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NEWEST Additions & Announcements

Johnny Brown from the Paint Department has returned to work after an absence due to surgery. Welcome back Johnny! Marvin Compton and Chau Hoang from Atlanta Anodizing are both currently at home recovering from illness. We wish them both a speedy recovery. Finally, please keep Keith Mauney, Charlotte Plant Manager, in your thoughts and prayers as he undergoes surgery on April 12. He will be out of work for about two weeks. Get well soon, Keith!

Congratulations to **Virginia Bender**'s daughter, Mari. Mari was selected at Citizen of the Month for the month of March in Ms. Harper's homeroom at Margaret Mitchell Elementary School. This honor is given to children who demonstrate good citizenship and conduct. Great job Mari. Keep up the good work!

We also want to say farewell to **Bill Bass**. Bill joined SAF two years ago as a member of the Fabrication Department bringing years of experience in several fields to the table. During these two years, he has provided our customer base with thousands of quotations, converted many of them into jobs, and managed projects to ensure timely delivery of quality products. Along the way, Bill established a customer oriented AutoCAD database and personally generated over 7,000 production drawings. Due to a major change in his personal life, Bill has opted for the rolling hills of L.A. (lower Alabama) and will be moving this month near the town of Dothan, just a few miles from his birthplace. Bill says he takes with him "fond memories of his time with SAF and the wonderful people he has been privileged to know." Thanks for a great two years and best wishes for continued success!

What's Inside

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.

THE ANODIZER
Spring/Summer 2001
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A Quarterly Publication for the Employees of SOUTHERN ALUMINUM FINISHING

How to decide between anodizing, painting and powder coating?

SPECIFYING The Right Finish For ARCHITECTURAL ALUMINUM

By Penn McClatchey

The purpose of this article is to help you decide what type of coating to use – anodizing, paint, or powder coating – when specifying architectural aluminum, whether the application is metal roofing, storefront, or curtainwall. The application and desired appearance determine the appropriate finish.

ANODIZING
WHAT IS ANODIZING?

Anodizing is a simple electrochemical process developed more than 70 years ago that forms a protective coating on the surface of the aluminum. The lifetime of the finish depends partly on the thickness of the anodic coating. The coating is a hard, durable, weather-resistant substance that protects the base metal. The coating is part of the metal and can not peel or flake.

ADVANTAGES OF ANODIZING

1. In general anodizing is less expensive than painting with the exception of coil painted products.
2. Anodizing is harder than paint. Anodizing is better for aluminum in high traffic areas where the coating is subject to physical abuse and abrasive cleaners.
3. Anodizing cannot peel off. The coating is actually part of the metal.
4. Anodizing gives aluminum a deeper, richer metallic appearance than is possible with paint. This is because an anodized coating is translucent, and one can see the base metal underneath the coating. This translucence contributes to color variation problems, but today's anodizers are doing a much better job of controlling color variation.
5. Anodizing is unaffected by sunlight. All painted coatings will eventually fail due to exposure to sunlight.

In the 1980s the Aluminum Anodizer's Council, or AAC, was formed by a group of anodizers who were concerned that no one was aware of the benefits of anodizing. Paint companies were comparing excellent paint to poor anodizing. To compound the problem firms in the industry were unaware of how to specify good quality anodized aluminum. Probably the simplest way to specify a quality anodized finish is to specify a thick coating.

The advantage of a thicker coating is its durability and longer life. Sadly, even the surface of an anodic coating may succumb to acidic pollutants in urban environments. Anodized surfaces, like other building components, must be protected from acidic attack during construction.

After many years anodized surfaces may accumulate dirt and stains that look similar to chalking paint. This "chalk" can be removed with a mild detergent combined with an abrasive cleaning technique. A small amount of the anodic coating can actually be removed, leaving behind a renewed anodized finish that can last for another twenty years. This is why anodizers say their product is "renewable". Once a paint has failed, the only options are repaint or replace the metal. When an anodized coating appears to have failed, cleaning often results in a renewed appearance.

