

Section 1.2

AUTOCLAVED AERATED CONCRETE - FIRE SAFETY

The superior fire resistance of AAC is a function of its internal pore and cell structure. Under magnification, the AAC matrix contains voids and closed cell air pockets, which provide it with its lightweight and superior fire resistance properties.

AAC has been tested per UL fire tests to successfully be assigned a 2-hour fire rating in a 3" thickness, and a 4-hour fire rating in both 4" and 6" thicknesses. The 2009 UL Fire Resistance Directory contains Fire Ratings for AAC block masonry under Design Numbers U-917, U-919, U-920, U-921 and X-901.

AAC wall systems have also been tested in accordance with the ASTM E119 Fire Test procedure. The test results are

always superior to other test assemblies. AAC retains its structural integrity throughout and subsequent to every fire test. Even a 4-inch-thick bearing or non-loadbearing wall can remain intact after a full 4-hour furnace exposure and a subsequent hose stream test exposure of 5.5 minutes' duration at 45 psi. Other non-masonry assemblies exhibit extreme compromises in structural integrity when tested to the same duration intensities.

AAC can also be used for steel column cover protection to help steel carry its design loads throughout the fire duration. At approximately 1,300°F steel begins to lose its structural load capacity. AAC column wraps help afford the extra measure of protection that steel requires at high temperatures.

COMPARISON OF FURNACE TEST RESULTS FOR AAC AND FRAME WALL SYSTEMS

AAC WALL		FRAME WALL	
A: Emerging from furnace		A: Emerging from furnace	
B: At the end of hose stream		B: Beginning of hose stream	
		C: Approximately 10 seconds into hose stream test	
		D: At the end of hose stream	
ASTM E119 2-hour fire test.		ASTM E119 2-hour fire test.	

For questions regarding AAC, call 1-800-IMI-0988.

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