

Product Evaluation

MA05 | 0620

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: MA-05

Effective Date: June 1, 2020

Re-evaluation Date: June 2024

Product Name: Hebel Autoclaved Aerated Concrete (AAC) Reinforced Floor Panels, Roof Panels, Wall Panels, Lintels, and Masonry Blocks

Manufacturer: Xella Mexicana SA de CV
Rio Amacuzac 1201 Ote., Col. Valle Oriente
Garza Garcia, Nuevo Leon 66269
(+52 81) 8399-2464

Distributor: Xella AAC Texas, Inc.
833 Isom Road
San Antonio, TX 78216
(210) 402-3223

General Description:

Hebel AAC products are noncombustible construction materials manufactured from a mixture of silica sand, lime, water, Portland cement, and aluminum paste. Products are factory cured in an autoclave. Hebel AAC products can be divided in two main categories: non-reinforced elements (blocks) and reinforced elements (floors, roof and wall panels, and lintels). The reinforced and unreinforced products are manufactured in the following AAC Classes in accordance with ASTM C 1693-11:

- AAC-4/500, minimum compressive strength 4 MPa (580 psi), nominal density of 31 pcf (density range: 28-34 pcf)
- AAC-5/600, minimum compressive strength 5 MPa (725 psi), nominal density of 37 pcf (density range: 34-41 pcf)
- AAC-6/600, minimum compressive strength 6 MPa (870 psi), nominal density of 37 pcf (density range: 35-41 pcf)

The structural elements are reinforced with steel complying with ASTM C1694-09 requirements. Transverse wires are welded to longitudinal reinforcement to provide anchorage. All reinforcing wire is protected with a minimum 0.028" thick anti-corrosion treatment. Minimum concrete cover over the reinforcing bars is 1/2".

All metal connectors, fasteners and accessories used with the material must be of corrosion resistant material compatible with the precast units.

Hebel masonry units must be assembled using thin-layer mortar. All of the unreinforced products are permitted to be sawed, drilled or nailed. Tongue-and-groove panels can be joined dry (except in fire-resistive applications) or bonded together by means of thin layer mortar or elastomeric sealant. The panel units are permitted for use as structural roof and floor units, bearing panel walls, nonbearing curtain walls, cladding panels, and partition panels. The blocks are permitted for use as unreinforced exterior and interior bearing and nonbearing walls.

Floor and Roof Panels:

Hebel AAC floor and roof panels are used in construction of floor and roof slabs. The floor and roof panels are fabricated in lengths up to 20' and thickness ranging from 3" to 12". The panels are produced in widths ranging from 12" up to 24". The panels 4" to 12" are manufactured with grooved edges along the longer dimension and have two layers of reinforcement. All grooves must be reinforced with one No. 3, Grade 60, deformed reinforcement bar and filled with Portland cement-based concrete or grout. Panels 3" thick are manufactured with flat edges and they have one layer of reinforcement only. These panels are placed over supporting wood or metal frames with maximum distance between supporting elements not greater than 24". Thin bed mortar must be applied to all edges of 3" panels.

Horizontal and Vertical Wall Panels:

Hebel AAC horizontal and vertical wall panels are used for exterior walls and partition walls of steel or reinforced concrete frames. The wall panels are produced with a tongue-and-groove profile in lengths up to 20' and thickness ranging from 4" to 12". The panels are produced in widths ranging from 12" up to 24". Vertical load-bearing wall units have reinforcing rods inserted into the groove between units. The grooves are then filled with Type M mortar. A steel plate connector is welded to structural supports. Horizontal units are held by hooked bolts (steel connectors), with a minimum edge distance of 3", welded to the structural steel.

Curtain Wall Panels:

Hebel AAC curtain wall panels are non-loadbearing panels. The panels are similar in construction to the horizontal and vertical wall panels except they may only be used for non-loadbearing installations.

Cladding Panels

2" Hebel AAC wall panels (Power Panel) are used as cladding system over wood or steel frames. The cladding panels are produced with flat edges in lengths up to 10' and thickness of 2" and 3". The panels are produced in widths from 12" to 24". These panels are placed over supporting wood or metal frames with maximum distance between supporting elements (studs) not greater than 24". Hebel cladding panels are screwed to the supporting frame. Hebel thin bed mortar is applied to all joints between cladding panels.

Lintels:

Lintels are used to span over doors and windows in masonry construction. The lintels are up to 8' in length, 8", 10", or 12" in height and thicknesses that range from 4" to 12". Lintels are reinforced.

Masonry Blocks:

Hebel AAC masonry blocks are solid blocks used in loadbearing and non-loadbearing walls. The blocks are available in three configurations: Solid Block, Cored Block, and U Block. The blocks are 24" in length and 8" in height. The blocks are available in a variety of widths, ranging from 4" to 12". The blocks are laid with Hebel thin bed mortar, a ready to mix mortar. The mortared joints are approximately 1/16" to 3/32" thick and have a minimum compressive strength of 1450 psi at 28 days. The block walls are constructed in a running bond pattern.

Installation:**General:**

The design and analysis of Hebel AAC products must follow the guidelines published in ACI-523.4R-09, Guide for Design and Construction with Autoclaved Aerated Concrete Panels, and TMS 402-11/ACI 530-11/ASCE 5-11 Building Code Requirements for Masonry Structures and the Hebel Technical Sheets and Installation Guides.

Hebel AAC systems must be designed and inspected by a Texas licensed professional engineer appointed by the TDI as a qualified inspector for compliance with the applicable building specifications adopted by the TDI.

Foundation:

The Hebel AAC system can be built onto a standard slab-on-grade foundation, post tension foundation, or pretension foundation. The foundation and the attachment of the Hebel AAC system to the foundation will need to be designed and inspected by a Texas licensed professional engineer appointed by the TDI as a qualified inspector for compliance with the applicable building specifications adopted by the TDI.

Roof Framing:

The roof framing system and the attachment of the roof framing system to the Hebel AAC system must be designed and inspected by a Texas licensed professional engineer appointed by the TDI as a qualified inspector for compliance with the applicable building specifications adopted by the TDI.

Exterior Wall Covering, Roof Covering, Windows, Exterior Doors, Garage Doors:

The attachment of the exterior wall coverings, roof coverings, windows, exterior doors, and garage doors must as specified in ICC code evaluation reports or TDI product evaluation reports. Where wood bucks are used around perimeter openings as an attachment point for windows and exterior doors, the attachment of the buck to the Hebel AAC system must be designed and inspected by a Texas licensed professional engineer appointed by the TDI as a qualified inspector for compliance with the applicable building specifications adopted by the TDI. Where wood jamb are used to secured tracks for garage doors, the attachment of the wood jambs to the Hebel AAC system must be designed and inspected by a Texas licensed professional engineer appointed by the TDI as a qualified inspector for compliance with the applicable building specifications adopted by the TDI

Note: Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.