

Hosts

Welcome to [Not A Roofer podcast](#) where we discuss roofing. Without all the jargon. I'm Brianna. And I'm Charity. And this is today's episode. Today we are kind of going along the same lines that Brianna did on her solo podcast and talking more about solar roofing. We are so excited. We were able to find a great guest to join us and I will let him introduce himself.

Ken

My name is Ken Kelly. I'm president of Kelly roofing. We cover to the state of Florida and do shingle, tile, metal, and flat roofing applications. But about two years ago, we started installing Tesla solar products. So, I'm happy to tell you all about that journey and what you can do to become an excellent contractor as well.

Hosts

Perfect so how did you get involved with Tesla was it like right when they came out with a product, or did it take a little bit for you to jump on board?

Ken

I was very excited about the announcement that occurred years ago and very intrigued in anything that has Tesla behind it, you know is going to do well, just because of how dynamic Elon is as the leader in it and as an innovator, and so I started bombarding them with requests to be a part of a project and they said, you know, we're too early to bring on other contractors and so forth. But we had a breakthrough back in 2018. And I was invited to go out to a test group that they were installing, that had versions one, two and three on it. It was nothing more than a grouping of shipping containers out in the middle of a vineyard in Sonoma, California. And they actually gave me GPS coordinates. So I flew out and got a rental car and was following my phone's GPS. And sure enough, as I come over the hill on a dusty road, There was this mock roof that was basically put a top of a bunch of rented shipping containers, and it was pretty neat. You can tell where they had taken a bunch of material off and then put it on multiple times as they were testing new versions. The thing that they were most intrigued about was how to install the roof to make it watertight and talk about wind and hail and the things that the roof needs to be able to withstand. You see, Solar City, which is the company that Elon purchased to roll into Tesla was very good at the electrical side of things, but this was their first foray into the roofing side of it. So they were going around looking for industry experts who could provide feedback. Then I helped with the training program and then we tested the training program with our own staff. And then it basically the launch pad was Elon was doing this push to do 100 roofs in one week. And we had sent out install crews to California to be part of that push. Unfortunately, the very next week COVID became a monster deal and the whole country went into shutdown. We didn't know we were going to get our crews out of California. And then we've somewhat went into hibernation for about six months or so. And Tesla came out and said, Listen, we've got four installers nationwide, that we want to be part of this channel installer

program, where we're going to allow you to sell, purchase and install the Tesla roof system, following similar lines to where our own Tesla's own install crews do it. But we feel as though there's an opportunity to streamline if we bring in outside ideas, and that's what we've been working on. with them ever since that was early 2019 that we were we were made a channel installer.

Host

Wow. That's great story and just how you got started. So I think what intrigues both Charity and I are these solar panels that Tesla has. There's not something like it out there. It's not like you install asphalt shingles and then put the solar panel on top. Can you talk a little bit about that and explain how that works?

Ken Kelly 01:45

Absolutely. So this is a new sector in the world of solar photovoltaics. This is called BIPV or built-in photovoltaics. The idea is that you don't pay for two different systems. You don't have to pay to put a roof on and then you mount to a rack and put panels on top of that system. You don't have those two to maintain. Instead, the roofing product the roofing material that is protecting the building from water intrusion is also the solar or photovoltaic electric producing material. So in our world, we put down one roof we plug in a couple of wires and boom now all of a sudden we're supplying the home with energy and keeping it dry. And the Tesla roofs have a 25-year material limited warranty that incorporates both the solar photovoltaics and the roofing materials themselves.

Host 02:35

Can solar be installed on commercial buildings or is it only residential?

