

**SUBJECT: Lime and Manganese Pops on Brick**

**Lime Pops**

**Lime** is a naturally occurring material in some clay deposits. In spite of everything we do to eliminate lime from clay used to manufacture brick, some fine particles of lime occasionally get into the clay body. Small pieces of limestone within the clay may turn to quicklime, if they do not fully dissolve in the clay during firing. If these particles are near the face of the brick and come in contact with moisture, they can expand and exert enough pressure to break small chips off the surface of the brick. We call these chips "lime pops," and they usually occur within the first year after brick are made.



**Strength and durability** of brick are not affected by lime pops, but they can be aesthetic issue, if they occur in sufficient size and number as to detract from the appearance of the wall. All Acme brick are manufactured to meet the requirements of *Standard Specifications for Facing Brick*, ASTM C 216, Grade SW, for exposure to "severe weathering." **We warrant the brick to perform accordingly for 100 years.**

ASTM C216 Facing Brick (8.4.1) and a similar statement in ASTM C652 Hollow Brick states that "other than chips, the face or faces shall be free of cracks or other imperfections detracting from the appearance of the designated sample when viewed from a distance of ... 20 ft" for Type FBA. There is no standard for chips or cracks in Type FBA because this type is intended to allow for tumbled and distressed brick that have chips and other blemishes as features to give them an appearance of age or hand molding. But following the spirit of ASTM C216, we voluntarily treat these chips as "other blemishes" and use the 20 ft. rule to determine acceptability.

**Manganese Pops**

**Manganese** is also present in some clay deposits. We grind the clay carefully to these particles small enough to blend thoroughly with the clay body. But as with limestone, small pieces of manganese oxides may remain after firing. If they are near the face of the brick and come in contact with moisture, they can also expand and break small chips off the surface of the brick. We call these chips "manganese pops," and they also typically occur within

the first year after brick are made. Manganese pops look like lime pops, except the center is normally black or dark brown, instead of white like the lime pops.

**The best repair** for lime and manganese pops is to stain them to match or blend with surrounding brick. Replacing the affected brick does not work, because it usually results in mismatched mortar, which looks worse than the original lime pops.

Reference:

ASTM C216 Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)

ASTM C652 Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale)