Coatings—Application & Training Best Practices for Repair Coatings

Presenter

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Disclaimer

Disclosure

This presentation is not intended to be a comprehensive program covering all aspects of this topic. All technicians are encouraged to read and follow all applicable standards, codes and regulations related to this topic.

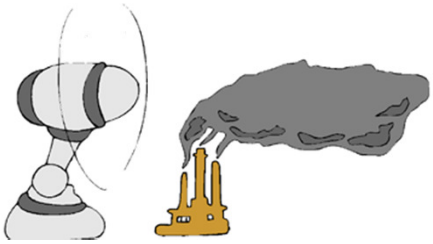
- ✓ It is the responsibility of each individual contractor to follow local building codes and licensing requirements and to work safely in accordance with OSHA guidelines.
- ✓ It is the contractor's responsibility to take proper precautions on each project to prevent cross contamination. Always take the health and safety of the building occupants into consideration before you conduct any cleaning procedures.
- ✓ All of the following tips are only general tips. They do not cover every situation and it is your responsibility to adapt these tips to the individual system you are working on.
- ✓ The Instructor is not responsible in any way for the work you perform after viewing this slide show. You are responsible for your own work.
- ✓ The views and opinions following are the instructors opinions and not necessarily the official position of the National Air Duct Cleaners Association.

Overview

This session will cover the coating of fiberglass insulated duct systems.

Topics will include:
- Assessment of systems;
- The best tools and equipment for application of coatings;
- Accessing the systems and potential hazards of coating HVAC systems.

Let's Clear the Air



What's the Difference?

These terms are used loosely in our industry

- Duct Sanitizing
- Duct Sealing
- Duct Coating

Duct Sanitizing

- Definition
- Sanitizer: A sanitizer is a substance or mixture of substances that kills a high percentage (99.9%) of, but not necessarily all, bacteria on a surface. Technically, the EPA defines a sanitizer as a substance or mixture of substances that reduces the bacterial population in the inanimate environment (on surfaces and objects) by significant numbers (e.g, 3 log 10 reduction or more), but does not destroy or eliminate all bacteria.1
- (Source: NADCA POSITION PAPER on Chemical Product Applications in HVAC Systems)

Duct Sealing

- Product definition Sealants are materials – liquids of varying viscosity or tapes - used to seal surfaces, joints, connections, gaps and openings.
- These include but are not limited to tapes, glue, mastic etc.. And the main function is to prevent air leakage
- (Source: NADCA POSITION PAPER on Chemical Product Applications in HVAC Systems)

Duct Coatings

- Coatings - Resurfacing materials (also known as repair coatings) are coatings that are applied to surfaces that show signs of damage or degradation

Pros

- Can restore integrity to a duct system.
- Retards or repairs fiberglass deterioration.
- Saves costly replacement of duct board or lining in ductwork or air handler.
- Coatings can isolate non-removable particulate from the airstream.
- Coatings can smooth the interior profile of surfaces within HVAC systems to make them easier to clean in the future.
- Coatings can yield a smooth film surface when dry that reduces the probability of deposition and accumulation of foreign materials that could support future microbial activity.

Cons

- Does not replace duct cleaning
- Not a substitute for source removal
- Adds an additional stage to an HVAC project after initial duct cleaning which will create additional expense & time.
- Occupants may need to leave the building while coatings are applied or curing.
- May affect sound attenuation where lining or fiberboard are used for that purpose.
- Some odors may linger after application.
- Using EPA-registered coatings (with antimicrobial properties) requires some form of licensing in some states which may add additional costs and burdens to the applicator.
- System may need to remain shut down for a period of time to allow sealant to cure.

ACR, The NADCA Standard 2013

4.21.5
No cleaning process shall be performed that will damage a properly designed, installed, and structurally sound HVAC system and its components, or negatively affect the performance, operation, or normal life expectancy of the system.

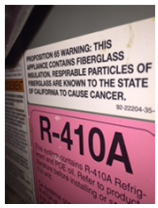
Any cleaning method will create surface micro porosity (microscopic deterioration of a porous surface).

