BETTER CHEMISTRY = BETTER GARAGE DOORS

New "Cool" Paints Now Widely Used in the Industry

In the last several years, garage door manufacturers have been offering darker colors such as black for the first time. The advent of "cool" paints, often known as "heat-reflective paints" is the reason. One of their key advantages for garage doors is their greater resistance to fading.

To learn more about this new technological advancement for the garage door industry, we talked with several of the major companies that supply paint for the coatings on steel garage doors. Our respondents are:

- Pam Wilson, Technical Manager, Coil & Extrusion Americas, AkzoNobel
- Rob Roy, Market Development Manager, Beckers Group
- John Carter, Coil Development Manager, Dura Coat Products
- Jeff Alexander, Vice President of Sales, Valspar

How are these heat-reflective coatings different from the typical coatings that have been historically used on steel garage doors?

Wilson: Heat-reflective coatings are made from special pigmentation that reflects infrared radiation (aka heat). These special pigments … allow door manufacturers to introduce new, darker colors that haven't been available in the past.

Roy: These pigments were developed in conjunction with the military to prevent heat-seeking attacks on allied equipment.

Carter: They have been used for years on metal roofing to reflect the sun's rays.

In layman's terms, what are the results of the performance tests of these coatings?

Alexander: The results are very revealing. We see surface temperatures up to 30 percent cooler as a result of solar-reflective coatings.

Roy: The reduction in heat can be 15 to 25 degrees (Fahrenheit) on certain darker colors. Energy Star compliance requires a solar-reflectance minimum of 25 percent (for steep sloped surfaces). Generally, the darker the color, the greater the benefit.

Wilson: Regular coatings of light colors will naturally have about 60 percent total solar reflectance (TSR), and dark colors will have about 10 percent. The heat-reflective coatings increase TSR values by 10 to 30 percent, depending on the color.

What are the top advantages of the heat-reflective coatings?

Carter: They can reduce heat buildup by 15 to 20 percent.

Wilson: Heat reflection can prevent thermal bowing. That happens when the hotter surface expands towards the heat source, creating a bow or U-shape in the structure. Bowing in garage doors can lead to opening/closing malfunctions and surface wear.

Alexander: The top advantage is reducing heat levels inside the building or garage. By reducing the heat, the lifespan of the garage door could be extended.

Roy: Dark colors naturally absorb sunlight and get hot. This technology allows us to produce blacks and browns and other dark colors.

What are the drawbacks? Does it cost more?

Alexander: No performance characteristics are compromised. Hardness, flexibility, and weathering remain the same. Typically, the marketplace demands a premium for solar-reflective coatings.

Wilson: By using these special pigments, the OEMs can offset the additional costs of thicker-gauge metal or additional stiffeners to keep the doors from bowing. So, although there is an increase in applied cost of paint, the OEMs may still see an overall cost savings. A drawback may be in having to segregate inventory; the cool version versus a non-cool version of the same color can have a different effect on how products fade.

What other coating developments are on the horizon?

Roy: We have a new textured/wrinkled coating called BeckryTex that is very low gloss with a very unique look. I believe it will look good on high-end residential doors and maybe even commercial doors.

Carter: Longer-life coatings.

Alexander: We continue to work on the development of even higher solar-reflective values than today. We are also very involved in the development of print coats for the garage door industry. We see print coats as a growth area for the garage door market.

Wilson: Generally speaking, the current trends are looking into additional aesthetics, textures, and sustainable (green) technologies. ■