

THE SPECIALIST

SURFACE PROCESSING

SPL are in the business of ridding your classic Ford's bodyshell of rust, and then making sure it doesn't come back. Here's how it works.

Words Simon Woolley Photos Gerard Hughes

WHAT DO THEY DO?

Automotive paint and rust removal
Electrophoretic coating

If there's one thing guaranteed to get the stress levels rising in the average classic Ford owner, it's the sight of rust. Engines may blow up, suspension might wear out, but these are a walk in the park compared with the onslaught of tinworm.

Over the last few years, more and more classic Fords have undergone major restorations, and identifying and dealing with heavy corrosion has become something of an obsession.

Shotblasting is one route to identifying corrosion, another is what we commonly refer to as acid dipping but Surface Processing Limited (SPL) prefer to call chemical immersion cleaning.

"We get a lot further than any other process," reckons SPL's managing director, Adrian McMurray, who has been developing the process for 16 years.

Based in a former boiler factory on the outskirts of Dudley in the West Midlands, SPL's facilities are the biggest in the UK, and run 20 hours a day, treating all manner of components.

The company first started in 1994 as an alternative to the typical paint strippers of the day, and its main business was (and still is) stripping and treating components such as suspension items for OEM manufacturers.

It wasn't long before complete bodyshells started appearing at the works however, particularly from Prodrive who wanted to get rid of the factory-applied sealants from Impreza shells prior to building them up into WRC cars. "We were getting 90-100 shells a year from them at one point," Adrian recalls.

These days however, the bodyshells coming through the doors have a

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distinctly classic flavour, and SPL's dedicated team of 15 staff are now treating around 350 shells a year, with a fair portion of those from the classic Ford stable. And it's not just cars needing a restoration — the day of our visit, a Group 4 Mk2 Escort shell from former WRC co-driver, Phil Mills' Viking Motorsport stable was going through the immersion process prior to being prepped and built up for an endurance event.

But there's more to SPL than just chemical cleaning. They also offer electrophoretic coating (more commonly known as E-coating) — a highly-effective corrosion protection process used by all the major car manufacturers.

Turn the page for an insight into how both processes work.

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HOW MUCH?

TYPICAL COSTS

To strip and clean an Escort bodyshell	£954
To E-coat an Escort bodyshell (plus a redip)	£2160
To strip and clean a cylinder block	£75



Viking Motorsport's Mk2 shell has just come out of the paint removal tank, and is being carefully washed down prior to undergoing the E-coating process.



A Jaguar E-type shell undergoes the paint stripping and rust removal process. This can take anything up to a couple of days.

"IT'S AN ESTABLISHED CHEMISTRY THAT'S BEEN TRIED AND TESTED ON AN ENORMOUS WAY"



Here's the same Escort shell after it's been E-coating. It's now ready for any further body mods prior to prep and paint.

The Treatment Rooms

In simple terms, there are two main elements to the SPL process to get your classic Ford's bodyshell well on the way to rude health.

Here's how they work:

Cleaning and rust removal

SPL's chemical immersion cleaning involves placing the bare shell in a special steel cage (which will take up to a Transit-sized panel van).

The cage is then lowered into a tank slowly, then tilted forwards and backwards to get good chemical penetration.

"We only use mild acids, so depending on how thick the paint is, this process can take a couple of days," says Adrian. "It's an established chemistry and has been tried and tested on an enormous scale."

The shell will go in and out of the dip several times, and the process takes away filler, adhesives and even underseal as well as paint. "Anything not steel or iron needs to be removed prior to the process



Cavities are drilled to let the process work.

beginning,” says Adrian, “and the major panels (doors, boot, bonnet and so on) are also removed and go through the process in a separate cage.”

The same process will also remove the majority of the rust and to aid its removal, SPL work through the shell, drilling a series of small holes in the box sections and enclosed cavities where necessary to allow proper penetration.

“It will find the corrosion. With this process you don’t really miss a thing.”

The process is constantly monitored, and the time the shell needs to spend in the tank varies — it could be in for several hours, overnight or sometimes up to three or four days.

Once this process is complete, the chemicals are then carefully washed out — which can take a couple of hours.

The shell is then ready for repair or modification, prior to further cleaning and the E-coating process if required.

E-coating

This process is one that has been in use by all the major car manufacturers since the early ‘80s. “96 per cent of world car production is currently E-coated,” reckons Adrian. “It’s the best immersion paint process in use today, and it’s far better than any primer you can buy.”

Once the rust removal treatment has been flushed out of the bodyshell, it is coated in a preservative and taken to another plant where the shell is again dipped in another series of tanks, one of which contains a zinc, manganese and nickel phosphate solution (the same holes drilled in the box sections at the rust-removal process now allow the zinc coating to work its way into hidden cavities).

After rinsing, the shell is placed in another tank containing PPG epoxy paint and an electrical current is passed through it, allowing the paint to fully bond via a process known as electrophoresis (hence E-coating).

The bodyshell is then placed in a giant oven, which cures the paint and the high temperature (185 degrees C) also drives out moisture from within the seams and box sections.

Once done, further body repairs can be carried out if required, as it’s a weld-through treatment, and traditional seam-sealers and primers can also be applied in the usual way prior to final painting.



After dipping this is what you’re left with. Any corrosion has been removed and it’s plain to see where fresh metal needs to be let in.



Engine and suspension components can also be cleaned.



Intricate box sections, tubing and panelwork are no problem for the paint stripping, rust removal and E-coating services that SPL offer.

DIPPING VS SHOTBLASTING

WHICH WORKS BEST?

Traditionally in car restoration, a bodyshell is shotblasted after the major repairs have been carried out in a bid to uncover further rot. This is the opposite to dipping where the shell is stripped and cleaned prior to restoration. “It makes it a lot easier to see where work is needed,” explains Adrian.

“Dipping is also a lot kinder to panel faces, and as you’re using fluid rather than granules, it’s a far more penetrating process as the chemicals will work their way into sills and chassis rails. With shotblasting you end up with the blasting media in the box sections. It’s notoriously difficult to get out, and what’s left ends up soaking up moisture, and the corrosion process begins all over again.”

“Dipping isn’t the be-all and end-all, but it takes a lot of the misery out of the restoration process.”

