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Standard Terminology Relating to Refractories¹

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1. Scope

1.1 This terminology covers terms particularly related to refractories and encompasses raw materials, manufacture, finished products, applications, and testing procedures.

1.2 When any of the definitions in this terminology are quoted or published out of context, editorially insert the limiting phrase “in refractories” after the dash following the term to properly limit the field of application of the term and definition.

2. Referenced Documents

2.1 ASTM Standards:

- C 24 Test Method for Pyrometric Cone Equivalent (PCE) of Fireclay and High-Alumina Refractory Materials²
- C 181 Test Method for Workability Index of Fireclay and High-Alumina Plastic Refractories²
- C 401 Classification of Alumina and Alumina-Silicate Castable Refractories²
- C 416 Classification of Silica Refractory Brick²
- C 456 Test Method for Hydration Resistance of Basic Bricks and Shapes²
- C 492 Test Method for Hydration of Granular Dead-Burned Refractory Dolomite²
- C 860 Practices for Determining and Measuring Consistency of Refractory Concretes²
- C 909 Practice for Dimensions of a Modular Series of Refractory Brick and Shapes²

3. Significance and Use

3.1 This terminology ensures that terms peculiar to refractories are adequately defined so that other standards in which such terms are used can be understood and interpreted properly.

3.2 This terminology is useful to those who are not conversant with the terms related to refractories. However, it is also a ready reference for those directly associated with refractories to resolve differences and ensure commonality of usage, particularly in the preparation of ASTM standards.

3.3 Although this terminology is intended to promote uni-

formity in the usage of terms related to refractories, it can never be complete because new terms are constantly arising. The existence of this terminology does not preclude the use or misuse of any term in another context.

4. Terminology

4.1 Definitions:

abrasion of refractories, *n*—wearing away of refractory surfaces by the scouring action of moving solids.

acid refractories, *n*— see **refractories, acid**.

alumina-chromia brick, *n*—a refractory brick, which may be burned or unburned, manufactured predominantly of a mixture of a high-alumina raw material and chromic oxide (Cr_2O_3), with the alumina (Al_2O_3) content being 50 % or greater by weight and with chromic oxide (Cr_2O_3) predominating by weight among the other constituent oxides.

anthracite-coal-base carbon refractory, *n*—see **carbon refractory, anthracite-coal-base**.

basic refractories, *n*— see **refractories, basic**.

bat, *v*—to reject or discard a brick or shape.

binder, *n*—a substance added to a granular material to give it workability and green or dry strength.

bloating of refractories, *v*—substantial swelling produced by a heat treatment that causes the formation of a vesicular structure.

bond fireclay, *n*—see **fireclay, plastic or bond**.

burn, *v*—the heat treatment to which refractory materials are subjected in the firing process.

burning (firing) of refractories, *v*—the final heat treatment in a kiln to which refractory brick and shapes are subjected in the process of manufacture for the purpose of developing bond and other necessary physical and chemical properties.

calcine, calcines, *n*—refractory material, often fireclay, that has been heated to eliminate volatile constituents and to produce desired physical changes.

calcined refractory dolomite, *n*—see **dolomite, calcined refractory**.

calcining of refractory materials, *v*—the heat treatment to which raw refractory materials are subjected, preparatory to further processing or use, for the purpose of eliminating volatile chemically combined constituents and producing volume changes.

carbon-ceramic refractory, *n*—a manufactured refractory comprised of carbon (including graphite) and one or more ceramic materials such as fireclay and silicon carbide.

¹ This terminology is under the jurisdiction of ASTM Committee C08 on Refractories and is the direct responsibility of Subcommittee C08.92, The Joseph E. Kopanda Subcommittee for Editorial and Terminology.

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² *Annual Book of ASTM Standards*, Vol 15.01.