

Speaker 0 00:00:05 Welcome to the Clear Impact Podcast brought to you by PGTI University. Thanks for joining us today. My name is Sherri Connor and I am your host.

Speaker 1 00:00:19 Well, I love little sea turtles. I think they're the cutest things ever. I love to see them all run to the water. Yeah, no, it's a beautiful thing. There is more to tinted windows than you may realize. Is it a film that's put on afterwards? What is low E? What helps lower my energy bill? Is there really a thing called turtle glass? Learn all about this and more as we continue in the Windows and Doors 101 series today, we're chatting with Jim Heise as he helps us understand these important details. Welcome back to the Clear Impact Podcast. We are here today with Jim Heise, who is part of our training team at PGTI University. Thanks for being here today,

Speaker 2 00:00:52 Jim. Well, thank you for inviting me.

Speaker 1 00:00:54 I'm glad you could make it, Jim, how long have you been here?

Speaker 2 00:00:57 Well, actually it's funny you say that, uh, today happens to be my anniversary date 15 years today.

Speaker 1 00:01:03 Oh, wow. Oh, was I supposed to get a cake? Uh, that would have been nice. Well, maybe I'll run out at lunchtime and grab one. I don't know that I need to eat any cake, but I know that doesn't stop you.

Speaker 2 00:01:14 No, no, it's one of my food basics.

Speaker 1 00:01:18 Well, we are delighted that you're here today and there is a topic that is a controversial one, a little bit around glass. We want to talk about tints. The thing I know about tint is that if I want my car to feel cooler, I get my windows tinted, but that is not necessarily the case for your house. Talk a little bit about that. Okay.

Speaker 2 00:01:40 Well let's first describe the two different types of tint. When you mentioned about putting tint on your, on your automobile, basically that's a tint that's put onto the inside of your car. They don't put the tint onto the outside. It's a film that they put on and it doesn't really make the car cooler. Like people think what it actually does in reality is makes it more comfortable. The, the tint on the inside of a window, actually the darker tin actually absorbs energy. Anything, anything dark absorbs heat. It doesn't push it back. So to speak of which we'll talk about a method here in a little bit on how that happens on a window or door. When you have tint the tint, it shouldn't really should not be put onto the interior and aftermarket tint. In other words that you roll on and put onto a window, the reason being again, it's going to absorb the energy and begin by doing so it can actually cause a stress cracks into the glass.

Speaker 2 00:02:29 And as a result of that, most manufacturers actually voids the warranty when a homeowner does that, oh, so if you've got a tint, a window or door, it needs to be done at the time, the product is manufactured because when we use tint on a window or a door, that tint is actually as part of the mixture of the glass when it's manufactured. So in other words, it's not a film it's actually solid all the way through the glass. Uh, so that's basically the main difference between a tinted window aftermarket versus one that's done when it's made, it's a lot more effective. What we'll do is, uh, if you're using a, for example, a tint with an insulated piece of glass, we'll put that tint on the exterior, not onto that interior piece of glass, because we don't want it to absorb that energy. Tinting a window is oftentimes more of a

cosmetic thing, a personal preference for, um, for an individual. It doesn't do what they think it's going to do. They think is going to actually give them better energy calculations and energy savings. But in reality, the testings have proved that the most energy efficient glass by far is just clear glass, not tinted glass.

Speaker 1 00:03:35 Really. So if one of our customers wants, say a blue glass, we don't add something to the glass to make it blue. We order it from the glass manufacturer, and it comes blue. Correct. That's super interesting. One of the things that I learned is that the thickness of the glass will change the color of it.

Speaker 2 00:03:54 Absolutely. We have different glass thicknesses that we use in the determination of how thick that glass is. Again, it's one of the variables that's used in calculating design pressure. We can make a window stronger simply by making the glass thicker. And if you put an additive into the glass mixture, when they manufacture the glass, the thicker that glass becomes the darker that tint actually becomes. And now that really only becomes important if you're trying to match an existing window, or for example, if you have a window that's going to be near another window and they have a different glass thickness, the tints, aren't going to look exactly identical. So that's something that has to be determined when, when you're ordering a product, right?