Ken Kelly 02:42

So the Tesla solar roof is designed for a pitched roof application. So as long as you have a minimum of two and a half and 12 Yes, it is possible to put these roofs on commercial applications. The only thing you have to consider is the electrical service to the home currently or the or to the commercial building. Currently, the Tesla solar roofs require a single phase electrical. So if it's a three phase that's coming into the commercial building, we would need to split that off into sub panels and then work it out to where we're powering those sub panels with either the solar system or potentially battery backups in what we call Powerwalls. But yes, it can be done. We're doing a multifamily up in Pensacola right now. It's a three-story commercial, multifamily building with 12-unit owners and we're supplying it to the whole building. So yes, it's absolutely possible. Now if you have in terms of like the traditional commercial roofing where some people in the industry think that all commercial is just flat roofs, right? I wish we would come up with a standard definition but unfortunately, we haven't yet. If you have a flat roof, the Tesla solar roof is not designed for that. However, your traditional rack mounted systems would be a

great application for those on flat roofs and you can even angle them so that they are more aligned southern facing. So you can better track the azimuth of the sun and get better output year round. So there is an application for those flat roofs as well. It's just you will have to go to the Tesla solar panels, not necessarily the Tesla solar roof, which is the individual tiles that overlap and plug and play together.

Host 04:22

Okay, so when it comes to the investment into solar roofing, you know, that's a big question. That I feel like a lot of people have, is it, it tends to be a lot more expensive upfront, but what is the upfront cost versus what it can save in electricity Do you know?

Ken Kelly 04:41

I would say in most systems, you're going to see a payback somewhere between 7 and 13 years. And that's including the 26% federal tax credit that's available and assuming that you'd be able to take advantage of that tax liability deferral for up to three years. If you don't have enough liability in year one, you can push that two additional years to hopefully get the full discount. The good thing about BIPV is that the entire roof installation would then qualify for that tax deduction. Whereas a rack mounted system, there's some debate as to what is applicable and when it's not. There's a lot of people who think it is just the solar panels themselves and any battery storage devices, not the racking, not roofing related items, not labor and so forth. The general sentiment is that the entire roof would be applicable to that 26% tax credit, and that's at the federal level. Keep in mind, there are local state incentives depending on where you are. And there could be utility incentives, depending on what your utility provider is. So the 26% applies to everybody. And then you have additional that you can layer on top of that potentially based on where you're at. So let's talk about ROI. So yes, the Tesla solar roof is priced at approximately the same amount if you went with a typical premium roof system, let's say a tile or a metal like standing seam metal, for instance, and then put solar PV on top of it the traditional way. This is either roughly the same price or maybe slightly less. And that's a good rule of thumb for pricing. So at the end of the day, what do you get with the Tesla solar roof that you don't get with the traditional system? One you get an all-encompassing warranty to you get a roof that is absolutely gorgeous. I think it is the slickest looking roof that's out there today. And you have one thing to maintain not to so there's some real advantages to it. But yeah, that's when we talk ROI if you want me to go into detail?

Host 06:54

you can Yeah, for sure.

Ken Kelly 06:56

There's a couple things that consumers typically would provide us that would help us to perform the calculation and design the size of the roof system in PV system that they would be that we would

