
This page, top: 6. *The Virgin and Child Enthroned, with Four Angels*, detail of the Virgin’s red cloak. At high magnification, the spotty appearance of the red paint can be seen. The pearls and pale yellow decoration have been painted on top, using a dab of grey paint for each pearl with a touch of white for the highlight. The fluid red paint is used again, thinly applied, for the shadows of the pearls; it has tended to form a drop each time the artist has lifted his brush away.

This page, bottom: 7. *The Virgin and Child Enthroned, with Four Angels*. Cross-section of a sample from the red cloak, showing the thin, translucent red layer over grey paint, consisting of lead white mixed with black. Below this is a thin lead white layer and the chalk-containing preparation layer, or ground. The paint sample is no bigger than a salt grain.

a fine linen cloth to remove the excess [6]. A cross-section [7], prepared from a sample of the paint and photographed under the microscope, shows that the red paint is indeed almost as translucent as glass and has been applied over a layer of grey paint, resulting in the subdued red colour we see.

A few of the paintings in the National Gallery’s collection are unfinished. They allow us to see how artists constructed their paintings and the order in which the different parts of the picture were painted may also be revealed. Thomas Gainsborough began the painting of his two daughters [8] by sketching the composition on the beige-brown preparatory layer, or ground; he used a white chalk, traces of which can be seen in the lower right corner. He then outlined the figures with deft strokes of dark brownish paint. The placing of the cat on the older girl’s lap is not entirely clear and Gainsborough did not develop this part of the picture any further. He indicated the main features of flesh and costume very sketchily – the flesh colour of the arms...

Above: 13. Saint Luke painting the Virgin and Child. Detail showing palette and brushes. The paints on the palette include bright red vermilion, a crimson lake, blue azurite and lead white. A flesh colour has been mixed in the centre of the palette. See also [10].

24. Preparation of a white ground, here using chalk (left); for gesso sottile, soaked gypsum would be used. Right, animal skin glue, ready to be dissolved in water; behind, the prepared mixture, kept warm over hot water. Dribbles down the side of the pot show its creamy consistency.

gesso, a particular form of calcium sulphate made by roasting gypsum. It is ground to a powder, sifted and mixed with the glue to form a paste, which is applied to the panel with a broad knife and scraped flat when dry. Secondly, the much finer gesso sottile is applied. This is prepared by soaking gypsum, or the roasted material, in water for a long time, giving a particularly fine-textured form of calcium sulphate. It is then ground and carefully mixed with the glue solution to a creamy liquid, kept warm over a bowl of hot water [24], and painted onto the panel with a soft bristle brush, applied in several coats. Cennini recommends eight: ‘You may do with less on the foliage ornaments and other reliefs; but you cannot put too much of it on the flats.’

When it was dry, the surface of the gesso was scraped down until it was perfectly smooth. Cennini recommends dusting the surface of the panel with powdered charcoal; only when no remaining charcoal could be seen on the surface would it be flat and smooth enough. The result is a brilliant white, smooth and quite hard ground.

Variations of this method were followed across Italy, but over time the process became less complex and less careful: as the use of gold backgrounds declined, a perfectly smooth, flawless surface was less necessary. The ground of Michelangelo’s ‘The Manchester Madonna’ is particularly hard and now shows a network of fine cracks over the unpainted surface [25]. It is also pitted with air bubbles, caused by overheating the gesso mixture or brushing it on too vigorously.
Once the support had been chosen and prepared, the artist could concentrate on designing the composition. Drawn or painted studies might be made for the whole composition or for individual figures or passages – draperies, perhaps, or parts of the landscape. These might include informal sketches, such as the rapidly drawn pen and ink sketches of the Virgin and Child by Raphael in which several possible positions for the baby are explored [38]. Landscape and nature studies, or details from them, could be used: Anthony van Dyck used one of the trees from an ink and watercolour landscape study in the background of the Equestrian Portrait of Charles I [39, 40].