This creates two very undesirable conditions:

- More surface friction resulting in additional drag on air movement and surface erosion of the fiberglass resulting in more rapid re-accumulation of dirt and contaminants, and
- Their re-entry into the air stream every time an a/c unit is running of fiberglass particles.

Importance

Importance



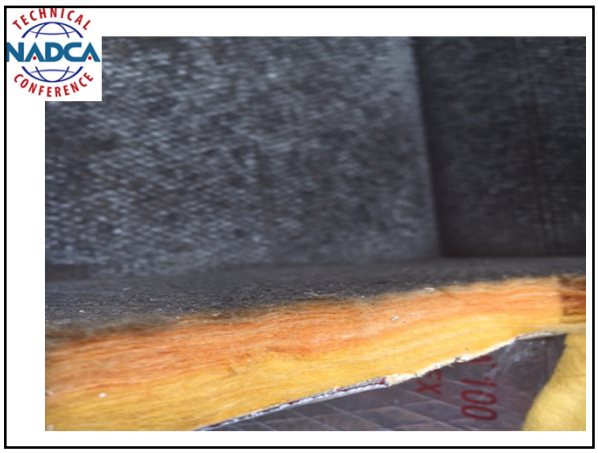
Should I Replace?

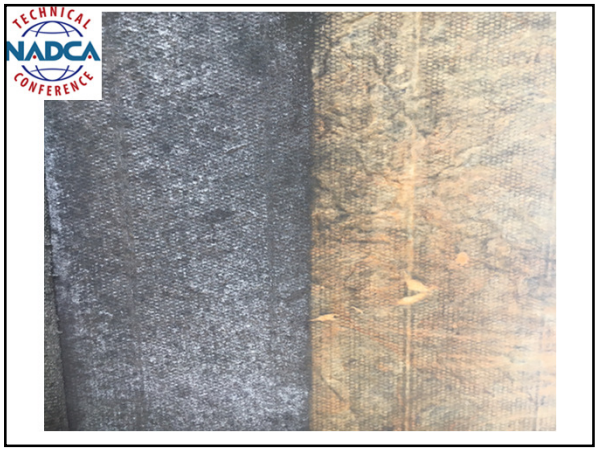
When should you Coat Vs. Replace?

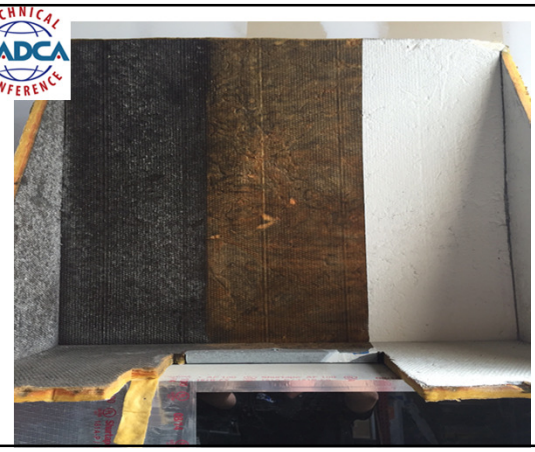
If the insulation is in good shape and can stand up to the rigor of cleaning you can :

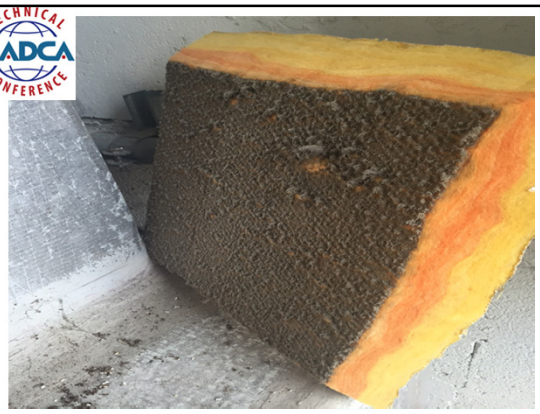
- Clean the insulation and then coat the insulation.
- (Side note: Do not forget to clean 1st! Coating is NOT a substitute for source removal)
- If the insulation is not in good shape and cannot stand up to the rigor of cleaning you can :
  - Remove the insulation
- If the insulation is wet
  - Remove the insulation