ANODIZING AND THE ENVIRONMENT

Anodizing is compatible with today's environmental concerns. From a finisher's point of view, anodizing does far less damage to the environment than paint. The chemicals from anodizing can be used by municipal waste water treatment facilities. Anodizing emits no ozone producing solvents (VOCs), and there are no heavy metals involved in the process. (VOC stands for Volatile Organic Compounds. VOCs are a component of smog, also known as air pollution.)

ORGANIC COATINGS
PAINTS AND PVDF COATINGS

The performance of any paint or powder coating depends on the pretreatment, resin and pigment. With aluminum the pretreatment is critical. This is why painted coatings for aluminum should be factory applied. Resins are often the weak link in painted system. Some resins, like PVDF, have outstanding weatherability, while epoxy coatings are meant only for interior use.

PVDF is the generic name for a resin better known as Kynar 500. Kynar 500 is a tradename owned by Atochem North America. Several firms make paints with PVDF resin including PPG Industries, Valspar, Morton, Glidden, and Akzo. There are also PVDF resins imported into the U.S. which are not Kynar 500. This is why throughout this article I have refer to Kynar 500 as PVDF wherever possible.

There are many resins available for architectural use such as Urethanes, Polyurethanes, Aliphatic Urethanes, Polyesters, Silicon Polyesters, Polyester TGICs, PVDF, etc. Only a few of these coating systems will last for more than five years. The American Architectural Manufacturers Association (AAMA) has several excellent performance specifications for aluminum coatings, and AAMA 2605-98 is their most important specification for aluminum.

An important aspect of AAMA 2605-98 is its requirement for actual ten year exposure in South Florida. PVDF coatings have been shown to pass AAMA 2605-98 in the widest variety of colors. AAMA 2605-98 does not apply to coil coated products and there is no universally accepted specification for coil coated products.

PVDF coatings are usually formulated as 70% PVDF and 30% other resins, acrylic usually predominating. While 50% PVDF coatings are available, they do not meet AAMA 2605-98 in all colors. Chemical resistance and resistance to sunlight are the strengths of PVDF coatings. PVDF has come to dominate the curtainwall and metal roofing markets because of its weatherability, and wide variety of available colors.

ADVANTAGES OF PVDF COATINGS

1. PVDF will outlast anodizing in corrosive environments. Window washers can be less careful about the kinds of cleaning agents they use to clean a building. If extremely corrosive cleaners are used, however, even PVDF can be damaged.
2. PVDF coatings offer nearly an unlimited selection of colors and are easy to manufacture in small batches.

SAF

3. Coil painted sheet is less expensive than anodized sheet and does not craze as badly when fabricated. "Crazing" is when you bend a sheet and the coating cracks.
4. Color control is usually better than with anodizing. It is surprising, however, how many of our customers do not expect the slight variation that is seen in the color of paints. Metallic metal-flake paints are especially prone to color variation. To improve color consistency, all the metal for a project should be painted by one applicator in one set-up.

POWDER COATINGS

Liquid paint is composed of pigment, resin, and solvent. Powder paint is simply pigment encapsulated in resin and is commonly known as "Paint without the solvent." Powder coatings and liquid coatings made from the same resin and pigment will have the same performance. For a particular resin, the decision to use a powder or liquid coating is actually a question of application technique and expense.

The real advantage of powder is reduced air pollution compared to paint. When powders are cured in an oven they emit no VOCs. A disadvantage of powder is the large batch sizes that are required. The powder manufacturers are aware of this "set-up" problem, and a few of them keep stock colors that they distribute in small batches. Several companies manufacture exterior grade powders using a Polyester TGIC resin. Polyester TGIC powders are currently available in more stock colors than any other powder.

Some resins are more easily manufactured in liquid coatings and some are more easily manufactured in powder coatings. Resin is usually manufactured in either powder or solvent-based coatings, but not both. Examples of this are epoxy that is predominantly a powder coating, and PVDF that historically has been manufactured as a liquid coating. Many of the perceived advantages of powders over liquid coatings (like hardness and gloss) are actually characteristics of the resin.

