

RESIDENTIAL/COMMERCIAL



FlexCrete™

Aerated Concrete Blocks

Technical Bulletin BP-B/010904



PRODUCT DESCRIPTION

FlexCrete fiber-reinforced aerated concrete blocks are part of the **FlexCrete** Building Systems family of products.

Building with **FlexCrete** blocks provides many advantages over other traditional concrete construction alternatives. As with all **FlexCrete** materials, they are formulated using high volumes of fly ash, a recovered resource that is in abundant supply wherever coal is burned for generating electricity or for other industrial uses. In contrast with other forms of aerated concrete, because of the unique physical properties of fly ash, **FlexCrete** is cured at low temperatures and ambient pressure, thus eliminating the use of energy intensive autoclaves.

Used as a stand-alone building system, or in combination with **FlexCrete** floor & roof panels, **FlexCrete** block is suitable for load bearing and non-load bearing walls in all types of commercial, industrial and residential applications.

FlexCrete Building Systems, LC is an affiliate of Headwaters Construction Materials, Inc. With manufacturing facilities throughout the U.S. and its own national distribution network, Headwaters Construction Materials is one of the largest manufacturers of construction materials in the country.

FlexCrete products are manufactured using a patented process that achieves substantial reductions in the cost of manufacturing aerated concrete. Tests have shown that this process enhances many of the features of aerated concrete, while sacrificing none.

Because of the cost benefits, **FlexCrete** products can be extremely competitive when compared to autoclaved aerated concrete and other traditional construction methods.



USES and Applications

FlexCrete blocks are suitable for load bearing and non-load bearing walls in all types of commercial, industrial and residential applications. The solid units are installed with a thin-joint system, which produces a bond that allows for less reinforcement than standard concrete masonry units. Reduced weight, (one-fifth that of cast-in-place concrete) and increased face size (8" x 24"), offer a reduction in man hours required to complete a project and potential savings in the sizing of a building's main structural elements.

FlexCrete products are ideal for use in areas prone to high winds, wildfires and other extreme conditions. Their unique properties also provide opportunities for other specialty applications, such as fire walls, sound walls, collision sacrifice structures and explosive resistant structures.

Aerated concrete products have been used in numerous residential and commercial projects, including the 800-room, 32-story luxurious Hilton Convention Center Hotel in Austin, Texas.



The advantages of building with thin-joint **FlexCrete** blocks, over conventional concrete masonry units are:

- Significantly reduces wall construction times
- Increases productivity by enabling other trades to start sooner
- Improves stability during construction
- Ideal in combination with thin-coat plaster finishes
- Provides the potential for better quality construction
- Increases bond and, therefore, wall strength
- Can achieve higher levels of air-tightness
- Does not require secondary insulation
- Reduces site waste
- Eliminates piles of sand on site

BENEFITS

FlexCrete blocks provide all the proven benefits of aerated concrete, for a unique building system which is extremely versatile, allowing easy integration with other traditional alternatives including steel, brick, wood and concrete.

EASE OF USE

FlexCrete blocks are lightweight and easy to handle, erect and install. They can be drilled, cut and installed using common tools.

SOUND INSULATION

FlexCrete Blocks provide outstanding sound insulation characteristics and are suitable for use in multi-family homes, commercial buildings, schools and hospitals. **FlexCrete** is the ideal material for creating peaceful, private and relaxing environments.

SAFETY

Since they are non-combustible, **FlexCrete** Blocks are suitable for fire-resistant applications. **FlexCrete** Blocks provide up to 8 hours of fire protection and minimize the spread of fire and toxic fumes.

DURABILITY

FlexCrete blocks suffer no reduction of strength in freeze/thaw cycles and are resistant to mold, mildew and pests.

ENERGY EFFICIENCY

FlexCrete Blocks offer superior heat insulation and retention of stored heat.

