

Results of Tests on Brick conducted in accordance with ASTM C67-12 Standard Method for Sampling and

Testing Brick and Structural Clay Tile

05/08/2013

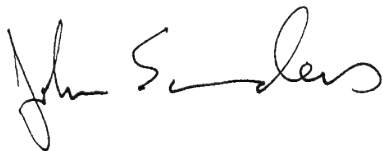
| | | | |
|--------|---|----------------|-------------------------------------|
| Name: | Whitacre-Greer Fireproofing Company 1400 South Mahoning Avenue Alliance, OH 44601 | Plant: | Whitacre-Greer Fireproofing Company |
| Phone: | (330) 206-2009 | Report Number: | WGFC-0070 |
| Fax: | | Sampled Date: | 04/15/2013 |
| | | Lot: | |
| | | Product Code: | |

Sample Description: **8-1/4 x 4 x 2-1/2 Firebrick**

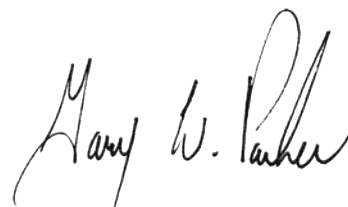
| | | | | | | | Test Date |
|---|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| Absorption | | 1 | 2 | 3 | 4 | 5 | Average |
| 24 Hour Submersion in Cold Water (%) | | 5.39 | 6.17 | 6.03 | 5.78 | 7.36 | 6.15 |
| 5 Hour Submersion in Boiling Water (%) | | 6.80 | 7.50 | 7.50 | 6.91 | 8.93 | 7.53 |
| Saturation Coefficient (Ratio of 24H to 5H) | | 0.79 | 0.82 | 0.80 | 0.84 | 0.82 | 0.82 |
| Compressive Strength | | 1 | 2 | 3 | 4 | 5 | Average |
| | <i>psi</i> | 9,375 | 11,311 | 8,487 | 8,549 | 7,852 | 9,115 |
| | <i>MPa</i> | 64.6 | 78.0 | 58.5 | 58.9 | 54.1 | 62.8 |
| Efflorescence | | 11 | 12 | 13 | 14 | 15 | |
| | | Not Effloresced | Not Effloresced | Not Effloresced | Not Effloresced | Not Effloresced | 04/29/2013 |
| IRA | | 6 | 7 | 8 | 9 | 10 | Average |
| | <i>g/min/30 in.²</i> | 33.5 | 45.2 | 47.5 | 37.4 | 57.1 | 44.1 |

The brick represented by the test results shown here comply with the standards listed below:

ASTM C 216 - 12 Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale)
Grade: SW, MW, with absorption alternate in section 6.1.2



John Sanders, Ph.D., PE, Director



Gary W. Parker, Laboratory Supervisor