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Auto Physical Damage

Episode 7: Painting a New Picture: Automotive Coatings and Their Impact on Repair

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Think that paint color doesn't affect a vehicle's performance and Advanced Driver Assistance Systems (ADAS)? Think again! Jeff Wildman, manager of OEM and industry relations at BASF, joins host Ryan Mandell to discuss the latest trends in automotive coatings, how they impact collision repair and why OEM procedures are critical—especially when it comes to paint.

Ryan Mandell: Welcome back everybody to the Mitchell Collision Podcast. This is a really special episode for me personally. This is the first one we're actually going to get to record in-person. So I am really excited to welcome Jeff Wildman, who is the manager of OEM and industry relations for BASF North America, and we're both here at CIC in Oklahoma City. So this is the first podcast where I actually get to sit across the table from somebody and it's really refreshing. It's really exciting. So welcome, Jeff. How are you doing today?

Jeff Wildman: Doing great.

Ryan Mandell: It's great to see you. And, you know, I got to see you last time at CIC in Arizona. That's where we kind of started talking about this, this idea to get together on a podcast. And I'm really glad that it worked out because I think right now there's just a ton of changes happening in the refinish industry. And every time I talk to you, I learn something new about the paint industry. So I'm really excited to share some of this information with

our listeners. Maybe before we get started, just kind of give us a little bit of an idea of what you do at BASF and a little bit about your background.

Jeff Wildman: Okay. So I manage the OEM and industry relations. So what that means is I work with the manufacturers on anything tied to the collision side of the business and really with paint. So if they're looking to get paint products approved for different manufacturers, if they're looking for repair procedures around a paint process, working with them on their OEM certification programs, maybe helping them find shops or helping shops understand what it is that the OEMs are looking for. But kind of bringing that all together and I talk a lot about repair procedures.

Ryan Mandell: Definitely.

Jeff Wildman: That has been a huge topic. And really, like you said, a lot of things going on with paint that will get into the tie into the repair procedures. But then I also represent BASF with all the other industry influencers. So working with people like you at Mitchell or here at CIC—but any organization that's tied to the collision industry. I just to make sure that BASF understands, really, what's happening in the industry, the direction of the industry, and that our team and our products and the things that we do relate to where the industry is heading—not to the way we've done it forever.

Ryan Mandell: And I think you really hit the nail on the head with that description. I think, again, in the past we've thought about refinish is just basically the coating on the vehicle and it's very cosmetic. From talking to you recently— and I know we'll get into this—it sounds like that's really changing a lot. And I would never have thought when I was managing a collision shop that I'd be looking at repair procedures as it relates to paint.

Jeff Wildman: Right.

Ryan Mandell: So I think there's a ton of content around there. But before we dive into some of those technology trends, I think a lot of people that I talk to and a lot of folks in the industry—especially coming from the insurance carrier side—are thinking about inflation and they're thinking about the supply chain crisis that everyone's going through right now. And now, admittedly, I know you're not directly working in the supply chain portion of BASF, but maybe just give an idea of kind of how BASF has been impacted, how the paint industry in general has been impacted by some of these supply chain challenges that we've been facing.

Jeff Wildman: I mean, it's really been just like everyone else, you know, trying to move product from point A to point B. And we've had some discussions with our supply chain to understand what's happening. We've done a lot of things to increase our inventory. So we've got more inventory in North America today than we ever had before.

Ryan Mandell: Wow.

Jeff Wildman: So that we can supply the shops because we manufacture products here. We manufacture products in other parts of the world. And some of the surprising things to me were just what's happened over the past two years with COVID. And a lockdown in another part of the world, how does that impact us here? And, really, what I learned was, they're containers. They're containers of product there. They're supposed to be coming to the US. Well, if they're in lockdown those containers, sit there. And it's not just the product that's in that container, but that container is supposed to come here. We're going to put something else in it and ship it somewhere else. So now we've got stuff that we can't move. And, again, it's understanding that there's a whole lot more to it than what I'm saying.

Ryan Mandell: Sure.

Jeff Wildman: This is real high level, but I've learned a lot about it. And like I said, we've done a lot of things to increase inventory because we are a manufacturer of a lot of the ingredients that go into paint. We're a little bit lucky there. You know, BASF supplies pigments to all the paint companies.

