New season - new colours

Experienced partnership.

The ultimate in refinishing.
Mercedes-AMG Petronas Motorsport, the five-time FIA Formula One™ Constructors’ Champion, wanted for the 2019 Mercedes-AMG F1 W10 EQ Power+ race car a PETRONAS green to pop from every camera angle, even from the roving helicopter shots at races, and look as good on a sunny day as it would in the rain.

Together with Official Team Supplier Axalta a luxurious, dynamic, stunning pearl green was created in Permahyd® Hi-TEC 480 Basecoat quality in a clear-over-base system.
Newly developed vibrant green for the 2019 Mercedes-AMG F1 W10 EQ Power+...

Mercedes-AMG Petronas Motorsport relies on Spies Hecker to "work to smooth".

Tough challenges that requires the right weight, speed and reliability.

Work doesn’t stop after the race...

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Mercedes-AMG Petronas Motorsport, the reigning World Constructors’ Champions based in Brackley, England, is passionate about the Spies Hecker paint used on its race cars and team trucks.

"It’s important that the race cars look great on the track and that our sponsors’ logos are displayed clearly. But what is exceptionally critical for us are the weight of the paint, the speed of its application and the ability of the entire paint system to be used over and over again, all season, season after season, with the same great results. Spies Hecker delivers that for us.

Andrew Moody,
Head of Paint and Graphics at MERCEDES AMG PETRONAS

Situated in Brackley, England, about 70 miles northwest of London, Mercedes-AMG Petronas Motorsport occupies a 60,000m² site with about 850 employees working five shifts, 24-hours a day, seven days a week. The team’s ultra-modern facilities include a wind tunnel, driver simulator and its own paint shop.

Being less than 10 miles from the Silverstone race circuit might seem the key factor for the team’s location, but Andrew Moody explains the site has other advantages. “We are in the centre of the so-called UK motorsports valley, which means we have many specialist suppliers within a 50-mile radius,” he says.

And one of those suppliers is Spies Hecker.

"We have a long-standing relationship with Andrew Moody and his team so we understand the pressure they are under, and in turn the requirements that our products perform, day after day, season after season. We’re very proud that we can deliver the results they need, so that the team can deliver on the track."

Joachim Hinz,
Spies Hecker Brand Manager, Europe, Middle East and Africa

Experienced partnership | The ultimate in refinishing | Paint Shop stories | Colour design
Mercedes-AMG Petronas Motorsport relies on Spies Hecker to "work to smooth".

When being painted, each part requires a huge amount of attention to detail, particularly relating to its weight, and the aerodynamically-sensitive parts require even more detailed finishing.

The substrates of the race car also vary depending on whether they are of a structural or of a cosmetic nature, and this impacts how the part is painted and its bake cycle. But regardless of the part or of the substrate, two things always hold true.

Work to smooth. Work to smooth.

Weight. Aerodynamics. Speed.

This season – which sees 21 Grands Prix over eight months - the W07 car, in addition to new external body parts and wings, is sporting a new design in the instantly-recognisable colours from 2015.

On the 2016 race car there are eight colours, none of which are commercially available: three shades of green and five shades of the main colour, called Stirling Silver after Stirling Moss, who drove for Mercedes in 1955.

"For us everything is about weight and aerodynamics. Carbon fibre, for example, can be tricky, as it can be porous. So we have to get a lovely finish with the minimum weight of paint, and the acceptable tolerances are different from component to component. For an aerodynamic part, it might be 0.3mm, which would be miniscule for most refinishers, but for us, any more can cause real issues. That can be hard to determine visually in the spray booth, so we have a "work to smooth" rule."

Andrew Moody,
Head of Paint and Graphics at MERCEDES AMG PETRONAS

The team in Paint and Graphics finishes the components off with one of two Spies Hecker clearcoats. Permasolid® HS Optimum Plus Clear Coat 8650 is a hugely reliable clearcoat for them and they use it on many parts.

