)	l = h _{ef} ความลึกของพุก ที่ฝัง (mm.)	l ความยาวตัวพุก (mm.)	t _{fix} ยึด เพลา ได้หนา (mm.)	การรับ น้ำหนักต่อ จุด (กก.)	จำนวน ต่อ กล่อง (ชุด)
FMD 6 x 32 S/10 (พร้อมสลัก)	61301	4 - 5	38	32	32	10	30	50
FMD 8 x 38 S/20 (พร้อมสลัก)	61302	6 - 7	48	38	38	20	80	50

การรับ Load ขึ้นอยู่กับการติดตั้งที่ถูกวิธีโดยช่างผู้ชำนาญ

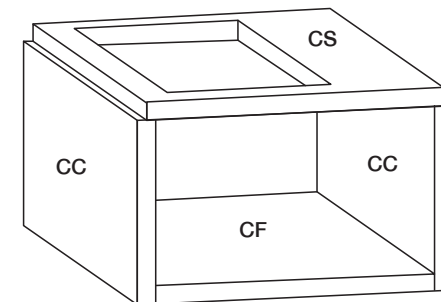
หมายเหตุ : ทำต้องการเว้นระยะหรืออุปกรณ์ต่างๆ เช่น รูปภาพ ฯลฯ ที่มีน้ำหนักน้อยกว่า 5 kg. สามารถใช้พุกพลาสติกทั่วไปได้

▶ 21. Q-CON Counter

Q-CON Counter is produced from reinforced lightweight concrete. It is easy to install and applicable for either kitchen counter or bathroom counter within houses and all types of building.

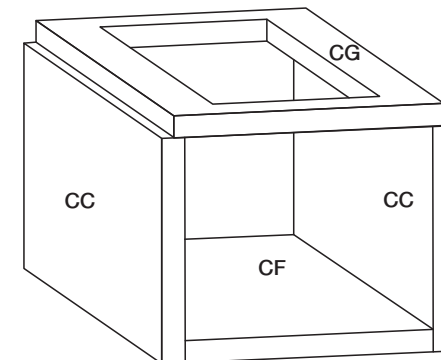
Counter Sink dimensions

- (CS) Top Piece 7.5 x 56 x 120 cm.
- (CC) Side Piece 7.5 x 56 x 75.5 cm.
- (CF) Lower Piece 7.5 x 56 x 112.5 cm.



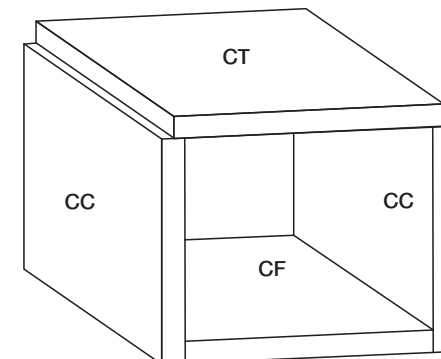
Counter Oven dimensions

- (CG) Top Piece 7.5 x 56 x 90.5 cm.
- (CC) Side Piece 7.5 x 56 x 75.5 cm.
- (CF) Lower Piece 7.5 x 56 x 83 cm.



Counter dimensions

- (CT) Top Piece - 7.5 x 56 x 95 cm.
- 7.5 x 56 x 150 cm.
- 7.5 x 56 x 200 cm.
- (CC) Side Piece - 7.5 x 56 x 75.5 cm.
- (CF) Lower Piece - 7.5 x 56 x 83 cm.



Quality products from Q-CON

Q-CON Block				
Block Thickness (cm.)	Width x Length (cm.)	Block/Sq.m.	Block/Pallet	Sq.m./Pallet
7.5	20 x 60	8.3	200	24
10	20 x 60	8.3	150	18
12.5	20 x 60	8.3	120	15
15	20 x 60	8.3	100	12
17.5	20 x 60	8.3	80	10
20	20 x 60	8.3	70	9
25	20 x 60	8.3	60	7

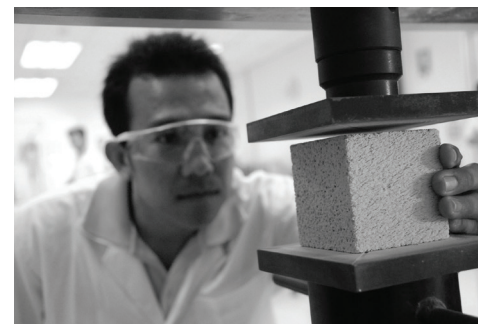
Q-CON Lintel			
Block Thickness (cm.)	Width (cm.)	Length (m.)	Min.Bearing Length (cm.)
7.5	20	1.20, 1.50, 1.80, 2.10,	40
10, 12.5, 15, 17.5, 20	20	2.40, 2.70, 3.00, 3.30, 3.60	15 - 30

Q-CON Groove Panel			
Block Thickness (cm.)	Width (cm.)	Length (m.)	Wind Load (Kg/m ²)
7.5, 10, 15, 17.5, 20	20	1.50, 2.0, 2.5, 3.0, 3.5 4.0, 4.5, 5.0, 5.5, 6.0	50 - 500

Q-CON Floor Panel			
Block Thickness (cm.)	Width (cm.)	Length (m.)	Wind Load (Kg/m ²)
10, 12.5, 15, 17.5, 20, 22.5, 25, 30	60	1.50, 2.0, 2.5, 3.0, 3.5 4.0, 4.5, 5.0, 5.5, 6.0	50 - 500

Fire Rating

Products	Fire Rating Level (Hr)					
Block Thickness (cm.)	7.5	10	12.5	15	17.5	20
Blocks						
- Load Bearing	-	2	2	4	4	4
-Non Load Bearing	4	4	4	4	4	4
Lintel	-	4	4	4	4	4
Wall Panel						
-Non Load Bearing	-	4	4	4	4	4



Acoustic Performance

Block Thickness (cm.)	Finishing	STC Ratings (Decibel)	
		G2	G4
7.5	Rendering 1 cm. (2 side)	37	40
10	Rendering 1 cm. (2 side)	39	42
12.5	Rendering 1 cm. (2 side)	41	44
15	Rendering 1 cm. (2 side)	42	45
20	Rendering 1 cm. (2 side)	45	48
25	Rendering 1 cm. (2 side)	47	50

Physical Product Characteristics

Characteristic	Unit	Block		Lintel / Panel
		G2	G4	
Normal Dry Density	Kg/m ³	500	700	600
Working Density	Kg/m ³	650	910	780
Compressive Strength	Kg/m ³	≥ 20	≥ 40	≥ 35
Modulus of Rupture	Kg/m ³	4.4	8.0	-
Ultimate Tensile Strength	Kg/m ³	44	4.4	-
Modulus of Elasticity, E	Kg/m ³	15,000	17,500	21,900

Thermal Performance

Products	Block Thickness (cm.)	Thermal Resistivity, R (m ² . k/w)	
		G2	G4
Block	7.5	1.079	0.974
	10	1.332	1.177
	12.5	1.584	1.408
	15	1.837	1.626
	20	2.342	2.061
Wall Panel Floor Panel Lintel	7.5	-	0.47
	10	-	0.63
	12.5	-	0.78
	15	-	0.94
	20	-	1.25

