

## 6. Technical Sheet and Installation Guide

# Contec Masonry Components

## Technical Sheet

### General Features

Lightweight, fire resistant\*, water penetration resistant\*\*, pest resistant, fast and easy to install, versatile and affordable. Contec Masonry Components are AAC elements and are manufactured in two different strength classes for unreinforced products (Standard Block, U-Block, O-Block): GP2/0.5 and GP4/0.7. Lintels are steel reinforced elements and are manufactured in GB4.4/0.7 strength class. Reinforcement is Grade 70 steel covered with an anticorrosive coat.

\* Under ASTM E119-95 UL®

\*\* ASTM E514

### 1. Standard Blocks

#### Uses

Contec Standard Blocks are solid units used to build load bearing and non-load bearing masonry walls.

#### Dimensions

**Length:** 24 in.  
**Height:** 8 (7 7/8) in.  
**Nominal Thickness:** 4, 5, 6, 7, 8, 10 and 12 in.  
**Strength class:** GP2/0.5 and GP4/0.7

#### Properties

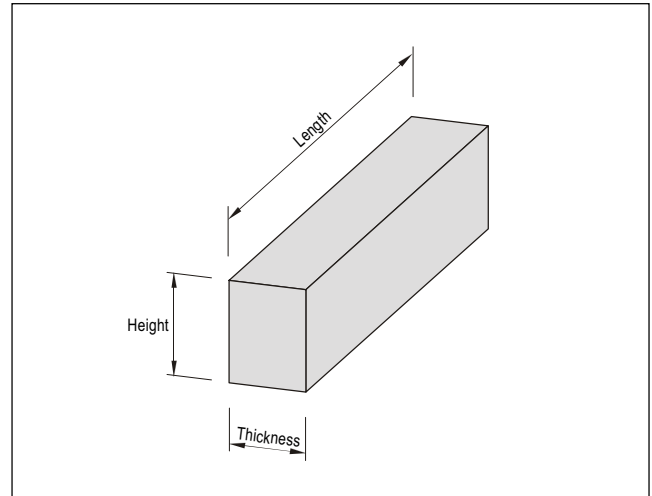


Fig. 1: Contec Standard Block (AAC solid block).

Characteristic	Strength Class	
	GP2/0.5 (31 pcf) <sup>(1)</sup>	GP4/0.7 (44 pcf) <sup>(1)</sup>
Design Weight (pcf)	37	52
Minimum compressive strength, $f_{cu}$ (psi)	355	710
Modulus of Elasticity (psi)	213,000	355,000
Minimum compressive strength of masonry, $f_m$ (psi)	355	710
Drying shrinkage (in/ft)	0.003	0.003
Thermal Expansion Coefficient (1/°F)	$4.4 \times 10^{-6}$	$4.4 \times 10^{-6}$
Resistance to Freezing <sup>(2)</sup>	0.969	0.979

<sup>(1)</sup> Maximum dry density.  
<sup>(2)</sup> Ratio of final versus initial volume of sample subjected to freeze/thaw cycles.

Thickness*	Design Weight				Pieces/ Pallet	Wall Covering Area/Pallet ft <sup>2</sup>
	GP2/0.5		GP4/0.7			
in	psf	lb/piece	psf	lb/piece		
4 (3 7/8)	12.3	16.1	17.2	22.6	180	236.4
5 (4 7/8)	15.4	20.2	21.5	28.2	144	189.1
6 (5 7/8)	18.4	24.2	25.8	33.9	120	157.6
7 (6 7/8)	21.5	28.2	30.1	39.5	96	126.1
8 (7 7/8)	24.6	32.3	34.4	45.2	84	110.3
10 (9 13/16)	30.7	40.3	43.0	56.5	72	94.6
12 (11 13/16)	36.9	48.4	51.6	67.8	60	78.8

\* Nominal dimension (Exact dimension)

Material	Thickness*	Thermal Resistance
	in	"R" <sup>(1)</sup> ft <sup>2</sup> h °F / Btu
<b>Contec Block GP2/0.5</b> Density 31 pcf K=0.83 Btu in/ft <sup>2</sup> h °F	4 (3 7/8)	4.73
	5 (4 7/8)	5.91
	6 (5 7/8)	7.09
	7 (6 7/8)	8.27
	8 (7 7/8)	9.45
	10 (9 13/16)	11.82
<b>Contec Block GP4/0.7</b> Density 44 pcf K=1.17 Btu in/ft <sup>2</sup> h °F	4 (3 7/8)	3.36
	5 (4 7/8)	4.20
	6 (5 7/8)	5.03
	7 (6 7/8)	5.87
	8 (7 7/8)	6.71
	10 (9 13/16)	8.39
<sup>(1)</sup> Energy efficiency studies developed at Construction Technology Laboratories (CTL) in Chicago evidenced equivalent performance R-values from 9 to 32 ft <sup>2</sup> h °F/Btu depending on project location.		

