

# 10 YEARS YOUNGER

AN ALL-OVER CHEMICAL PEEL MIGHT SOUND LIKE AN EXPENSIVE SPA TREATMENT BUT FOR AN AGING PROJECT CAR IT IS A WISE MOVE. WE FIND OUT HOW DIPPING AND COATING CAN WIND THE CLOCK BACK FOR EVEN THE TATTIEST MOTORS.

If you spent your working week getting the inside scoop on magazine-worthy feature cars as we do, then you would soon start to notice a pattern emerging; the biggest challenge most owners face is how to address inevitable bodywork issues. Unlike mechanical repairs and upgrades, bodywork can be the most soul-destroying aspect of a build, chewing up time and money and perhaps even causing the less determined to throw in the towel completely. Why?

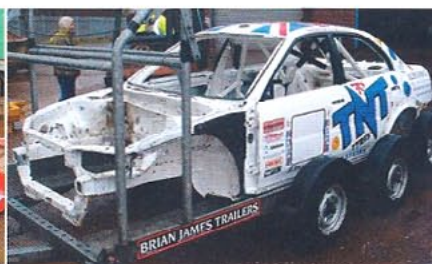
If your car is more than, say, a decade old, it's highly likely that our moisture-rich environment combined with volumes of winter road salt and grime has started to corrode body panels, subframes and the chassis. Before you know it, you're chasing

rust around the whole vehicle. Meanwhile, if you are looking to lose weight from the car there are tens of kilos of thick, sticky sound-deadening material to scrape out. Fancy a shaved engine bay? Then you'll have to make sure the excess daubing of seam sealer is meticulously removed to ensure a flawless finish.

If the sound of all that makes you break out in a cold sweat, your project is definitely a candidate for a unique chemical-based procedure offered by Surface Processing Limited (SPL) in Dudley. Since 1994, the firm has been offering the automotive market a high-quality process that deals with all of the above issues facing the modifier, restorer or tuner with the minimum of hassle. Its

chemical immersion process has proved to be so successful that many OE manufacturers (both automotive and industrial) use SPL on an ongoing basis to process batches of parts or panels, removing all paint and any other deposits ready for refinishing. SPL also handles the bodyshell preparation for a number high-profile motorsport clients – the Mazda MX-5 GT race car currently competing in Britcar is just one of many track and rally cars to have had kilos of excess weight removed in SPL's chemical tanks.

SPL's process involves immersing the subject – be that a complete bodyshell, select panels or even mechanical components like engine blocks – in a chemical bath to remove

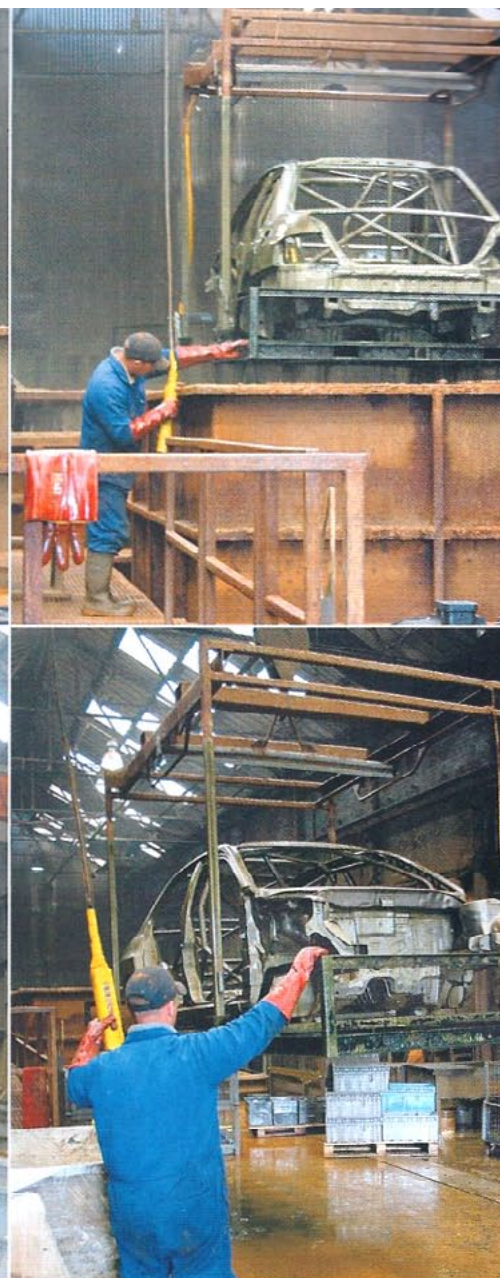


BEFORE: Bare bodyshell is first immersed in a chemical bath, followed by an 'inhibited' hydrochloric acid, to remove all oxidation and other organic materials





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PHOTOS: ANDREW BIDDLE & SPL



rust and organic materials without affecting the substrate, whether steel, aluminium, brass or zinc components. Because the bodyshell or component is completely immersed in a series of different tanks, the chemicals can get to work on virtually every accessible area, something that cannot be said for traditional media-blasting methods. Additionally, the vehicle isn't left with rippled panels from the harsh blasting action or an accumulation of blasting debris that is impossible to entirely remove.