recommend. The first thing is What is your average kilowatt usage or your electric bill? We can reverse engineering either way. But at the end of the day, we need to get down to the number of watts that are being consumed. And the whole idea here is we want to design a system that's big enough to offset pretty much all of their electric bill and what I mean by that a little tangent here is some utilities will charge a connection fee. So you might want to go off grid but if your home or office is physically connected to a utility, it doesn't matter if you buy electricity they may still charge you a minimum fee, let's say 25 bucks, 30 bucks a month. So if you're going to spend \$20 A month 25 to \$30 a month. Let's go ahead and design a system to where you're buying that much electricity from them so that you're not just paying it for nothing. You're actually paying it for something right so we can go a little bit smaller on the PV size in kilowatts, to hopefully get you right in that line. But there's another component to this. We need to think about future energy needs. And here's a really big push and why Tesla has moved into this space and why it's important for them. You know, Tesla, their mission is to accelerate the world's transition to a sustainable energy. Well, the one thing that they see happening is this huge shift in the type of automobiles we're going to be buying and driving right now. PV or sorry, electric vehicles are less than 1% of all vehicles on the road. And by the year 2025. They estimate that 25% Of all the vehicles sold will be electric, that is a monumental shift. What does that mean? It means the power grid is going to be taxed much more than it currently is today. And that's an issue. And there are grids across this country that are aging, and they just simply can't keep up with that amount of demand. So the idea from Elon is we're going to not slow down the number of cars that we're selling based on this worry of the electrical grid not being able to sustain it. And instead we're going to make like little tiny utility centers all throughout the country. By putting PV on all of these rooftops we're going to lessen the demand on the energy grid. And more on a resilience of self providing. So that's why they also provide the battery backups in what they call the power walls, similar technology to the batteries that are used in the vehicles. And the idea is this. When you wake up in the morning, the sun comes out you start turning things on to get breakfast get the kids off to school, watch TV and so forth. Well, you're starting to increase your energy demand. Because the sun is up and you have a photovoltaic system on the roof. Well, you're probably using the power that you're generating yourself. Well then you go off to school you go off to work you turn the lights off, and really there's a lower consumption within the building. So the idea is to use that excess energy that's being generated and instead of pumping it back into the grid and turn the meter backwards. Instead let's go ahead and charge the batteries. So now we've got these power walls that are fully charged. And the evening rolls around. The kids get home from school, the parents are home from work, and they're cooking dinner and they're watching TV and they're doing homework as nightfalls. Now the solar unit is not really producing much at all. And we're relying solely on the battery backup power. If we can get through the night on those batteries, or than the next morning, affordable take system start to recharge the batteries in print and writing the energy the home needs and you're in this perpetual cycle where you're self reliant on your own energy production. So now we don't really need the utility, except for maybe extreme situations where you were just not producing enough or you had a really cloudy day or, or something along those lines. And then you might pull from the utility grid slightly. But that's the idea. And then to take it one step further. If you really help your energy usage and you reduce it quite a bit. And now you're producing more energy than you need whether to charge the batteries are used internally. You can pump that back into the grid and you can get a credit. Now the industry buzz term that you've probably heard is called net metering. A net metering agreement means that the utility is going to give you one for one for any energy that you produce and put back into the grid as long as you don't pump more into the grid than what you use. So

in other words, let's say for instance, I'm meeting some utility energy and I'm going to pull 100 watts. So I spend this way they're charging me and then all of a sudden later in the day, I'm producing more electricity than I need. And I pushed back in the utility 100 Watts, well, that is a net zero, right? They're going to give me full credit for the amount that I put back in. But let's say for instance, I used 100, but I pumped back to 100. The first 100 is going to be net metered if that agreement is in place, but the additional 100 They only have to pay me under a net metering agreement, wholesale rates, so I might be spending 1518 20 hour in California 40 cents a kilowatt hour, but they may only be given me back one to 10 cents a kilowatt hour for that additional energy. So it's really important to design the system accurately based on what your energy needs are today and what they're going to be in the future so that you don't get caught in that situation where you spent a bunch of money on a solar photovoltaic system that you're really not getting a solid return on investment for

Host 13:04

goes away more than I thought I did not do as much research as I thought I did. So that is why we have a guest so that we can learn more from someone more experienced. Yeah. Um, has solar been impacted or affected by the material shortage like a lot of the other companies have been

Ken Kelly 13:28

another great question. Not so much. There's been a few items where we've had a slight delay on mostly because they rely on microchips. But as far as the materials and the production, Tesla has a goal of doing 1000 roofs a week install, so they have a factory in supply chain that is capable of producing 1000 roofs a week. And without revealing internal numbers that I'm not allowed to share. I can tell you that they typically are able to produce at today's production output as much material they need in one month that they will use in the entire year. So their capacity is really amazing. And we just have not ramped up yet to meet that capacity. So as far as getting materials, it's not an issue. What we need is more contractors to help us install these roofs.

Host 14:30

Yeah, so going into that a little bit. How would a contractor get involved with Tesla specifically?