## Acoustic Performance

Assembly Type	STC	Report No.
Contec 6" wall GP2/0.5 unfinished	44	AS-TL958AX
Contec 6" wall GP2/0.5 with 1/2" Gypsum Board two sides	44	AS-TL958BX
Contec 8" wall GP2/0.5 unfinished	47	AS-TL959AX
Contec 8" wall GP2/0.5 with furring strips and 1/2" Gypsum Board one side	49	AS-TL975AX
Contec 8" wall GP2/0.5 finished with 1/2" Gypsum Board one side	47	AS-TL975BX
Contec 10" wall GP2/0.5 unfinished	50	AS-TL978AX
Contec 8" wall GP4/0.7 with stucco one side	48	AS-TL979AX
Contec 8" wall GP4/0.7 with stucco one side and 1/2" pad and carpet on opposite side	49	AS-TL979BX
Contec 8" block wall GP2/0.5 unfinished	47	AS-TL1023BX
Contec 8" block wall GP4/0.7 unfinished	50	AS-TL1026AX
Contec Double 5" block wall GP4/0.7 unfinished (airspace 4" no fill)	60	AS-TL962AX
Contec Double 5" block wall GP4/0.7 unfinished (airspace 4" Mineral wool 2.5 lb/cuf)	65	AS-TL962BX
Contec Double 5" block wall GP4/0.7 unfinished (airspace 4" Mineral wool 4.0 lb/cuf)	68	AS-TL962CX
Note: Testing performed at Acoustic Systems, Inc., 415 East St. Elmo Rd., Austin, TX in accordance with ASTM E90 "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."		

## Fire Performance

Wall Components (GP2/0.5 and GP4/0.7)	Fire Ratings (Hours)	UL Design Numbers (UL Fire Resistance Directory 1998)
Non-load bearing Contec block walls 4" thick and up	4	U919
Load bearing Contec block walls 6" thick and up	4	U919
Lintels 6" thick	4	U919
Fire protection for existing framing (4" thick Contec block)	4	X901
Note: Testing performed at Underwriters Laboratories, Inc., Northbrook IL under ASTM E119 (UL/ANSI 263) "Fire Tests of Building Construction and Materials."		

## 2. O-Blocks

### Uses

For use in reinforced masonry and tie down installation on Contec masonry walls when required by Local Building Codes.

### Dimensions

**Length:** 24 in.  
**Height:** 8 (7 7/8) in.  
**Nominal Thickness:** 6, 7, 8, 10 and 12 in.  
**Strength class:** GP2/0.5 and GP4/0.7

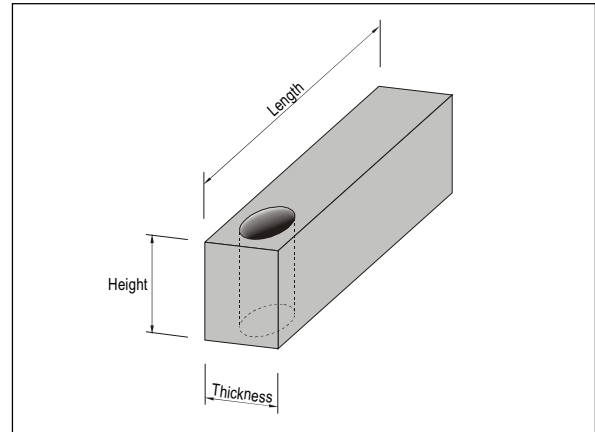


Fig. 2: Contec O-Block.