Ryan Mandell: Sure.

Jeff Wildman: So at least we're manufacturing a pigment in the plant. We manufacture paint in that plant. Doesn't have to go very far.

Ryan Mandell: Exactly. And that was interesting. You know, we were on a call with your head of supply chain just a few weeks ago. And it was interesting hearing about how dynamic the system is and that it came as a surprise to me that the strategy is constantly being adjusted to maximize the efficiency and to minimize really the cost of that process. And that might mean going to an onshore supplier as opposed to an offshore supplier in any given moment.

Jeff Wildman: Right. And those are the things that we don't see. And like I said, when we when we talked to the supply chain manager, you know, it was eye opening the things that she was telling us about how fluid this has to be. And we've been lucky because we haven't really had any stock outs. You know, we may have run out of a reducer or something minor, but nothing major. And I know not everybody could say that. And when you think about it's not just paint, but it explains a lot what's happening with parts and with microchips and everything else. And we've also seen some of that with the paint mixing equipment where someone may want a mixing system. We can't get it because we can't get the piece of equipment to mix it on.

Ryan Mandell: Right.

Jeff Wildman: And it goes back to just like the parts and the steel and all those other pieces that are tied to it.

Ryan Mandell: It definitely seems like this is all kind of pieces to the same puzzle, just in different orders. And everything's kind of jumbled up right now. So it’s more like a 1,000-piece puzzle as opposed to 100-piece puzzle right now it seems like. So, you know, that is certainly a challenge that I think is facing all the different stakeholders in the industry to one regard or another. The other thing is certainly the technology of vehicles. And, you know, we've seen obviously it's no surprise that ADAS is becoming ubiquitous just completely throughout every segment of vehicle. You know, the most basic vehicles have highly optioned ADAS packages now. So I kind of mentioned we've always thought of paint as really just a cosmetic item on the vehicle. How is how is that changing? How is that evolving with the presence of all this technology.

Jeff Wildman: Paint is becoming a functional or safety part of the vehicle, though, and a lot of it goes back to ADAS and the connected vehicle. And as we get to electric vehicles and autonomous vehicles, because you start to think about the technology. And right now the big thing is radar. And you've all seen probably, you know, position statements from different manufacturers. You can't put more than X amount of paint on a bumper and everybody's a little bit different. And this is one of the projects I've worked on BASF for about two years now because we've been learning more about it too. But when you talk about radar, that radar has to send its transmission through that bumper cover. Not all bumper covers are the same. So you’ve got the material that's going through the bumper and then it goes through the paint. It goes out to hit an object and bounces back, and then that radar receives it. Then to tell the vehicle, there's something back there. One of the things that we've learned about is a term called permittivity. And what that permittivity is the transmission or how transmissible that radar signal is through a substrate. So you have a permittivity of the bumper and of the paint. And as we've learned more about the paint, it really comes into the base coat, and it ties in more to the metallics. And we're learning that some metallics interfere with the transmission more than other metallics.

Ryan Mandell: Interesting.

Jeff Wildman: So we've been working with the vehicle manufacturers, the radar manufacturers, to understand how do you test that? How do you determine what the permittivity of a coating is? And we've been doing a lot of testing in Germany. So we're spraying out panels on cutouts from bumper covers and you have to do different bumper covers because the thickness is different, so forth. So that then gets tested.

Ryan Mandell: And that's fascinating because, you know, so essentially, you're talking about different levels of performance based on the color of the vehicle.

Jeff Wildman: Yes.

Ryan Mandell: That's just wild to me to think about. And so if I'm an OEM, is my coating thickness going to be different for a black, a straight black bumper cover versus a heavy silver metallic bumper cover?

Jeff Wildman: It may be, but that's part of the technology that goes into the paint today because when we talk permittivity, black has almost no impact. Silvers—really high silver metallics—may have a lot of impact. But it depends on what metallics are used in it, the size and the shape.

Ryan Mandell: Interesting.

Jeff Wildman: So it is not as simple as saying black is okay and silver is not.

Ryan Mandell: So GM silver may be different than Ford silver and Nissan silver. Right, for instance?

