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HEBEL AUTOCLAVED AERATED CONCRETE (AAC) PANELS AND MASONRY BLOCKS, AND HEBEL THIN-BED MORTAR

CSI Section:

03 41 00 Precast Structural Concrete

04 22 26 Autoclaved Aerated Concrete Unit Masonry

1.0 RECOGNITION

Hebel Autoclaved Aerated Concrete (AAC) Panels and Masonry Blocks, and Hebel Thin Bed Mortar recognized in this report have been evaluated for use as interior or exterior, unreinforced or reinforced, load-bearing or non-load-bearing, or shear walls, wall lintels, and roof and floor panels. Panels and Masonry Blocks can be used in any Type construction where non-combustible products are approved as defined by the IBC Chapter 6. The structural performance, physical characteristics, thermal conductivity, sound transmission, non-combustibility, and fire resistance properties were evaluated for compliance with the following codes and regulations:

- 2018, 2015, 2012 and 2009 International Building Code® (IBC)
- 2018, 2015, 2012 and 2009 International Residential Code® (IRC)

2.0 LIMITATIONS

Use of Hebel AAC Panels and Masonry Block units and Hebel Thin-Bed Mortar described in this report is subject to the following limitations:

2.1 Hebel AAC Masonry Block structures shall be designed and installed in accordance with this report and the applicable code.

2.2 Hebel AAC panel structures shall be designed using the procedures in this report, the guidelines in ACI 523.4R-09, and the applicable code.

2.3 Panel connections shall be designed to the satisfaction of the building official.

2.4 Hebel AAC wall panels used for lateral force-resisting systems shall be special AAC structural walls in accordance with Section 21.15 of ACI 523.4R shall be limited to Seismic Design Categories A and B.

2.5 Hebel AAC roof and floor panels used as diaphragms of lateral force-resisting systems shall be limited to Seismic Design Categories A or B, in walls in accordance with Section 7.8.2.1 of ACI 523.4R.

2.6 Use of AAC panels for loads that involve vibration and impact forces is outside the scope of this report.

2.7 The manufacturer’s published installation manual and this report shall be available at all times at the jobsite during construction. Where there is a conflict, the most restrictive shall govern.

2.8 Plans, specifications, engineering calculations and other construction documents specifying the use of Hebel AAC Panels and AAC Masonry Blocks shall be submitted to the building official for approval. The calculations and documents shall be prepared by a registered design professional when required by the statutes of the jurisdiction where the project is to be constructed.

2.9 Inspection and installation of construction using Hebel AAC Masonry Blocks shall comply with the requirements set forth in the applicable code listed in Section 1.0 of this report for structural masonry. Special inspection shall be provided and comply with Section 2.13 of this report.

2.10 Installation of Hebel AAC panels shall comply with this report, the guidelines in ACI 523.4R-09, and the requirements for structural concrete in the IBC. Special inspection shall be provided in accordance with Section 2.14 of this report.

2.11 Exterior walls and other building elements exposed to weather and/or moisture shall have code-complying weather-resistance coverings. Roof coverings used in conjunction with the panels shall be rated as required by Table 1505.1 of the IBC.

2.12 Surfaces of basement walls in contact with the ground shall be waterproofed.

2.13 Special Inspections of Masonry Blocks: Special inspection of structural masonry shall conform to Section 1705.4 of the IBC. The special inspector’s duties, at a minimum, include verifying Hebel AAC Masonry Block unit and Hebel Thin-bed mortar identification, unit placement, placement of field reinforcement, mortar preparation and application.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





2.14 Special Inspections of Panels: Special inspection of structural concrete shall conform to Section 1705.3 of the IBC. The special inspector's duties shall include verification and inspection of concrete construction as specified in IBC Table 1705.3 as well as Hebel AAC panel and Thin Bed Mortar identification, panel placement and placement of field-installed reinforcement.

2.15 Hebel AAC Panels and Masonry Block units shall be manufactured by Litecrete, S.A. DE C.V. in Pesqueria, Nuevo Leon, Mexico.

2.16 Hebel Thin-Bed Mortar shall be manufactured in Pesqueria, Nuevo Leon, Mexico.

3.0 PRODUCT USE

3.1 Hebel Autoclaved Aerated Concrete (AAC) Masonry Blocks

3.1.1 General: Hebel AAC Masonry Blocks are AAC masonry units used with Hebel Thin-Bed Mortar to construct masonry walls for interior or exterior, unreinforced or reinforced, load-bearing or non-load bearing, or masonry shear walls in accordance with the AAC provisions in Chapter 21 of the IBC. Hebel AAC Masonry Blocks and Hebel Thin-Bed Mortar may also be used where an engineering design is submitted in accordance with Section R301.1.3 of the IRC.

3.1.2 Design

3.1.2.1 General: Walls constructed using Hebel AAC Masonry Blocks and Hebel Thin-Bed Mortar shall be designed in accordance with provisions as set forth in Sections 2101.2 of the IBC and Sections 3.1.2.2 through 3.1.2.6 of this report. AAC masonry block design shall comply with the requirements of Chapters 1 through 7 and Chapter 11 of TMS 402 for strength design.

3.1.2.2 Required Strength: Required strength shall be determined in accordance with the strength design load combinations in Section 1605.2 of the IBC.

3.1.2.3 Design Strength: AAC masonry members shall be proportioned such that the design strength exceeds the required strength. Design strength shall be determined as follows, under the 2018 edition IBC, in accordance with Chapter 11 of TMS 402-16, under the 2015 edition IBC Chapter 11 of the TMS 402-13 /ACI 530-13/ASCE 5-13 Building Code Requirements and Specification for Masonry Structures, under the 2012 edition IBC Chapter 8 of the TMS402-11/ASCE 5-11/ACI 530-11 under the 2009 edition IBC Appendix A of TMS 402-08/ASCE 5-08/ACI 530-08 under the 2009 IBC, as applicable.