Thickness* (in)	Design Weight lb/piece		Core Diameter (in)	Core Volume (ft <sup>3</sup> )	d <sub>1</sub> (in)	d <sub>2</sub> (in)	d <sub>3</sub> (in)
	GP2/0.5	GP4/0.7					
6 (5 7/8)	22.5	31.5	3 9/16	0.0449	2 15/16	1 3/16	19 5/16
7 (6 7/8)	26.6	37.2	3 9/16	0.0449	3 7/16	1 11/16	18 13/16
8 (7 7/8)	29.8	41.7	4 5/16	0.0671	3 15/16	1 3/4	17 15/16
10 (9 13/16)	37.8	53.0	4 5/16	0.0671	4 15/16	2 3/4	16 15/16
12 (11 13/16)	45.9	64.3	4 5/16	0.0671	5 7/8	3 3/4	15 15/16

Note: Hole must be filled with concrete  $f'_c = 3$  ksi.

### \* Nominal dimension (Exact dimension)

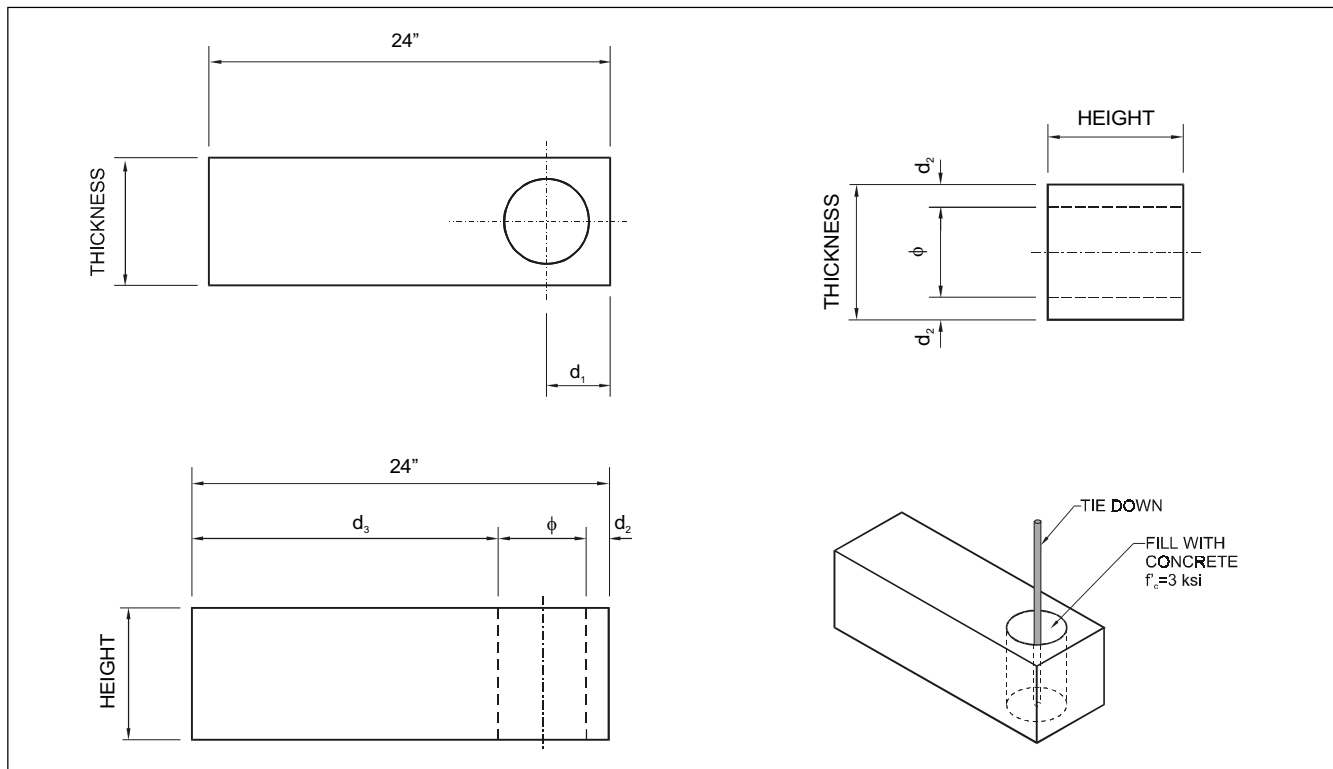


Fig. 3: Contec O-Block dimensions.