Powder coatings are often only available in large batches. Custom colors can be very expensive. Each batch of powder must be ground to order using expensive grinding equipment. Paints will continue to maintain their niche in the market because of the ease with which small batches can be mixed. The ability to "mix and match" gives painters unequalled flexibility and ease of use.

Southern Aluminum Finishing also applies epoxy based powders for interior applications such as furniture. One note of caution about powders: they are prone to orange peel and the coating may appear to be textured.

ENVIRONMENTAL CONSIDERATIONS

All the resins I have mentioned can theoretically be made in either wet-paint or powder-coating formulations. Some resins are easier to manufacture and/or apply as wet paints, but solvents cause air pollution. Solvent-born coatings for long-term exterior architectural applications are still mostly solvent-based where typically between 70 and 80% of each gallon of paint is evaporated during the paint curing process. Included in the solvent fumes are hydrocarbons that are termed VOCs (volatile organic compounds) by the EPA, and are a precursor to ozone formation similar to automobile exhaust. Ozone is a major component of smog and can cause eye, lung and throat irritation.

Paint manufacturers may be forced to decide between recommending their applicators install costly pollution control equipment, or developing powder coatings. Powder coatings produce no air pollution, and are becoming full-fledged competition for anodized and wet painted coatings.

In order to meet AAMA 2605-98 a painted coating requires a chrome-phosphate pretreatment. This pretreatment requires that applicators have water pollution control equipment. While this technology is well known and produces excellent adhesion, the sludge from this process is a hazardous waste and is difficult and costly to dispose.

In light of these new developments, specifiers may wonder what the best way is to specify a long lasting painted finish. Our advice is to consult with your finisher, specify AAMA 2605-98, and to rely on the expertise of coating manufacturers like PPG, Lilly, Akzo or Valspar who mix these coatings for the architectural market.

RECOMMENDATIONS

Earlier in this article, I mentioned that PVDF had captured the curtainwall and metal roofing markets. This is because for curtainwall and metal roofing, color consistency and selection are more important than abrasion resistance. With PVDF, a specifier may choose any color he wants.

In most situations PVDF coatings have excellent color consistency but this does not mean their consistency is perfect. Contractors must be careful to have their metal coated at the same time in the same place to reduce the probability of color variation caused by different batches. Often there is severe color variation within three and four coat metallic PVDF coatings. Architect's objections to metallic paints are reminiscent of their objections to anodizing.

Be very careful when applying touch-up paints! A perfect match is impossible between the factory-applied finish and a field-applied finish. Touch-up paints are a problem for both painted and anodized coatings. Touch-up paint should never be sprayed on. It should be touched on lightly with a brush. Touch-up paint usually fades and chalks at a different rate than the underlying coating.

When a live, translucent building exterior is desired, anodizing is a good finish for curtainwall. Architects should require color range panels from the anodizer. The installer should be aware of the color variation expected with anodized panels. An installer may be able to sort some of the panels by elevation for a desired effect. Sorting may also be required with metallic painted coatings. If a panel is outside the approved color range, the finisher should not ship it. It is also critcal for the installer to avoid installing metal that is not within range. When specifying anodizing for monumental use, be sure to specify SAFINISH (Aluminum Association Class I).

The reason for specifying SAFINISH anodizing is to make an anodized coating as durable as possible. Coating thickness is the most significant indicator of durability for anodized coatings. Coating thickness for architectural use can be specified as either Class 1 (0.7 mils) or Class 2 (0.4 mils) per Aluminum Association DAF 45, but often there is no specification. The "cheapest thing" is then installed, and in a few short years the finish is pitted, stained and eroded.

Cheap anodized sheets are often sold with a coating thickness of 0.10 mils. A finish of this thickness also might be called a 200, A21, A22 or A24. While this coating thickness is suitable for some applications, specifiers should know that the integrity of this finish does not last more than a few years in exterior architectural applications. The expected lifetime is less in coastal environments. Coating thickness makes an even more important difference in the durability of colored finishes. Colors also fade more quickly with thinner coatings because they contain less of the coloring agent.