3.1.2.4 Seismic Design Provisions: Hebel AAC masonry shall comply with the provisions of Section 2106 of the 2018 and 2015 editions of the IBC, and Chapters 1 and 8 of TMS 402-11 under the 2012 IBC, or Chapter 1 and Appendix A of TMS 402-08 under the 2009 IBC, as applicable. Structures using Hebel AAC Masonry Block units and Hebel Thin-Bed Mortar used in the seismic force-resisting system of structures, are not limited in height when assigned to Seismic Design Category B; except for ordinary reinforced AAC masonry shear walls, height is limited to 35 feet (48 768 mm), for structures assigned to Seismic Design Category C.

3.1.2.5 Thermal Insulation: Hebel AAC Masonry Blocks, when tested in accordance with ASTM C518, have thermal conductivity values, k, as shown in Table 1 of this report.

Strength Class	Thermal Conductivity, k
AAC-2	0.75
AAC-3	0.92
AAC-4	0.91
AAC-5	0.98
AAC-6	0.98

SI conversions: $k = 1 \text{ Btu}\cdot\text{in}/ \text{ft}^2\cdot\text{h}\cdot^\circ\text{F} = 0.144 \text{ W/m}\cdot\text{K}$

3.1.2.6 Sound Transmission Class: Walls constructed of minimum 8-inch-thick (203 mm) Hebel AAC Masonry Blocks provide a Sound Transmission Class (STC) rating of not less than 50 in accordance with Section 1207.2 of the IBC and Section AK102 of the IRC, when tested in accordance with ASTM E90.

3.1.2.7 Fire Resistance Walls constructed with Hebel AAC Masonry Blocks and Hebel Thin-Bed Mortar a minimum of 4 inches (100 mm) thick have a four-hour fire-resistance rating in either load bearing or non-load-bearing walls. AAC masonry units shall be laid in a running bond, and all the joints shall be mortared. Allowable loads on fire-resistance-rated AAC masonry bearing walls shall be limited to 77 percent of the calculated axial load.

3.1.3 Installation: The Litecrete published installation instructions, the Hebel Installation Manual and this report shall be strictly adhered to, and a copy of the instructions shall be available at all times on the jobsite during installation. Additionally, drawings and/or specifications shall supplement the published instructions, and feature detailed information concerning how the Hebel AAC Masonry Block units described in this report are to be integrated into the building under construction.

Exterior walls exposed to weather and/or outside moisture shall have a code-complying weather-resistive barrier. With the exception of the first course, which is placed on a leveling bed of ASTM C270 Type M mortar in accordance with Section 2104.1 of the 2018 and 2015 editions of the IBC (Section 2103.12 of the 2012 IBC, or Section 2103.11 of



2009 IBC), as applicable, the Hebel AAC Masonry Block units used in wall construction are laid with horizontal and vertical joints mortared with Hebel Thin-Bed Mortar. The tongue-and-groove block system does not require the vertical joints to be mortared. Hebel Thin-Bed mortar shall be mixed and applied according to Hebel’s published installation instructions and the joints shall be 0.041 to 0.12 inch (1 mm to 3 mm) in thickness. The Hebel AAC Masonry Block unit walls shall be built in running bond, with the vertical joints staggered a minimum of one-quarter the length of the unit but not less than 4 inches (102 mm).

Cored blocks shall be placed within 24 inches (610 mm) of corners, each side of openings, and each side of movement joints to accommodate vertical reinforcement. Cores on the block shall be factory installed or drilled on site. Field-installed cores for 5-inch-thick (125 mm) blocks shall be minimum 2.75 inches (70 mm) in diameter. Field-installed cores for 6-inch-thick (152 mm) blocks shall be a minimum of 3 inches (76 mm) in diameter. Field-installed cores for blocks 8 inches (203 mm) thick or thicker shall be a minimum of 4 inches (102 mm) in diameter. Vertical reinforcement size and spacing shall be specified by the structural design professional. Vertical reinforcement shall be spliced to reinforcement dowels from the foundation and continue up the walls through the vertical cores with a 90-degree hook in the bond beam. The cores shall be filled with fine grout in accordance with ASTM C476. Figures 2 through 4 of this report illustrate details of a typical wall section.

A bond beam consisting of a row of U-block shall be installed at the top of each floor level of the AAC wall. Two deformed, minimum No. 4 reinforcing bars shall be installed in the U-shaped cavity that runs horizontally through the wall. The vertical reinforcement in the vertical core shall terminate with a 90-degree hook in the bond beam. A truss anchor plate or double wood sill plate shall be anchored to the bond beam. Bent pieces of deformed reinforcement shall be used to tie the cores and corner together. The details of reinforcement, including splice length, shall comply with TMS 402.

Hebel Thin-bed mortar shall be applied to clean surfaces using a ³/₁₆-inch-by-³/₁₆-inch (4.8 mm by 4.8 mm) notched trowel. Minimum ambient temperature during installation shall be 40°F (4°C). Hebel AAC Masonry Block units may be cut to exact shapes and sizes with a hand saw or an electric saw.

3.2 Hebel AAC Panels, Slabs and Lintels

3.2.1 General: Hebel AAC panels, slabs and lintels shall be designed and constructed in accordance with the requirements of Section 1901.2 of the IBC, ACI 523.4R-09, the manufacturer’s installation instructions and this report. In the event of a conflict the most conservative shall govern. The manufacturer’s installation instructions shall be strictly adhered to and be available at the jobsite during construction.

Allowable loads shall be as shown in Tables 7, 8 or 9 of this report, as applicable.

Typical installation details are illustrated in Figures 5 through 7 of this report. The figures are for general information only.

3.2.2 Wall Panels: Hebel AAC wall panels may be used as load bearing walls erected vertically between story heights or non-load bearing wall panels erected either vertically or horizontally between columns. Wall panels may be used with steel or concrete structures as curtain walls spanning horizontally or standing vertically. Initial wall panels shall be set in a leveling bed of Type M cement mortar complying with ASTM C270. A waterproof membrane shall be used between the foundation and the bottom of the wall panel. The exterior face of wall panels shall have code complying weather protection. Panels shall be attached to the structure in accordance with the approved plans. Panel to panel edges shall be joined with Hebel Thin-Bed Mortar complying with Section 4.1.2 of this report.

