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Coatings Review

News and Updates from Your Source for Quality Wood Finishing Solutions

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Technical Tip - Compatibility

Today's coatings technology offers complex and specific finishing solutions for the vast array of applications, uses, and substrates. With this complexity comes the necessity to refrain from inter-mixing, or blending products -- never assume compatibility of products, even when they are from the same manufacturer.

Each coating formula contains specific resins, precise solvent ratios and unique additive "packages". A substantial amount of time and effort goes into the development and production of the products. Consequently, modifications should be left in the hands of experienced coatings chemists. Typical problems associated with a

slightly incompatible mixture might be exhibited by a loss of film clarity, haziness or discoloration. More severe incompatibilities could cause "separation of

"...modifications should be left in the hands of experienced coatings chemists."

the product", "kick out" or even complete gelation. Obviously, any perceived benefit from mixing, stretching, or "tweaking" products is quickly negated by the expense of rework and waste disposal. Even more catastrophic are those incompatibility problems that don't show up until

after application -- such as loss of adhesion, delamination, or color change!

Incompatibility issues can also exist between the products used within a "finishing system". The potential for difficulty increases when products from two or more manufacturers are used, i.e. a stain, sealer and topcoat from three different sources. Manufacturers are seldom willing to back up warranties if more than one brand of product is being used. However, because of the variety of new technologies being used to develop new products, buying products from a single source does not automatically assure compatibility. Typical problems associated with

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Regulatory Compliance - Hazcom Training

OSHA's Hazardous Communication Standard (29 CFR 1910.1200) is a complex and multifaceted regulation that includes labeling, Material Safety Data Sheets (MSDS) and training requirements. Previous

Coatings Review articles have covered labeling and MSDS requirements. This article is going to focus on training requirements. The Hazardous Communication Standard (HCS) specifies specific elements every

employer must include in employee Hazardous Communication (Hazcom) training.

Hazcom training must be a written plan. Completing the training without a

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Regulatory Compliance - Hazcom Training (Continued)

written plan will not be considered compliant. The written plan can be a simple explanation of who will receive training and when they will receive it, followed by an outline of what will be covered. Keep in mind, every employee exposed to hazardous chemicals should complete their Hazcom training before they are exposed to the chemical. At Rudd Company, Hazcom training is completed on the first day of employment by every employee regardless of exposure.

Training programs must include:

1. How HCS will be administered in your company. Many companies use a combination of vendor labeling and MSDS, while others use in-house labeling systems including HMIS®, or NFPA® hazard warning labels along with MSDS.
2. Information on how to read and interpret MSDS. You will need to ensure MSDS are available to every employee with chemical exposure.
3. How to use the information provided in the MSDS and product labels.
4. The hazards associated with the chemicals used in your

company. Ensure you cover the physical hazard such as flammability as well as the health hazards such as skin irritation, nose irritation, etc.

5. Steps employees can take to protect themselves from the hazards associated with the chemicals. This usually includes information about personal protective equipment, handling procedures, and ventilation requirements.
6. Strategies on how to detect the presence of hazardous materials. This can include visual appearance or smell.

Hazcom training is required prior to employee exposure to chemicals, whenever a new chemical is introduced into the work environment and whenever your company hazardous communication plan changes. Even though not required, it is also a good idea to repeat the training every 2 - 3 years as a refresher.

For additional information regarding specific regulations and requirements, contact Rudd Company's Regulatory Manager, KaLyn Burmeister, at 1-800-444-7833 or kburmeister@ruddcompany.com.

Article Excerpt - When did that crack occur?

Cracks or splits in wood that are discovered after finishing have long been a source of frustration for many manufacturing operations. They also are a major source of controversy. When did they occur? What caused them? Some people feel that they can be created in the finishing line because the “ovens are too hot” or the “times are too long” or other similar arguments regarding the finishing system.

Although the problem can occur in all woods, it is most perplexing in fine grain woods such as maple or hickory. This discussion will explore a procedure used in a particular situation where such cracks were observed in panels after finishing.

Any discussion of cracks in finished panels or in finished cases invariably elicits a response that they occur in the finishing operation because of such factors as temperature, time or “the finish itself”. This argument is often most expressed when the cracks are “discovered” only after the finishing operations. It has been my experience over these many years that it is a rare for such a system to cause cracks in the wood.

A Case Study

Too often in troubleshooting these types of cracks, people tend to gather around the panels and look at them from whatever grain direction that can be readily seen by simply examining the tops of the panels in total. I have repeatedly suggested that the only

way to determine what the cracks are, when they may have occurred and what may have caused them is to cut the panels. Then the cracks can be examined from various angles to truly ascertain grain directions and perspectives on how and where the cracks are running within the wood.

Although not a perfect but at least a usable technique follows the assumption that if the cracks occurred in finishing (that usually means in the curing ovens), then the likelihood of any finish material down inside the crack would be remote since there was no crack or break in the wood when the finish was applied. Conversely, if the crack occurred before the finish was applied there would be an expectation that some type of finish material should be down inside the crack. The objective then is to cut the panel in such a way to examine these possibilities.