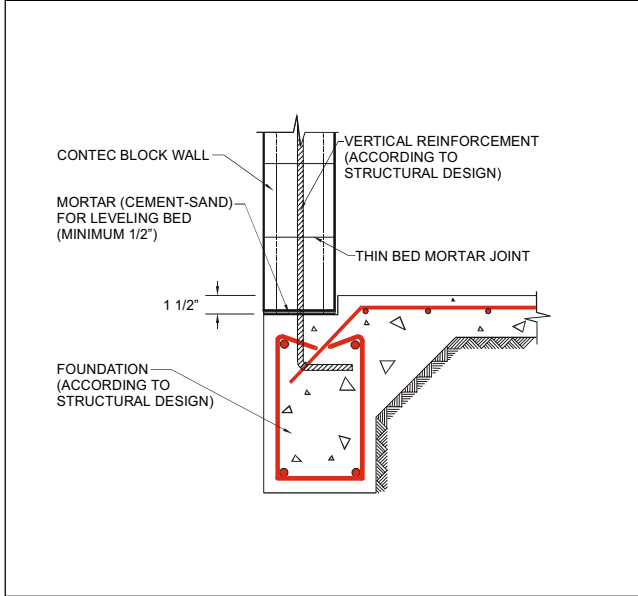


Fig. 4: Typical detail of Contec masonry wall.

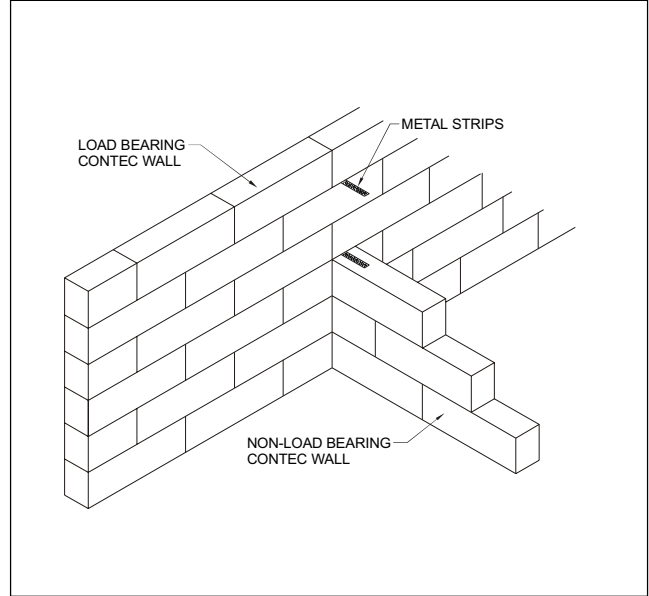


Fig. 5: Wall connection using metal strips.

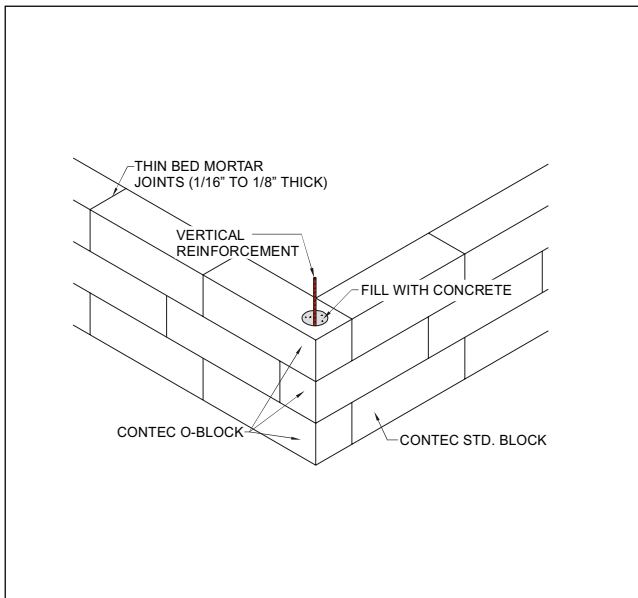


Fig. 6: Pilaster located at corner.

### 3. U-Blocks

#### Uses

For use in composite reinforced concrete beams (bond beams) to cover wall openings or as confinement elements.

