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Architectural Paint Coatings

By Todd Hamilton

Painted aluminum can bring vibrant color and a striking look to any project. Painted coatings offer architects and designers a palette of colors. However, with this increased color availability comes additional complexity for fabricators and installers. SAF applies a number of different paint coatings. It is easy to get confused because of the different terminology, specifications, and manufacturers in the market. The following is a synopsis of the painted coatings that SAF can apply:

PVDF Kynar 500/Hylar 5000 resin paints (70% or 50%)

PVDF paints can be confusing for many customers. 70% PVDF paints exceed the requirements of AAMA-2605 and are most often used for exterior applications in monumental structures and landmark buildings. There are four main suppliers of PVDF paints: PPG, Valspar, Akzo and BASF. Even though each paint manufacturer uses different trade names (Duronar, Fluoropon, Trinar, Fluoroceram, etc) they essentially are referring to the same type of product.

Many 70% PVDF colors only require that we apply a primer coat and a color coat, commonly referred to as a 2-coat system. However, depending upon the color of the paint, a clear topcoat may be required. Bright colors often require this clear topcoat in addition to the primer and color coat. This is referred to as a "3-coat" system. Furthermore, some colors require an additional protective coating (in addition to a clear topcoat) called a barrier coat. This "4-coat" system is often required for blues or translucent metallic colors.

Some 70% PVDF colors have a metallic look achieved with the addition of a metallic flake in the resin. When applied these metallic colors are extremely attractive and eye-catching. But they can also exhibit extreme color variation from piece to piece and from lot to lot resulting from the normal variations in application technique on a production line. The color of metallic flake paints will also change depending on the viewing angle because of the overlap of the metallic flakes within the coating. In addition, pieces painted with a metallic color by one applicator should not be placed next to the same metallic color painted by another applicator. As long as the Subcontractor, General Contractor, Architect and owner all understand the inherent variation that can exist with these kinds of colors, metallic paints are a good option.

The metallic look in PVDF coatings can also be achieved with the addition of a mica flake to the paint. While mica flake coatings are more opaque in appearance and lack the depth of a true metallic flake paint they apply more uniformly and do not exhibit the same variation as metallic flake paints. Mica flake paints offer the same kind of eye-catching metallic appeal and

should be used when uniformity is critical.

50% PVDF paints (as opposed to 70% PVDF) are also available in the marketplace. These coatings meet the requirements of AAMA-2604. Because 50% PVDF paints are harder than traditional 70% PVDF paints, they offer additional abrasion resistance. However, 50% PVDF paints are less resistant to fading than 70% PVDF. 50% PVDF paints are also available with a mica flake addition so metallic-looking color options are available. Paint manufacturers stock a wide variety of both 50% and 70% Kynar paints. However, where we can match and mix many colors in a 70% PVDF system, we will not mix and match 50% PVDF coatings.

Polyester resin systems & Powder Coating

Another common paint type in the marketplace is polyester-based paints. Polyester based paint systems typically meet the requirements of AAMA-2603. Polyester-based coatings are often used for residential or interior architectural applications. But since they are not as resistant to fading and weathering as PVDF coatings, polyester resin paints should not be used for exterior use on commercial buildings or high-rise curtainwalls. One exception might be handrails or an application where abrasion resistance is more important than fading. Polyesters have excellent abrasion resistance.

SAF applies high-solid, low-VOC polyester coatings. PPG and Valspar both actively market high-solid, low-VOC polyester-based coatings (Plycron III and Valex) and offer a wide variety of colors. We are unable to match and mix these coatings, so color flexibility is somewhat limited unless one of the paint manufacturers creates a custom match. The low-VOC coatings are functionally similar to Acrylic coatings like Duracron and produce less air pollution.

A term often used in the marketplace is "baked enamel" finish. Unfortunately baked enamel is a very generic term and could mean many different things. Polycrons are considered baked enamel. 50% and 70% PVDF coatings are also considered baked enamel. When specifying a paint type, be specific and try to refrain from using the term baked enamel.

Another common product in the architectural finishes market is powder coatings. Powder coatings and liquid paint are made from the same resin and pigment and will have essentially the same performance characteristics. Powder coatings are simply thought of as paint without the solvent, but powders are a little more complex than that.

