



TO RESTORE OR REPLACE A ROOF?



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Heidi J. Ellsworth:

Hello everyone and welcome to another Roofer's Coffee Shop Lunch and Learn. This is a very special Lunch and Learn, because we're doing it live from Western States. And I am here with Johnny Walker. Hello, Johnny.

Johnny Walker:

Hello, hello.

Heidi J. Ellsworth:

Hello.

Johnny Walker:

Good to see you again.

Heidi J. Ellsworth:

I am so excited for this Lunch and Learn. I have to tell you, the buzz everywhere is about roof restoration. Everybody's talking about it, contractors are adopting it. But there's a lot of things that you need to know, in that front office, in the sales, estimating production to make sure that you have a safe and quality performing roof restoration.

Johnny Walker:

Absolutely.

Heidi J. Ellsworth:

So that's what we're going to talk about today, right?

Johnny Walker:

Yep, absolutely.

Heidi J. Ellsworth:

Okay. So, we have three learning objectives today. One, what are your roof restoration options? Two, how to decide with a roof evaluation. And three, common restoration practices.

Johnny Walker:

My name is Johnny Walker. I never needed a nickname, that is my name. I've worked for ICP APOC, the roofing and waterproofing division. I've been with the company now, oh, going on 13, 14 years, in that range somewhere. I've been in roofing in one form or another for the last 25 years. Think I'm giving a little bit away about my age there.

Heidi J. Ellsworth:

Yeah, but that's ... I'm right there with you.

Johnny Walker:

So, I've done everything in roofing, from being the roofer, working through distribution, working as an independent sales rep, working as a manufacturer's rep, being a district sales manager, and now a national technical manager for APOC.

Heidi J. Ellsworth:

I love it.

Johnny Walker:

We call the "4 R's of Restoration" so we say "Repair" "Restore" "Recover" and then of course "Reroof". So when we talk about repair, really that's your quickest and your easiest. You're on, you're off the roof. That's your bandaid. So you're going in, you're fixing a quick problem, a leak on the roof, you get it done and then you're off. The con to that would be that that is just really, in a lot of cases, a temporary.

Heidi J. Ellsworth:

Right.

Johnny Walker:

You're not doing the entire roof, you're not focusing on everything, just that particular problem. Then you get into the restoration. On a restoration, we're taking that good roof and providing a system over the top of it. We're going to focus on all of the details within that roof, we're going to address every single thing on that roof. So your scuppers, your drains, your curbs, your base flashings, penetrations. All of that we're going to address, along with applying a great reflective protective coating over the top of it. The next thing is your recover. This is where you're taking a roof that's at the end of its life and putting another roof over the top of it.

Heidi J. Ellsworth:

Top, right.

Johnny Walker:

Sometime that's not a great option because there might already be two layers of roof on it, right? And those restorations have, or I should say that recover, have their own issues. Multiple penetrations, additional holes in the roof. Another layer of roofing, that eventually is going to have to be torn off and go to the landfill. So it has its own-

Heidi J. Ellsworth:

And weight, right?

Johnny Walker:

... pros and cons. Yeah, adding the weight to it.

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

And then additionally, each one of those recovers, they have usually a layer of recovery border insulation. And then, as I like to say, there's never been a roof that's ever been installed that didn't leak.

Heidi J. Ellsworth:

Right.

Johnny Walker:

So when that roof leaks, where does that water go? Well, in a lot of your recovers, that water has a chance to flow anywhere it wants to, and really adding a lot of weight. And then of course, when you get into your northern climates-

Heidi J. Ellsworth:

Right.

Johnny Walker:

... that water has a chance to freeze and potentially cause damage, maybe even a little bit of uplift and break some fasteners.

Heidi J. Ellsworth:

Right. Makes sense.

Johnny Walker:

The fourth option is the reroof. Now this is obviously the most expensive, but sometimes it's absolutely what you have to do. If the roof is in really poor shape, potentially maybe some rotten deck, that type of thing. You don't have a choice, you're going to have to take it off. The pro is you're getting a brand new roof.

Heidi J. Ellsworth:

Right.