#### Dimensions

**Length:** 24 in.  
**Height:** 8 (7 7/8) in.  
**Nominal Thickness:** 6, 7, 8, 10 and 12 in.  
**Strength class:** GP2/0.5

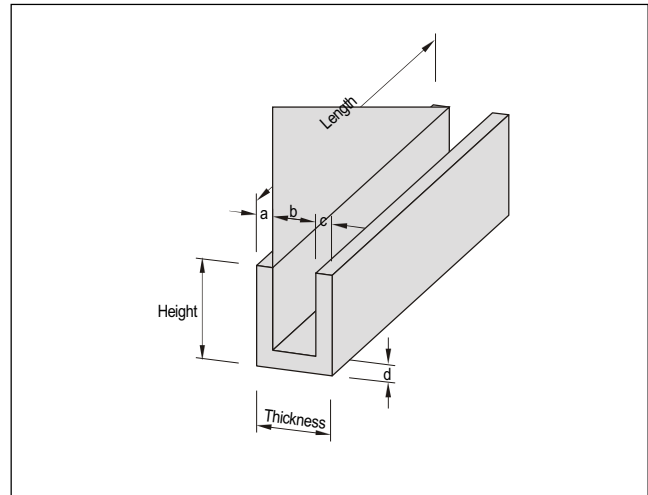


Fig. 7: Contec U-Block.

Thickness* in	Unit Weight lb	Hollow Volume <sup>(1)</sup> ft <sup>3</sup>	Pieces/ pallet
6 (5 7/8)	16.1	0.2334	80
7 (6 7/8)	18.4	0.2814	60
8 (7 7/8)	22.2	0.2894	60
10 (9 13/16)	23.0	0.4894	50
12 (11 13/16)	28.3	0.5694	40

<sup>(1)</sup> To be filled with concrete when used as lintel or bond beam.

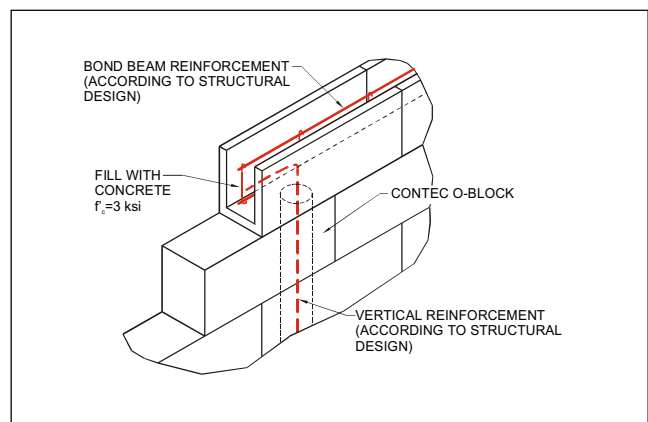


Fig. 8: Bond beam at top of the wall using Contec U-Block.

Thickness * in	a in	b in	c in	d in
6 (5 7/8)	1 1/2	3	1 1/2	2 3/16
7 (6 7/8)	1 11/16	3 1/2	1 11/16	2 3/16
8 (7 7/8)	2 1/8	3 5/8	2 1/8	2 3/16
10 (9 13/16)	1 7/8	6 1/8	1 7/8	2 3/16
12 (11 13/16)	2 3/8	7 1/8	2 3/8	2 3/16

\* Nominal dimension (Exact dimension)