There is often enormous pressure to sell the "cheapest" product available. If a specification simply reads "Clear Anodized," a 0.2 mil coating is the likely result. On the other hand, if a thickness of 0.8 mils is specified the coating will last at least four times longer. Simply put, the life of an anodic coating is proportional to its coating thickness, and a Class I coating is thicker than a Class II coating. All other things being equal, Class I coatings will last twice as long as Class II on the exterior of a building.

Anodizing can be renewed by cleaning. Anodizing can often be restored when it looks like it has failed, but when painted coatings fail there is little that can be done short of repainting the entire building. Repainting a building is normally more expensive than the cost of the original factory finish, and quality control is not good on a job site. Both anodized and painted coatings require regular maintenance, something most building owners do not consider.

STOREFRONT

The parts of a storefront that receive the most abrasion should be anodized. Anodizing's superior abrasion resistance means it will outlast paint on a door stile, kick-plate or push/pull bar. On the other hand painting aluminum framing materials above the doors adds a nice accent to a storefront. Sometimes, one will see aluminum doors installed in a mill finish to be painted at the job site. This is always a mistake. Field applied PVDF coatings are also available. If a field applied PVDF coating is used, the resulting finish will last longer than "hardware store" paint, but its abrasion resistance will still be lacking compared to factory-applied PVDF or anodizing.

Anodizing will always have a niche in the storefront market. Its abrasion resistance and low cost are not likely to be matched by any organic coating. Specify SAFINISH coatings for the most durable, long lasting finish.

CONCLUSIONS

The finish of choice depends on the application and is not merely a matter of personal preference. Anodizing is best suited for storefronts and anywhere else a rich metallic appearance is desired. Anodized and Polyester coatings are best for storefront and handrails. PVDF coatings are best suited for metal roofing and curtainwall components. Anodized, PVDF and Polyester coatings could all be used on curtainwall, roofing and storefront applications with satisfactory results.

There are many options available for finishing aluminum. That is why it is such a popular construction material. The question of which finish to apply is not always an easy decision because of all the options available. I have tried to help the specifier decide what type of coating system to use when coating architectural aluminum, whether the application is metal roofing, storefront, or curtainwall. The conclusion I hope the reader draws from this article is to communicate with your finisher or your finisher's suppliers.

Department Spotlight

By Todd Hamilton

SAF's Paint Shop

Southern Aluminum Finishing's paint shop is a vital part of our organization. The paint shop not only finishes jobs on metal supplied by our customers but also finishes metal from our Fabrication Department and Warehouse. The paint shop is usually the last stop for these jobs before they are shipped to the customer. Since a significant amount of work has usually been put into a job when it arrives at the paint shop, it is critical that we focus on producing a quality finish.

Our painting process is relatively straightforward. Material is first racked to a beam usually using a wire. The material then goes through a chrome phosphate paint pretreatment prior to going to the paint spray booth and the curing oven. Depending upon the finish and the number of required coats, the material might have to go through the booth and oven several times. After the final coat is applied and cured, the material is un-racked and packed for shipment.

Tommy Grier, plant manager of the paint department, and Hoi Van Tran, 2nd shift Foreman, have over fifty-five years of experience between them. Their vast knowledge of painting is invaluable in helping us produce quality finishes for our customers. Working for Tommy and Hoi is an experienced and knowledgeable production crew. Johnny Brown, with SAF over twenty-two years, is the assistant supervisor on first shift and works as Tommy's right hand man. Johnny organizes and transports metal from the warehouse and fabrication department to the paint department and also fills in wherever necessary. Carl Butler, with SAF for over fifteen years, works as our custom paint- mixing and matching specialist supplying the sales department with sample panels and providing custom-mixed paint for the spray booths.