Johnny Walker:

And you're getting all of the warranties and all of the new codes and everything, when you do that. The downside is that it's very expensive, and not really environmentally friendly. You've got all of that material going right into the dumpsters and into the landfills. And then of course, I like to say, there is a fifth one, which is "refrain". You just don't do anything.

Heidi J. Ellsworth:

You just don't do anything.

Johnny Walker:

You know what I mean? You move away from it. But maybe due to cost, budget issues and things like that. If you're going to get into a restoration of any kind, whether that's a repair, restoration or recovery, you really have to evaluate that roof. You need to take a look at the roof deck. Is there any deck deflection? You need to do a moisture survey. We want to evaluate all those types of things. We want to do core cuts, determining what the layers of roof are.

Heidi J. Ellsworth:

Right.

Johnny Walker:

Because that will also determine that, when you have a leak, how does the water flow?

Heidi J. Ellsworth:

Yes, yeah.

Johnny Walker:

If you've got a steel deck, well, then water can travel very easily. Versus a structural concrete deck, that water will sit there. The concrete itself is waterproof, so you're adding that water-

Heidi J. Ellsworth:

Until you get a little freeze and thaw.

Johnny Walker:

Yeah. Well, not only that. We recently, not recently, but a couple years ago, we had the collapse in Miami.

Heidi J. Ellsworth:

Oh, right.

Johnny Walker:

And that was salt water, basically getting in and rotting out the rebar. So if you've got that type of system, you really have to evaluate whether this is a reroof, a recover, a restoration, or just a simple repair.

Heidi J. Ellsworth:

Repair.

Johnny Walker:

And that's where that evaluation comes in.

Heidi J. Ellsworth:

Yeah. So let's talk about that, that's our second learning objective. How do you decide which of those roof restoration options you do? With roof evaluation. So the first step, "assess" right?

Johnny Walker:

Yeah. So when we look at a roof, we want to walk the roof. We're going to take pictures, we're going to look at every corner of the roof. We're going to look for ponding water, those dirty spots.

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

Even if the roof is dry, we all know that the dirt all flows to one spot. We're going to look for that. We're going to look for that deck deflection. Is there any valley in the roof? Any bow? Deck deflection could be simple. Insulation that's been crushed.

Heidi J. Ellsworth:

Mm-hmm.

Johnny Walker:

Maybe equipment was set on it, or it could be a rotten steel deck. Additionally, if there's deck deflection, our contractors need to be very safe and cautious walking that area, and make sure that they're safe when they're doing it. Infrared is a great simple tool, that a lot of contractors are starting to use on their own. And basically you go up and you're looking for anomalies, those temperature anomalies. As the sun heats the roof up all day, those areas that have moisture are going to retain that temperature longer. So you're looking for those hot spots.

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

That's going to identify. Now that's not a guarantee that that's a wet spot. They'll go up and do the core. They're going to core those areas and actually determine, is that section dry or is it wet? It could be an anomaly for some other reason. Air conditioning infiltration, that type of thing-

Heidi J. Ellsworth:

Right.

Johnny Walker:

... causing an anomaly. So those are the type of things that we're going to do to really evaluate that roof. So all of those testings, the core cuts. Potentially, if you're going to do a recover, there might be some wind uplift testings that needs to be done. All those types of things you're going to want to do. And then the last one, like I said, we were talking about maybe if you have deck deflection, you've got water penetration or infiltration that's been there for a long time. Getting a structural engineer out there to

look at it and determine, "Hey, do we really need to tear this whole roof off?" And evaluate the structural components of it, to make sure it's safe to do anything over it.

Heidi J. Ellsworth:

Okay. Well, and I would think too, when you think about ... There is risk, if you're going to tear the whole thing off. If you're going to go with the coatings and you're going to do a whole new system over that, you really need to know what's underneath there, to make sure you have a strong roof going forward. So the cost of a structural engineer makes sense when there's doubt.