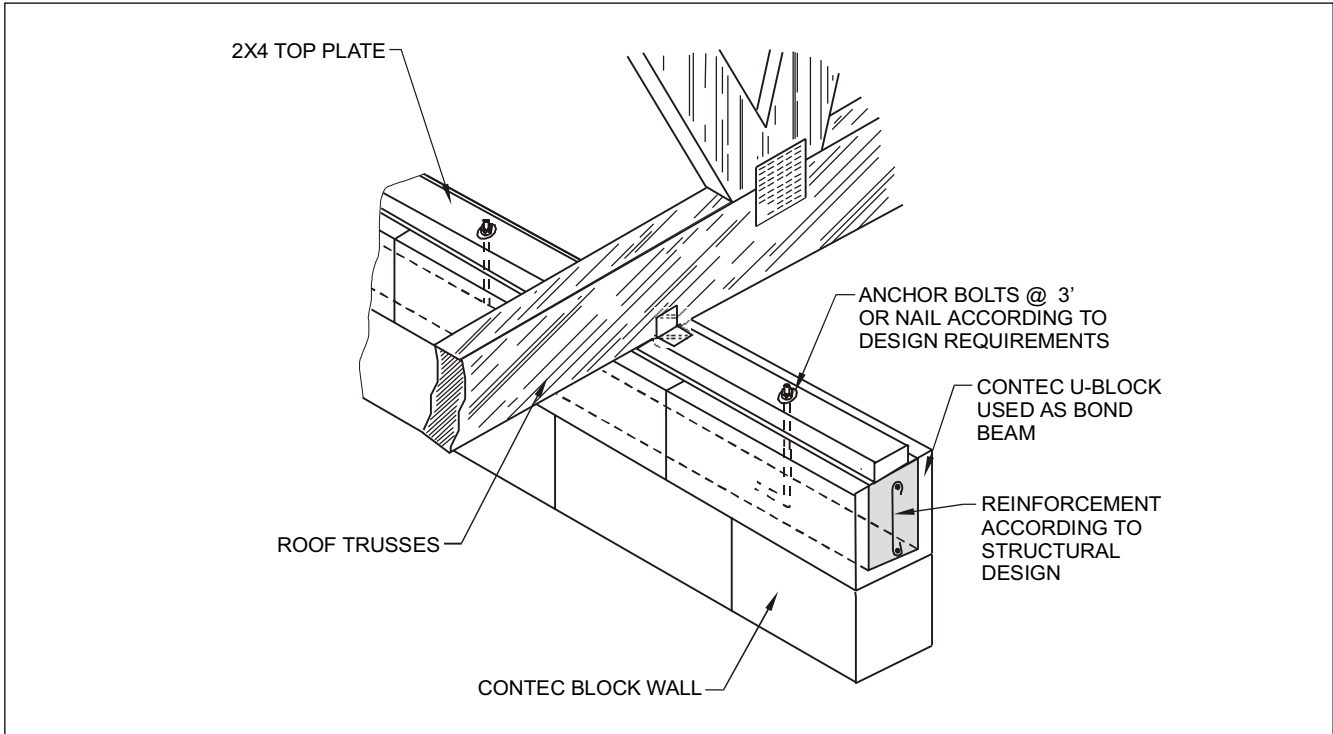


Fig. 9: Wood plate fixation at top of the Contec Wall.

