Refractory Installation Quality Control—Inspection and Testing Monolithic Refractory Linings and Materials

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Certain serious adverse health effects are associated with asbestos, among them the serious and often fatal diseases of lung cancer, asbestosis, and mesothelioma (a cancer of the chest and abdominal linings). The degree of exposure to asbestos varies with the product and the work practices involved.

Consult the most recent edition of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, Occupational Safety and Health Standard for Asbestos, Tremolite, Anthophyllite, and Actinolite, 29 *Code of Federal Regulations* Section 1910.1001; the U.S. Environmental Protection Agency, National Emission Standard for Asbestos, 40 *Code of Federal Regulations* Sections 61.140 through 61.156; and the U.S. Environmental Protection Agency (EPA) rule on labeling requirements and phased banning of asbestos products (Sections 763.160-179).

There are currently in use and under development a number of substitute materials to replace asbestos in certain applications. Manufacturers and users are encouraged to develop and use effective substitute materials that can meet the specifications for, and operating requirements of, the equipment to which they would apply.

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Introduction

The purpose of this standard is to define the minimum requirements for the installation of monolithic refractory linings and to provide guidance for the establishment of quality control elements necessary to achieve the defined requirements.

Refractory Installation Quality Control—Inspection and Testing Monolithic Refractory Linings and Materials

1 Scope

This standard provides installation quality control procedures for monolithic refractory linings and may be used to supplement owner specifications. Materials, equipment, and personnel are qualified by the methods described, and applied refractory quality is closely monitored, based on defined procedures and acceptance criteria. The responsibilities of inspection personnel who monitor and direct the quality control process are also defined.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ACI 547-79 [1] (revised 1983, reapproved 1997), *Refractory Concrete: Abstract of State-of-the-Art Report* (out of print)

ACI 547.1 R-89 (reapproved 1997), *Report - Refractory Plastics and Ramming Mixes* (out of print)

ASTM C71 [2], *Standard Terminology Relating to Refractories*

ASTM C113, *Standard Test Method for Reheat Change of Refractory Brick*

ASTM C133, *Standard Test Methods for Cold Crushing Strength and Modulus of Rupture of Refractories*

ASTM C181, *Standard Test Method for Workability Index of Fireclay and High-Alumina Plastic Refractories*

ASTM C704, *Standard Test Method for Abrasion Resistance of Refractory Materials at Room Temperature*

ASTM C1054, *Standard Practice for Pressing and Drying Refractory Plastic and Ramming Mix Specimens*

Harbison-Walker Handbook of Refractory Practices [3]

SSPC SP 3 [4], *Power Tool Cleaning*

SSPC SP 7/NACE No. 4, *Brush-Off Blast Cleaning*

3 Terms and Definitions

For the purposes of this document, the following definitions apply.

NOTE See Annex A for a glossary of additional refractory terms that are not referenced in this standard.

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1 American Concrete Institute, 38800 Country Club Drive, Farmington Hills, Michigan 48332, www.aci-int.org.

2 ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.

3 ANH Refractories, www.hwr.com/contact.

4 The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh, Pennsylvania 15222, www.sspc.org.