Reduce Reduce Reduce

Andy: We all know the saying reduce, reuse, recycle when it comes to environmental concerns. But when it comes to household humidity it's all about reduce, reduce, reduce; this week on Non Toxic Environments.

So it is the dog days of summer here, early August here in Wisconsin. Early August in Wisconsin is all about heat and humidity and it is the same throughout most of the country, actually, heat and humidity. We all know that humidity can cause some serious problems in the house and today I just wanted to talk about some of those areas just to give you some pointers, some tips and tricks of how to take care of that. Once again, this is Andy Pace with Non Toxic Environments. Thank you so much for joining us again this week. I am by myself today. Hopefully, Jay will be back with us next week.

Reduce, reduce, reduce this is the mantra that I've been using with my clients quite often this year. I think that every year that I'm involved with healthy home diagnosis, and consulting, and remodeling, and so forth, I'm finding more and more reasons why the elevated humidity in the home can cause serious problems for us. Probably the biggest why we know is mold. Elevated humidity or moisture in the home can lead to a mold problem. Mold needs only a few things to proliferate in the house and one of that being high level of moisture and the other being food source and they like dark places.

If the house has a higher than 50% relative humidity for an extended period of time, if there are areas that are prone to mold growth this is the time that this can happen. Whenever we're involved in projects and we're trying to remediate problems the first thing we'll talk about is lowering the humidity in the home. Now, some houses have basements, others have crawl spaces, others are slab on grade and so there are different methods for reducing the humidity depending on which configuration you have.

Quite honestly, it's really the same basis, either dehumidification through a piece of equipment that's designed to condense the air and take the moisture out of it, and one is a whole house air conditioning system which also dehumidifies; the second being a free standing dehumidifier. I will definitely be having show notes for this episode coming up in the next couple of days

because I'm going to be putting some links to products that I know, that I trust, that we've used before, that work really well for our clients and I want to make sure you have access to those so look for those show notes coming out probably some time on Tuesday when this episode is released. So whole house de-humidification, I'll say that slowly.

Here in Wisconsin in wintertime we have another problem which is it's so dry that a lot of folks here have whole house humidification products, otherwise known as an April Air System, one of the brands that's very well known. In the summertime it's all about getting rid of that humidity. Mold is the number one problem that can occur with high humidity, that's the number one, I would say, scary problem that you can have with high humidity.

The second scary problem, not as scary as mold but not as destructive but still very problematic, is the release of chemical fumes. Now, this has come to my attention several times in the last few weeks. Now that we're in those dog days of summer here and it's hot and humid, people complain about chemical fumes that they didn't have before. Matter of fact, I just had a consulting client who said that they had tested a home that they bought last fall. They tested it, it was perfectly acceptable to them, absolutely no problems in the home, and they are just now all these months moving into the house and now they're experiencing chemical out gassing issues.

Nothings been done on the house, okay? Nothing's been done to the house, the only difference is the time of year. Now this doesn't happen often but it happens enough to say that it's a problem. High humidity can elevate the amount of chemical off gassing a couple of ways. First of all, heat and humidity can excite chemicals, make them more active, make them become more airborne. Second thing is, as humidity is an emulsifier, that means that as it is evaporating off the surface it's also carrying with it slight chemical fumes from the surface that it came from.

We had another situation recently where I had tested, I've done the FRAT test, we've talked about that, the Formaldehyde Release Attenuation Test. I had tested this client's home a couple of months ago and found that the carpet had an elevated amount of formaldehyde coming off of it, somewhere in the neighborhood of 450 parts per billion. I tested it again not a couple of weeks later and found that the out-gassing was less than half. What changed in that house?

Well, they closed up the windows, turned on the air conditioning, put their dehumidification system on in the basement, and that made the difference. That was it, that was it. There was no chemical treatment done to the carpet. You may or may not know AFM Safecoat, a product line that we talk about quite often. They have a product that is a treatment for carpet. It actually cleans out and seals up the carpets of that probably 80-90% of the off gassing and mostly the formaldehyde gets sealed up because of this seal system. This client didn't do that. They just closed up the windows and turned on the air conditioning, and turned on their dehumidifier, that's it.

