

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 So every window, every door is going to have this four inch by eight inch white label on the product. And it's going to indicate at the very top in big bold letters, a positive and a negative pressure.

Speaker 0 00:00:30 As we continue with our Windows & Doors 101 series, we explore design pressure. I want to protect my home against 140 mile an hour winds. So why does design pressure matter? What is design pressure? On today's episode of the Clear Impact Podcast, Patrick Jameson and I talk about this little known but important number.

Today on the Clear Impact Podcast, we are in a series called Windows & Doors 101, and who better to help explain some basic things than our own Patrick Jameson. Hey Patrick, good to have you today. Thanks for joining us. Thanks again for having me. One of the things that was a little confusing for me when I first started in this role at the University was this thing called design pressure. I've lived in Florida for a long time. And so I've lived through several hurricanes, including Hurricane Andrew. And I know the category one category two, I know 110 mile an hour winds. I know 140 mile an hour winds, but I had never really heard anything about design pressure. And I know that you have a ton of knowledge about this. So can you help the average person? Like I was six months ago - who didn't know anything about windows and doors? Can you help explain what design pressure is and why that matters?

Speaker 1 00:01:44 Well, the first thing is don't feel bad because you're not the only person that asked that question, design pressure. I was in that same boat. Other homeowners, our dealers asked that same question of, wait a minute, my home, or just asked me the question, what wind speed does this window meet? And you're telling me that we don't go by just wind speed. We go by something called design pressure. I worked on the manufacturing floor for several years. I had no idea what a design pressure was. So in a nutshell, design pressure is this formula that has several variables inside of it. And wind speed is just one of those variables. It is a way to really put the windows and doors through a test to see how well it's going to perform during a storm, hurricane, tropical storm, et cetera. We have to know how it's going to affect it because a lot of people think, oh, if that tree branch hits the window, that's the only test.

Speaker 1 00:02:28 No, that's not the only test. Think of it as a hurricane passing by your house. You're going to have a lot of those winds trying to breach and break down the door. And when the winds don't breach down that door and the door holds its own, the winds start to wrap around the house and then the winds are gonna wrap around the backside of the house and almost kind of like suck out the windows in the back of your house, because of the way that the wind speed is traveling. So the front door is experiencing positive design pressure. That is your wind speed. That's water, all trying to get inside your house. And if it does, it's gonna fill up your house like a balloon and eventually burst. You know, your roof's going to probably pop off. Well, the back windows are experiencing negative pressure.

Speaker 1 00:03:08 So it doesn't have the winds blowing right on the door. The winds are almost trying to like suck out the window from the house. When the eye passes over, the wind speeds are all going to change. And now your back window is going to experience positive pressure. And that front door is now experiencing negative pressure because of how the winds change. So every window, every door is going to have this four inch by eight inch white label on the product. And it's going to indicate at

the very top in big, bold letters, a positive and a negative pressure. And that tells us what this window has been designed to.

Speaker 0 00:03:42 There's a rule around that with the positive number and the negative number are sometimes the same, but the negative number is sometimes larger, correct?

Speaker 1 00:03:52 Yes. So your negative number will always be either the same or greater than the positive. And a lot of people ask that, understand why the reason being is because you can't pull water backwards. That positive number is experiencing, like I said, all those winds and water trying to get inside of your product. And we have different components that we can add to windows as well as doors. For example, like a sill riser adapter that acts as a dam, a water dam to, to allow water inside the higher, the sill riser adapter, the bigger, the positive number because of water, but your negative number is never going to experience water. Because again, it's the winds trying to suck the window out of the house, out of that wall and you can't pull water backwards. So that's why your negative numbers either going to be the same or greater than the positive.

Speaker 0 00:04:35 How does somebody find out what design pressures they need to meet? Is that a building code thing, is that by the local jurisdiction, does the average homeowner just rely on the county that they're in or the city that they're in to tell them what they need to meet?