Ken Kelly 14:38

Yes, so there are a couple of ways. The first is I would encourage anyone to reach out to me, the best way is to email me ken@kellyroofing.com Because I can get you in touch directly with the people who are setting up certified installers. Or channel installers and also help you through the process. The process is somewhat lengthy, but not any different than if you were a certified contractor installing a low slope system or a metal system or shingle system, where you would need to meet certain criteria from the manufacturer in order to be able to offer their warranties and so forth. So for commercial installers, you

may be very familiar with an MDL or a new dollar warranty. And let's say for instance, you have a certification with your low slope manufacturer. Well, you probably had to get your crews certified in order to install that system. You're going to need to have project supervisors who understand all of the requirements on how that roof should be installed. You may have to do some engineering or design work so that you have the right deck to the right attachment method, the insulation vapor barriers and so forth so that the roof wood stands wind, hail, and whatever elements are unique to your region. Well, it's no different from tab for the Tesla solar roofs. They want to make sure that the installers that are installing these roofs are qualified have been trained properly, and know what they're doing when it comes to installing it. So here is a brief rundown on what to expect. If you want to be a Tesla certified installer. First of all, you would submit an application and after that application is reviewed and approved to start, they would set you up in the portal and you would begin taking their online LMS or learning management system classes. It's really a training manual done mostly by video, but there's also some cool interactive graphics and little quizzes and stuff after each session. So it's fun and it keeps it going. This the chapters are relatively short, so you don't have to worry about short attention spans especially people like myself, who are Type A personalities and would rather be out on a route to sit in front of a computer. The coolest thing is you can actually do it on a cell phone. So even when you're you know out waiting for materials to be delivered, you can actually take a lot of sessions that way. Once you're set up in the system, then you can also sign the key individuals within the organization that need to understand how they relate to that portion of the process. For instance, you're going to need to train your sales team to be able to sell this because there is another level of dynamics when it comes to communicating with customers. Customers. Typically are very well educated. They've done a lot of research online prior to reaching out to a roofing contractor to install the system. So they probably have really good questions and you're going to want to be able to answer those. So the thing that makes it unique to roofers is the electrical side. It was the thing that I feared the most. The truth is actually really easy. Tesla makes it so simple with the plug and play design. Once you understand kilowatts, inverters, gateways, you're good. It's really that simple. And with their online training in their in person training, they really take all the guesswork out of it. So no worries about that as a salesperson, you'll understand how to quote the jobs, how to talk and answer the questions that you need to. And you'll also be able to talk about return on investment and design the right size system for the client. So after you identify the salesperson you're going to want to identify a Program Manager. This is someone inside who knows all things Tesla, they're going to want to know the sales components, the login, the engineering, the permitting, the ordering, the provisioning, the loading, pretty much everything because you need one person to follow that through. And that one person is probably going to be the internal coordinator. That's going to assign the other roles to everybody. And then the last big piece of this puzzle is going to be your crew Foreman and your crew. So they're going to need to know how to install it and there's a two part learning for them. The first part is going to be an online training just like the other positions in the company. The second part is going to be hands on. Now Tesla has a number of training facilities around the country. There's probably one New York Post so that it's easy to get to. You're going to take a few days out of work, go to the Tesla center, and you're going to physically be installing this route including a lot of the electrical work as well. So that takes away that mystery. How many panels can I hook together per MCI? How many MC eyes per home run? How do I hook the home runs into the inverters and how does the inverter hook into the utility panel? All of which is actually really easy. There's just three simple rules once you have those rules memorize, the installation is a piece of cake. So let's talk about the process once you become a certified installer of actually doing a Tesla route. So let's say you've gone out you've sold your