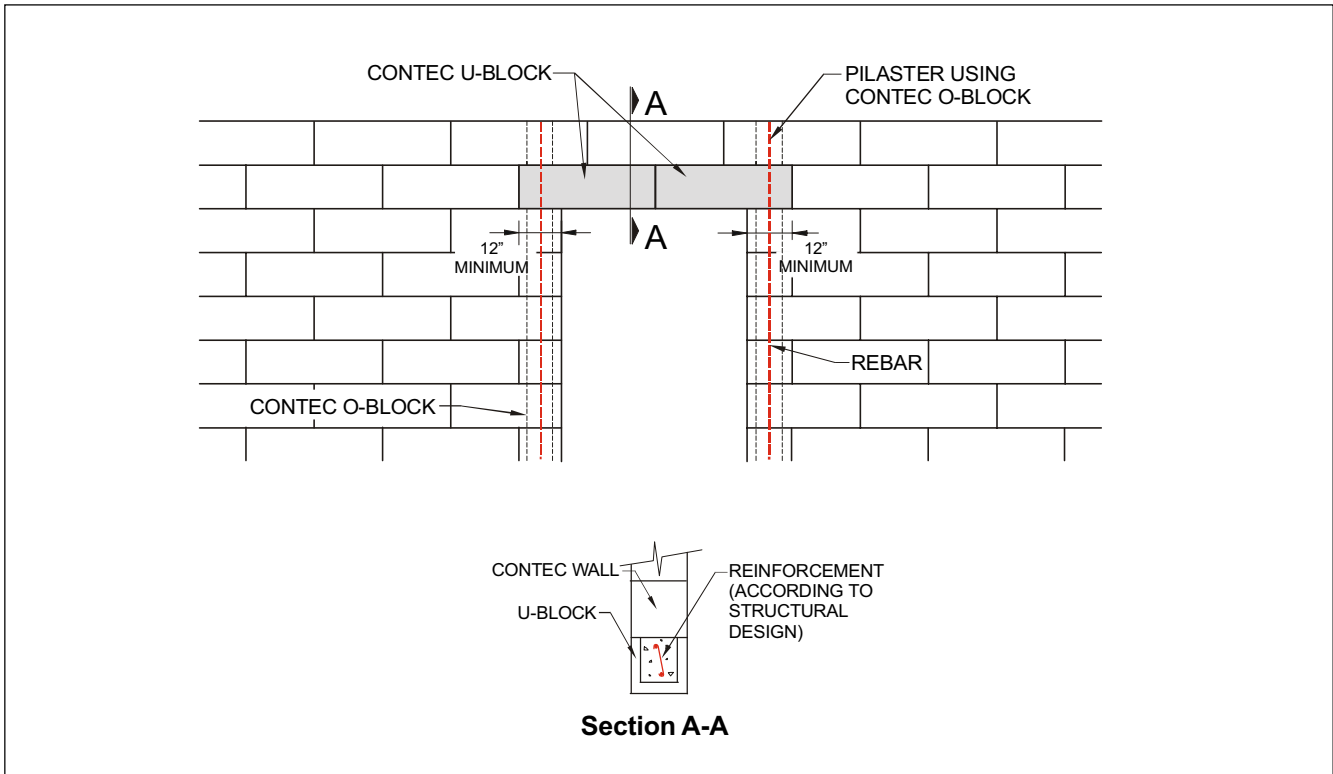


Fig. 10: Contec U-Block beam used as lintel to span door and window openings.

## 4. Lintels

### Uses

Precast AAC steel reinforced beams to span door and window openings. Anticorrosive coating is used on steel reinforcement.

### Dimensions

**Strength class:** GB4.4/0.7

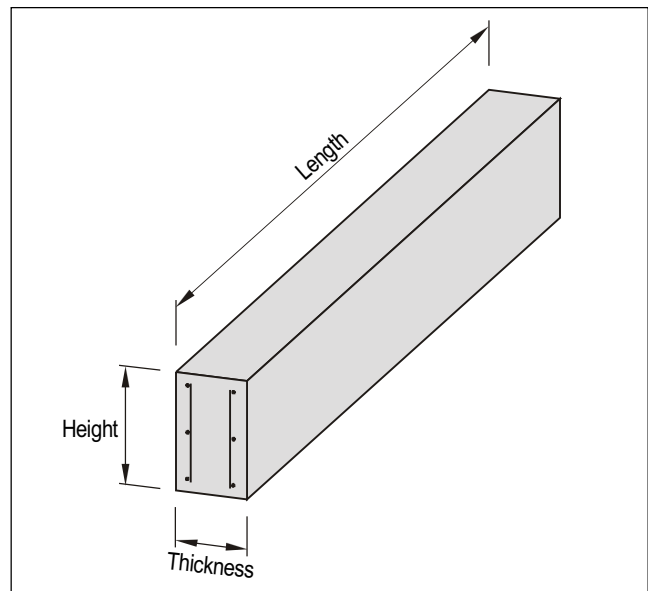


Fig. 11: Contec Lintel.

Thickness *	Length	Max Clear Span	Unit Weight (lb/piece)	
			10" (9 7/8) Height	12" (11 13/16) Height
4 (3 7/8)	4' 5 3/16"	3' 1"	62.50	75.00
	5' 4 15/16"	4' 1"	76.39	91.67
	6' 6 3/4"	4' 11"	92.59	111.11
5 (4 7/8)	4' 5 3/16"	3' 1"	78.13	93.75
	5' 4 15/16"	4' 1"	95.49	114.58
	6' 6 3/4"	4' 11"	115.74	138.89
6 (5 7/8)	4' 5 3/16"	3' 1"	93.75	112.50
	5' 4 15/16"	4' 1"	114.58	137.50
	6' 6 3/4"	4' 11"	138.89	166.67
7 (6 7/8)	4' 5 3/16"	3' 1"	109.38	131.25
	5' 4 15/16"	4' 1"	133.68	160.42
	6' 6 3/4"	4' 11"	162.04	194.44
8 (7 7/8)	4' 5 3/16"	3' 1"	125.00	150.00
	5' 4 15/16"	4' 1"	152.78	183.33
	6' 6 3/4"	4' 11"	185.19	222.22
10 (9 13/16)	4' 5 3/16"	3' 1"	156.25	187.50
	5' 4 15/16"	4' 1"	190.97	229.17
	6' 6 3/4"	4' 11"	231.48	277.78
12 (11 13/16)	4' 5 3/16"	3' 1"	187.50	225.00
	5' 4 15/16"	4' 1"	229.17	275.00
	6' 6 3/4"	4' 11"	277.78	333.33

\* Nominal dimension (Exact dimension)