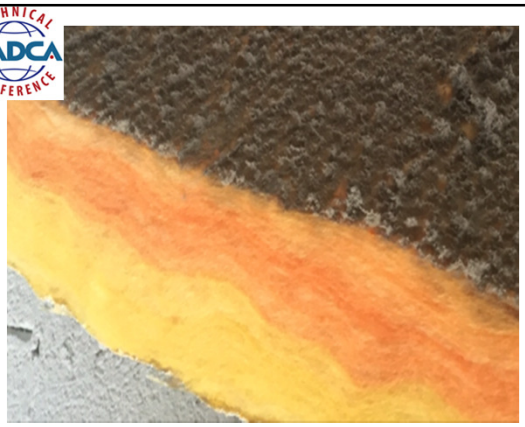
Here is where it gets 'MOST INTERESTING'



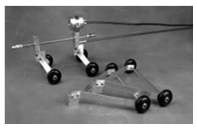








Application Methods



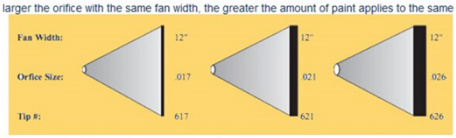
Application Methods

Application

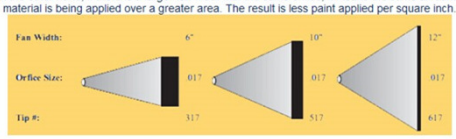
Choosing a Tip

Examples

The larger the orifice with the same fan width, the greater the amount of paint applies to the same area.



On the other hand, if there is a larger fan width with the same orifice, it means the same amount of material is being applied over a greater area. The result is less paint applied per square inch.



Potential Hazards

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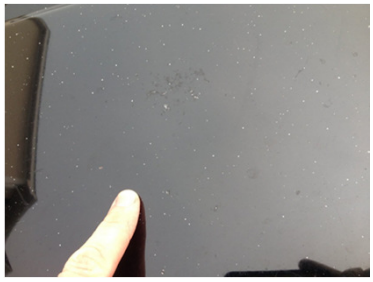
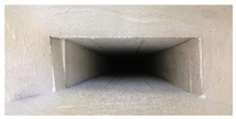


Potential Hazards

Potential Hazards

Site Preparation

Before & After



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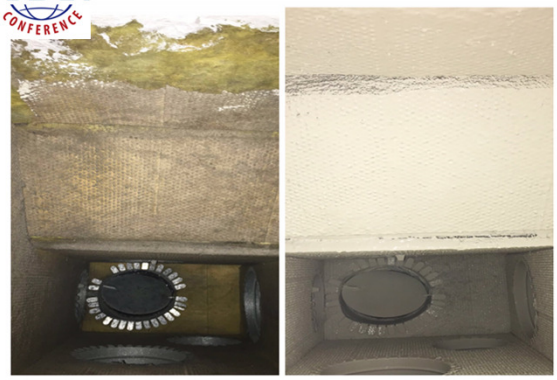