3.2.3 Roof and Floor Panels: Hebel AAC floor and roof slab panels may be used as simply supported floor and roof slabs. The panels shall be supported by load-bearing walls or structural beams. The panels shall be designed to comply with strength and serviceability requirements as specified in ACI 523.4R-09. Longitudinal joints between panels shall be reinforced with a No. 3, Grade 60, deformed reinforcement bar complying with ASTM A1064, in minimum 3,000 psi (20.7 MPa) compressive strength concrete. Ring beams shall be place around panel perimeters and consist of two No. 4, Grade 60, deformed reinforcement bars complying with ASTM A1064, in minimum 3,000 psi (20.7 MPa) compressive strength concrete. Tables 7, 8, and 9 provide allowable load and span information.

3.2.4 Roof and Floor Panel Fire-Resistance Rating. Roof and floor panels have the fire-resistance ratings as shown in Table 2 of this report. Roof panel assemblies shall be covered with an approved adhesively applied roof covering.

Table 2 – Fire-Resistance Rating	
Slab Thickness (inch)	Fire-Resistance Rating (hours)
4	1
5	4

SI: 1 inch = 25.4 mm

3.2.5 Sound Transmission Class: Wall, roof, and floor assemblies of minimum 8-inch (203 mm) thickness constructed in accordance with this report have a sound transmission class (STC) of not less than 50 for air-borne noise when tested in accordance with ASTM E90 in accordance with Section 1207.2 of the IBC, and an impact insulation class (IIC) rating of not less than 50 when tested in accordance with ASTM E492 in accordance with Section 1207.3 of the IBC.



3.2.6 Thermal Insulation. Hebel AAC wall, roof and floor panel assemblies have the thermal transmission properties shown in Table 3 of this report.

Strength Category	Thermal Resistance, R (ft ² •h•°F/Btu)	Thermal Conductivity, k (Btu•in/ft ² •h•°F)
AAC-2	1.32	0.75
AAC-4	1.09	0.91
AAC-6	1.02	0.98

3.2.7 Combustibility. Hebel AAC wall, roof and floor panels are non-combustible and meet the requirements of Section 703.5 of the IBC.

3.2.8 Fire Classification. Hebel AAC roof panels, without coverings, have a Fire Classification of Class A as defined by Exception 1 of Section 1505.2 of the IBC.

4.0 PRODUCT DESCRIPTION

4.1 Hebel AAC Masonry

4.1.1 Hebel AAC Masonry Blocks: Hebel AAC Masonry Blocks are precast, noncombustible masonry units manufactured of autoclaved aerated concrete produced from cement, lime, gypsum, quartz sand, water, and an expanding agent (aluminum paste) admixture. The Hebel AAC Masonry Block units shall be produced in strength classes designated AAC-2, AAC-3, AAC-4, AAC-5 and AAC-6, having compressive strengths and densities as summarized in Table 4 of this report.

Strength Class	Compressive Strength, psi, minimum	Density lb/ft ³ , minimum
AAC-2	290	25
AAC-3	435	25
AAC-4	580	31
AAC-5	725	37
AAC-6	870	37

SI conversions: 1 psi = 0.006895 MPa, 1 lb/ft³ = 16.0185 kg/m³

The Hebel AAC Masonry Block units are available in four different configurations: Blocks, Jumbo Blocks, U Blocks and Cored Blocks and various dimensions as shown in Table 5 of this report. Dimensions for U Blocks and Cored Blocks are shown in Figure 1 of this report.

Block Configuration	Thickness (inches)	Height (inches)	Length - (inches)
Blocks	2, 3, 4, 5, 6, 7, 8, 10, 12	8, 12, 16	24
Jumbo Blocks	6, 7, 8, 10, 12	24	40, 48
U Blocks	5, 6, 7, 8, 10, 12	8	24
Cored Blocks	5, 6, 7, 8, 10, 12	8	24

SI conversions: 1 inch = 25.4 mm

The Hebel AAC Masonry Block units in the Blocks and Cored Blocks configurations are also available with tongue and groove edges. The dimension of the tongue and groove shall be 1 inch high by 2 inches wide (25.4 mm by 51mm). The AAC units share the same physical and structural properties. Strength classes AAC-2, AAC-3, AAC-4 AAC-5, and AAC-6 comply with ASTM C1386, ASTM C1691, ASTM C1693-11 (2017), and IBC Section 2103.1.

4.1.2 Hebel Thin-Bed Mortar: Hebel Thin-Bed Mortar consists of inorganic aggregates, cement, and organic additives. Hebel thin-bed mortar for AAC complies with Section 2103.2.1 of the 2018 and 2015 editions of the IBC (Section 2103.12 of the 2012 IBC, Section 2103.11 of the 2009 IBC), as applicable. Hebel Thin-Bed Mortar is pre-bagged in dry form from the factory. Each bag weighs 48.5 pounds (22 kg). Mixing instructions are printed on the bag for the addition of water and the appropriate mixing sequence. Hebel Thin-Bed Mortar shall be used with Hebel AAC Masonry Blocks as recognized in this report. The working life of the thin-bed mortar mixture is four hours. The Thin-Bed Mortar when stored in unopened bags and protected from moisture has a one-year shelf life from the date of manufacture.

4.1.3 Fasteners: Fasteners and mechanical connections shall be approved by the building official for each project.

4.2 Hebel AAC panels: Hebel AAC panels are manufactured from autoclaved aerated concrete and consist of reinforced, precast, noncombustible panels complying with ASTM C1452 and ASTM C1694, as applicable, in strength classes AAC-2, AAC-4 and AAC-6. Available panel strengths and densities are as shown in Table 6 of this report.

Strength Class	Minimum Compressive Strength (psi)	Nominal Dry Bulk Density (lb/ft ³)
AAC-2	290	25
AAC-4	580	31
AAC-6	870	37

1 psi = 0.006895 MPa, 1 lb/ft³ = 16.0185 kg/m³

4.2.1 The reinforced wall panels, lintels, floor panels and roof panels are reinforced with two layers of factory-installed reinforcement with protection from corrosion in accordance with ASTM C1452 and ASTM C1694, as applicable. Steel wire reinforcement shall comply with the requirements of Section 1901.2 of the IBC, ACI 523.4R-09, the manufacturer’s installation instructions and this report, and shall have a minimum f_y of 70 ksi (485 MPa) and be minimum nominal ⁵/₃₂-inch (4 mm actual) diameter to maximum nominal ⁵/₁₆-inch (8 mm actual) diameter and spaced maximum 9.44 inches (240 mm) on-center. Metal fasteners and other embedment’s shall be corrosion-resistant and compatible with the AAC.



