POTTERY FAULTS & REMEDIES

Technical Tips And Product Information

#15

FAULT	APPEARANCE	CAUSE	SUGGESTED REMEDIES
BLOATING	Bubble formation within the clay during firing.	Expansion of clay body produced by pressure build up of gasses trapped in a melted body by: 1. Overfiring or irregular firing 2. Carbon trapped within vitreous body. 3. Clay body too high in fluxes (melting materials).	1. Reduce firing temperature 2. Fire more slowly 3. Add grog to open up clay body.
BLOW OUT/ SPIT OUT	Craters in bisqued clay.	1. Presence of impurities in clay. 2. Foreign particles of plaster from mould surface.	1. Avoid possible contamination of clay during making process. 2. Remove any plaster plucked away from mould surface before firing.
CRACKING	Cracks in bisqued clay	1. Rapid or uneven drying of clay pieces prior to firing. 2. Firing body too fast up to 300°C 3. Overworking of clay during making/drying	1. Dry slower and carefully. 2. Slow down initial firing rate (take 4-6 hours to 300°C) 3. Reduce handling time during making.
CRAWLING /ORANGE PEEL EFFECT	Bare, unglazed patches on surface of pottery accompanied by glaze puckered into small beads.	1. Excessive handling of bisque ware before glazing. 2. Oil, grease, dust etc on bisque ware before glazing. 3. Cracking of dipped glaze layer during drying and before firing.	1. Minimise handling of bisque before glazing. 2. Keep bisque ware clean. Sponge before glazing. 3. Reduce glaze application thickness by dipping quicker or thinning glaze in the dipping bucket.
CRAZING	Fine cracks in glaze surface (but not through the clay body)	1. Mismatch of glaze and body thermal expansions. 2. Glaze applied too thickly. 3. Moisture expansion of pottery after firing to earthenware temperature. 4. Under firing of body or glaze. 5. Firing cooled too quickly.	1. Fire clay to higher temperature or soak clay longer at peak temperature. 2. Reduce glaze thickness. 3. Glaze earthenware pottery all over and fire on stilts to eliminate unglazed areas which absorb moisture. 4. Reduce porosity of clay body by bisque firing to 1100°C and always fire the glaze to the recommended temperature. 5. Do not open the kiln door after firing until the kiln has cooled to 100°C
DUNTING (STRUCTUAL CRACKING)	Splitting of ceramic ware due to silica inversion. (When glaze has run into crack, dunting has occurred during heating cycle. If a crack has a sharp edge, dunting has occurred during cooling cycle.)	1. Too rapid heating and/or cooling of clay body especially around 575°C and 225°C (silica inversion temperatures) 2. Large variations in wall thickness of article giving rise to thermal variance. 3. Overfiring of clay body.	1. Fire and cool the body more slowly through temperature ranges at which silica inversions take place. 2. Give careful consideration in design of shapes. 3. Reduce firing temperature of clay body.

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GLAZE PEELING / SHIVERING	Glaze lifting away from body. (Occurs mainly on edges of pots such as cup rims and handles)	1. Glaze under excessive compression. 2. Migration of soluble salts to surface of clay body in drying or firing giving rise to poor adhesion of glaze. 3. Excess cleaning (sponging) of clay to expose excess silica particles.	1. Reduce firing temperature and/or soaking period. 2. Sand off soluble salts before glazing. 3. Reduce sponging in clean-up.
PINHOLED GLAZES	Pin holes in glaze after firing.	Gas release from body and/or glaze during firing because of: 1. Underfiring clay body. 2. Air trapped in clay. 3. Over application and overfiring underglaze colours. 4. Underfiring glazes 5. Overfiring glaze giving rise to volatilization.	1. Fire body to recommended firing temperature. 2. De-air clay before making pots. 3. Reduce application of underglaze colours. 4. Fire glaze to recommended firing temperatures. Ensure kiln is heating evenly. 5. Reduce glaze firing temperature.
FLAKY UNDERGLAZE	Underglaze separates from the clay body with a cracked-mud/ peeling appearance.	Underglaze applied too thickly.	1. Apply less coats of underglaze. MAXIMUM 3 COATS. 2. Stir underglaze regularly when in use to prevent setting. 3. Thin underglaze with water or brushing medium if it is too thick/ dehydrated. 4. Add some brush-on clear glaze or frit/water to the mixture to increase the melting materials and improve adhesion.
CLAY EXPLOSION IN THE KILN	Shards and dust left after firing or thick areas blown off pottery items.	1. Firing moist/wet clay items. 2. Not allowing sufficient time for thicker sections to dry. 3. Heating thick work too quickly.	1. Fully dry clay pieces before firing. 2. Fully dry entire piece, including all thick areas. Slow firing rate to approx. 50°C per hour. 3. Firing too fast for the fine nature of the clay, large size of the work, or large volume of pottery packed into the kiln.
OVERFIRING	Molten and malformed pottery after glaze firing. Bases of pots stuck to kiln shelves. All pottery and shelves collapsed and melted, attached to kiln walls etc.	1. Over firing beyond the top temperature of the clay body. 2. Kiln not turning off or running too long to reach the correct temperature (over 24 hour is too long) 3. Not enough batt wash on kiln shelves or inappropriate clay for the firing temperature	1. Follow manufacturer's instructions on the clay bag. 2. Double check kiln firing temperatures before firing. Ensure kiln is regularly serviced, cleaned and turns off at the appropriate time. 3. Batt wash kiln shelves annually