

NORTHCOTE POTTERY SUPPLIES
TECHNICAL TIPS AND PRODUCT INFORMATION #15
POTTERY FAULTS & REMEDIES 1

FAULT	APPEARANCE	CAUSE	SUGGESTED REMEDIES
BLOATING	Bubble formation within the clay during firing.	<ol style="list-style-type: none"> 1. Expansion of clay body produced by pressure build up of gases trapped in a partially melted body by: <ol style="list-style-type: none"> a) Overfiring or irregular firing. b) Carbon trapped within vitreous body. c) Clay body too high in fluxes (melting materials). 	<ol style="list-style-type: none"> a) Reduce firing temperature. b) Fire more slowly. c) Add grog to open up clay body.
BLOW OUT / SPIT OUT	Craters in bisqued clay.	<ol style="list-style-type: none"> 1. Presence of impurities in clay. 2. Foreign particles of plaster from mould surface. 	<ol style="list-style-type: none"> 1. Avoid possible contamination of clay during making. 2. Remove any plaster plucked away from mould surface before firing.
CRACKING	Cracks in bisqued clay.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Dry more slowly and carefully 2. Slow down initial firing rate (take 4 - 6 hours to 300°C). 3. Reduce handling time during making.
CRAWLING/ORANGE PEELING EFFECT	Bare, unglazed patches on surface of pottery accompanied by glaze puckered into small beads.	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Minimise handling of bisque before glazing. 2. Keep bisque ware clean. Sponge before glazing. 3. Reduce glaze application thickness by dipping more quickly or thinning dipping glaze in the dipping bucket.
CRAZING	Fine cracks in glaze surface (but not through the clay body).	<ol style="list-style-type: none"> 1. Mis-match of glaze and body thermal expansions. 2. Glaze applied too thickly. 3. Moisture expansion of pottery after firing to earthenware temperature. 4. Underfiring of body or glaze. 5. Firing cooled too quickly. 	<ol style="list-style-type: none"> 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 a firing until the kiln has cooled to 100°C.
DUNTING (STRUCTURAL CRACKING)	Splitting of ceramic ware due to silica inversion. (When glaze has run into crack, dunting has occurred during <u>heating</u> cycle. Crack with sharp edge, dunting has occurred during <u>cooling</u> cycle.)	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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.
GLAZE PEELING / SHIVERING	Glaze lifting away from body. (Occurs mainly on edges of pots such as cup rims and handles).	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Reduce firing temperature and/or soaking period. 2. Sand off soluble salts before glazing. 3. Reduce sponging in cleanup.