But for parts they need to get done and dried quickly, they trust Permasolid® HS Speed Clear Coat 8800. They value this High Solids clearcoat, with its extremely fast drying time, very highly.

Products used regularly by the team:
- Priomat Wash Primer 4075
- Permasolid HS Vario Primer Surfacer 5340
- Permasolid HS Performance Surfacer 5320
- Permahyd Hi-TEC Base Coat 480
- Permasolid HS Optimum Plus Clear Coat 8650
- Permasolid HS Speed Clear Coat 8800

Thousands of hours...

Thousands of hours and thousands of parts.
With such an intricate livery on the car, Moody and his team face tough challenges. Over the course of this season, they will paint literally thousands of panels and components.

"It takes about 150 hours to paint a race car, with the nose and rear wing each taking about 12 hours. The speed of application and reliability is essential. We don't have time to accept anything less than perfect."

Andrew Moody, Head of Paint and Graphics at MERCEDES AMG PETRONAS

Once a part is painted, it's weighed, it's inspected, and if passed, it goes through on-going quality control with the Aerodynamics Department, and at the circuit, until it is used.

Stories from Brackley’s paint shop.

Mercedes-AMG Petronas Motorsport relies on Spies Hecker to “work to smooth”.

The race car livery means that it is essential that every interchangeable component not only fits perfectly but also matches the colours and shading on the adjacent panels.

To ensure the race cars remain as aerodynamically sound as possible, 80% of the sponsors’ logos are airbrushed onto the paint rather than using decals. And that includes the iconic Mercedes star on the front of the nose.

"Airbrushing the star is a fantastically creative skill, but we needed repeatability, consistency and accuracy. So we took that wonderfully creative activity and build a clear process behind it, so any of our painters can airbrush it. The star takes nearly an hour to complete, and there are 30 different stages in the process, but only four colours: blue, brown, white and black."

Andrew Moody, Head of Paint and Graphics at MERCEDES AMG PETRONAS
Work doesn't stop after the race.

After every race, the Build Department strips the cars and then the individual parts are sent to Moody’s team in the paint shop. The parts are checked carefully and then usually repainted.

It may seem rather excessive to refinish the entire car after every race, but as Moody explains, there are valid reasons for it. “Consider qualifying or racing somewhere like Abu Dhabi or Bahrain, where there is a lot of sand in the air."

“If a piece of gravel hits our car, it can take a piece out of the body, or can cause craters and nicks in the paint, which certainly will interfere with our aerodynamics, especially if the damage is on the front wing. It goes back to how aerodynamically important it is to “work to smooth”, and that means even after a race.”

Andrew Moody,
Head of Paint and Graphics at MERCEDES AMG PETRONAS

A part that requires refinishing is first weighed, then stripped of its coatings, repainted, weighed again, inspected, and only then is it returned to the Build Department.

The team keeps a detailed record of each part’s weight history until that part becomes unusable. This is to ensure a part doesn’t “gain” weight over the course of its life. Some parts may be a tiny bit heavier after their first paint and will be slighter lighter after their second and subsequent repaints.

Most parts have a life span of four or five repaints, while some have shorter lifespans, often due to the substrate being very thin – perhaps only 1mil thick - or because the design might change.
Spies Hecker isn’t reserved for the race cars though. There are eight team trucks that are painted with Spies Hecker about every two years. And Moody’s team paints hundreds, if not thousands, of garage and hospitality boards, as well as everything from grid trollies and water bottles, to the engineer’s station on the pit wall.
Related links to the stories

- Race Spray Gun: paint like the World Champions
- New season, new livery, new colour
- Mercedes-AMG Petronas Motorsport Masterclass: airbrushing – precision and process create perfection
- Mercedes-AMG Petronas Motorsport: Paint Shop on tour
- Paint overall with a Formula One look
- Iconic racing helmets
- Carbon Art 45 - fabulous carbon fibre sculptures

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