



Designation: F109-04 (Reapproved 2009) Designation: F109 – 11

Standard Terminology Relating to Surface Imperfections on Ceramics¹

This standard is issued under the fixed designation F109; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This terminology describes and illustrates imperfections observed on whitewares and related products. For additional definitions of terms relating to whitewares and related products, refer to Terminology C242. To observe these defects, examination shall be performed visually, with or without the aid of a dye penetrant, as described in Test Method C949. Agreement by the manufacturer and the purchaser regarding specific techniques of observation is strongly recommended.

2. Referenced Documents

2.1 *ASTM Standards:*²

C242 Terminology of Ceramic Whitewares and Related Products

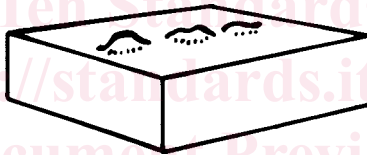
C502 Test Method for Wedging of Flat, Rectangular Ceramic Wall and Floor Tile

C949 Test Method for Porosity in Vitreous Whitewares by Dye Penetration

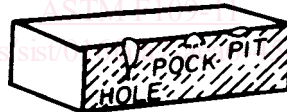
E165 Practice for Liquid Penetrant Examination for General Industry

3. Terminology

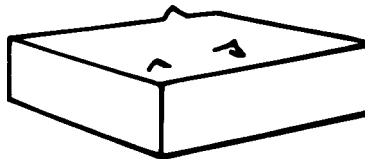
blemish—strained or discolored area attributable to normal composition or forming, or both. (See also **inclusion**.)



blister—bubble or gaseous inclusion at the surface which if broken could form a pit, pock, or hole.



burr—fragment of excess material or foreign particle adhering to the surface.



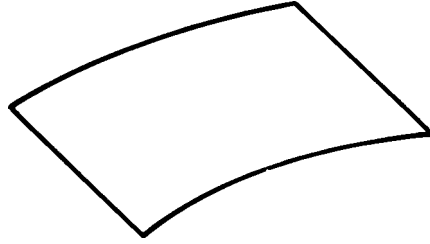
camber—a single arch of curvature. (See also **waviness**.)

¹ This terminology is under the jurisdiction of ASTM Committee C21 on Ceramic Whitewares and Related Products and is the direct responsibility of C21.01 Editorial and Terminology on Nomenclature.

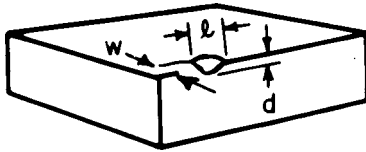
Current edition approved Jan. 1, 2009. Published February 2009. Originally approved in 1969. Last previous edition approved 2004 as F109-04. DOI: 10.1520/F0109-04R09.

Current edition approved March 15, 2011. Published April 2011. Originally approved in 1969. Last previous edition approved 2009 as F109 – 09. DOI: 10.1520/F0109-11.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.



chip—area along an edge or corner where the material has broken off.



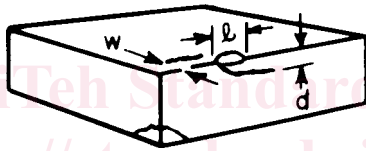
where:

w = width

l = length, and

d = depth.

closed chip—fractured area on the edge or corner when the material has not broken off (Syn. *potential chip*).



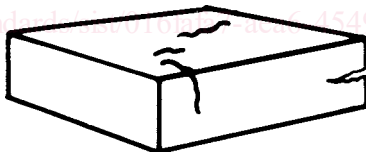
where:

W = width

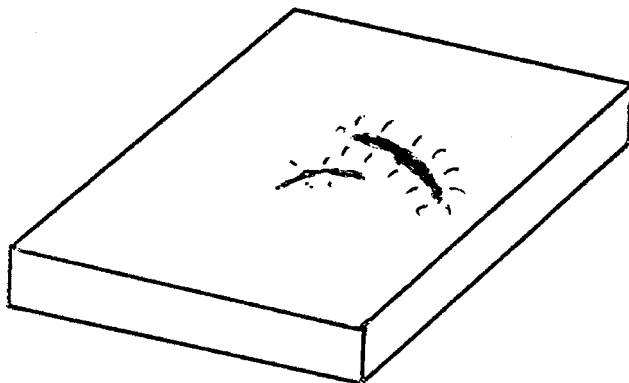
l = length, and

d = depth.

crack—line of fracture without complete separation.

