Designation: F 109 – 91 (Reapproved 2001)

Standard Terminology Relating to Surface Imperfections on Ceramics[1]

This standard is issued under the fixed designation F 109; 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 C 242. To observe these defects, examination shall be performed visually, with or without the aid of a dye penetrant, as described in Test Method C 949. Agreement by the manufacturer and the purchaser regarding specific techniques of observation is strongly recommended.

2. Referenced Documents

2.1 *ASTM Standards:*

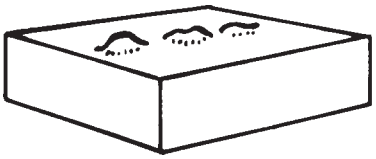
C 242 Terminology of Ceramic Whitewares and Related Products[2]

C 949 Test Method for Porosity in Vitreous Whitewares by Dye Penetration[2]

E 165 Practice for Liquid Penetrant Inspection Method[3]

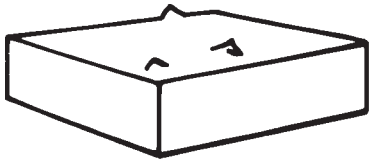
3. Terminology

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

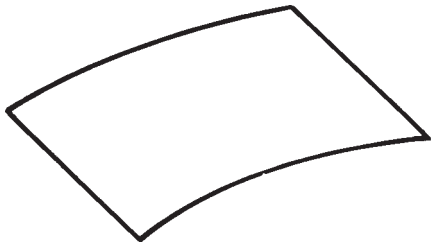


blister—bubble or gaseous inclusion at the surface which if broken could form a pit, pock, or hole.

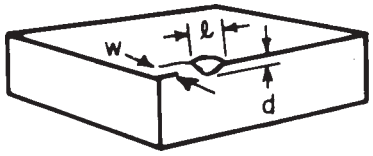
burr—fragment of excess material or foreign particle adhering to the surface.



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



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



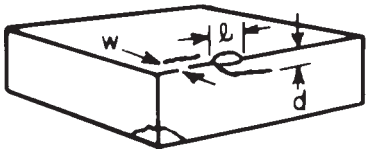
where:

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

[1] This terminology is under the jurisdiction of ASTM Committee C21 on Ceramic Whitewares and Related Productsand is the direct responsibility of Subcomittee C21.01 on Nomenclature.

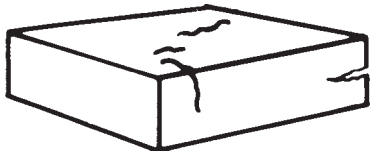
Current edition approved Dec. 15, 1991. Published February 1992. Originally published as F 109 – 69 T. Last previous edition F 109 – 73 (1991)ε1.

[2] *Annual Book of ASTM Standards,* Vol 15.02.

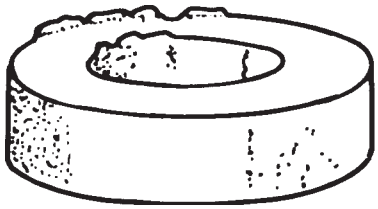
[3] *Annual Book of ASTM Standards,* Vol 03.03.

d = depth.

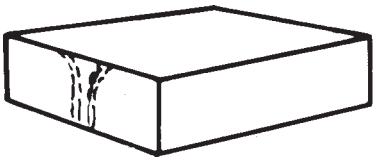
crack—line of fracture without complete separation.



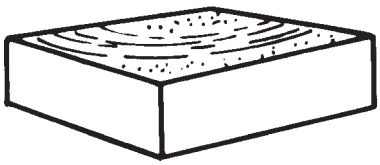
fin—fine feather-edge protrusion from the surface (Syn. *flash*).



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



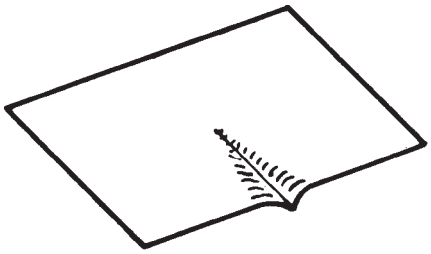
grinding mark—a pattern of fine striations or scoring, usually directional, resulting from machining, as distinct from **surface marks**



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**).

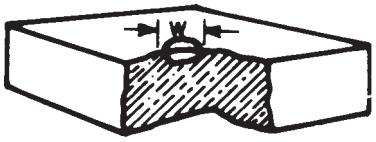
kink—a type of waviness occurring interior to the edges, not to be confused with the more abrupt departures as ridges or surface marks. (See also **waviness**.)



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

pit—a shallow depression or crater in which all surfaces are visible by normal (20/20) vision under 200 fc of illumination.

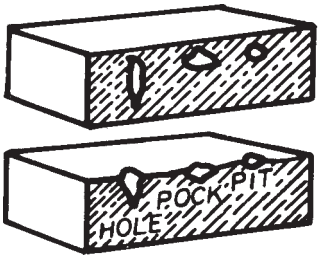
pock—a partially closed surface cavity.



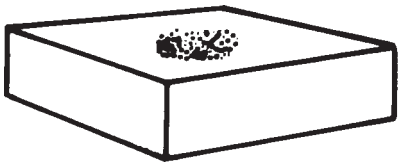
where:

w = width.

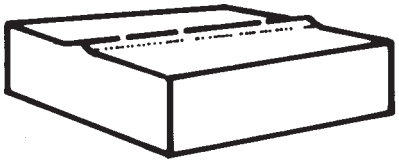
pore—an internal cavity which may be exposed by cutting, grinding, or polishing to become a pit, pock, or hole.



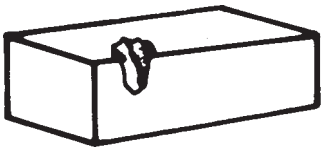
porous area—an area that will retain dye when tested in accordance with Practice E 165 and, if broken through at the porous area, will show evidence of dye penetration into the body.



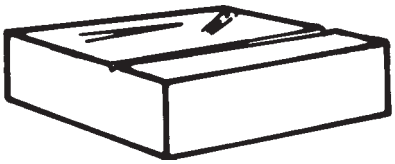
ridge—long, narrow protrusion on any surface.



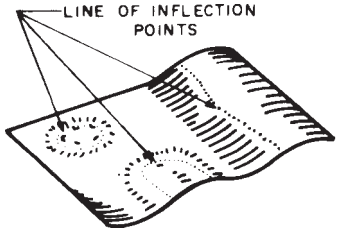
rim—a protrusion, usually of base material, bordering either partially or completelly a hole, pit, or pock.



surface marks—relatively long, narrow, shallow grooves or cuts in the surface, such as scratches, score marks, and machining marks. (See also **grinding mark**



waviness—a long-order departure from flatness as opposed to sharp discontinuities. Amplitude is in excess of specified surface finish. In general, waviness will exhibit a number of inflection points that, if connected, would form a line whose path may be open or closed (Syn. *warp*).



weld mark—a deep groove or fissure formed by incomplete union of two or more particles or streams of material flowing together.