



[Introduction](#)

[Product Line](#)

[Thermal Properties](#)

[Fire Resistance](#)

[Acoustic Insulation](#)

[Moisture Absorption](#)

[Environmental](#)

[Structural Design](#)

[Standard Construction
Details](#)

[Installation Procedures](#)

[Tools/Fasteners](#)

[Wall Finishes](#)

[News](#)

Energy Efficient • Acoustical Insulation • Fire Resistant • Pest Resistant • Environmentally Friendly



PRODUCT DESCRIPTION

Autoclaved Aerated Concrete (AAC) is a lightweight, high strength building block used in a variety of applications for commercial, industrial, and residential construction. AAC is manufactured from lime, sand or mine tailings, cement, gypsum, aeration agent and water to produce pre-cast blocks and panels. AAC has excellent thermal and acoustic insulation properties, is fire and pest resistant, and environmentally superior to more traditional building materials. AAC is a viable and economical alternative to conventional building materials such as wood, concrete, and steel.

AAC was originally invented by architect Johan Axel Ericksson and was patented in 1924. AAC has been used extensively throughout Europe, Far and Middle East, Australia, and South America.

AAC was specifically designed for load-bearing applications such as wall and lintel construction. AAC is also a superior building block in non-load bearing applications such as sound and fire walls.

The following pages describe the manufacturing of AAC, the benefits of using it for masonry walls, the physical properties, construction details and guide specifications.



2

AAC PRODUCTION

Environmentally friendly and energy conserving, AAC meets all the requirements of a "green" building material. No pollutants or hazardous wastes are generated in the production process and there is no waste of raw materials.

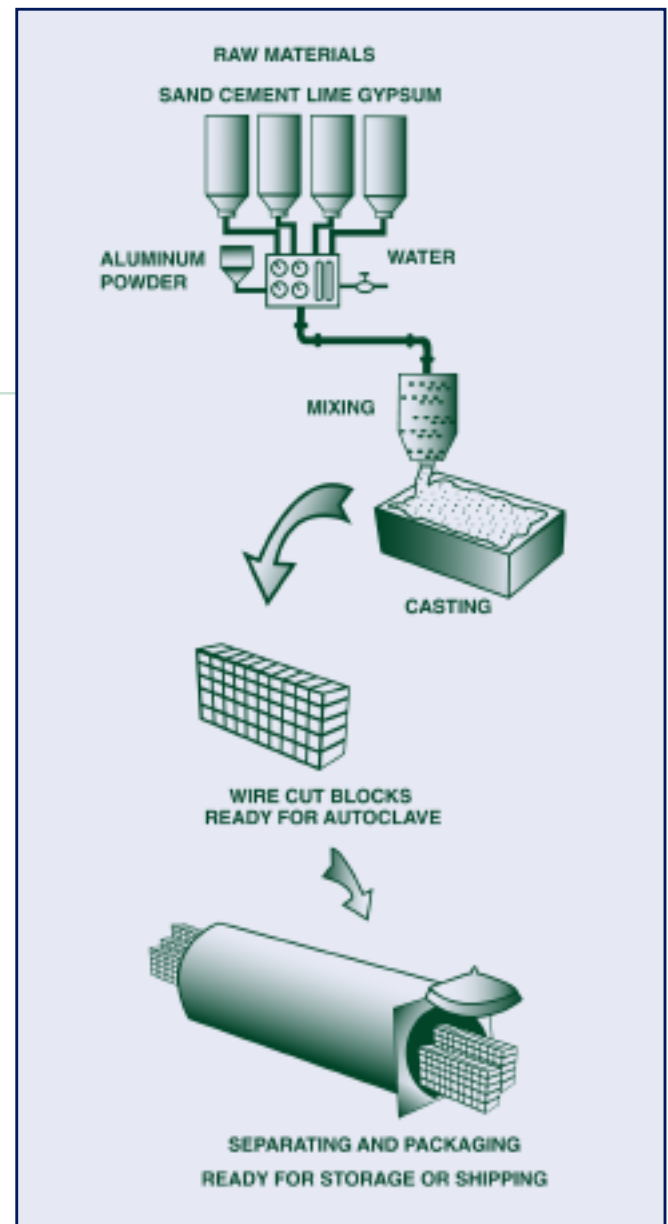


The production method

conserves energy since autoclaving is carried out at high pressures and thermal energy is recovered and reused for maximum efficiency. Production trimmings can also be fully recycled making E-Crete AAC a highly efficient and environmentally friendly building material.