first Tesla roof, and now you're getting ready to install it. This is the process first you're going to want to take your estimated design and you're going to want to get an engineer to design the electrical schematics so that you can submit those for a permit. Now in roofing in some areas of the country, it could relatively be the wild wild west there may not be licensure there may not be permitted. There may not be inspections. But when it comes to electrical no matter where you go in the country, there is a universal electrical code as part of ICC, and you're going to have some form of regulation that's going to want to look at the installation. So for them the inspectors to know what they're looking at the utility. It may not be a local jurisdiction, it could be the utility itself, that's going to inspect this, you're going to want some kind of schematics. The schematics are designed by engineers and all you do is give them the roof lay up approximately how much PV is going on each section of the roof. They do a one-line and three-line diagram, and you're able to submit that with your permit so that the inspector knows what they're looking at when the roof is installed. Once you have the permit in place, now it's time to place your order. So Tesla really does a great job by providing some tools to not only help price the room to help lay it out, but also to put together the order they call it the bomb generator bomb stands for Bill of Materials. Don't say it on airplane somebody may misconstrue what you're saying, but the bomb generator helps to break down the size of the roof and what parts and pieces you're going to need to install it that basically goes right into a purchase order and that purchase order gets submitted to Tesla so that you can purchase the materials. I can tell you there's been a little bit of insight here a little bit of insider knowledge. Tesla is going to move towards bulk pricing and bulk purchasing. And much like today if we have a bigger project, we can go to our manufacturers or to our suppliers. And we can ask for special pricing because it's a uniquely large project. If you were to buy more of the product and be able to inventory and store it in a warehouse, you're probably going to get a slightly better price than just purchasing one home individually at a time. And if anything, if it's not the price, the materials that are going to change, it is definitely going to impact your shipping costs. For instance, if it takes a quarter of a semi tractor trailer flatbed to do 135 Square roof. But yet, if I bought in bulk, I had four of those to fill up the truck. I'm going to get 25% off of the price of shipping because I contributed to all four jobs instead of just one. So something to consider. So let's fast forward real quick here and go through the rest of the status steps of the job because it gets really easy and repetitive because it's stuff that you're already doing now as a contractor. Once the material is ordered, you're going to want to bring it directly to your office and you're going to want to warehouse it. Why? Because it is electrical components. We don't want to get them wet. We don't want them to get wet. So we keep them in a dry storage until we're ready to use. Another thing to consider is job sites don't always have enough area to store all of the materials that you're going to use unlike shingles or metal or some of these other roof systems where we may have that material brought to the job site input right up on the roof for us everything we're going to need. It's not really practical for a Tesla solar roof to be rooftop loaded all at once. So our suggestion is to bring it out in two or three trips. So and keep it in a secure warehouse until you're ready for those parts and pieces. You will the way we do it is we have it split into three phases. We removed the old roof, put down a special class a fire rated underlayment, do all of the perimeter flashings and we call in for our drying inspection. Next we have the material delivered at least about a third to a half of it that we're going to need for the install and that would include all of the other perimeter flashings starter panels, and at least a panel or two or a mounting planer to have all of the panels that you would use to start installing the roof. So then once the driveway or the site starts to reduce in size of the material on the ground you can bring in the remaining items and not, you know be so jammed up that you're not going to be able to be efficient. Speaking of efficiency, what is the best size crew for the jobs? Well, from

playing with this over and over again and doing time studies. What we found is it's best on any home nor or project that is 30 square or larger to have three install crews of two people. So two person teams, three of them, plus at least one person on the job. So that is a seven maybe even an eight person crew to get the most efficiency out of this. We'd have one person on the ground that's bringing items to the ladder Vader one person on the roof that's running material to the different mounting plates, and then to keep those three teams fed once the roof is loaded and you are just about done installing, there's one part that I get a lot of questions on and I just want to throw it out there so that you understand how this is slightly different than a typical roof system. We are plugging together wires. The Tesla roof system is actually elevated above the roof about an inch and a half. So all the wires are underneath, clipped in together and there's good wire management system involved to where it's not just a rat's nest under there. It's actually well designed and also that inch and a half spacing allows for a vapor zone and that vapor zone helps to keep the panels cool so that they produce more electricity. Even in the hottest summer days. There's kind of like a method to their madness. You know, they're they have great engineers who have really figured a lot of cool things out on this system. But what we do is we try to get all of those wires to come to the top we run them along the ridge, and then we go into what we call a pass through where it actually goes through the roof. Deck eight sometimes at a stop and most of the time at the ridge line and then through the attic. It goes to wherever the meter box says those home runs will connect into an inverter and this is likely where you would use an electrician unless your company has an electrical license and you have electricians on staff your electrician would come in, they would take those home runs, they would connect them into the inverter and the inverter connect sorry, the inverter in converts the DC or direct current which is being generated on the roof to AC alternating current which is what's used inside the home. Once it's converted to AC now you can plug it into the breakers and you can decide either you're going to do the entire panel and have it all produced sort of backed up by electricity. Or you can create a sub panel or identify certain breakers that are going to be fed from the solar and some that are just going to be off the utility. There's some leeway there. And the last thing that we need to discuss is power walls. This is that battery backup system. So this is a third player that enters the game and is now changing the way the design is set up just slightly. The batteries need what they call a gateway or a controller because now you have a third source of electricity coming into power the building. You have the utility, you have the roof and now you have the battery. And this gateway is the controller that decides where that electricity is coming and what it's powering. So it's very simple. device. It just allows you to do what I was just talking about, decide whether it's going to be the whole house the entire panel, or it's going to be a portion of those panels, or portion of those breakers. For instance, if you're only going to put one power wall and you have a typical single family home, one power wall might not be enough to supply the entire home's energy needs throughout the entire night. But you can use your power wall as an emergency backup to another words, you know, after a storm or if I you know the utility gets knocked out for some reason I might not need an air conditioner. I might not need a hot water heater. I might not need my stove. But I want my microwave. I want lights right, those things I have to power in order for me to survive. So we would set those breakers into a sub panel and then power that sub panel with a battery and leave the rest on the grid knowing that if the grid knocks out at least I have the bare essentials that are being powered and it's enough for me to get through the night. The last thing that the gateway does and by the way there is one of these in the inverter as well is an automatic transfer switch cut off. And why is this important? Imagine for a moment we have a tornado that comes through hometown and you have the utility company that's going to send a lineman out to the street to put together and reassemble the power grid. They're going to put in new power