Jeff Wildman: And then the other thing we're doing is, and again, a lot of people have talked about three-stage and four-stage coatings. But it's not so much they're three stage or four stage. But we're talking about having a tinted sealer or tinted undercoat because the colors are more transparent. The reason they're more transparent is to get that radar transmission, that permittivity. So if we have the right color undercoat, you put a transparent coating over it and the color matches, right? But it's a thinner coating. So you get the permittivity with the radar. Or if you don't use the proper undercoat color, you may have to put ten coats of the color on. You're building that film thickness. It may or may not match. And now what you've done with the permittivity is, again, that sealer doesn't have any metallics in it.

Ryan Mandell: Right.

Jeff Wildman: Well, all those coats of base coat have a lot of metallic.

Ryan Mandell: Sure. So that's going to impact that tremendously.

Jeff Wildman: It's going to impact it tremendously. And that's where you start to talk about what's the repair procedure for this bumper.

Ryan Mandell: And so I'd imagine that would start to impact possibly your repair-versus-replace decisions on some of these parts also—where, I mean, that's just crazy to think about that my decision might change based on the color of that panel.

Jeff Wildman: Right.

Ryan Mandell: That's really interesting. I imagine, you know, I mean some of it's probably based on the frequency levels of some of these sensors. I think you mentioned to me these newer generation sensors, these gigahertz-level sensors, are much more finely tuned.

Jeff Wildman: That radius is the higher frequencies are much more impacted than the lower frequency radars. And, again, I'm not the expert on this, but those are some of the things that we're starting to see.

Ryan Mandell: Well, it makes sense when you have, shorter more high frequency waves. They're going to be reacting with whatever surface they're permeating through a lot more frequently than a longer, lower frequency wave. So, I mean, it totally makes sense.

Jeff Wildman: So it's just not a simple bumper repair anymore. Not to mention with that bumper repair, it's probably going to need a calibration.

Ryan Mandell: Right. Yeah, we're seeing that become much more commonplace. You know, I think where we're at with calibrations is kind of back in the beginning of around 2017, 2018, where we were with diagnostics, where diagnostics were a small portion of estimates had scans on them. Now every vehicle is getting the scan almost. So I think we're at that same stage with calibrations right now because I think there's still a lot of unknowns around when do you calibrate? Does this require calibration? So I think that's something that we're going to see that really ramp up.

Jeff Wildman: Yeah, no, I would agree with that.

Ryan Mandell: And, you know, you mentioned to me lidar as being another consideration.

Jeff Wildman: Right.

Ryan Mandell: And the way the reflectivity of different colors in terms of how the lidar interacts with those. So talking about that, I mean, that's got to be something that's really critical for manufacturers as they look to develop their autonomous driving strategies.

Jeff Wildman: And we've got a group at BASF that's working on this right now with all the manufacturers because lidar does not see black. So we've got some demonstrations we've done where we can show it. With lidar, it runs right into a black object, but a white object goes right around. And it ties into that reflectivity of the pigments. And we've done a lot of work internally because, again, BASF has a pigment division, so we're looking at different types of pigments. What are some things that you can do to use a different black pigment but still get the same colors because we all know that black and white and silver are the number one, two and three colors out there today. And we're not going to get away from dark colors. So we're looking at options to use either different pigments or, again, the other thing we've looked at is do you use a reflective silver and a transparent coating so that the lidar sees through the transparent coating and reflects off of the undercoat?

Ryan Mandell: Wow.

Jeff Wildman: So, again, it's becoming part of the safety of the vehicle.

Ryan Mandell: That's what it seems like. I mean, it really does seem like this is, I think you mentioned at the beginning, this is now a functional part of the car. It doesn't just impact how pretty it is.

Jeff Wildman: Right. And again, a lot of people look at these colors. Why are you making color so difficult today? Yeah, the designers are getting involved in that and do some of that. But a lot of it has to come back to that functional part of it. Like I said, the transparent colors. They give you a different look, but they are also giving you some safety features. And that's why, again, when we talk about this—and I talk to shops a lot—why is this a four-stage color now? It's not four stage. It's a Tennant sealer and then it's a three stage over the top of that maybe. Or it's a base clear with a Tennant sealer later. But that Tennant sealer is how you get the right color.