Reducing the amount of moisture in the house, reducing the amount of moisture in the carpet vastly reduced the amount of formaldehyde coming off of that surface, thus, making it a much healthier space to live in. Reducing the humidity in the home can eliminate a lot of problems from specific surfaces. These are surfaces that absorb humidity, absorb moisture out of the air, and then wreak havoc on us in other ways.

What other systems or what other situations would there be? Wood. Wood's a great example. With high humidity in the house you may have a really elevated smell of wood in the house coming from the cabinetry, from the wood floors, even from the wood studs behind the drywall. We've got a lot of people calling these days saying that they can smell the pine terpenes coming off of the wood framing of the house. That is, honestly, a problem right now because of the high humidity.

Now humidity or high humidity can cause other issues in the house with wood. Particularly, this time of the year we get a lot of phone calls from folks that are complaining that the wood floors that they installed in the wintertime are now starting to curl or even buckle and they don't know why, actually. Come to find out that the humidity level in the house is so high that it's causing the wood to start to move. Remember, wood is hydroscopic. Wood is a sponge, it absorbs the moisture out of the air. As it absorbs into the wood, the wood swells. If the wood can't go anywhere, if the wood is nailed down or locked together with a click and lock system, if it can't actually grow it's going to grow within itself which is the swelling of the wood. That can cause buckling, it can cause permanent damage to the wood. It is reversible to a certain point so you want to catch it in time.

We've talked about mold being a problem with high humidity and we've talked about chemical fumes being a problem with high humidity. We've talked about wood itself being problematic because of the off gassing of the pine, because of the swelling of the wood causing buckling. You can get interior doors, windows, cabinetry starting to stick a little bit because of the swelling of the wood ever so slightly. That swelling can cause opening and closing issues with doors and windows.

What's the other thing that we have a problem with high humidity? Well, this is the number one time of the year for clients calling up and saying, "I was using X, Y, Z brand of paint," or, "I was using Safecoat paint and I painted a month ago and you know what? I can still smell that paint in the house. What's going on?" Folks, there's nothing going on with the paint itself. What's happening is the paint is not fully cured. Now we've talked about this in previous episodes of Non Toxic Environments that paint can take up to two weeks to reach a full cure but that's in a perfect situation. That is, 70 degrees and 50% relative humidity.

If the relative humidity in the house gets above 50%, if the moisture content of the surface that you're painting gets too high, what happens is it prolongs the curing process. Think of it this way. Close your eyes and imagine what your room looks like when it's really humid inside. Think of that moisture as being like fog in the room and you painted your room with one coat of primer and two coats of paint.

If you wait the proper amount of time in between coats, which is usually at least two to four hours and that's the only time you've waited, the problem is, is that there's still too much moisture left in that paint so as you apply the primer coat and that evaporation comes off the paint and tries to evaporate into the ambient air but that fog is in there, that humidity is in there, there's nowhere for the moisture to go so it stays in the coating longer. You'll find that the paint stays sticky longer from coat to coat even after your final coat.

This time of the year it's imperative that you allow ample time between coats. That is, from the primer to the paint, and then from the first coat to the second coat of paint. Instead of giving it two to four hours, give it four to eight hours, maybe even give it overnight. What you want to do is apply a coat, wait let's say a minimum of four hours, and then touch it, see if it feels sticky

or dry. Use your sense of, your tactile senses to decide if it's ready for the next coat. Chances are, if it's sticky and there's too much moisture in there, if you put another coat over the top of that it's going to cause the paint to prolong its cure by weeks to months.

With a prolonged cure what you get is paint that not only stays sticky for a longer period of time, it can also release odors from the paint and from the surface below for a very long period of time. It's not uncommon to have that paint smell in the house and in the sticky months of the year for a month or longer because of this situation with the too high humidity. Matter of fact, I've had situations before that that smells lingers for six months or longer. I don't want to scare you and say that this is going to occur but with high humidity runs the risk of these odors lingering.

Now, if you're using a Safecoat product a good thing to know is that there's no toxic or hazardous ingredients in the products so while that lingering odor may be annoying there's nothing dangerous about it. Now, this is to say that you've tested the Safecoat product, you know you're okay with it. We all know of chemical sensitivity. There's a situation where five out of 100 people can actually have a reaction to Safecoat. There's nothing up there in the world that's safe for everybody. Let's just put that out there that you've already tested this so if that smell is lingering it's like the idea that maybe a few days ago your friend cooked fish in the house and you were invited over for dinner today but their house still smells like fish. Doesn't mean it's bad, doesn't mean it's dangerous, it's basically just annoying. That's similar to a paint issue.