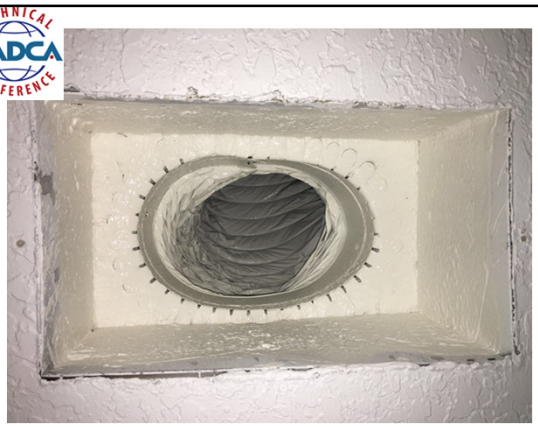

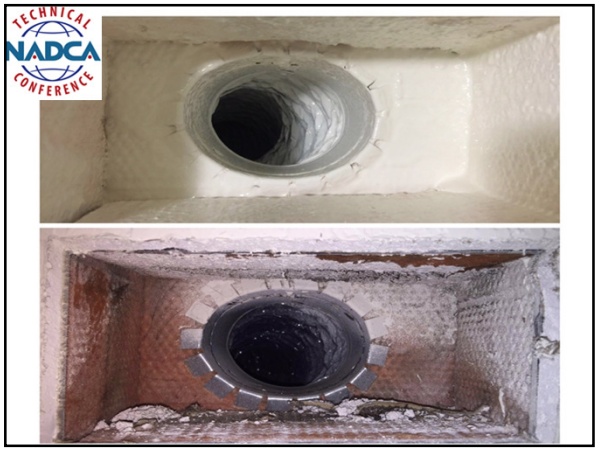

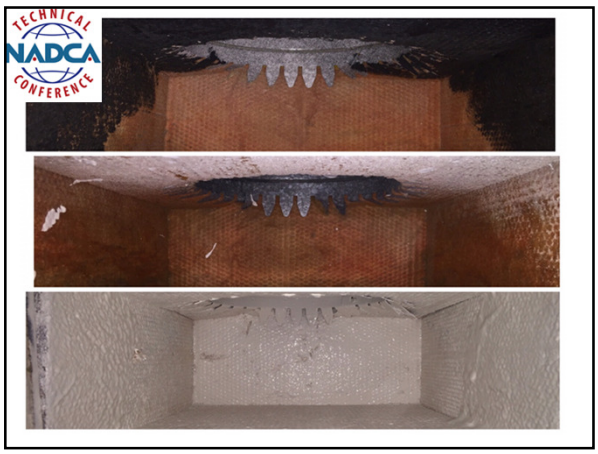

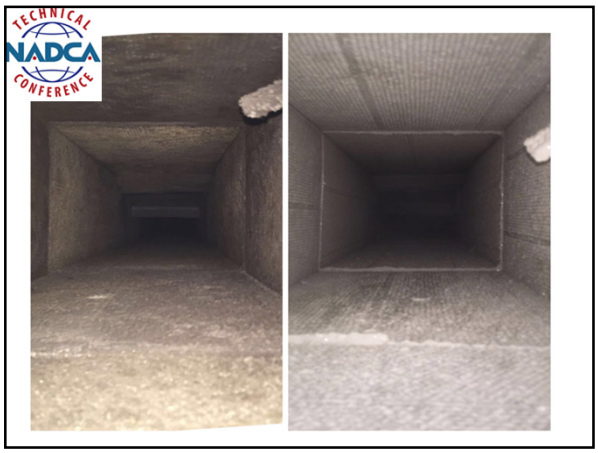

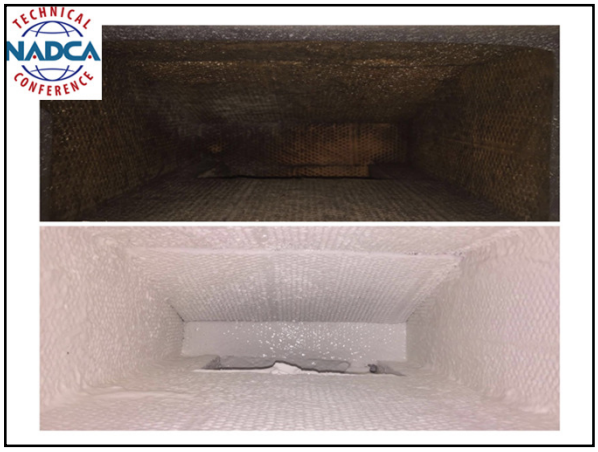


Before & After

In Conclusion

- Coatings lockdown any remaining loose fiberglass fibers after cleaning.
- Coatings provide a more durable air steam surface that is more resistant to air erosion and moisture and is easier to clean in the future.
- A way to extend the life of the HVAC system for the building owner at a lower cost than replacing ductwork, air handlers and other system components.
- We are dealing with high pressure paint and there are inherent risks involved.
- Think twice before you condemn a system!

Presenter Contact Information

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Thank you
for
Participating!