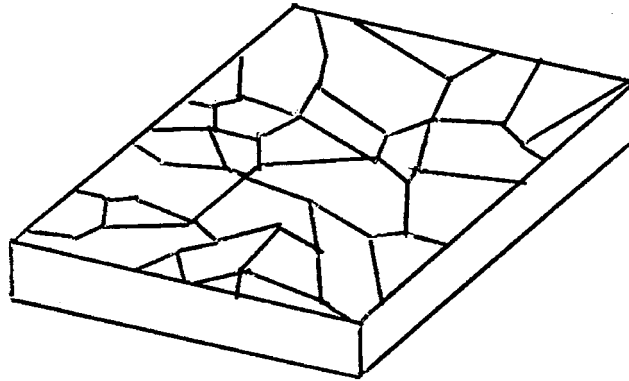


crawling—a parting and contraction of the glaze on the surface of ceramic ware during drying or firing, resulting in unglazed areas bordered by coalesced glaze.

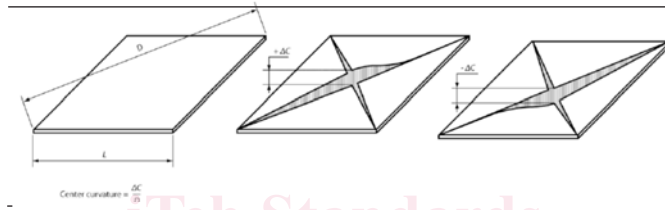


crazing—the cracking that occurs in fired glazes or other ceramic coatings as a result of tensile stresses, may also occur in the

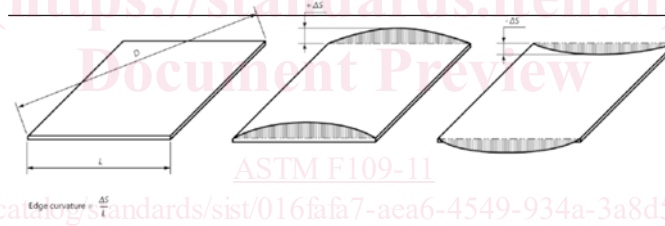
surface portion of uncoated (unglazed) whiteware bodies.



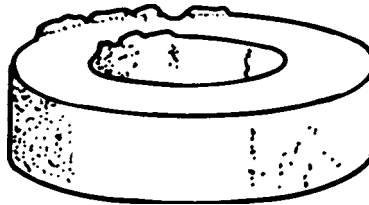
diagonal warpage—the departure of the center of a tile from the plane in which three of the four corners of the tile lie.



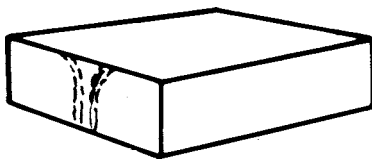
edge warpage—the departure of the center of one edge of a tile from the plane in which three of the four corners lie.



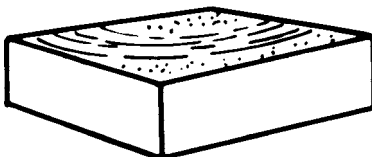
fin—fine feather-edge protrusion from the surface (Syn. *flash*).



flow line—one or more streaks distinguished by a difference in light reflectance from the surrounding area, characteristic of injection-molded parts. (See also **weld mark**.)



grinding mark—a pattern of fine striations or scoring, usually directional, resulting from machining, as distinct from **surface marks**

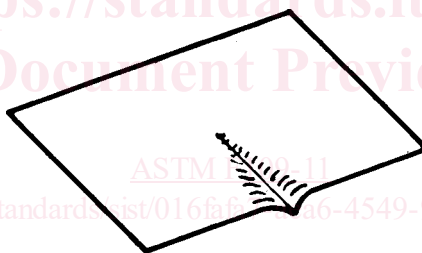


hole—a deep depression or void, the bottom of which is not visible by normal (20/20) vision under 200 fc illumination.



inclusion—embedded foreign material or a stain other than from normal composition or forming, or both (see **blemish**).

kink—a type of waviness occurring interior to the edges, not to be confused with the more abrupt departures as ridges or surface marks. (See also **waviness**.)



lump—a raised area on the surface having the appearance of being solid.

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