

Product specifications of

ACRA-BOND® *ULTRA*

A versatile, environmentally-friendly conventional solids acrylic coating for the residential/light commercial market



AkzoNobel

Tomorrow's Answers Today

Architects and specifiers will find ACRA-BOND® *ULTRA* is an excellent finish for a variety of interior metal surfaces and residential window and door systems.

After many years of successful application with the original ACRA-BOND®, our research and development group has released a product that is superior to current AAMA 2603 technologies.

Test data show it to be the finest conventional solids polyester on the market today.

Why was there a need to completely re-engineer such a workhorse product like the original ACRA-BOND®? The answer was in the voice of our customers. Since the trend to return to conventional solids acrylic technology is growing with the increase in installations of VOC abatement equipment, we believe that this technology will be the coating of choice for residential and light commercial use for quite some time.

What are the features and benefits of this new system?

- Better coverage in difficult to reach areas.
- Painting the most difficult shapes beautifully the first time rather than having to depend on a second run for customer satisfaction.
- Better mileage per gallon for the applicator and therefore a lower applied cost.
- Savings in energy consumption with lower curing temperatures.
- Better flexibility with improved hardness.
- Vastly improved resistance to metal marking.
- Larger windows of forgiveness in application without sags, solvent blisters, or "pull-away" from edges.
- Excellent surface clarity.
- Greatly improved exterior durability.

To make our vision of the future complete, we offer ACRA-BOND® *ULTRA* in our EXPRESS Intermix system for exact quantity needs and exact color matching. This on-site and on-demand ability eliminates waste and reduces costs by recycling overages into new colors.

Architects and specifiers will find ACRA-BOND® *ULTRA* to be an excellent finish for a variety of interior metal surfaces and residential window and door systems.

Disclaimer

The information contained herein is correct to the best of our knowledge. It is offered in good faith, but not to be construed as warranties as to performance of results, since the conditions of use of our products are beyond our control. We suggest that you evaluate the information presented here and determine the suitability of our products prior to commercial scale application.

ACRA-BOND® *ULTRA*

product specifications

| | |
|---------------------------------|---|
| Product Type | Acrylic baked enamel. |
| Specification | Meets or exceeds all AAMA 2603 specifications. |
| Primer | None |
| Percent Solids (Package) | Weight solids 48-64%, Volume solids 37-45%. |
| Percent Solids (Reduced) | Weight solids 40-53%, Volume solids 30-34%. |
| Reduction | 15-25% by volume of Xylene/ Butyl Carbitol blend then add Butyl Carbitol as needed for flow. |
| Viscosity | 17-19 seconds #3 Zahn @ 77° F (package), 20-25 seconds on Zahn #2 (reduced). |
| Film Thickness | Standard: 2.4 to 4.0 wet mils, 0.8 - 1.2 mils dry. Coastal: 3.5 to 5.0 wet mils, 1.2-1.4 mils dry. |
| Gloss Range | 25 to 35% @ 60° angle. |
| Cure Schedule | Lab bake cycle 6 minutes @ 350° F. Production cure varies with the speed, oven temperature and metal mass being painted. Temperature must achieve 350° F and be maintained for 4 minutes minimum. |
| Cure | H+ pencil hardness and 50 MEK double rubs. |

AAMA 2603 specification

The following is part of the AAMA 2603 Specification. ACRA-BOND® *ULTRA* has physical properties which more than qualify it for extrusion application.

| | | |
|---------|---|------------------------------|
| 6.4.1.1 | Dry Adhesion | No pick-off |
| 6.4.1.2 | Wet Adhesion | No pick-off |
| 6.5.1 | Direct Impact | No pick-off |
| 6.6.1.1 | Chemical Resistance | Excellent |
| 6.6.2.1 | Mortar Resistance | Pass - little or no staining |
| 6.6.3.1 | Detergent Resistance | Excellent |
| 6.7.1.1 | 1500 Hour Humidity Resistance | Pass |
| 6.7.2.1 | 1500 Hour Salt Spray Resistance | Pass |
| 6.8.1.1 | 1000 Hour Accelerated Weathering | Pass |
| 6.8.2.1 | 1 Year Outdoor Exposure | Pass |
| N/A | Pencil Hardness | H - 3H |

For more information, please contact:

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We're the largest global paints and coatings company and a major producer of speciality chemicals. We supply industries worldwide with quality ingredients for life's essentials. We think about the future, but act in the present. We're passionate about developing sustainable answers for our customers. Based in Amsterdam, the Netherlands, we have 60,000 employees working in more than 80 countries - all committed to excellence and delivering Tomorrow's Answers Today®.