Speaker 1 00:04:35 So if you are in a condo and the, all of the other windows in the condo are a certain color and you have to replace your windows, then you need to double check with the HOA and make sure that you know, what those thicknesses are so that you're not,

Speaker 2 00:04:52 That's a good example. And another example is in calculating a design pressure on a home there's different zones, there's an interior zone, which is zone four and an exterior zone, which is zone five. The exterior zones are going to require a higher design pressure in, in order to reach that higher design pressure, the manufacturer may be using a thicker glass as one of the options. Uh, so that's, that's something that they need to keep in mind as well also. So this way, if you have another window right up close to it, it's would look a little bit different than the one right near the corner.

Speaker 1 00:05:22 Oh, wow. That's a good thing to keep in mind if you want everything to match.

Speaker 2 00:05:26 Yeah. It's easy to do. When I say easy to do is you calculate the design pressure for the end zone, zone five and do the entire house. Then that way everything matches up.

Speaker 1 00:05:34 And so the people that are doing the sales and installation of windows and doors understand all of that?

Speaker 2 00:05:40 You would think so. But no, it doesn't happen that way. Always a lot of times we find people that are out there selling windows that might've been selling, for example, automobiles or insurance the day before. And so you do want to deal with someone that's knowledgeable and what's a manufacturer that's knowledgeable that everything matches up.

Speaker 1 00:05:59 Mm wow. That's important. That's really good to know about the tints. I know that there is a product out there called low E and tell us about that. Cause that can be a confusing thing. Right? Okay.

Speaker 2 00:06:10 Well, first of all, what does Low E stand for? Let's see if you know that? Low emission? No, that's for an automobile. I don't know. That's low emissivity. It's very difficult. I am not going to repeat that again. That's why they call it Low E. Close enough.

Speaker 1 00:06:29 I'll have to look that up. I'll put that in the show notes.

Speaker 2 00:06:31 We'll just call it Low E for now. Yeah. There's, there's different types of Low E's that are out there. There's a hard coat, soft coats, etc. We won't get into all that, but basically what Low E does is it reflects the radiant heat from the sun. Uh, an example, almost everyone is probably sat on a couch or a chair watching either a movie in the afternoon or a football game, you know, on a Sunday afternoon. And you can feel the heat coming through the glass and you feel it on the back of your head or on your back. That's basically called solar heat gain. Okay. The solar heat gain coefficient is a number basically that determines how much of that light energy comes through the glass as a way to deflect. Some of that is by using a low E. Low E basically will cause that radiant heat, a certain percentage of it to kickback, let's say kind of like reflect back instead of coming through the glass the low E's today are so effective that, you know, sometimes just sort of you kill one monster and create another one.

Speaker 2 00:07:28 They can be so effective today that they there's been instances where it's melted the vinyl siding at a neighbor's house. The sun hits the glass. It has to be what I referred to as a perfect storm. I've had to explain that to North Carolina building commission one time when we had that instance a few years ago, and it was, as I explained to them a perfect storm, which means the sun had to be at a certain angle to cause that reflection and the siding on the neighbor's house had to be within a certain distance. And then it had to be manufactured at a certain time. In other words, the vinyls today are tested to a much higher standard than what they were say 20 years ago.

Speaker 0 00:08:03 Be sure to tune in for upcoming episodes to help you understand the fenestration industry, what you need to know when buying windows and doors and other related topics, you can find out more about us at [pgtiuniversity.com](http://pgtiuniversity.com). You can also find us on Facebook and LinkedIn.

Speaker 2 00:08:22 So it had to be that perfect storm, but that's how much that sun that actually reflects back. It's kind of like a magnifying glass almost.