4.2.2 Hebel AAC Wall Panels: Hebel AAC wall panels are 24 inches (610 mm) wide, up to 20 feet (6,096 mm) in length and widths of 4, 5, 6, 7, 8, 10 or 12 inches (102, 127, 152, 178, 203, 254 or 305 mm). Panel edges may be flat, notched or tongue-and-grooved.

4.2.3 Hebel AAC Floor Slab and Roof Slab Panels: Hebel AAC floor and roof slab panels are 24 inches (610 mm) wide, up to 20 feet (6,096 mm) in length and widths of 4, 5, 6, 7, 8, 9, 10 or 12 inches (102, 127, 152, 178, 203, 229, 254 or 305 mm). Slab edges may be flat, notched or tongue-and-grooved.

4.2.4 Hebel AAC Lintels: Hebel AAC lintels are reinforced beams used to cover spans above door and window openings in both load bearing and non-load bearing walls. The lintels are manufactured in standard heights of 8, 10, 12, and 24 inches nominal (200, 250, 300 and 600 mm actual), and various lengths and widths.

4.2.5 Hebel Thin-Bed Mortar: Hebel thin-bed mortar for AAC complies with ASTM C1660 and Section 2103.2.1 of the 2018 and 2015 editions of the IBC (Section 2103.12 of the 2012 IBC, Section 2103.11 of the 2009 IBC). Thin-bed mortar is a dry mix, pre-packaged in 48.5 lbs. (22 kg) bags. The working life of the thin-bed mortar is four hours. When stored in unopened bags and protected from moisture the thin-bed mortar has a one-year shelf life from the date of manufacture.

4.2.6 Grout: Cement grout used with Hebel AAC panels shall consist of one part Portland cement and three parts fine aggregate (sand) conforming to ASTM C476.

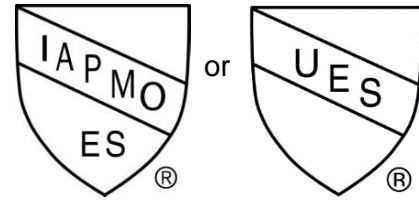
5.0 IDENTIFICATION

Hebel AAC Masonry Block units are identified on the pallets by labels which shall include the manufacturer's name (Litecrete, S.A. de C.V) and/or brand name (Hebel), a code indicating the production plant and date of production, product type, strength class and density, the IAPMO Uniform ES Mark of Conformity, and the Evaluation Report Number (ER-405). A die-stamp label may also substitute for the label.

Hebel AAC panels, slabs and lintels are identified by labels or die-stamps which include the manufacturer's name (Litecrete, S.A. de C.V.), brand name (Hebel), product type, strength class and density, the IAPMO Uniform ES Mark of Conformity, and the Evaluation Report Number (ER-405).

Hebel Thin-Bed Mortar is identified by packaging which shall include the name Litecrete, S.A. de C.V, the brand name (Hebel), the weight, and mixing and application instructions.

Either UES Mark of Conformity may be used as shown below:



IAPMO UES ER-405

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems (AC15), dated February 2010 (editorially revised February 2019); manufacturer's descriptive literature and installation instructions. Testing was performed by laboratories in compliance with ISO/IEC 17025, and include:

6.1.1 Reports of Impact Sound Transmission testing in accordance with ASTM E492.

6.1.2 Reports of testing for compliance with the Standard Specification for Reinforced AAC Elements in accordance with ASTM C1452.

6.1.3 Report of testing for compliance with the Standard Specification for Precast AAC Wall Construction Units in accordance with ASTM C1386.

6.1.4 Report of flexural bond strength testing in accordance with ASTM E518.

6.1.5 Report of diagonal tension (shear) testing in accordance with ASTM E519.

6.1.6 Report of compressive strength test of mortar in accordance with ASTM C109.

6.1.7 Reports of Airborne Sound Transmission testing in accordance with ASTM E90.

6.1.8 Report of testing for noncombustible materials in accordance with ASTM E136.

6.1.9 Report of fire testing in accordance with ASTM E119.

6.1.10 Reports of testing for compliance with the Standard Specification for Thin-bed Mortar for Autoclaved Aerated Concrete (AAC) Masonry in accordance with ASTM C1660.

6.2 Manufacturer's descriptive literature and installation instructions.



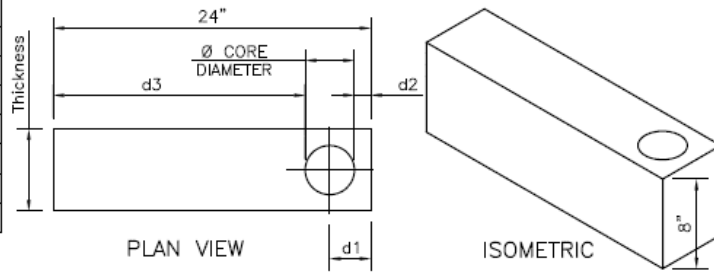
7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Hebel Autoclaved Aerated Concrete (AAC) Masonry Block Units, Panels, and Thin-Bed Mortar to assess their conformance to the codes shown in Section 1.0 of this report and documents the product's certification. Products are manufactured at locations noted in Sections 2.15 and 2.16 of this report is under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org

CORED BLOCK DIMENSIONS (inches)				
Thickness	Core Diameter	d1	d2	d3
5	2.75	2.46	1.08	20.17
6	3.54	2.94	1.17	19.29
7	3.54	3.44	1.67	18.79
8	4.33	3.93	1.76	17.91
10	4.33	4.91	2.74	16.93
12	4.33	5.90	3.73	15.94