Raw Ingredients of AAC

- Sand or Mine Tailings
- Water
- Cement
- Lime
- Gypsum
- Aerating Agent



IDEAL USES OF AAC

Eight Key Features

- Extremely Durable
- Thermal Insulation
- Fire Resistant (UL Classified)
- Acoustic Insulation
- Pest Resistant
- Environmentally Friendly
- Versatile and Easy to Use
- Lightweight

The many advantageous properties of AAC make it an ideal building material for:

- Commercial
- Residential
- Multi-Family
- Industrial
- Schools
- Hospitals
- Hotels
- Fire Walls
- Sound Walls



2

PRODUCT LINE

MORTAR

E-Crete supplies thin-bed mortar and repair mortar, which are specifically manufactured for use with AAC blocks and lintels. It comes in ready-to-mix powder form. Just 1/16 inch mortar bed is needed to adhere the products. This extremely thin joint prevents heat loss and speeds installation. For best results, apply the thin-bed mortar with a notched trowel choosing a trowel the same width as the block.

Repair mortar is used to repair walls where cuts or channels were made to install wiring or plumbing. Cover channels with repair mortar or fiberglass tape. Use the repair mortar prior to application of exterior or interior plasters. When covering E-Crete with sheetrock or other sheathing materials, block patch may not be necessary.

Approximate mortar usage for blocks

40 - 8" blocks per bag

30 -10" blocks per bag

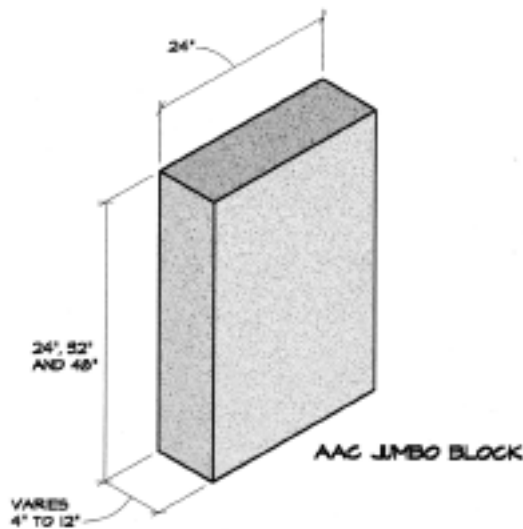
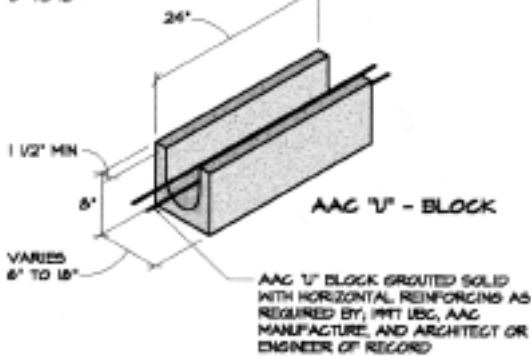
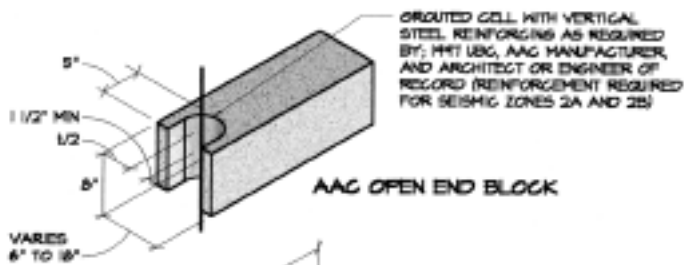
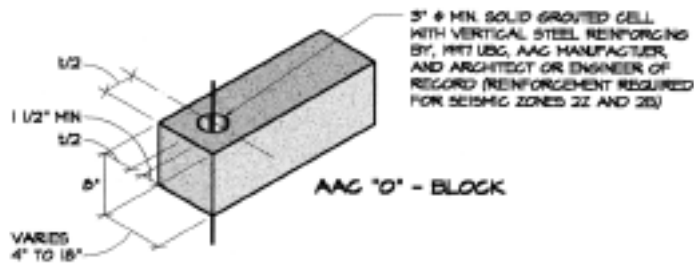
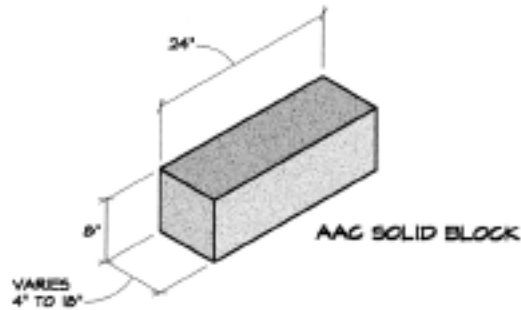
20 -12" blocks per bag

