

Crazing

Crazing is the glaze defect in which a network of cracks develop in the fired glaze. These cracks are often very fine, but can also be quite severe. You may first notice crazing of a glaze when removing the pot from the kiln or crazing may develop over time.

Crazing is generally undesirable; however, certain glazes, referred to as crackle glazes, are specifically composed to develop a controlled form of crazing. Crackle glazes should never be used on the interior of any pot that is able to hold liquid or foodstuffs.

Reasons for Crazing

This fault is usually caused by a glaze that is too small for the clay body. The glaze contracts more than the clay body as they cool from their maturation temperature in the kiln. The resulting tension in the glaze causes it to crack. Other common causes are:

- thermal shock due to abrupt and significant temperature changes
- overfiring a pot, which can melt the silica in the clay body, changing its coefficient of expansion
- expansion of the clay body due to absorption of moisture after firing, if the clay body is porous and has unglazed areas
- poor fit between the clay body and the glaze.

Solve Crazing Through Changing the Firing

Crazing may be solved or reduced by firing to a higher temperature or by introducing a longer soak at the end of the firing cycle. However, if you are already firing to a point where the clay body is partially vitrified (for example, porcelain), increasing the temperature or soak may actually increase the problem.

Solve Crazing Through Changing the Glaze

If the crazing is due to a mismatched glaze and clay body, the best solution will be to modify one or the other's coefficient of expansion.

To modify the glaze, try one of the following:

- increase the silica
- reduce the feldspar (or soda or potassium in general)
- increase the boron, or
- increase the alumina.

Solve Crazing Through Changing the Clay Body

Generally speaking, a fairly moderate increase in the amount of silica in a glaze will correct the glaze defect. If, however, there is a marked soda or potash content it may be more practical to modify the clay body, in one of the following ways:

- For low-fire clay bodies, increase the soda or potash
- For high-fire clay bodies, the most practical method of curing crazing may be to increase the silica in the clay.