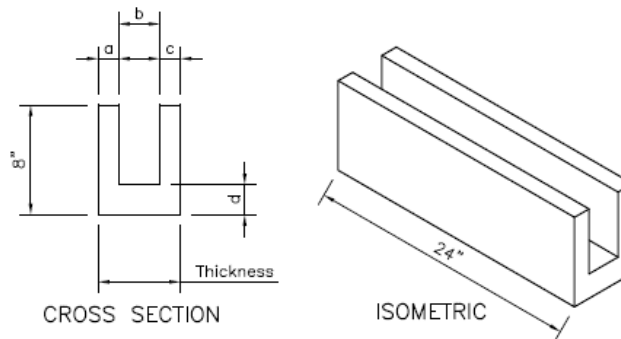
All Cored Block units are 24-inches nominal length
SI conversions: 1 inch= 25.4 mm



CORED BLOCK

U BLOCK DIMENSIONS (inches)			
Thickness	a and c	b	d
5	1.5	2	2.125
6	1.5	3	2.125
7	1.75	3.5	2.125
8	2	4	2.125
10	2	6	2.125
12	2	8	2.125

SI conversions: 1 inch= 25.4 mm



U - BLOCK

FIGURE 1. HEBEL MASONRY – U BLOCK AND CORED BLOCK

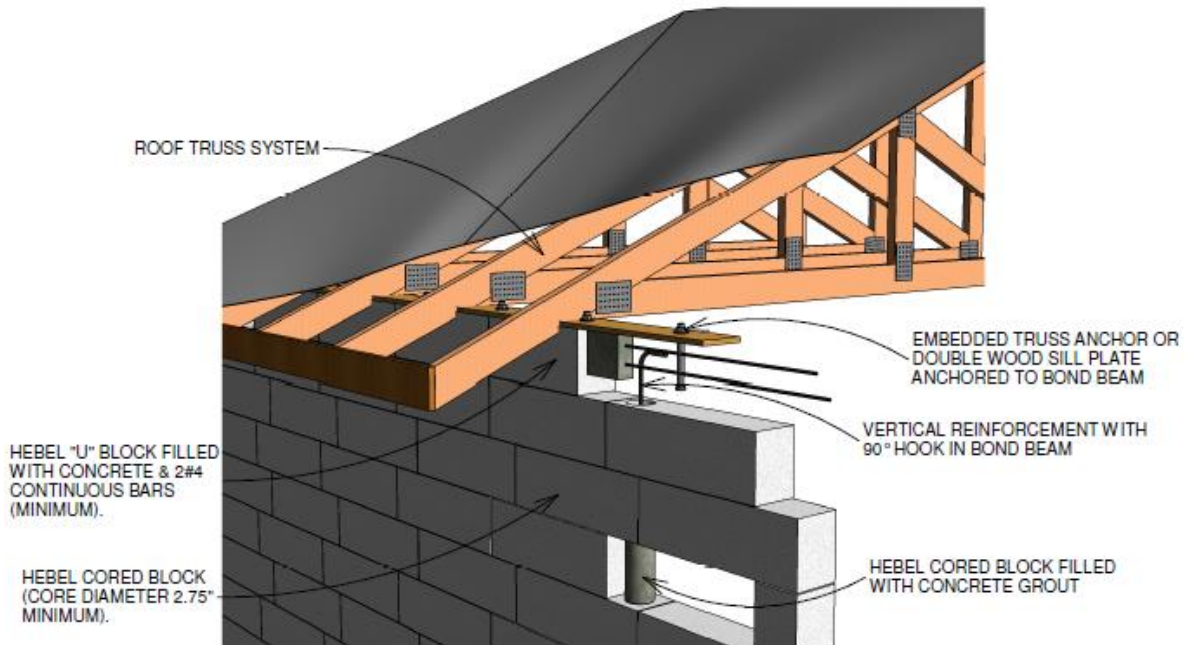


FIGURE 2. HEBEL MASONRY – SECTION @ TOP OF WALL

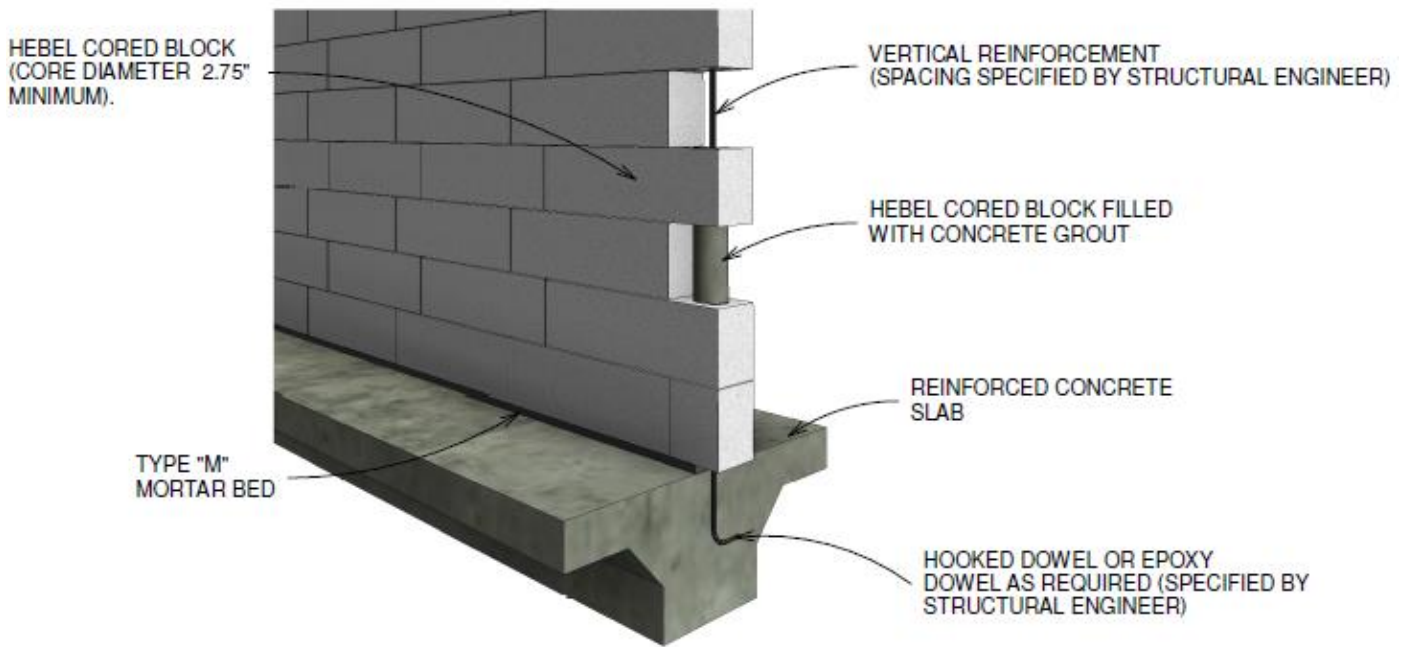


FIGURE 3. HEBEL MASONRY – SECTION @ FOUNDATION

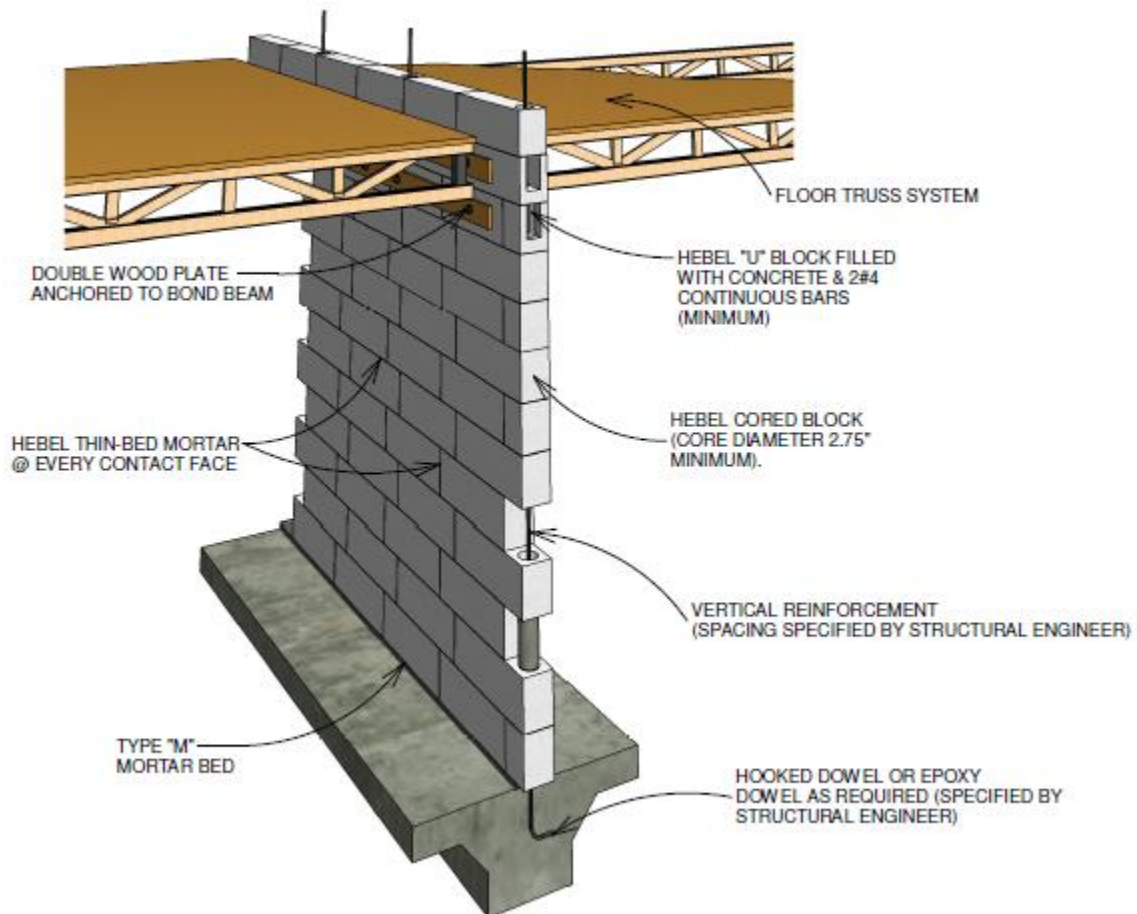


FIGURE 4. HEBEL MASONRY – TYPICAL WALL SECTION



Table 7. AAC-6 Floor Panel Allowable Loads ^{2,3}

Nominal Panel Thickness (inch)	Moment Capacity (lb-ft/ft)	Superimposed Uniform Load ¹ , w (psf)												Dead Weight (psf)
		63	68	73	84	89	94	99	104	110	115	120	125	
		Maximum Permissible Span ^{4,5,6,7} (feet)												
4	814	8	7	7	7	7	7	7	6	6	6	6	6	15
5	1340	10	9	9	9	9	9	8	8	8	8	8	8	18
6	1,985	13	13	13	12	12	12	11	11	11	11	10	10	22
7	2,776	15	15	15	14	14	13	13	13	13	12	12	12	26
8	3,680	17	17	17	16	15	15	15	15	14	14	14	14	31
9	4,732	19	19	18	18	17	17	17	16	16	15	15	15	35
10	5,917	19	19	19	19	19	19	18	18	18	17	17	17	40
12	6,333	20	20	20	20	20	19	19	19	19	19	19	19	44

For SI: 1 inch = 25.4 mm; 1 foot = 305 mm; 1 psf = 47.88 Pa, 1 lb-f/ft = 4.488 N-m/m³; 1 pcf = 16.02 kg/m³

Table 8. AAC-4 Roof Panel Allowable Loads ^{2,3}

Nominal Panel Thickness (inch)	Moment Capacity (lb-ft/ft)	Superimposed Uniform Load ¹ , w (psf)														Dead Weight (psf)
		20	23	26	31	37	42	47	52	57	63	68	73	78	84	
		Maximum Permissible Span ^{4,5,6,7} (feet)														
4	571	11	11	11	10	9	9	9	8	8	8	7	7	7	7	12
5	937	14	13	13	9	12	11	11	10	10	10	9	9	9	9	15
6	1,389	16	16	15	14	14	13	13	12	12	11	11	11	11	10	18
7	1,942	18	18	17	16	16	15	15	14	14	13	13	13	12	12	21
8	2,576	19	19	19	18	18	17	16	16	15	15	15	14	14	14	25
9	3,311	21	20	20	19	19	19	18	18	17	17	16	16	15	15	28
10	4,141	20	20	20	20	20	20	20	19	19	18	18	17	17	17	31
12	6,056	20	20	20	20	20	20	20	20	20	20	21	20	20	19	37