DESIGN VERSATILITY

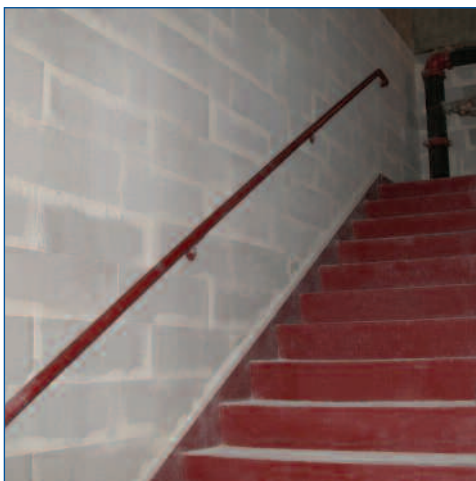
FlexCrete Blocks are manufactured in various lengths, heights and thickness, providing great design flexibility.

COST EFFECTIVENESS

FlexCrete blocks are easy and quick to install, thus minimizing construction costs. They require no minimal maintenance, which reduces long-term costs.

SUSTAINABILITY

In addition to the environmental benefits associated with the energy savings of **FlexCrete** walls, **FlexCrete** itself is composed primarily of fly-ash — an abundant recovered resource. Fly ash use decreases landfill utilization. **FlexCrete** Blocks replace standard construction materials such as wood, insulation and traditional concrete.



INSTALLATION

FlexCrete blocks are installed using a thin bed mortar. An integral part of the **FlexCrete** concept, thin-joint block work allows walls to be erected quickly, without the delays associated with setting times of conventional, thick-bed mortars. **FlexCrete** Thin Bed Mortar is a cementitious product, supplied as a dry, pre-mixed powder in 55 lb. bags designed to replace traditional sand/cement mortar, **FlexCrete** Mortar starts to set within 10 minutes of initial application and reaches full design strength in just 2 hours.

FlexCrete Mortar is easy to mix on site by simply adding water in the correct proportions. Notched scoop trowels help attain a consistent thickness of 1/8" on head and bed joints.

FlexCrete has developed several coatings both for exterior and interior use, although many types of commonly available finishes may also be used. Drywall may be installed over **FlexCrete** walls using furring strips or direct glue-on application.

Standard installation and construction details are available upon request, as well as information on training courses and factory-authorized installers who have completed training and are equipped to provide the highest level of quality, efficiency and safety to our clients. **FlexCrete** also provides technical support and engineering services.

SPECIFICATIONS

	Property	Testing Standards	Class 30	Class 35
PERFORMANCE VALUES	Fire Resistance (8"-14" block) – hours	ASTM E 119	4.0	4.0
	Sound Transmission Class (8" width)	ASTM E 90	48	48
	R-value per inch of thickness	ASTM C 177	1.34	1.05
	Thermal Conductivity btu•1in/hr•ft ² •°F	ASTM C 177	0.74	0.95
PHYSICAL PROPERTIES	Compressive Strength – psi	ASTM C 140	430	600
	Dry Density – pcf	ASTM C 1386	30	35
	Modulus of Elasticity x 10 ³ – psi	ASTM C 469	150	250
	Shear Stress – psi	ASTM C 469	8	11
	Bearing Stress – psi	ASTM C 469	107	150
	Permissible Flexural Tensile Stress – psi	ASTM C 469	24	34
	Direct Shear Strength – psi	ASTM C 469	32	60

	Dimensions W x H x L	Units per Pallet	Square Feet per Pallet
PALLET SIZE, WEIGHT AND CAPACITY	4" x 8" x 24"	144	192
	6" x 8" x 24"	96	128
	8" x 8" x 24"	72	96
	10" x 8" x 24"	48	64
	12" x 8" x 24"	48	64

TOOLS and Ancillary Materials

Contact FlexCrete for information about tools and ancillary materials for the **FlexCrete** System, including:

- Fasteners
- Thin Bed Mortars
- Standard Fiber Mesh
- Basecoat, Patch and Acrylic Finishes

FlexCrete Aerated Concrete complies with ICC ES-5766.

FlexCreteTM
Aerated Concrete Blocks

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ON THE COVER: Headwaters is proud to honor the spirit of Lewis and Clark's expedition to discover America's resources through the sponsorship of the Headwaters Fort Mandan Visitor Center – a celebration of history and a living demonstration of uses for coal combustion products.