The refreshing of an entire bodyshell requires several different treatments at SPL's plant. Using a bespoke form of temperature-controlled chemical immersion developed in-house, the first stage removes the majority of

heavy organic coatings like underseal, sound-deadening material and body filler. From there, the remnants of organic materials including paint, grease, oil and carbon are stripped off the shell by immersion in an alkaline hydrocarbon solution, thus leaving the mild steel shell free of contaminants.

Once it's been soaked for the prescribed amount of time in the first tank, the shell is moved into another for rust removal using a specialised acid. In decades past, the acid-dipping processes of some companies would actually attack the metal substrate and eat away at healthy material. Such were the risks to the structural integrity of an acid-dipped bodyshell that the process was banned by a number of motorsport sanctioning bodies. In

contrast, SPL uses an 'inhibited' hydrochloric acid, a specific type of acid that contains corrosion inhibitors to prevent damage to good metal while still allowing the acid to eat away at any oxidised (rusty) metal. Again, the immersive approach ensures that the shell has the best possible coverage at each stage – even the insides of pillars and sills will be cleaned thoroughly.

The fourth and final step in SPL's cleaning and stripping procedure is to neutralise any acid residue on the bodyshell in an alkaline bath and passivate the uncoated metal to provide a measure of corrosion protection. You only have to observe how quickly rust spots appear on a brake disc to appreciate how rapidly surface rust could appear if the



DURING: After neutralising the acid in an alkaline bath, any necessary repairs – welding holes, etc – can be carried out. It's much easier welding to fresh metal!





metalwork wasn't rendered less reactive (passive, as opposed to active) in this final important step.

Having a good look at some of the dipped bodyshells, it's incredible to see what the SPL immersion process uncovers. Every detail of the car's metalwork is on display, even down to file marks on classic cars where the panels were dressed by factory workers decades ago. It could also be quite alarming to some owners as they discover the naked truth about their car's earlier life, as unknown repairs become starkly evident. Hence SPL encourages its customers to collect the shell (or panels) at this stage to enable any necessary repairs to be carried out. It's much easier welding on to fresh metal too!

The next service SPL offers is to coat the restored bodyshell or panels with an electrophoretic primer, or E-coat, which is exactly the same corrosion resistant coating used on 96% of OE-manufactured bodyshells, panels and chassis components. With the subject returned to SPL for a re-run through stages three and four of the stripping process (to remove any light corrosion that may have arisen during the repair stage), it then undergoes an eight-stage process of

alkaline cleaning to remove any grease and oils before being immersed once again in a anti-corrosion solution. For the chemistry nerds among you, this is a tricationic phosphate that contains zinc for adhesion, nickel for corrosion resistance and manganese for wear resistance.

The final step is to dip the entire shell in an E-coat tank to electrically apply the recognisable black paint film to a depth of 22-28 microns (about a quarter of the thickness of a human hair) and then cure the coating in an oven. It might not sound like much but E-coat is so effective that OE manufacturers give lengthy anti-perforation warranties on their cars, so it's like giving an entire vehicle or selected panels an entirely new lease of life.

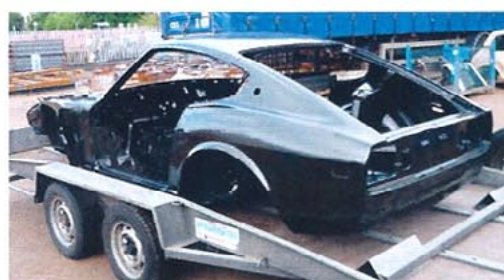
SPL's chemical dipping and E-coating services will undoubtedly give any project owner, vehicle restorer or motorsport preparer the very best start to their project. The thoroughness of the chemical dipping and stripping cannot be matched by other methods, and yet is not wildly expensive either; SPL can dip and strip an entire shell and its removable panels (doors, bonnet, bootlid, etc) from just £795. Compare that to

the investment in both time and money that would be required of an individual to achieve inferior results, and it's arguably a more economical solution in terms of time saved and the quality of the finished product. At £1450 plus a nominal re-dipping fee, E-coating an entire vehicle is an option that may require more deliberation by the customer, but knowing the propensity of '70s Japanese sports cars to rot before your very eyes, anyone embarking on a project to restore a rare classic should give serious consideration to ensuring that these icons are preserved for decades to come.

Whether your project is destined to be one of the 250 cars per year that are given the SPL treatment, or whether you just choose to dip your toe in by getting a few components treated – engine blocks particularly benefit from a comprehensive clean through all the galleries and oil ways SPL will happily accommodate its customers' requirements. Give the team a call and treat your project right! ✨

## CONTACT:

Surface Processing Ltd (01384 242010 or [www.surfaceprocessing.co.uk](http://www.surfaceprocessing.co.uk))



**AFTER:** As an additional service, SPL can coat the now rot-free shell in an electrophoretic primer that offers the ultimate protection against metal perforation.