The most common Powder Coatings for architectural use are based on polyester resins. Polyester finishes, wet or powder, usually have a higher gloss level and are more abrasion resistant than PVDF finishes. Powder coat fin-

ishes are used for a variety of residential and commercial applications. Several companies in the marketplace stock a variety of colors of Polyester TGIC powder. Customers requiring a custom color not included on these "stock lists" usually face very large minimum quantities and significant additional expense. Thus, many customers requiring a custom powder coat color are forced to select an existing powder coat color closely resembling their sample. Certainly the inability to easily match and mix color in powder coat in small quantities limits its use.

Quoting and processing a paint job can have a number of pitfalls. Consider that all aluminum that we paint must first go through a chrome phosphate pretreatment process. All of the coatings we apply must go through a baking process of up to 475 degrees F. Customers can save time and eliminate some potential problems if they follow a few simple guidelines:

BASIC DESCRIPTION	SPEC	PPG NAME	VALSPAR NAME	AKZO NAME	BASF NAME
Basic 2-Coat 70% Kynar System Primer + Color Coat	AAMA-2605	Duranar	Fluropon	Trinar	Fluoroceram
3-Coat 70% Kynar System (Metallic Coating)	AAMA-2605	Duranar XL	Fluropon Classic	Trinar TMC	
3-Coat 70% Kynar System (non-Metallic Coating)	AAMA-2605	Duranar XL	Fluropon Premiere	Trinar TEC	Fluoroceram Exotic CL
4-Coat 70% Kynar System (Non-Metallic Coating)	AAMA-2605	Duranar XL	Fluropon Premiere		Fluoroceram Exotic CL
2-Coat 70% Kynar System with mica (non-metallic) pearlescent flakes	AAMA-2605	Duranar Sunstorm	Fluropon Classic II	Tri-Escent II	Ultramet 2 Pearlescent Coating
2-Coat 50% Kynar System Primer + Color Coat	AAMA-2604	N/A	Acroflur	N/A	N/A
2-Coat 50% Kynar System with mica (non-metallic) pearlescent flakes	AAMA-2604	N/A	Acrodize	N/A	N/A
Polyester Resin Coating System High Solid/Low VOC formulation Primer (optional) + Color Coat	AAMA-2603	Polycron III	Valex	N/A	N/A

Helpful Guidelines for Painting Material at SAF

■ When requesting a quote or placing an order for a painted finish, please try to provide us with a valid color code (and a color chip if possible) from one of the paint manufacturers. A color code usually represents a unique formulation or recipe for manufacturing the paint. With this color code, we are able to determine the proper specs for the paint (metallic, non-metallic, clear coat required, etc).

Providing a valid code also allows us to order paint in advance for a job if necessary. SAF needs a written purchase order or a signed acknowledgement of our quote before we can order paint for a job. Ordering paint in advance helps to eliminate delays in waiting for paint to arrive from the manufacturer.

We realize that these paint codes are not always available. Oftentimes customers will provide us with simply a paint name like Tree Green. Unfortunately this name alone does not tell us enough information. In fact two different paint manufacturers might have colors called Tree Green and the colors might be completely different. When a code is not available, the next best option is to send us a color chip. With a color chip, we can attempt to match and mix the paint in our lab. Keep in mind that we can only mix 70% PVDF (Kynar 500/Hylar 5000) formulations in our lab. So if you provide a polyester or powder coat sample, we can only attempt to match the color and not the gloss level or the performance characteristics of the paint chip.

Sometimes we are unable to create an exact color match on a sample. If this is the case, we can either offer our best-effort match or send the chip to a paint manufacturer for a custom match. One downside to sending chips to the manufacturer is time. Depending on their backlog of requests, paint manufacturers can take as long as 3-4 weeks just to create a custom match. Furthermore, minimum paint orders might apply (depending on the color) which can significantly increase the cost of the job.

■ When sending us a request for quote (and especially before we begin production) send

us shop drawings of the material to be painted. Without shop drawings, we are unsure which surfaces require painting. When we know which surfaces must be painted, we will charge you for painting that surface only, saving you money. Drawings will also give us guidance on where we can rack the material.