Now what if ... We'll just take this another step further. What if you painted your house and six months later the surface is still sticky and it's still releasing an odor. Well, after six months ... I'm a big believer that time heals all wounds and sometimes you've got to just let it run its course. We've had situations before where that stickiness has just been problematic because of furniture or clothing rubbing up against the paint. Realize that in today's day and age without the use of VOCs in paint and for as bad as some VOCs are, these volatile organic compounds, they do actually do some pretty good things I paint in that they allow the paint to dry out quicker and harder.

Without the use of VOCs, where most paint companies still use other solvents, Safecoat does not so that paint could stay sticky a little bit longer in a high humidity. If it's becoming problematic, one of the old fashioned tricks that we use works really well. Either if you have rubbing alcohol in the house, isopropyl alcohol, or if you go out to the store and buy a bottle of the cheapest vodka you can find. Wet a rag or a sponge and ring it out and lightly wipe the surface of the painted surface. As the alcohol that you wipe on evaporates it will also pull with it a lot of the moisture that's locked in that coat and you'll get the paint to cure up on that surface a lot quicker.

That's one tip. Another tip is introduce dehumidification into that very room where you're having problem. The third thing is, get some fans. Paint needs air movement to cure. It doesn't need fresh air, it needs air movement so take a fan and direct it right at the wall so the air actually blows right on the wall. That will help to wick away more of the moisture. Another idea to remember is that if you open up the windows to try to get fresh air in the room to help get rid of some of those odors, it could actually be counter-productive. You might be introducing more moisture which eventually will just cause the paint to take longer and longer to cure so it really is counter productive.

Let us recap here, problems associated with high humidity in the home: mold, chemical off gassing, and then problems with wood furniture, problems with the woodwork in the home releasing odors. Then finally, it's the problem with paint not curing fast enough, staying sticky, and having elevated aromas coming from the paint because of the moisture still trying to come out. Back to the start here folks, it's all about reduction, it's all about reduce, reduce, reduce. I'm a firm believer of closing up the windows and turning up the air conditioning. That is going to be far more effective than opening up the windows and hoping that fresh air is going to solve these problems because it really won't.

Now, when you close up the windows and turn on the air conditioning I am going to hope that you have a good whole house air purification system. If you don't, follow the link on these show notes. They'll be a link to a system called an RS4. They'll be a link to the Austin Air products. These are the two absolute best systems we've ever seen and fully endorse them. GDC, Green Design Center, even has these on their website. I will be putting links in the show notes to

whole house dehumidification systems to garage, basement, and crawlspace ventilation systems.

These are ways to get rid of humidity, thus get rid of these problems that we've talked about before. Now, I hope you've enjoyed this compact episode of Non Toxic Environments. Wanted to get a podcast out for everybody this week but really wanted to focus on the problem at hand right now this time of the year which is high humidity. Thank you so much for listening. Thank you for following us. Please make sure to go to degreeofgreen.com and on that front page we have what's called a speak pipe messaging system.

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Eventually, we're going to have a membership site that will be a paid site. Now don't worry, it's not going to be for the podcasts and the blogs, those will always be free, we always want to get

that information out there. We will be having a membership site for those who want a little bit more. Now as some of you may know and even have hired me, I do offer consultation services for people who are involved in remodeling, in construction or even just want to learn a little bit more about healthy building techniques.

I'm going to start small group consulting through the website as part of the membership so we'll be doing some daily and some weekly small group, both audio and video, so that those who are having similar problems or who have a similar topic in mind can sign up and join a small group to learn all about these issues if you are one of our paid members. We hope to have that coming out in fall. I just wanted to give you a little teaser about that because we'd really like to have your feedback.

If you were to join Degree of Green as a paid member and a very slight membership fee, what else would you like? What else can we do for you that would make that membership worthwhile? We'd love to hear about it so please leave us a message on that Speak Pipe app on the website. That's it folks, thanks again for listening, and we will talk to you again next week. Take care.

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