AAC BLOCK DIMENSIONS (INCHES)

Width (Thickness)	Height	Length
4	8	24
6	8	24
8	8	24
10	8	24
12	8	24
14	8	24
16	8	24
Jumbo Block		
4	24	32
6	24	32
8	24	32
10	24	32
12	24	32
8	24	48
Cladding Block		
3	24	32
4	24	32



AAC STANDARD BLOCKS

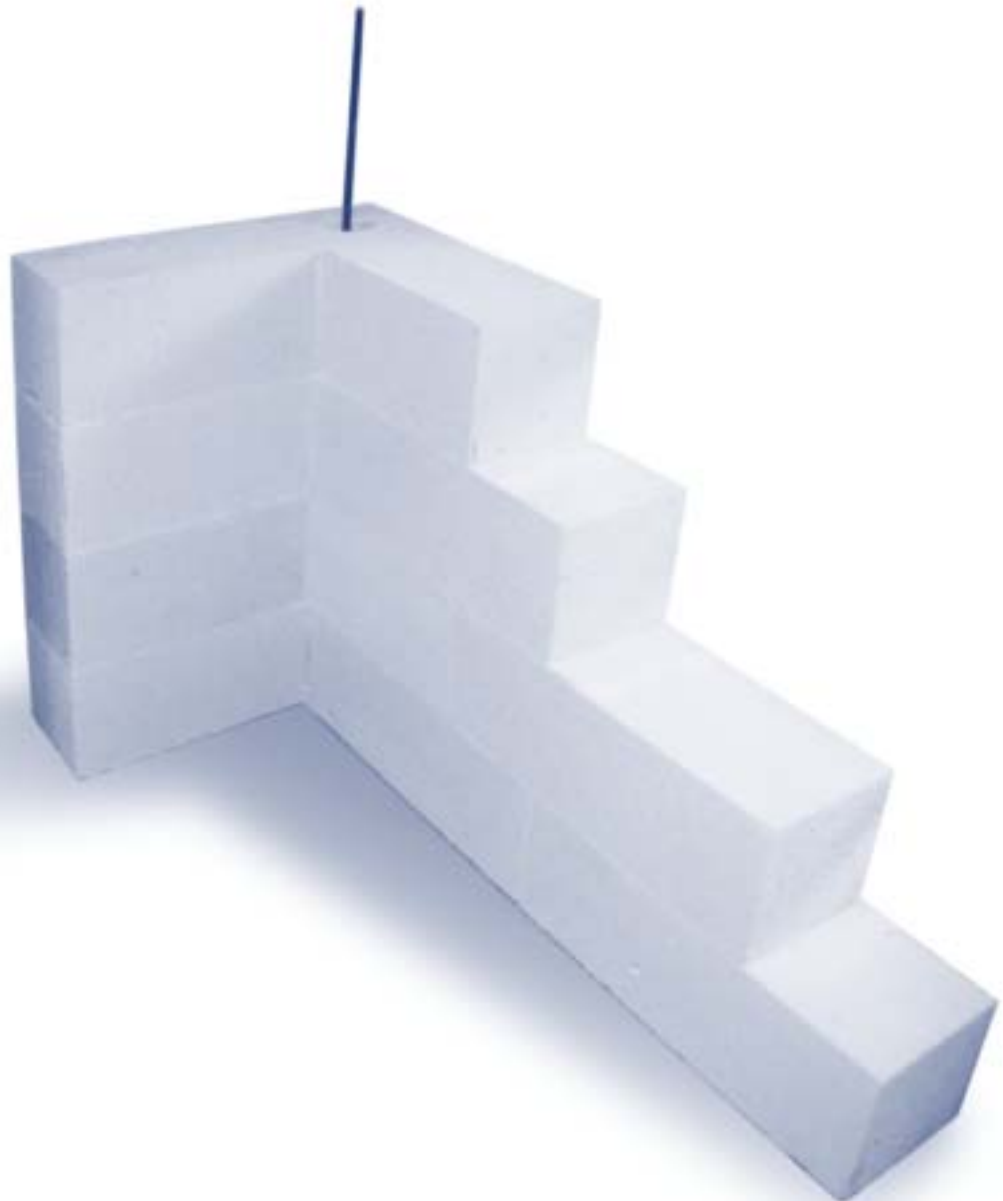


2

STANDARDS AND APPROVALS

E-Crete is continuously updating design parameters and technical information and has obtained ICC ESR 1371.

The tests in the table on the following page were performed on various AAC products in accordance with the methods prescribed by the American Society for Testing and Materials (ASTM).



Standards	
Test or Report	Description
ASTM C 1386 Standard Specification for Autoclaved Aerated Concrete (AAC) Wall Construction Units	Standard Covers Physical Requirements of Load-Bearing Compression and Non-Load-Bearing AAC Units
ASTM C1452 Standard Specification for Reinforced Autoclaved Aerated Concrete Elements	Standard covers Load-Bearing and Non-Load-Bearing reinforced autoclaved aerated concrete (AAC) floor, roof, wall, and stair elements used as components for building construction.
ASTM C 1555-03 Standard Practices for AAC Masonry	Standard covers workmanship of AAC, thin bed mortars, and exterior and interior finishes.
ASTM E 119 Fire Test of Building Construction and Materials	Fire Test of Wall Assemblies (Load and Non-Load-Bearing) and Hose Stream Test. Fire Test of Floor and Roof Assembly