Speaker 1 00:08:29 In a way where you can set bugs on fire.

Speaker 2 00:08:31 Absolutely. What I've never done that! I started fires, but not with bugs. It sounds like something Bear Grylls would do. Right.

Speaker 1 00:08:40 Well, you know, when you grow up on a farm and you're bored, what happens? No, just kidding, it wasn't me. That was my brother. I never did that.

Speaker 2 00:08:47 We just burned each other when I was younger right here. Put your hand here. Right? Let's see what happens.

Speaker 1 00:08:51 Low E. So is that something that done by the glass company before the glass comes to us?

Speaker 2 00:08:58 Yeah. Yes. That's actually done at a glass manufacturer, I don't know of any window or door company that actually manufactures glass. So a few of them such as our PGT will have a glass factory, but we don't actually a glass plant. We don't actually manufacture glass. We take the raw

glass that's sent to us and then we treat it, treat it meaning we'll either heat strengthen it, which will make it twice as strong as the raw glass that was sent to us or we'll temper it, which makes it safety glazing, or we'll make it, turn it into basically, um, impact rated glass or, or possibly insulated glass or a combination of those two things. So we, we actually treat the glass there, but the glass comes to us with the Low E on it. That's put on at the manufacturer. The most common Low E that's put on basically is a soft coat. The soft coat is the easiest to handle and the less problems down the road with the consumer and the soft coat. Is what they'll do is they'll put either a two layer of this silver oxide, sort of like a spotter coat, they'll call it or they can do a triple coat. So there's different coats. They can add to it to make it more and more effective. But of course that adds up to cost then as well.

Speaker 1 00:10:02 Right? So solar heat gain coefficient. Is that something that people only in the south need to worry about when they're trying to keep their house cool in the summer? Or is that something important for Northern customers also?

Speaker 2 00:10:14 Two most common terms that are used for energy and windows and doors are U-factor and then solar heat gain coefficient. The U factor, for example, I think of it as insulation when you're living up north. And when I say up north, I have sort of dummy things down a lot of times there's eight different climate zones. All right, but I'll break it down into two. If you live in an area where you have to heat your house, more than six months out of the year, then U-factor becomes extremely important to you cause you don't want to heat the house and have that heat disappear. Right. All right. And if you're in an area where you have to air condition, more than six months out of the year, such as where we live, then solar heat gain coefficient is more important. We don't want that heat to come in.

Speaker 2 00:10:52 So we'll have certain requirements that only a certain amount can come in as a building code standard, where if you go up north, they want that free heat to come in. There is no restriction on it because they want that heat to come in because that's free energy, free heat. So they won't have to heat the house as much. And it's just the opposite for U Factor. U factor basically is very important up north because they want to keep their heat in and down here, it's a little less important because we want some of that heat to get out because if it doesn't escape, then we have to run the air conditioner.

Speaker 1 00:11:23 Got it. Low E helps with solar heat gain. Does it help with U Factor?

Speaker 2 00:11:28 It can make a minor effect in that as well, also where they put the low E, we'll put it on a different piece of glass, a different surface, for example, where we are here in Florida, we'll put it on the, what we call surface two, which is the, the exterior piece of glass. And if it's up north, they'll put it on surface three, which is the inside interior piece of glass.

Speaker 1 00:11:47 Mm. So there's a lot to know about all of that. I want to talk for a minute about turtle code because that is, that's a thing here.

Speaker 2 00:11:54 Oh yeah. You know what that is? Don't you?

Speaker 1 00:11:57 Well, it's where the lights don't transmit as brightly out of the window so that the turtles don't get disoriented when they're hatching.