Charlie Mallard, Henry Mallard and Ken Johnson are our key first shift rackers. Ronnie Bryant, Herman Prince and Stanley Prince rack material on second shift. The rackers keep the flow going through the paint department. Scott Jones is our lead painter on first shift. Trung Huy Tran, Hau Van Tran and Tuan Nguyen are our painters on second shift. And Van Ngoi Phan is our lead packer. He makes sure the material we paint is road-ready for transport to the customer. SAF is lucky to have so many experienced people working for us, making sure we produce quality finishes in every step of the process.

ANNIVERSARY's & Birthdays

HAPPY BIRTHDAY

RICARDO LOOR	04/02
DELORES GALLOWAY	04/05
MAURICE MCDANIEL	04/06
MIKE LANCASTER	04/12
FESSAHAYE ASGODOM	04/18
MY TAI NGUYEN	04/18
TAN MINH LE	04/23
TUOI VAN LY	04/24
MAURICE BADAWY	04/24
JAMES DENNISON	04/26
CHAU K HOANG	04/27
JAMES MCCLATCHEY	05/02
FRED ALEXANDER	05/05
HOI QUAN TRAN	05/07
SHERRY KENT	05/07
VU TAN DO	05/08
JACK ALAN EAKEN	05/11
KEVIN HITT	05/11
Y HONG NGUYEN	05/13
PENN MCCLATCHEY	05/14
LOC TAN NGUYEN	05/23
LONG VAN PHAM	05/24
SEN VAN HO	06/06
TUAN ANH NGUYEN	06/08
AN HOANG MAI	06/09
RONNIE BRYANT	06/17
TAI QUOC LY	06/18
JAMES VERNON MAURER, JR	06/19
EFREM TSEGAI TEARE	06/24

HAPPY ANNIVERSARY

TUYEN THANH BUI, 4/1/96	5 YEARS
QUY VAN LE, 4/2/96	5 YEARS
CHAU K HOANG, 4/9/81	20 YEARS

SAF's Smog Program Continues

By Jim Maurer, Jr.- Plant Engineer & PSG Coordinator

Quickly approaching is another Smog season in Atlanta. This years' season officially begins May 1st and ends September 30th. Southern Aluminum Finishing (SAF) will be joining up with the Partnership for a Smog-Free Georgia (PSG) again this year to do it's part to reduce Smog in our great city. SAF will be rewarding employees for their efforts in minimizing pollutants. At the end of each month during the Smog season, SAF will be giving three lucky Smog-conscious employees fifty bucks!

Points will be rewarded for those who meet various levels of participation. The levels make it so that every person will be able to participate, and those who feel strongly about the cause can participate in a greater way with greater chances of reward. There will be categories for the following: 1) carpooling, 2) using mass transit like MARTA, vanpooling, and riding a motorcycle, 3) walking or riding a bike to work and 4) bringing a lunch to work as opposed to driving out to get something.

Point allocations will be specifically communicated to employees, with the most points being awarded to those who produce no pollutants like categories 3) and 4) above. Employees will be notified a day in advance when the next day will be an official Smog-Alert day - points in all categories will be tripled on Smog-Alert days. One other change this year is for those who are involved in weekend work, you will have another chance to help reduce pollutants and will be recognized for those efforts as well.

This year's Smog Committee members include Johnny Brown for the Paint Shop, Glenn Garvett for the Sales Office, Richard Moore for the Warehouse, Anodizing and Fabrication, and myself for Engineering, Chemistry and Maintenance. Please see one of these individuals for questions. Let's see what you can do for the community, and earn some free money!

THE INSIDER

PROJECT SPOTLIGHT

Gadsden Glass: Technology Enhanced Learning Center at the State University of West Georgia, Carrolton, GA

By Todd Hamilton

Effective project management is one of Southern Aluminum Finishing's most important strengths. This strength was demonstrated with a recent project SAF completed for Gadsden Glass in Gadsden, AL. The project was for the Technology Enhanced Learning Center (TELC) at the State University of West Georgia in Carrolton, GA. Bill Bass was the SAF Project Manager.

The job called for SAF to fabricate and anodize almost 700 items (in excess of 12,000 pounds of material) to meet exact customer specifications and delivery requirements. The specified finish was an SAF 215 Clear Class I anodized coating to match the customer's sample.

