

translucent, that any metal stains have been removed (Figure 10.4).

If the hole goes right through the ceramic one side should be blocked off using a small strip of adhesive tape or a small piece of dental wax. When filling with epoxy putties the sides of the rivet hole may be coated with a thin layer of epoxy resin. This will improve adhesion of the putty which may pull away from the ceramic slightly while the filling is being shaped. The epoxy putty is then introduced and pressed in well using a wooden swab stick. Care must be taken to ensure that there is no air trapped at the bottom of the hole. Excess is removed. If body and glaze are being reproduced by two separate layers of filler the body filler must be very carefully applied and excess on the glaze edges should be removed before it cures. The surface of the body filler is flattened with the square end of a swab stick and it is then allowed to cure. The filler matched to the glaze is then applied.

Filling rivet and lacing holes with plaster of Paris or Polyfilla is carried out in much the same way as filling with resins. The sides of the holes are not coated with adhesive as there is generally no adhesion problem. The shrinkage of Polyfilla will usually necessitate a



(a)



(b)

Figure 10.4 (a) Blue and white porcelain object with riveted joint. (b) Rivets removed, break edges and rivet holes cleaned and filled with matched filler (epoxy resin with pigments and fumed silica) (Victoria and Albert Museum, London).

second application of filler after the first is dry. It is very difficult to apply plaster of Paris or Polyfilla to fill the hole in the body without getting it on the edges of a glaze, and it is difficult to clean the filler back off the glaze edges. Filling rivet and lacing holes in glazed earthenwares in separate body and glaze layers is consequently difficult but with care it can be done satisfactorily.

Rim chips

Rim chips, ranging in size from a few millimetres to large 'bites' of several centimetres, are very common losses in plates and bowls. The restoration of these generally requires the material used to be supported during curing. Small fillings of this type can be supported by strips of adhesive tape but, as mentioned above, the tape will not accurately take on a curve and if it is used for supporting anything other than very small edge chips of a few millimetres in size the filling will have to be done in two stages. If the adhesive tape is used to support the inside of the curve, a certain amount of cutting back of the inside of the filling will be necessary after curing; if it is used on the outside of the curve, the outside of the filling will have to be built up with the addition of further filling material after the first application has cured.

One way of achieving the correct shape in a curved filling is to use an intact area of the object over which to form the filler. Elston (1990) writes of the use of this technique for shaping a filling for the restoration of an eye-cup. Thin plastic film is laid over the appropriate area of the object as a separating layer and the filling material is applied on top of this. The filling material can be left in place until it has cured sufficiently to hold its shape, and it is then moved into position and fixed in place with further filling material.

Alternatively, one of the support materials may be used to create a mould of the shape, and either dental impression compound or sheet dental wax are commonly used when filling simple losses from rims (Figure 10.5). An open mould is usually used, i.e. the support material is used on one side only. This enables a putty to be pressed into place. If a liquid filler is to be used a more enclosed mould may be made. The compound or wax is softened by immersing in hot water or gently heating with a hot air blower and then placed over an intact area of the rim that corresponds to the missing area in order to shape it. It is allowed to cool in position and then removed, carefully wiped dry and repositioned over the damaged area. Enough compound or wax should be used to ensure that the support will overlap the intact area well on either side of the damaged area. The support is then taped in place using adhesive tape, or attached using poly(vinyl alcohol). Alternatively, in the case of a dental wax support, the edges

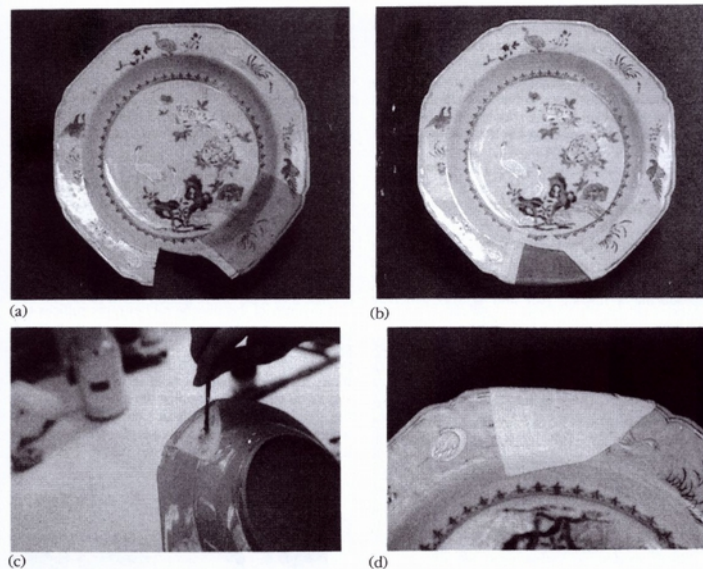


Figure 10.5 Dental wax support used for filling in rim of Chinese plate: (a) wax sheet pressed onto intact area of rim; (b) wax sheet moved into position across area to be filled; (c) filling material applied with spatula from back of plate; (d) filling cured and wax support removed.

may be sealed to a non-porous ceramic surface using a heated spatula. The filling material is then carefully pressed into the support and shaped using a spatula. The filling material should be of a consistency that allows it to be easily pressed into position but should not be too soft or it may slump during curing. If an epoxy putty is used as the filling material the break edges may be pre-coated with a little epoxy resin to which no pigment or filler has been added in order to improve the adhesion of the putty. The object is then placed to cure in an attitude that encourages the filling material to remain in position. Once the filling material has cured the tape securing the support is carefully removed (using solvent if necessary) and then the support itself is removed. If the support has been carefully shaped and positioned there may be very little further filling or shaping necessary on the side of the support. For this reason when using a support it is generally preferable to use the support on the side of the area to be filled that is less accessible or less easy to shape. For example it would be used on

the inner surface of a chip in the neck of a vase, as the inner surface would be difficult to gain access to. It would also be placed on the inner surface of a chip in the rim of a bowl, as the convex shape of the outer surface of the filling would be easier to achieve free-hand.

Holes

Holes in objects often occur at the point of impact of a blow or fall, where the body has shattered into minute fragments that cannot be replaced. They may also occur due to loss of larger fragments. Some form of support is required on one side of the hole when filling, and the procedure is much the same as for filling losses in rims. Again, the use of adhesive tape will be limited to rather small holes, and it may be necessary to add further filler to reproduce a curved surface after the first application has cured and the tape been removed. If the hole is in a very awkward