Step One - The End Grain

After the areas with the cracks are cut from the panel, the first step is to examine the end grain. It is important to note the grain direction in which the crack is running. It is highly likely that [perpendicular] cracks are drying or moisture-related checks. However [cracks that] run parallel to the growth ring [are not] a drying or moisture related defect, but a defect called shake (wind shake or ring shake) that occurs in the tree. A third type of crack that can be seen on the cross section appears as an irregular or

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Are You Smarter Than a 5th Grader?

Do you know as much as a fifth-grade student? Find out if you know enough to pass this quiz. For answers visit our web site at www.ruddcompany.com.

1. Who did not sign the US Constitution?

- A). George Washington B). John Hancock
C). Ben Franklin D). Alexander Hamilton



2. Which is the capital of Nebraska?

- A). Boise B). Lincoln C). Little Rock D). Omaha

3. Common table salt is a chemical compound of?

- A). Sodium and Chloride B). Sodium and Chromium
C). Magnesium and Potassium D). Sodium and Magnesium

4. The decimal equivalent of 3/4 inch is?

- A). 0.66 B). 0.75 C). 0.825 D). 3.4

5. Which is the longest river in the world?

- A). Yangtze B). Amazon C). Nile D). Mississippi

6. Complete this problem: $3/4 + 1/2 =$

- A). 3/8 B). 4/8 C). 6/4 D). 10/8

7. Which is the softest rock?

- A). Carbon B). Talc C). Graphite D). Anne Murray

8. Which Sentence is Incorrect?

- A). Rise up singing to raise your spirits.
B). Lay yourself down and lie in wait.
C). The dog will wag it's tail.
D). There's their mother over there.

9. Which is not true about carbon dioxide (CO2) ?

- A). It's called dry ice in it's solid form
B). It's a noble gas
C). It contributes to global warming
D). It's colorless, odorless and tasteless



Technical Tip - Compatibility (continued)

using incompatible products within a finishing system might be retarded dry time, poor adhesion, cloudiness or color change.

- And always test the materials for suitability with your process and substrate before starting full-scale production.

The bottom line...

- Use one manufacturer's products for a complete finishing system (we recommend Rudd, of course)
- Ask for a "system" recommendation; never assume compatibility between products - even from the same manufacturer

"...never assume compatibility between products..."

For additional information or technical support, please contact Rudd Company's Technical Support Department at 1-800-444-7833 or techsupport@ruddcompany.com

Calendar Highlights

Monday, May

26th: Rudd Company will be closed in observance of Memorial Day. Freight companies will not deliver on Monday.



Regular customer service hours are Monday - Friday 7:30 am - 5:00pm PDT

Fun Facts

Mother's Day was made an official U.S. holiday by President Woodrow Wilson in 1914. Mother's Day is celebrated the second Sunday of every May (May 11th this year), and is the most popular day for dining out, even over Valentine's Day. Ana M Jarvis is credited for founding Mother's Day.



Father's Day was first celebrated on June 10th, 1910. In 1966, President Lyndon Johnson declared the 3rd Sunday of June as Father's Day. Credited with the idea of Father's Day is Sonora Smart Dodd from Spokane, WA. who decided that Fathers should also be honored after hearing a Mother's Day sermon.





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Article Excerpt - When did that crack occur? (continued)

zigzagging crack (running at various angles to the grain). It is highly probable that such a crack is the result of mechanical damage to the piece either in machining, handling or mechanical conveying and holding. To determine which of these types of cracks are in the panels by examining only the top or face of the panel is generally not possible. The panel must be cut into samples and examined on the end grain to be sure.

Step Two - The Crack Surface

Cut the cracked, split areas into small samples, and then split the crack open with a knife. Do not cut the crack open, but split it open so that the faces inside the crack can be examined.

There must be a diligent, effective quality control effort to find these cracks and splits earlier. The further down the proc-

essing line they are discovered, the greater the cost of the rejected parts or panels. I think we sometimes underestimate the role and impact that quality control and inspection have not only on improving quality and making better products, but also on substantially reducing manufacturing costs.

In fine grained woods, finding such cracks is difficult; they are not easily detected. In rough material, the fine "hairline" cracks are not obvious on the rough surface and can be easily missed in a casual observation of the surface. They also are difficult to see after sanding (where many inspections take place), because the sander dust may help obscure the crack.

"If you really want to know what is happening, cut the material into samples..."

An effective, diligent multi-stage inspection program will help minimize the risk of material like this being sent far down the processing line before it is caught.

Once these cracks are found, appropriate diagnostic steps should be taken to establish the "real" cause. Without cutting the material and examining it in many facets and grain directions, troubleshooting is more like chasing shadows.

Too often, the culprit becomes some phase of the process based on half-truths and anecdotal information. I cannot emphasize this enough: If you really want to know what is happening, cut the material into samples for full examination.

Article by Fred M Lamb. Excerpt taken from Modern Woodworking magazine, Jan. 2006.