Clayworks

Why Clay Cracks

Greenware

Clay dried unevenly. Clay shrinks as it dries. If one part of the clay is dries faster than another part, the faster drying part shrinks faster. Faster shrinkage causes the clay to crack. Adding too much water while working the clay will contribute to it drying unevenly.

Clay dried too fast. Fast drying clay increases the likelihood one part of the clay is drying faster than other parts.

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Clay thickness variation. Thicker clay holds moisture longer so thicker parts will dry faster.

Incompatible clay mix. There is always a risk when mixing different clays together that one clay might dry faster than the other.

Clay not compressed. If the clay hasn't been fully compressed any difference in compression will cause the clay to dry unevenly.

Kiln Firing

Kiln cooled too fast. Thermal shock cracks caused by fast cooling are the same as clay cracks caused by fast drying. If one part of the load is cooling faster than another part the difference can cause the ware to crack.

Fired too high. Clay softens as it approaches its melting point. If it is fired higher than that it can warp or deform. This is relatively common with mid-range clay rated to cone 4 to 6 that often should not be fired past cone 5. A bisque load fired too high can vitrify the clay making it extraordinarily difficult to get the glaze to bond to the clay.

Fired too long. The same as firing too high. There is a direct heatwork relationship between time and temperature wherein a longer hold will produce the same effect as firing to a higher temperature.

Multiple firings. Multiple firings can produce an accumulative affect the same as firing too high or too long. Each extra firing adds to what was done in previous firings.

Bad glaze fit. The glaze used must be compatible with the clay. It not the clay can crack or the glaze blister or craze.