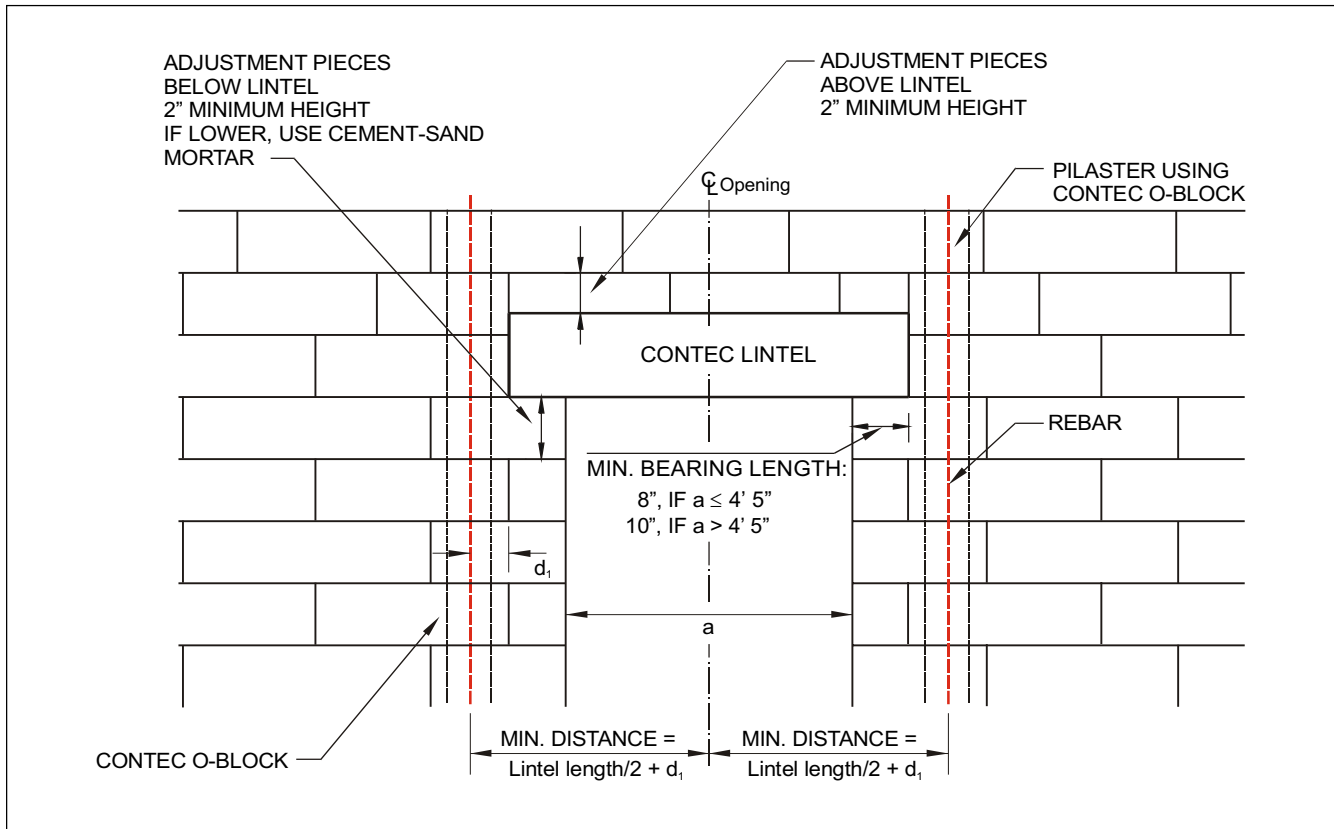


Fig. 12: Contec Lintel construction detail.

## Contec Masonry Components design considerations

- Contec Masonry Components can be used to build load bearing or non-load bearing walls. Masonry walls built with Contec Masonry Components shall be designed following guidelines established by ACI 530-95 and Local Building Codes.
- Contec O-Blocks can be used to build pilasters designed according to Local Building Codes.
- Contec U-Blocks can be used to build bond beams and lintels (to span door and window openings).
- Contec Lintels must not be cut on site. The reinforcement of Contec Lintels is determined by Texas Contec Technical Department.
- For high wind zones (> 100 m.p.h.), pilasters must be located next to the openings in exterior walls. Therefore, headers using Contec U-Block is recommended (see Fig. 10).