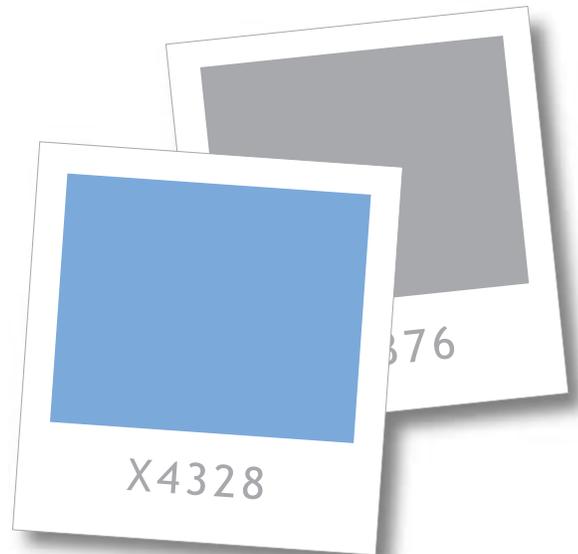
■ Whenever possible, send us mill finish material to paint. We will not paint over anodized or painted coatings. We cannot strip paint. We can strip anodized coatings (except for YKK material) but stripping adds cost to your job. If you have anodized material that needs to be stripped prior to painting, send it to our main receiving facility at 1581 Huber Street. Otherwise send your mill finish material directly to our paint shop at 1200 Old Chattahoochee Ave.

■ Make sure that fabricated rails and assemblies have drainage holes to prevent entrapment of our pretreatment solution in the piece. Holes in the top of the assembly allow for the admission of air and bottom holes are needed for drainage. Solution entrapment and drool out can potentially ruin a finish.

■ Before shipment, please remove all non-aluminum parts from any assemblies you need painted. Our painting process will damage steel and plastic. Keep in mind the curing oven operates at temperatures as high as 475 degrees F.

■ Our maximum working size is 7'6" x 9' x 30', but anything larger than 5' x 2' x 28' may require special handling charges. The maximum weight we can handle is 500 lbs, but anything larger than 100 lbs may also require special handling.

■ Be sure that specialty items like curved arches, assemblies, or formed metal are packaged soundly for shipment. We will try to ensure we bring any transit damage to your attention as



quickly as possible.

■ The appearance of a painted coating can depend on the metal that we start with. Because PVDF coatings are very thin (0.0015"), they hide very little. If metal comes into our facility with scratches and gouges we may not be able to hide the defects. Painting cannot hide water stain either so be sure to package your metal and protect it prior to shipment to a coater.

■ Because of the high temperature used to cure the paint, flat aluminum sheets may warp in the oven as the metal expands and contracts. If flatness is critical, have us paint the metal after fabrication. Also keep in mind that curved extrusions can change shape, and we recommend welding a temporary support rod across the base of an arch before painting.

The next time you need to have material painted, remember that SAF can handle the job. If the job is large or small, fabricated or un-fabricated, if you have a color code, a color chip or just a color name, just remember to get as much information as you can about the paint and then follow these guidelines and your paint jobs should go smoothly.

Department Spotlight

By Glenn Garvett

Shipping and Receiving

Every day there is a never-ending flow of metal at Southern Aluminum Finishing. SAF has a team of dedicated individuals who unload, document, track, schedule, and load metal to keep up with this flow of material. The men in the plant and warehouse handle most of the metal that comes through SAF's facility in Atlanta.

Cecil Gates, plant manager, leads this group and gives guidance to his team. He is a veteran of nearly 30 years and oversees the warehouse operations as well as the anodizing plant. Cecil always has knowledge of every piece of metal that goes through the warehouse. Ask him where someone's job is, and he will tell you where to find it.

Cecil has a solid lieutenant in Calvin Mitchell. Calvin has been with SAF for 5 1/2 years and is responsible for scheduling trucks and shipping. Besides being military trained, he is very detail oriented. He schedules carriers; makes bills of lading; works with 18 freight lines; and keeps an important paper trail for all jobs. Calvin knows the most important part of his work is to see that all jobs ship in a timely manner. He works long hours and does not leave the job until the last truck is loaded. From the large jobs to smallest pick-up order, all receive his attention.

Reginald Peek and Kevin Hitt operate the receiving warehouse on a daily basis. Together they have over five years of SAF experience and a great team spirit. Reginald, or Reg to his fellow employees, says the most important part of his job is ensuring incoming metal is not damaged. He says that the way metal is packaged and shipped makes for a better finished product.

When jobs arrive with little or no packaging with aluminum already scratched and/or bent, the whole process suffers. Unfortunately we are unable to repair material damaged in transit. Sometimes unprotected metal gets wet in shipment. Water can cause watermarks and the formation of a white chalky residue on the aluminum. The receiving team's job is to spot these problems early and react accordingly by informing the sales department of the issue at hand.