Ryan Mandell: Right.

Jeff Wildman: And if you don't use that Tennant sealer, you will never match the color.

Ryan Mandell: So do you think we're going to see manufacturers moving away from three-stage paint applications? I know when we look at our data, we've actually seen going back, you know, five years ago, we can see every single year a higher percentage of paint codes that come through our system are identified as a three stage. Do you think we're going to start to see that reverse itself a little bit?

Jeff Wildman: No. I think the three stage is here to stay and four stage is probably the next thing you're going to be talking about. You see it increasing because it gives you a different depth of color.

Ryan Mandell: Sure.

Jeff Wildman: And the designers at the automakers love these colors.

Ryan Mandell: How big of a role does weight play in coating application?

Jeff Wildman: At the refinished level, it doesn’t. You know, at the manufacturer’s level, I'm sure it does because everyone's trying to lightweight their vehicles.

Ryan Mandell: Right.

Jeff Wildman: But I'm not really involved there. So I shouldn't really give you much of an answer.

Ryan Mandell: Oh, that's okay. I just know so many of the conversations we have in the industry are around lightweighting vehicles. And I would imagine, you know, as you add more and more coatings, it’s going to increase the weight then.

Jeff Wildman: But it adds weight.

Ryan Mandell: It does. It does. Absolutely. So do you think looking at the kind of spray equipment—the kind of technology being used in terms of formulation of paints—do you think we're going to continue to move towards more waterborne applications in the next five to 10 years throughout the ecosystem of refinish? Or do you think we're still going to be having pretty heavily solvent-based, clear coats and things of that nature?

Jeff Wildman: I think you're going to be moving towards more environmentally friendly coatings. I don't know that they will all be waterborne. There's a lot of UV technology out there today. And with the UV technology, it's a 100 percent solid product. There's no solvent in it. It's dried with UV light. So, again, it's better for the environment just like a waterborne would be.

Ryan Mandell: Sure.

Jeff Wildman: But it may offer some benefit for collision repair.

Ryan Mandell: So I think it's safe to say that as a whole, the refinish industry is really advancing in technology right along with the rest of the automotive industry. I mean, it seems like what gets all the press is all the ADAS and the sensors and self-driving. But gosh, I mean, it really seems like the paint side of it is on the cutting edge and really kind of part and parcel of where these vehicles are headed.

Jeff Wildman: It's really tied to the future. And the thing is, if you look a little deeper, even at the auto companies or anywhere in any company, one of the things you hear about is sustainability. And although that

may not be top of mind today, it's still very high within the objectives of every auto company out there and every major corporation like BASF. We're looking at what are those sustainable products and that's part of what's driving paint technology to. And it’s driving automotive technology. You know, we're looking for how do we develop more sustainable products and legislation will have something to do with that.

Ryan Mandell: Sure.

Jeff Wildman: You know, there was a lot of legislation 10 years ago and it kind of slowed up. It'll come back.

Ryan Mandell: Of course.

Jeff Wildman: And we see that today in Europe and we see sustainability is a big factor. Everything is done in Europe today from choosing your vehicle to choosing the paint you put on that vehicle to how it’s repaired.

Ryan Mandell: Oh, absolutely.

Jeff Wildman: It'll come this way.

Ryan Mandell: Yep. Europe is usually kind of a harbinger for those kinds of environmental pathways. I know their recycling industry is very, very strict. And, they have produced very little waste because so much of it is recycled. It's such an important part of their government initiatives.

Jeff Wildman: Correct. So, again, we watch those things, and we know it's coming. We just don't know when.

Ryan Mandell: Absolutely. Well, Jeff, I just want to say thank you so much for spending time today. It's great to see you again. Great to do one of these face-to-face here at CIC. And I'm sure that hopefully people listen to this and just have a little bit of a better appreciation for the complexity of the refinish side of the industry. And I think there's going to be a lot of cool stuff that we're going to be watching from you guys in the future.

Jeff Wildman: No, thank you. And it was great seeing you again. I mean, it's great to get out and see people.

Ryan Mandell: Yeah.

Jeff Wildman: But thanks for the opportunity. This has been a lot of fun.

Ryan Mandell: My pleasure. Thank you, Jeff.

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