poles. They're going to pick the lines up off the road and they're going to rehang them on the power poles. Well, the utility knows that, hey, we've turned off the power to that grid. We don't have to worry about our utility getting electrocuted when they go to rehang these wires, but at the end of the street, there's someone with a solar roof and that solar roof is working because the sun is out. No linemen go to touch that line and they're electrocuted because the solar unit is pumping it back into the grid. The automatic transfer switch that caught up detects that the utility system is down and stops any electricity from back feeding into the grid so that we keep those electrical workers safe. So that completes the install. The last piece of this puzzle is going to be what we call the commissioning or provisioning. So we have three people that we need to talk to when it comes to turning on the electricity. If you have a local jurisdiction that needs to do inspections, they need to do their inspections and give you approval. Number two, Tesla is going to provide an app on your phone so that you can monitor and manipulate and change some of the settings on the solar roof. So we need to provision it with Tesla and connect your your system using an internet connection. The last is going to be the utility. Eventually the utility needs to come in and they need to bless the system and then you say okay, we've found that this is safe, and we can go ahead and turn this on and we've got the correct agreements and applications approved and you're good to go. And you don't want that's it. Next you got a happy customer. They love it. They're tinkering with it. They're talking to the neighbors and you're selling a bunch of these roofs because you've done all of those steps and they're happy customer.

Host 30:33

So glad you brought up tornadoes to charity just had a tornado in her city like two weeks ago. And then I took her to tornado watch last night. Thankfully they all missed us but funds Okay, so as you know roofing is different in every single state and some states get a lot of snow. Does solar roofing work in every type of climate or is it mainly just for the southern moreover states? Good question.

Ken Kelly 31:07

So the most popular country in the world that has the most amount of solar systems installed is Germany. And if you think of Germany, the majority of the country of Germany has a similar climate as San Francisco. It's cloudy, it's cold. Not necessarily a ton of snow, but they do get some and that's a great question. So does this work? Well, first of all, yes, it absolutely does. See, the material is black. And photovoltaic systems tend to produce a little bit of heat when they're working. So it actually does a really good job of melting snow and depending on your climate it typically is able to melt enough of it to where you're getting at least let's say the top two thirds of the room. still producing power, maybe not the bottom third because it might be covered with snow and you have some snow guards and so forth. Next, hail. There's a great video online that shows somebody using a hammer and hitting the tensile solar glass panel and then also doing the same thing to clay and concrete tile. And the Tesla solar roof actually has a higher tensile strength or brake strength than most of your tile products. that are out there today. And then the last thing so that that's a hail, for instance, and the last thing we need to be worried about is wind. So I happen to live in hurricane alley down here in Florida, right? I'm proud to say that the test of solar roof has passed the ASTM rating to bring it to 194 miles per hour and that is really just the top top notch it means it can be installed anywhere in the state regardless of the municipality regardless of the