Speaker 1 00:04:48 Yep. So in my opinion, the best thing for a homeowner to do is go seek out one of our customers, one of our dealers or distributors, and they will be able to tell exactly what design pressure their house is rated for. Because like I said, there's several variables: the mean height of your roof. We need to know that how big is the windows you're putting inside the house? Are they under 10 square feet? Are they greater than 20 square feet? What exposure is their house? For example, do they have the back of their house on a big lake? And there's over 1500 feet of just water, but that's going to be a different design pressure compared to somebody that's surrounded by trees and woods or other houses, other buildings.

Speaker 0 00:05:27 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 1 00:05:46 Is it an interior zone window or an end zone window, for example, are the windows four feet from the edge of the house? Or are they like dead smack in the middle of their house? Because those windows from the end zone to the interior zone are going to have different design pressures. And it's very important. So if I was going to talk to a homeowner, I would tell them to seek out a dealer and let them decide exactly which design pressures their house needs to meet.

Speaker 0 00:06:12 They really need to even have drawing plans that really spell out exactly where everything is going, all of the specs around that. Um, does it matter if you're in a two-story home, would you need to have different design pressures from the first floor to the second floor?

Speaker 1 00:06:27 It could be definitely. Because again, you know, the mean roof height, the exposure all plays a toll in it. Oh wow. It's incredible. And that's where that big formula comes back in. I remember talking to an engineer many years ago and I said, can you tell me in your words, what design pressure is? Well,

Speaker 0 00:06:42 You asked an engineer that question? I did, and I found out they don't give you yes and no answers. I was gonna say, how long was the conversation?

Speaker 1 00:06:50 He asked if I could sit here for about four days to talk about it. And I was like, whoa, I don't have four days. I've got about 40 seconds, but no, it's an incredible formula. And it's something good. It's a lot better than just testing for wind speed. And when you look at our products that we have, that's Miami-Dade tested the different design pressures, the different glass makeups, the different components that we can add to these windows. You know, we can usually meet up to about 180 mile an hour winds. We have some incredible design pressures for wind speed for, you know, the size of the windows, the size of the doors, as well as for water infiltration.

Speaker 0 00:07:23 Wow. That's a lot. Um, no wonder I was confused.

Speaker 1 00:07:27 So we spent almost two hours on this topic in one of our classes.

Speaker 0 00:07:30 So the positive number is when the winds are coming at you and the negative number is when the winds are going away from you. That makes sense. And water only goes with the wind, not from the inside of the house out. So the positive pressures are lower because that takes into account that water is also being blown. Whereas the negative pressures could be the same or larger because there's not water involved. Yes. Oh good. So did I get a gold star now? You get two gold stars for that. Oh, awesome.

Speaker 1 00:07:59 I've got another example for the Florida homeowners that live down here. If you remember, we have these little black bugs every year called love bugs.

Speaker 0 00:08:07 It's about that time, isn't it?

Speaker 1 00:08:09 Yes, it's about that time, and Sherri, on your car when you are driving to and from work, where are your love bugs that you got to wash off?

Speaker 0 00:08:17 Ugh, there are all across the front bumper and some, and the windshield, and then even the back of the mirrors get nailed. And then the very roof line at the top of the windshield, they're just all over the front of the car.

You don't have any on your trunk?

No, I don't drive backwards.

Speaker 1 00:08:33 So there's a good example of positive and negative design pressure. Love bugs are all your positive hitting the front of your car. There's no love bugs hitting the back of your car. They can't hit the back of it if you're driving forward. Oh gosh. So again, that's your example of positive and negative lovebug pressure.

Speaker 0 00:08:50 Yeah. Awesome. Well, Patrick, I really appreciate you giving our audience a good explanation of that. That's an important number when it comes to choosing a product for your house. And it's good to know that there are people out there who actually make it their job to know more about it than we do. And that we can know that our investment is a good one and that we're going to be pleased with the end result. Absolutely. Thank you for having me. Thanks Patrick. Have a good day.

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