Kevin places importance on obtaining accurate information on each job and writing it up for the sales department to process. He says that it is a big help when a job arrives with a packing list or instructions with a purchase order number. This information helps eliminate paperwork delays. When aluminum arrives with little or no information it becomes a real mystery to determine who/what the metal is for. Both Kevin and Reg work hard in our large warehouse, identifying all the jobs, labeling metal with job numbers, and moving metal either to the paint shop, the fabrication shop, or anodizing plant. They also load and unload the flatbed trucks for the larger orders.



Preserving metal value, ensuring timely shipments and satisfying customers are of great importance to this team. The handling of metal, both before it arrives at SAF and after we receive it, can affect its value. Damaged material detracts from the finished product. Also, the time factor is of great concern to our customers. The shipping date of a job is extremely important. These men are a key to when and how the job goes out. They take a great deal of pride in their work and deserve our appreciation.

PROJECT SPOTLIGHT

Arch Aluminum & Glass: Sandy Springs MARTA Station

By Todd Hamilton

MARTA, Atlanta's mass transit system, recently expanded their rail line northward in response to increased demand because of traffic

congestion and air quality concerns. Part of their expansion plans included the construction of a new rail station in Sandy Springs near the end of their North line near GA. 400.

Arch Aluminum & Glass supplied the aluminum storefront for the project. The job called for Southern Aluminum Finishing Company to paint the Arch Aluminum storefront with PPG's Metallic Silver UC50958XL, a 3-Coat metallic flake paint. This job demonstrates the attractive and eye-catching appearance that can be achieved when metallic-flake paint is applied using the appropriate precautions.



ANNIVERSARY'S & Birthdays

HAPPY BIRTHDAY

ROBERT GUNN.....	7/4
FERMIN BALTAZAR CRUZ.....	7/5
JOHNNY BROWN.....	7/13
CECIL GATES.....	7/19
MARK CARROLL.....	7/21
JAMES PARKER.....	7/25
TAI VAN BUI.....	7/27
MENDE ELLIS.....	7/28
LEANDRO CAMACHO.....	8/10
HENRY MALLARD.....	8/11
REYNOLDS MCCLATCHEY.....	8/15
KENNETH JOHNSON.....	8/20
TAN MINH PHAM.....	8/20
BOB SIMARD.....	8/21
PAUL BUSH.....	8/22
CALVIN MITCHELL.....	8/22
CARL BUTLER.....	8/23
LARRY LUPO.....	8/24
BILL DAVID WIMBERLY, JR.....	8/25
DALLAS STEELE.....	8/30
TAM NGUYEN.....	8/30
ERIC RICHARDSON.....	9/2
KEITH MAUNEY.....	9/5
DOUGLAS FARLEY.....	9/5
QUY VAN LE.....	9/10
VIRGINIA BENDER.....	9/11

TODD HAMILTON.....	9/18
GLENN GARVETT.....	9/29
VLADIMIR GONCHAROV.....	10/1
TRUNG QUOC LE.....	10/2
HUY TRUNG TRAN.....	10/4
TRI DUC NGUYEN.....	10/12
TU VAN TRUONG.....	10/12
MARVIN COMPTON.....	10/14
CHINH VAN THAI.....	10/15
GOITOM HABTEZGHI.....	10/15
DARRYL DAVIDSON.....	10/17
BA VAN DINH.....	10/19
GIANG THANH NGUYEN BUI.....	10/22
ANTHONY EGNEW.....	10/23
HERMAN PRINCE.....	10/25
LOC BA NGUYEN.....	10/27
NGOI VAN PHAN.....	10/30

HAPPY ANNIVERSARY

CALVIN MITCHELL.....	9/3.....5 years
TUOI VAN LY.....	9/16.....5 years
RICKY WINCHESTER.....	8/29.....10 years
TAI VAN BUI.....	9/9.....10 years
TUAN ANH NGUYEN.....	9/9.....10 years
PENN MCCLATCHEY.....	10/2.....15 years
HERMAN PRINCE.....	10/27.....15 years
TERRY BOLAN.....	7/17.....20 years
LARRY LANCASTER.....	6/21.....35 years

Touch Up Paint: A Touchy Issue

By Todd Hamilton

Installers commonly use touch up paint to cover up minor blemishes when installing finished aluminum on a job. Many of Southern Aluminum Finishing Company's customers often ask us to provide touch up paint with their material. While we realize the importance of using touch up paint when installing material, a number of key issues should be considered.

