

TEST REPORT

Intertek

ETL SEMKO

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EVALUATION CENTER
Intertek Testing Services NA Inc.
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Elmendorf, TX 78154

RENDERED TO

FLEXCRETE
10653 SOUTH RIVER FRONT PARKWAY, SUITE 300
SOUTH JORDAN, UT 84095

PRODUCT EVALUATED: 4" FlexCrete (Class 30) Mega-blocks
EVALUATION PROPERTY: Fire Resistance

Report of Testing 4" FlexCrete (Class 30) Mega-blocks for compliance with the applicable requirements of the following criteria: ASTM E119-05a Fire Tests of Building Construction and Materials.

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5 Testing and Evaluation Results

5.1 RESULTS AND OBSERVATIONS

The wall assembly was placed in the laboratory's non bearing test frame and placed in front of the test furnace on February 26, 2007. The ambient temperature at the start of the test was 57°F, with a relative humidity of 23%. Throughout the fire test, the pressure differential between the inside of the furnace (measured at a point 1/3 of the way down from the top center of the wall specimen) and the laboratory ambient air was maintained at -0.03 inches of water column, which resulted in a neutral pressure at the top of the test article.

Other than some hairline cracks forming on the exposed surface after approximately 90 minutes, no other visible changes occurred during the 4-hour test.

The wall withstood the fire endurance test without passage of flame or gases hot enough to ignite cotton waste, for the entire fire test. Transmission of heat through the wall during the fire endurance test did not raise the average temperature on the unexposed surface more than 250°F, nor any individual temperature more than 325°F. The hose stream dislodged a large section of block in the middle of the wall on the first pass across the wall. A duplicate wall was constructed to meet the requirements of the hose stream test.

During the fire test, the wall was measured for deflection at three points along its vertical centerline: at 30" (position #1), 60" (position #2) and 90" (position #3) from the left side of the wall. The wall deflected a maximum of 3/4" during the 4-hour test.

In accordance with the E119 test standard, a calculation for any correction to the indicated fire resistance period was done. The correction factor was then mathematically added to the indicated fire resistance period, yielding the fire resistance period achieved by this specimen:

ITEM	DESCRIPTION	TEST VALUE
C	correction factor	-3.11 min (-187 seconds)
I	indicated fire-resistance period	243 min
A	area under the curve of indicated average furnace temperature for the first three fourths of the indicated period	288 573°F•min
As	area under the standard furnace curve for the same part of the indicated period	294 365°F•min
L	lag correction	3240°F•min
	FIRE RESISTANCE PERIOD ACHIEVED BY THIS SPECIMEN ==>	240 min

Note: The standard specifies that the fire resistance be determined to the nearest integral minute. Since the furnace curve lagged behind the standard curve, the test was run for an additional three minutes to make up for difference.

The duplicate wall for the hose stream retest was placed in the laboratory's non bearing test frame and placed in front of the test furnace on March 16, 2007. The ambient temperature at the start of the test was 67°F, with a relative humidity of 50%. Throughout the fire test, the pressure differential between the inside of the furnace (measured at a point 1/3 of the way down from the top center of the wall specimen) and the laboratory ambient air was maintained at -0.03 inches of water column, which resulted in a neutral pressure at the top of the test article.

After one hour of fire exposure, the wall was removed from the furnace and exposed to the standard hose stream test. The client opted to use the requirements for a 3-hr fire condition, which was 30 psi for 2.5 minutes. The wall withstood this hose stream test with no openings, so following that, the hose stream for a 4-hr fire condition was performed, at 45 psi for 5 minutes. This hose stream test also passed with no openings developed.

6 Conclusion


Intertek Testing Services NA (Intertek) has conducted testing for FlexCrete, on 4" FlexCrete (Class 30) Mega-blocks, to evaluate fire resistance.

The conclusions of this test report may be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

A 10-ft x 10-ft nonbearing wall constructed with 4" thick FlexCrete (Class 30) Mega blocks achieved a 4-hr rating when tested in accordance with ASTM E119-05a Fire Tests of Building Construction and Materials.

INTERTEK TESTING SERVICES NA

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