

10.4 Clearcoat Lacquers Explained



Clearcoat Lacquer is the final layer that is applied to the painted surface of your vehicle. Typically it is between 32 and 102 microns in depth and its primary function is to protect the underlying paint base colour. Clearcoat has to be chemically stable when exposed to UV radiation, it has to provide gloss and it has to cure hard enough to offer some protection from swirls and scratches.

Modern clearcoat technology is advancing rapidly and the age of self-healing clearcoats is not that far away. In the meantime, understanding how present-day clearcoats function is important prior to picking up a machine polisher.

Clearcoats are colourless – the colour of your car is determined by the paint layers underneath the clearcoat. This transparent layer has to combine the elements required to provide scratch-resistance, UV stability and gloss, all into one solution. Significantly, the elements used to provide UV resistance are lighter than the other elements, so as the clearcoat cures the UV resistant elements naturally rise to the upper layers whilst the heavier elements settle towards the bottom.

Each time a clearcoat is machine polished, around 2 -3 microns of the upper part of the clearcoat is removed. It doesn't take much machine polishing before the UV protective elements start to become degraded. Additionally, many car marques actually state paint warranties are invalidated if more than 25% of the original clearcoat has been removed. This means if the clearcoat is 80 microns thick, only 20 microns needs to be removed before the warranty is voided. If machine polishing session removes 3 microns – six or seven machine polishing sessions could conceivably void the warranty! This should be taken in to account before too much enthusiastic machine polishing begins!