The customer provided Bill with a list of shapes, lengths and quantities, each item with a one of four possible requested delivery dates. The customer wanted specific delivery dates to coincide with the installation process at the jobsite. With over 700 different items on the job, you can just imagine the challenge Bill had coordinating this job. Not to mention the complexity that the fabrication and anodizing departments faced handling such a challenging job.

Bill first arranged for the production of a mockup that was sent to and approved by the general contractor and architect. Then Bill initiated the full order into production, working closely with Larry Lancaster in fabrication, Cecil Gates in anodizing, and Richard Moore in Quality Assurance to ensure we met the customer's size and color requirements.

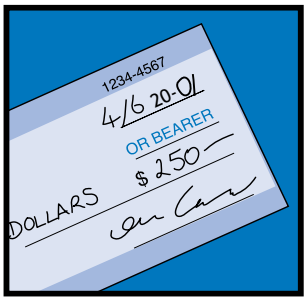
Once production was complete, the job was delivered directly to the jobsite in four separate lots as requested by the customer. The delivery times were crucial because they coincided with the installation process. The customer needed the pieces to arrive on site and on time. Furthermore, each shipment required that the crates be labeled with the detail and shape of its contents so the package could be put in the correct position at the jobsite without having to sort through it at the jobsite. This kind of organized packaging helps save customer's time and money.

The job is now completed, the material is installed and the building is open. Although this kind of order often presents numerous challenges, SAF has the resources and the expertise to handle even the most complex request.

THE INSIDER

Southern Aluminum Finishing Company Announces Company Paid Long-Term Disability Insurance for Employees

By John McClatchey

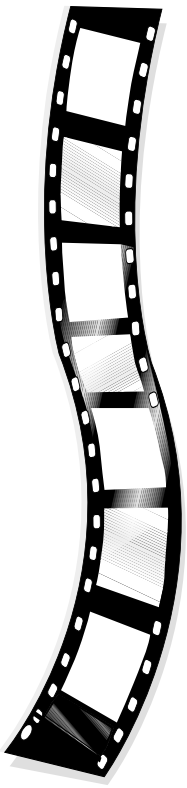


Recently several employees at SAF have had serious illnesses. As our work force ages this may happen more and more often. Therefore, we have decided to purchase long-term disability insurance for all full time employees who have worked for the company for longer than one year. The insurance should give the employees the security of knowing that if they become disabled, replacement income is available to help carry them financially through an illness without shattering their dreams for the future.

If you are disabled and you have worked for SAF for one year, you will receive 60% of your pay beginning 90 days after the disability and continuing until you are able to work again or until social security retirement age. If you become eligible for social security disability income or other disability income, the insurance benefit will be reduced by that amount. If you are disabled because of a preexisting condition, the insurance will not cover you until a year has elapsed from the date the company purchased the insurance, April 1, 2001. If you have any questions about other limits to the coverage, an insurance booklet will be distributed soon.

We hope you will value this benefit. It is unusual for a company of our size to provide long-term disability insurance. We insure your health, and now your income, because we want to be a good place to work.

SAF's Photo Contest



Do you have a project that you completed during the last five years using SAF products that you would like to show off? Our photo contest gives you the opportunity to share your project with the industry and possibly win a cash prize. We will pay you $10 for each project you submit.

Prizes will be awarded to the top three projects. Projects will be judged on product application, color selection and overall appearance. 1st prize: $250, 2nd prize: $100, 3rd prize: $50.

To enter: send us your snapshots of a recently completed project with a note identifying what Southern Aluminum Finishing product was used. If your project is selected, we'll have it professionally photographed and include it in our library of photography we use on our website, Sweet's Catalog or even a magazine advertisement.

The deadline for entries is September 1, 2001. Judging will be completed by January 1, 2002 and the winners will be contacted.

Mail your entries to:
Southern Aluminum Finishing Co
1581 Huber Street NW
Atlanta, GA 30318
Attn: Marketing Manager