ASTM E 90-97, E 413-87 and C 423-99a Sound Transmission Loss Test (STC)	Airborne Sound Transmission Test on Walls
ASTM C-469 Modulus of Elasticity	Stress Strain Curve of AAC in Compression
ASTM E-78 Flexural Strength	Flexural Test of AAC Units To Determine Flexural Strength
ASTM E-518 Flexural Bond Strength of Masonry	Assembly of Masonry Units Constructed as Beams
ASTM E-519 Diagonal Tension Test of Masonry Assemblies	Full Scale AAC Walls To Determine Shear Strength
ASTM C-177-85 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus	A Portion of AAC Material of 12 x 12 inch and 1 inch Thick is Placed in the Guarded Hot Plate. It is subjected to a Heat Source and Temperature Measurements are made until a Steady State is Reached. This test is used to determine experimental value as thermal conductivity (K) on AAC units.
ASTM E-514 Test for Water Penetration and Leakage Through Masonry	Full Scale Wall Assemblies Subjected to Water Under Pressure Exposure

Approvals

Test or Report	Description
ICC ESR-1371	AAC Design Procedure For All Seismic Areas
Underwriters' Laboratories (UL) Design Numbers: U916, U917, U921, U919, X901	Fire Test Results for AAC Walls
Underwriters' Laboratories (UL) Design Number: U924	Sound Transmission Class (STC) For AAC Walls
ACI 523.5R-xx	Recommended Practices for AAC Panels (Draft)
ACI 530-05/ASCE 5-05/TMS 402-05	Building Code Requirements for Masonry Structures