For SI: 1 inch = 25.4 mm; 1 foot = 305 mm; 1 psf = 47.88 Pa, 1 lb-f/ft = 4.488 N-m/m³; 1 pcf = 16.02 kg/m³

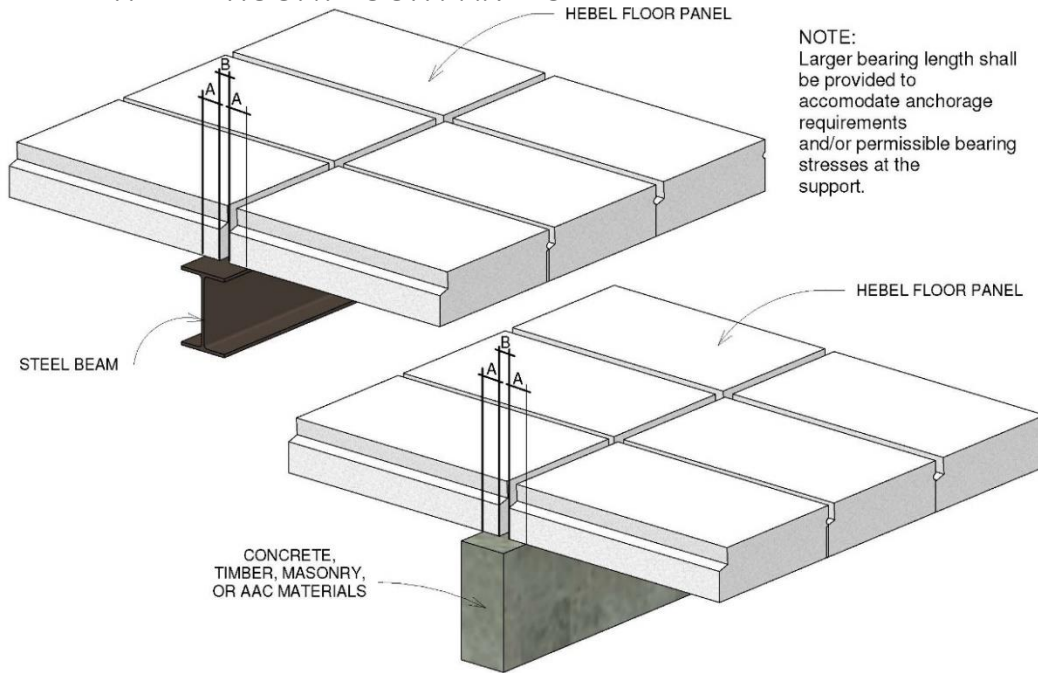
Table 9. AAC-6 Roof Panel Allowable Loads ^{2,3}

Nominal Panel Thickness (inch)	Moment Capacity (lb-ft/ft)	Superimposed Uniform Load ¹ , w (psf)														Dead Weight (psf)
		20	23	26	31	37	42	47	52	57	63	68	73	78	84	
		Maximum Permissible Span ^{4,5,6,7} (feet)														
4	814	12	12	12	12	11	11	10	10	9	9	9	9	8	8	15
5	1340	15	15	15	14	14	13	13	12	12	11	11	11	10	10	18
6	1985	18	18	17	17	16	15	15	14	14	13	13	13	12	12	22
7	2776	19	19	19	19	18	18	17	16	16	15	15	15	14	14	26
8	3680	21	20	20	19	19	19	19	18	18	17	17	17	16	16	29
9	4732	20	20	20	20	20	20	20	19	19	19	19	18	18	18	33
10	5917	20	20	20	20	20	20	20	20	20	20	20	20	20	19	37
12	8653	20	20	20	20	20	20	20	20	20	20	20	20	20	20	44

For SI: 1 inch = 25.4 mm; 1 foot = 32005 mm; 1 psf = 47.88 Pa, 1 lb-f/ft = 4.488 N-m/m³; 1 pcf = 16.02 kg/m³

¹ Superimposed uniform loads are nominal out-of-plane loads as defined in IBC Section 1602.1 and derived from strength design.
² Design unit weight of material is 37 pcf for AAC-4 and 45 pcf for AAC-6
³ Roof and floor slabs are designed for dead weight and uniformly distributed downward superimposed loads only. Uplift (wind) forces required further investigation to determine uplift load capacity.
⁴ Total load deflection (DL + LL) shall not exceed 1/300 of span for floor panels.
⁵ Total load deflection (DL + LL) shall not exceed 1/300 of span for roof panels having spans less than or equal to 19.4 feet.
⁶ Total load deflection (DL + LL) shall not exceed 1/200 of span for roof panels having spans greater than 19.4 feet.
⁷ More stringent deflection limits and/or analysis of long-term deflection shall be provided if slabs support nonstructural panels likely to be damaged by large deflections.

FIGURE 5. TYPICAL FLOOR PANEL CONNECTION AND MINIMUM BEARING DEPTH OF HEBEL ROOF/FLOOR PANELS



NOTE:
Larger bearing length shall be provided to accommodate anchorage requirements and/or permissible bearing stresses at the support.