1360 Rail Head Blvd. Naples, FL 34110 239-435-0014 office 239-435-0019 Fax CCC1325948

www.KellyRoofing.com – Mail@KellyRoofing.com

wind zone. And Florida has some of the most stringent codes anywhere in the world. So yes, definitely. This is it is weatherproof, if you will and it performs extremely well. There is a cool video that's out on the internet. It's not a roof that we installed. It's actually I think in the Midwest if I'm not mistaken, and it's a gentleman who went up on its roof after a hailstorm to see how the roof performed. And it was a it was a positive positive performance.

Host 33:17

I will definitely try and find that and I can put it in the show notes for listeners to look at because I think that'd be really cool. What does repairs on Tesla look like? You have to be certified in Tesla Ross to do the repairs or can anyone do repairs?

Ken Kelly 33:32

That's a good question. I have not heard one way or the other, how that's going to how that's going to be handled. My assumption would be in please. This is just Ken Kelly's assumption. This doesn't come from Tesla. My assumption would be since you'd have to be a certified installer to install the roofs. It's probably going to be one of those certified installers that would maintain or repair them if there's ever an issue. And I'm pretty certain Tesla would reserve the right to send their own employees out if need be. Right. So good question. I will ask about that and find out I'm pretty sure you have to be as certified Yes. Now speaking of maintaining, so let's say for instance you have an issue. Is this like a Christmas light string where one goes out they all go out? No, that's that is not the case. We actually do MCI is or microcurrent interrupters throughout the system. Specifically for that reason one it helps us troubleshoot it tells us where on the roof there could be a problem. And number two, if you ever had a panel malfunction where it was damaged, you don't have to worry about the whole roof system go down it wouldn't just be that isolated area that would have an issue. And the panels are purposely designed these tiles are designed to clip or snap in place. And we have a special tool that we can unlock the panel and then remove it, work underneath it and then either put a new one in or put that same one back in. It's actually pretty easy to work with.

Host 35:01

And then you know we've been talking about Tesla are there other solar voltaic I think is that you keep calling them products out there from other companies.

Ken Kelly 35:10

There are and there have been companies that have been working on this since probably about 2008 mainstream. Most of them are not quite as built in as Tesla has done. A lot of them are if they're if they're calling themselves built in photovoltaics, typically what they are is the rest of the roof is done one way let's call it shingle. And when you get to this panel section, there's a slight increase in rise. The

section itself is put together in larger panels. And is waterproof and then it ties into the surrounding roof and is kind of isolated in and of itself. It is still aesthetically noticeable. Whereas the Tesla solar roof it's almost completely indistinguishable, which panels are producing power on which ones are the rest of the roof. So yes, GF CertainTeed Dow had a product for a while there was manufacturers in the tile roofing industry that were working on it. I know Eagle had a product for a little while there's a number of companies that have are working on these systems. But I don't know that any of them are as far along as Tesla is right now. And the irony is Tesla was kind of a late comer to the game. But they're the five rules of innovation that Elon uses has really helped them to propel past some of the other players in the market. And if you're curious, I'll tell you the five rules of innovation. Because Elon uses this to quickly develop rocket ships but at the same time he uses it to develop roofs to number one. We're going to question the regulation or challenge the regulation and backup all of our testing with physics, you're going to be able to prove why the regulation is not necessary. And I'm going to throw one thing out there and I'm just going to see what the audience says about this. So please comment on this one. Would you ever consider cutting off a boot stack or a plumbing stack and turning it into a drain? That is challenging the regulation? Why do we need oops why do we why do we need I know why we need them so that we get adequate water flow and we don't create a vacuum right? But what's wrong with turning them into drains and having them not stick up through the roof? Okay, I'm gonna throw that at you. So that's an example of challenging the regulation number to delete a part or process. So we want to simplify the system as much as possible by taking out components or taking out steps and we know we've gone far enough when we have to add something back. Number three we are going to optimize we're going to optimize for delivery for production for installation and so forth. Number four accelerate. So we're going to install more and more and more of them. Elon likes to use wrapping round numbers like we want to do 100 of something or 1000 of something and only when we get to that level can we truly stress the system and know that we have a really good product that we can go mainstream with? And then the last thing is going to be automate. How can we do this without human intervention? How can we do it so that it's much faster and we can automate the process and just with a mouse one after the other so those are the five rules of innovation.