Speaker 2 00:12:06 So that I, I can't convince you that it's just, uh, an etching of, of a turtle on the glass. No. Okay. All right. I tried. Yeah. Yeah. Basically nature shows that when turtles hatch on the

beach, it's natural for them to go to the brightest spot. So they come out of the sand basically, and mother nature has them looking for the brightest spot and that's supposed to be the moon over the water or the horizon. So they head off into that direction where if you have a condo let's say, or a home on the beach and you have very bright lights on in the house, then the turtle goes the wrong way. And he never makes it to the ocean. Never makes it to the water. So that's where turtle code is, is actually used by the fish and wildlife society. So that is for the preservation of turtles, right.

Speaker 1 00:12:50 Because they're an endangered species. Yeah,

Speaker 2 00:12:52 Absolutely. So, so they have a requirement that only so much light can go through. Right now, when I say right now, because they're trying to change it right now, the visible transmittance has to be basically a 0.45. And that means that only 45% of the light is actually shining it through. There are talks and there are areas that are trying to increase that to a 0.25. But again, that's only a suggestion right now by the fish and wildlife society. It's really a 0.45, but there is one small area I understand Fort Myers beach is actually requiring now at 0.25.

Speaker 1 00:13:23 Oh wow. So if you are fortunate enough to live on the water where you can see the sand, then that's something that is relevant to you. You want to make sure that your house meets that code. Yeah.

Speaker 2 00:13:34 Yeah. And that would only be the windows and the doors that are, that can be seen from the sand, from the beach. In other words, or from the water. It doesn't mean the front of the house if the back of our house is facing the beach.

Speaker 1 00:13:45 Well, I love little sea turtles. I think they're the cutest things ever. I love to see them all run to the water. Yeah, no, it's a beautiful thing. And I know just from a little bit of experience I've had in volunteering with the sea turtle patrol program locally, that only one in a thousand turtles actually actually live to maturity, which is 25 years. So, so we need to do what we can not to, you know, make it even more difficult for them to live to those numbers. I totally agree. Is there anything else that we need to talk about around tints and glass and things like that? Do you have any fun stories around that? Yeah.

Speaker 2 00:14:20 There, there is a, uh, a tint that's used, it's called solar cool bronze has a very reflective, almost like a mirror image. And, uh, I remember a story of a woman who wanted it on her house and she mainly wanted it for privacy and not just for appearance for look, some people get it for looks. And it's also one that can be used for total code as well also. But she thought that no one could see in her house. And that's true during the day. Well at night or when you turn the lights on and it's dark outside, it has just the opposite effect. And you can see right through. And apparently there were some neighbors that were walking by her house at night and sort of taking their time as they walked by and looking. And then one of her friends came to the house and told her, you shouldn't be walking around like that. And she said, what do you mean you can't see in here? I said, oh yeah, I see everything from the outside. Oh no. So you have to have a little bit of basic knowledge on where to use some of that stuff, but it works great during the day, but at night you can see right through it. So it is not reflective at night.

Speaker 1 00:15:17 Those are important things to know. Yeah. I suppose so. And shame on those neighbors for not telling her.

Speaker 2 00:15:24 Well they're enjoying themselves. So, you know, at least they weren't setting out beach chairs and sitting in there watching, having popcorn, they weren't selling tickets, they weren't selling.

Speaker 1 00:15:34 I really appreciate you sharing some information around glass tints and turtle code with us today and the Low E and U-factor in solar heat gain and all of that. I appreciate your time. I'm sure we'll have you back for more knowledge checks because you're the, you're the senior knowledge expert here.

Speaker 2 00:15:50 So it's always fun talking to you. Awesome. Thank you so much, Jim, have a good day.

Speaker 0 00:15:55 PGTI University is the customer education team for an entire family of brands. We began with the original Eze-breeze porch enclosure line then became PGT, America's leading brand of impact resistant windows and doors. We then added CGI, CGIC, WinDoor, Western Windows, New South Windows and Eco Windows and Doors. We create products built to withstand major storms, keeping people safe, secure, and prepared. Our exceptional brands give you the protection you need without compromising design or functionality. PGTI University is here to educate you, our listener so that you can be a more informed consumer of window and door products.