STEEL, REINFORCED OR PLAIN CONCRETE, TIMBER CONSTRUCTION

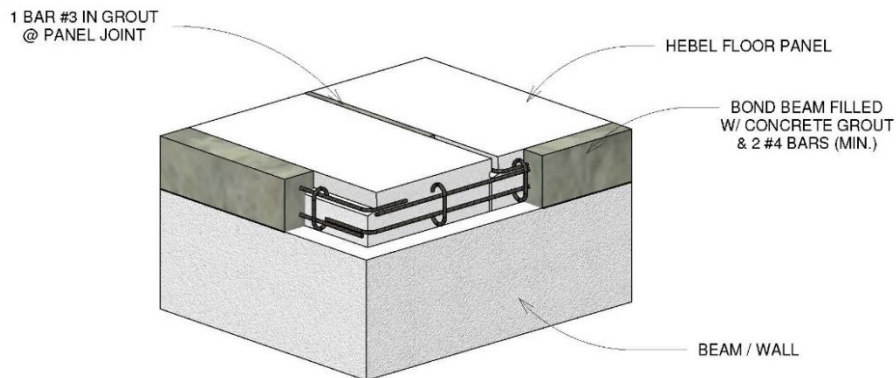
Minimum "A" is 2" (50 mm) or L/80 whichever is greater.
B ≥ 3/4" (19 mm)
(where L = clear span + A)

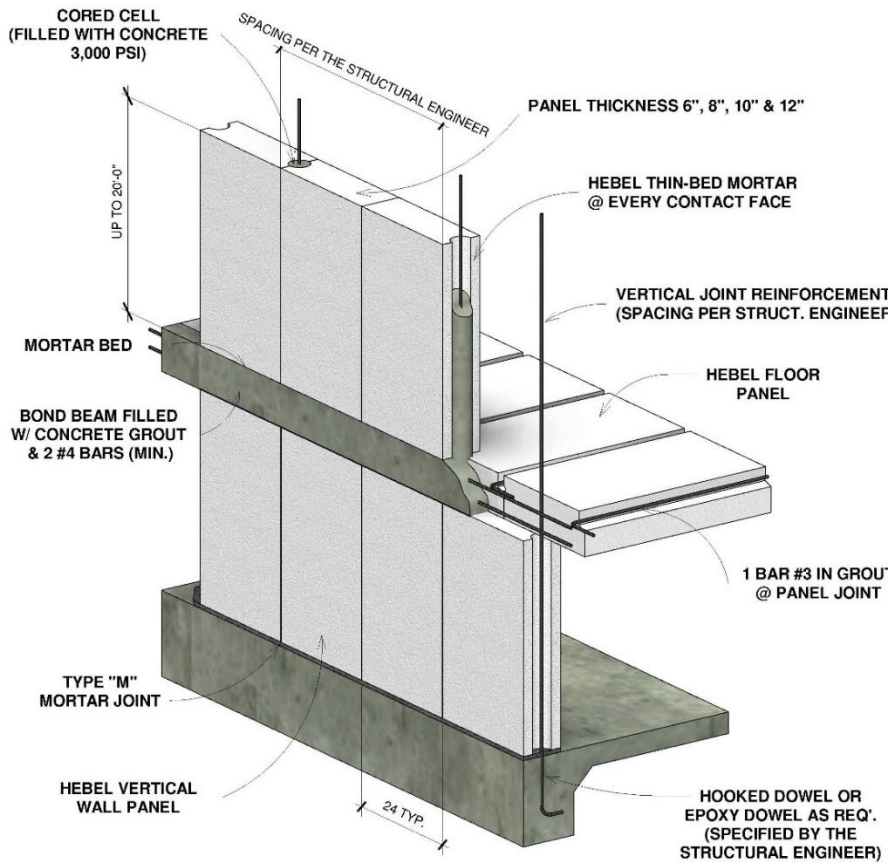
MASONRY CONSTRUCTION

Minimum "A" is 2.75" (70mm) or L/80 whichever is greater.
(where L = clear span + A)

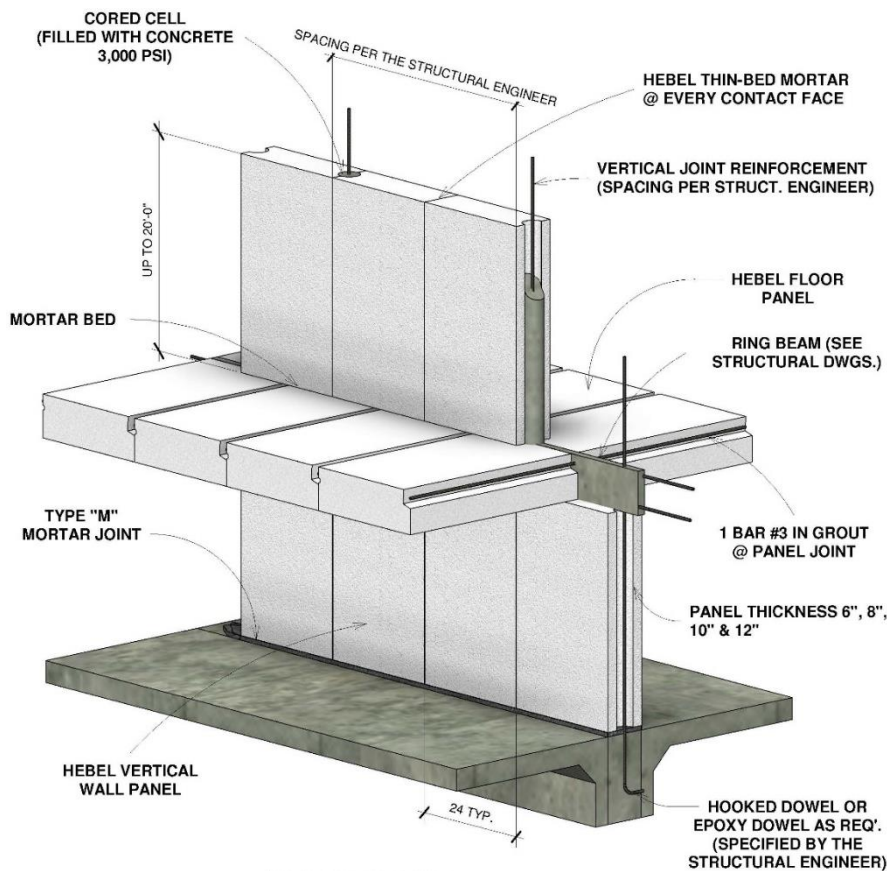
AAC MATERIAL CONSTRUCTION

Minimum "A" is 2" (50mm) for center bearing and 2.75" (70mm) for end bearing





**FIGURE 6.
TYPICAL EXTERIOR
WALL SECTION**



**FIGURE 7.
TYPICAL INTERIOR
WALL SECTION**