Host 38:25

Question just curious. Have you met Elon Musk? That was across my mind.

Ken Kelly 38:31

I've not met him in person yet. Okay. We get to see him on conference calls occasionally. Here's an insight. Here's some insight on the line. It is absolutely amazing. How detailed in depth. His product knowledge is about everything he's involved in. You would think as a roofer who's been doing this for almost 30 years, when I go in to have a conversation about roofing. I could probably hold my own. Elon knows probably as much if not more than I do about the roofing space and he's only been in it a couple years. He is an absolute student and a genius when it comes to be able to putting that putting everything in an engineering perspective and understanding the physics behind it.

Host 39:19

All right, I got one last question. Are solar roofs covered by insurances? If something happens, like a tornado or tree falls on your roof or something like is it covered by insurance or no? Yes.

Ken Kelly 39:33

So your typical homeowners insurance would cover this just as it would any other roof. I would say there's probably two things you need to be concerned about. Number one, if you're upgrading from let's say an asphalt shingle roof to a Tesla roof that is a premium upgrade. So the value of your home may have changed. I would suggest you contact your insurance company get a new valuation on the home and make sure that it covers that new roof because God forbid you have a complete total loss and the home was completely destroyed needed to be rebuilt. You want to make sure you have a coverage that's high enough to include that premium roof when they go back. Number two, there are some utilities and municipalities who are requiring additional insurance coverage for any solar product that's going on the roof, whether it's solar panels, or the Tesla solar roof. We have been working with them. And basically all it usually does is it increases from the bare minimum of let's say, for instance \$100,000 in liability, it might increase that to 300 or 500,000. The difference at the end of the year is probably pennies, you know, maybe two \$3 a month, \$10 a month most. But yes, there's some companies that are requiring that because there's more risk involved because it is a premium system. But other than that, nope, no issues. We haven't had a single customer tell us that their insurance company had an issue with their Tesla solar roof. And as a matter of fact, you know, there's a concern that they could, they could be fire prone. Well, Tesla took it a step further and said you know what, we are not going to just simply put on probably one of the best roofs ever invented, we're going to make sure that we don't have an issue providing there would be one by putting on a Class A fire rated underlayment, which is adhered directly to the deck and can't go anywhere. Should there be an issue just for that extra level of protection.

Host

Awesome. So I think that is all the questions we have unless you have anything else Charity. I can't think of anything else. Okay. This has been such a great conversation. Thank you so much for joining us, Ken.

Ken

You're welcome. Please feel free to reach out to me. As a matter of fact, I get so many requests. For people wanting to sign up. I'm probably going to set up a web page with some frequently asked questions. Just so I can refer you there and you can get the process started and some links and some videos and stuff. But you can for now email me Ken at Kelly roofing calm, and I would definitely go to our website, [www dot Kelley roofing.com](http://www.KelleyRoofing.com). You'll see that Tesla is predominantly displayed it has its own section and they're all of the stuff that we've been talking about pretty much is there as well. So it's a

good little place to kind of see how we go about marketing and selling it and the information that our customers want to know.

Host

You gave us so much information and we're so glad to have you. And for our listeners we will be back next week. That brings us to the end of today's episode. If you've been loving what you're hearing make sure to press the subscribe button so you get notified anytime we post a new episode. Episode come out on Wednesdays please share this podcast with a friend rate us or leave a review. All those help us to reach more listeners so that everybody can join us and learn more about the roofing industry as we go along on this journey. If you don't already follow us on Facebook, LinkedIn, Instagram or YouTube, all of our information in the show notes below. Feel free to contact us with any questions or ideas you have. And we'd love for us to talk about on the podcast. I hope you have a great day and we will see you next time.