Applying touch up paint in the field can be a risky proposition. SAF bakes on our painted and powder coated finishes in a 475° F oven. Touch up paint must be "air dry" to be applied in the field. While air-dry paints can be mixed to closely resemble the color of a baked on Kynar 500 or powder coated finish, when applied side by side the color and gloss level will not exactly match our factory applied finish. A discriminating architect would most certainly pick up on the variation.

Touch up paint will also age faster than a factory applied baked-on finish. Many times installers will touch up small spots on a finished piece of aluminum and the piece will look acceptable in the beginning. Unfortunately after a short period of time these touched up areas will begin to fade and become evident to the naked eye. This variation of color is commonly known as the "polka-dot" effect.

Furthermore, air-dry paints will not adhere to aluminum like baked-on Kynar and powder coated finishes. Most baked-on finishes are designed to last 5 years or more. Air-dry paints have no such guaran-

tee. Thus, touch up paint should be used sparingly. Many companies have lost significant amounts of money by using touch up paint to repaint a mistake in the field. Touch up paint failures can result in hefty backcharges and big financial losses on a job. We know of at least two firms who were put out of business because of touch up paint.

Another key point to remember is that "anodize touch up" does not exist. Aluminum anodizing is an electrochemical process carried out in a tank of acid. While immersed in acid, a controlled current is passed between the aluminum piece and a cathode for a period of time to develop the anodic coating. Obviously this process cannot be done in the field. As an alternative, some companies have used air-dry paints mixed to closely resemble anodized colors. But these paints by no means closely match an anodized finish and should be used even more sparingly.

With all these precautions in mind, SAF does have the ability to provide touch up paint. If you require touch up paint, we will forward your color chip to our air-dry paint vendor for matching, and our vendor will send you the paint directly. Or we can have the paint sent to our office here in Atlanta for you to pick up. In either case we will add the price of the paint to your invoice as a separate line item. So if you have to apply touch up paint in the field, please use caution and remember these key issues.

Southern Aluminum Finishing Company is currently working along with the state of Georgia's Department of Natural Resources Pollution Prevention Assistance Division (P2AD) to create strategies to reduce waste associated with our anodizing processes. P2AD is a non-regulatory branch of Georgia's Department of Natural Resources. P2AD helps private industries by providing technical assistance in changing manufacturing processes to reduce wastes and pollution, whether it is solid waste, energy wastes, or hazardous wastes. P2AD is enlisting the help of two pollution prevention engineers and Southern Aluminum Finishing is providing assistance with four chemical engineers that are on staff here in our Atlanta anodizing facility. James McClatchey (PE), Jim Maurer (EIT), Richard Moore (EIT), and Bob Simard are providing technical assistance and data to the process mapping part of the plan.

POLLUTION PREVENTION EFFORTS

By Richard Moore

SAF's objective for this project is to reduce costs by reducing waste. After careful scrutiny and data collection, improvements will be made regarding energy use, chemical use, chemical storage, and solid waste creation for example. Careful consideration will be taken to find ways to improve the entire process from unpacking metal and racking on a beam, to uncracking and repacking

P²AD

and every step in between. The anodizing process is not simple by any means. The chemical reactions taking place along with the supporting equipment such as heat exchangers, boilers, acid purification units, caustic etch recovery systems and numerous pumps provide a wide range of areas to study when looking for improvements. While this project will take four to six months to complete, it will be beneficial to Southern Aluminum Finishing, our community and our customers. These benefits will be seen not only in cost savings to our customers but also in a more efficient and environmental friendly anodizing facility.



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NEWEST Additions & Announcements

SAF welcomes Mende Ellis to our team. Mende started with SAF in June in Accounts Payable and has a background in customer service and sales.

Thanks to Jennifer Roberts for her help in the sales department this summer. Jennifer is currently finishing her degree in Management at Georgia Tech. We wish her the best of luck in the future.

Congratulations and thanks for everyone at SAF for helping achieve a record sales month in August. Lets keep up the great work!

The SAF Company picnic is scheduled for Saturday, October 13, 2001 from 11AM until 3PM. Once again the picnic will be held at the Atlanta Water Works Lodge. Walter and Todd will once again attempt to cater the event. Jim Maurer will be helping with activities. As always, volunteers are welcome. Contact Walter, Todd or Jim if you are interested in volunteering.

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Do not forget about SAF's new Customer Service Website. The site enables customers to place sheet and extrusion orders, check order status and even obtain shipment tracking numbers. Point your browser to <https://walden.saf.com/safcustomerweb> to access the site.