Johnny Walker:

Yeah. We talk about that all the time when we talk about restorations, the evaluation. A lot of times the building owner looks at that and goes, "Well, that's just an extra cost." But if you're going to spend 40,000 or even upwards to 200,000 on a complete reroof, maybe 40,000 on a restoration. The couple thousand dollars that you spend to find out what you need to do, and find out if you can do it safely-

Heidi J. Ellsworth:

Right.

Johnny Walker:

... is minimal, that's really minimal.

Heidi J. Ellsworth:

Now you also, and we had one note down here, "peel adhesion test".

Johnny Walker:

Yeah. So a peel adhesion test, basically what we're doing there is trying to identify if the restoration product you're going to put over the top, so if the coating, whether it be acrylics or silicones or urethanes, whatever system you're putting over the top, will it bond to the existing system? Most coatings will bond really well to a lot of your asphalt systems. But if there's any doubt, if you're talking about maybe a metal restoration and you think it's a Galvalume or a Kynar, you definitely want to do an adhesion-

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

... test to find out, "Do I need the use of an additional primer?" But when we do that for the adhesion, we'll usually do one side-by-side, one without a primer and one with. So you can kill two birds with one stone, not have to make a second trip. Single plies is another one. Manufacturer's a single ply, they're always trying to better their formulas.

Heidi J. Ellsworth:

Right.

Johnny Walker:

Well, you got to remember that it is a formula. So as the formulas change, the adhesions might change.

Heidi J. Ellsworth:

Mm-hmm.

Johnny Walker:

So even though you were successful on the last TPO restoration you did, you really want to check every one because it may be different from manufacturer to manufacturer, and formula to formula, batch to batch.

Heidi J. Ellsworth:

Right. They're not all the same.

Johnny Walker:

Yeah.

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

And National Roofing Code, or I should say Miami-Dade, we're really looking for two pounds per inch width, on a standard. So it's not a lot that you're looking for, to make sure that you can meet that wind uplift requirement. But yeah, so two pounds per inch width. So on a two inch strip, four pounds.

Heidi J. Ellsworth:

Pounds, okay. We want to analyze the results, right?

Johnny Walker:

Mm-hmm.

Heidi J. Ellsworth:

And so as you're looking through that, what are some of the tips on looking at that? Why restore? Is it a fit? How does that kind of work in?

Johnny Walker:

Yeah, so as I said, we're looking at, when we analyzing the data, the moisture content. If 20-25% of the roof is wet, then our recommendation is going to be a tear off. Now that doesn't mean that the contractor can't do a quick bandaid.

Heidi J. Ellsworth:

Right.

Johnny Walker:

A quick repair to try to stop the leak, prevent additional infiltration, while they go through that process of bid to get the roof torn off. Analyzing the deck deflation, what did we find? Making sure that you're going in the building and looking at the underside of the deck if you have a metal deck.

Heidi J. Ellsworth:

Right.

Johnny Walker:

Is there a lot of rust? Looking at the history of the roof. A lot of times when we go on these, we can talk to the building owner. And they'll provide you, if you ask, with all of the data, all of the history, the repairs they've had done. They may even have multiple different times that they've done surveys and evaluations. You can use all of that to make the right decision. And then of course, what's the expectation of the building owner?

Heidi J. Ellsworth:

Right.

Johnny Walker:

How long do they need this system to last? Are they going to be doing a complete remodel? Are they adding an addition? All of that's really going to play into what's their expectation. Will that repair, restoration, recover or reroof fit that need? We want to be proactive in getting all the data, so that we can give them the best possible system, give them the best longevity that's going to work for them.

Heidi J. Ellsworth:

For our third learning objective, common restoration practices. Let's work through some of those systems.

Johnny Walker:

Sure.

Heidi J. Ellsworth:

So maybe starting out with metal?

Johnny Walker:

With metal roof, there's some common things that we look at when we talk about making the roof watertight. We always talk about the "4 P Process" which is prep it, let's just get it clean. Prime it, for one of those three reasons that we talked about.

Heidi J. Ellsworth:

Right.

Johnny Walker:

Patch it. And when we're talking about patching, that's where we're really talking about making the roof watertight. And on a metal roof, for example, it's the seams.

Heidi J. Ellsworth:

Mm-hmm.

Johnny Walker:

It's the fasteners, it's the penetrations. Rarely do we see that the metal's completely rotten out. If it is, it has to be replaced.

Heidi J. Ellsworth:

Right.

Johnny Walker:

But we're going to focus on all of those screw heads that are going through, all those fasteners. We're going to focus on those horizontal and vertical seams. And then of course, we're going to look at the overall condition of the entire roof.

Heidi J. Ellsworth:

Everything. Now, what about single plies?

Johnny Walker:

The cool thing with single ply is that everything is a welded seam, so we're going to treat everything the same way. But we're really going to focus on those areas that we know are problematic, like those inside and outside corners, and penetrations that have been cut through the roof.

Heidi J. Ellsworth:

And let's talk about BUR and modified, because those are a lot of different systems there.

Johnny Walker:

So within BUR and mod bits, we generally class all asphalt roofs in that category.

Heidi J. Ellsworth:

Okay.

Johnny Walker:

So it can be a built-up roof with gravel, a smooth, a granulated, all of that classes in, because the restorations, with the exception of the prep, right? That's going to be different. But the actual restoration system we put over the top is the same. So in that, that's where we talk about base flashing, scuppers, drains, curbs, penetrations.

Heidi J. Ellsworth:

Yes.

Johnny Walker:

And field seams as well. We want to look at the waterways. Anytime you get a path of water, you're going to look at water flow because you can get hydraulic pressure that, if you have a minor leak, can actually force water in. So we're going to address all of those areas as well in the [inaudible 00:12:29] restoration.

Heidi J. Ellsworth:

Now what about the rocks and some of the ...

Johnny Walker:

Mm-hmm.

Heidi J. Ellsworth:

Yeah, how does that work?

Johnny Walker:

Yeah, so there's a couple different ways that you can do a built-up with embedded rock. The best way is to remove all the rock. There's great companies out there that you can use and get you down to a smooth system. Generally over that, you can do a full polyester system, if the roof, again, you have to evaluate for moisture.

Heidi J. Ellsworth:

Right.

Johnny Walker:

But we can do a full polyester system over the top of that, and provide upwards of a 20 year warranty.

Heidi J. Ellsworth:

Nice.

Johnny Walker:

And by removing the rock, you're actually making it easier to determine if there are leaks. And if you find a damaged area, to affect the repair, you're actually reducing the weight load on the roof as well.

Heidi J. Ellsworth:

Yeah. Let's just finish up with the four steps of restoration, just to make sure everybody has them. The 4 P's.

Johnny Walker:

Yeah, so the 4 P's, the prep, prime, patch, and protect. So in the prep phase, what we're really doing is we're getting the roof clean and dry. We're moving debris, we're taking trash off the roof. And of course, the whole time we're doing this prep phase, we're looking for damage.

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

Where we need to do something additional to it. So that's what we're doing. Additionally in the prep phase, if maybe you're spraying product, your plan is to spray a coating down. You're going to be blocking off air intakes.

Heidi J. Ellsworth:

Oh, yeah.

Johnny Walker:

Maybe taping some areas off, putting plastic over equipment, that type of thing, so that you don't get over spray. Of course, making sure that vehicles are moved.

Heidi J. Ellsworth:

Mm-hmm.

Johnny Walker:

Hey, this part of the parking lot is now blocked off because the wind's going to be going that way.

Heidi J. Ellsworth:

Right.

Johnny Walker:

So you want to take that extra precaution. All of that is in your prep phase. In the prime, what we're doing is we're looking at that roof and determining, if it's a metal roof, does it need a rust-inhibiting primer?

Heidi J. Ellsworth:

Okay.

Johnny Walker:

Is there any rust on the roof at all? We need to properly treat those areas. So for a metal roof, we're going to prime for rust inhibition. If it's an asphaltic roof, where we're going to put a silicone coating on it, where we want to make sure that the silicone stays nice and bright white and reflective for the long term, then you're going to want to use a bleed-blocking primer. And of course, the third reason to prime is for adhesion, with the single plies on metal. One of the things, Galvalume-

Heidi J. Ellsworth:

Okay.

Johnny Walker:

... is another one that's very hard to adhere to. So you want to make sure that whatever coating you're putting over the top has a great bond. Kynar surfaces. Kynar is in the same family as Teflon.

Heidi J. Ellsworth:

Oh, okay. Yeah.

Johnny Walker:

So if you think about that being on a roof, so you have a Kynar-painted roof, you want to make sure that you bond well. So we're going to do those adhesion tests. So that's in the prime phase. In the patch phase, this is important because all too often, coatings are sold as being miracles in a bucket. You know what I mean?

Heidi J. Ellsworth:

Yeah.

Johnny Walker:

So I like to say that they're oversold and underspecified, meaning that, "Hey, I've got a miracle and this is all you need to do and it's going to make your roof watertight for 20 years." Well, that's just not the reality. Reality is you have to go through this process. Making sure that you've got it properly prepped, properly primed, and then properly patched. You've done all of those areas, what we call "picture frame" right? You've stripped your seams, you've gone around your base flashings, you've addressed all your penetrations. And now what you're going to do is provide the last phase, which is the protection. This is your reflective protective coating. Doesn't just protect the repairs that you just did, right? That patchwork. It protects the overall roof.

Heidi J. Ellsworth:

Okay.

Johnny Walker:

When you think about thermal expansion and contraction, right?

Heidi J. Ellsworth:

Mm-hmm.

Johnny Walker:

If you've got a nice bright white repair and you don't do anything with the rest of the roof, well, they're going to expand differently.

Heidi J. Ellsworth:

Right.

Johnny Walker:

So those repairs that have some long term ability, now may fail in the short term because of the different temperature ranges. So we put a overall restoration over the whole roof, so that everything-

Heidi J. Ellsworth:

Is the same.

Johnny Walker:

... everything expands and contracts at the same rate, and ages at the same rate.

Heidi J. Ellsworth:

Yeah. Wow. Well, Johnny, thank you. I think this is amazing.

Johnny Walker:

Thank you.

Heidi J. Ellsworth:

Thank you for doing this. This is so fun, doing this live right here.

Johnny Walker:

I'm excited to be here.

Heidi J. Ellsworth:

I know.

Johnny Walker:

What a great show. This is actually my first trip to Western States.

Heidi J. Ellsworth:

Really?

Johnny Walker:

So-

Heidi J. Ellsworth:

Wow, okay.

Johnny Walker:

Yeah. So I'm excited to be here, excited to be with you.

Heidi J. Ellsworth:

So you're in newbie at Western States?

Johnny Walker:

A newbie to Western. Not any of the other shows, just a newbie to Western, yeah. Yeah, unfortunately COVID took one of our long term friends and coworkers, my brother Dan White. So I'm going to make a shout out to him.

Heidi J. Ellsworth:

Yes, yes, to Dan.

Johnny Walker:

So when COVID took him, I stepped up, and he always handled the West. And so, hi everybody, now I'm here in the West. And God bless Dan. And I'm just glad to be here with everybody.

Heidi J. Ellsworth:

I'm so glad to have you here.

Johnny Walker:

Thank you.

Heidi J. Ellsworth:

Western States, we're proud of our home turf here. So thank you. Thank you all for listening. I tell you what, talk about learning exactly what you need to know when those phone calls come into the office, when you're estimating, when you're doing sales, all the way through. I hope the purchasing agents out there right now are watching this, because this is good for everyone. So be sure to download your learning objectives, your discussion sheet, go through it. Be sure to take a picture while you're watching this, because one of you could be getting a free lunch from Roofer's Coffee Shop.

Johnny Walker:

All right.

Heidi J. Ellsworth:

I know. We like to do that.

Johnny Walker:

Love it.

Heidi J. Ellsworth:

We like to send fun stuff out. So thank you again, for being on this Lunch and Learn on roof restoration, and we'll see you again next month with another one.

Johnny Walker:

Great. Thank you, Heidi.

Heidi J. Ellsworth:

Thank you, Johnny.