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Revision Date: July 2009

Product specifications of

TRINAR[®] TEC and TMC

3-coat exotic and metallic color liquid spray exterior metal finishes for architectural extrusion applications



AkzoNobel

Tomorrow's Answers Today

All TRINAR[®] TEC and TMC coatings are formulations of 70% KYNAR 500[®] or HYLAR[®] 5000 polyvinylidene fluoride (PVDF) resin, which makes it the best choice for monumental or institutional projects.

Our history with this incredible technology dates back to the early 1970's.

Continually monitored AkzoNobel research and production quality assurance programs have produced years of actual 45° S. South Florida exposure data.

This data demonstrates TRINAR[®] TEC and TMC's remarkable resistance to exterior weathering such as fading, color change, chalking and cracking.

TRINAR[®] TEC colors are applied in a 3-coat process, and are available in a broad spectrum of vibrant, bright, and very clean colors. They lend themselves beautifully to applications requiring a striking accent or bold statement in design.

TRINAR[®] TMC metallic colors offer either a bright or subdued metal color which is very popular throughout the architectural community. Like TRINAR[®] TEC colors, TRINAR[®] TMC metallics are applied in a 3-coat process and have the unparalleled durability that only a 70% PVDF coating can provide.

When specifying TRINAR[®] TEC or TMC colors, it is helpful to include the appropriate suffix (TEC or TMC). This helps to distinguish the color as a 3-coat process, and minimizes any possibility for confusion during the specification process. The TEC stands for TRINAR[®] Exotic Clear, and the TMC stands for TRINAR[®] Metallic Clear.

Whether your color design requirements call for a bold statement or a soft and subtle appearance, AkzoNobel's wide array of TRINAR[®] TEC and TMC colors will provide the desired effects. Should you wish to match a color provided by another manufacturer, our computer-aided technicians will be happy to provide you with a corresponding match. Or, if you want

something not found on a color card, we will assist you in the creation of a brand new color.

TRINAR[®] TEC and TMC have become very popular coatings for factory application on aluminum as well as galvanized metal roofing and zinc/aluminum coated steel substrates. TRINAR[®] TEC and TMC coatings provide long-term beauty for a wide range of metal building components such as panel systems, curtain-wall, window systems, louvers, canopies, mullions, store fronts and fascia.

Disclaimer

The information contained herein is correct to the best of our knowledge. It is offered in good faith, but not to be construed as warranties as to performance of results, since the conditions of use of our products are beyond our control. We suggest that you evaluate the information presented here and determine the suitability of our products prior to commercial scale application.

TRINAR[®] TEC and TMC product specifications

| | |
|---------------------------------|---|
| Product Type | 70% KYNAR 500 [®] or HYLAR [®] 5000 coating. |
| Specification | Meets or exceeds all AAMA 2605 specifications. |
| Primer | KY1C17839A, KA1C22454(P1) or KN1C22296(P2) |
| Percent Solids (Package) | Weight solids 37-43%, Volume solids 25-27%. |
| Percent Solids (Reduced) | Weight solids 29-34%, Volume solids 20-22%. |
| Reduction | Primer: 1-1 with Xylene. Color coat and Clear coat: 20-30% by volume of Xylene/Butyl Carbitol blend then add Butyl Carbitol as needed for flow. |
| Viscosity | Primer: 20-25 seconds #3 Zahn @ 77° F (package), 16-18 seconds on Zahn #2 @ 77° F (reduced). Topcoat: 20-23 seconds #4 Zahn @ 77° F (package), 22-25 seconds on Zahn #2 @ 77° F (reduced). Clear coat: 20-23 seconds #4 Zahn @ 77° F (package), 18-22 seconds on Zahn #2 @ 77° F (reduced). |
| Film Thickness | Primer: 1.0-2.0 wet mils, 0.2-0.4 mils dry. Color coat: 4.0-6.0 mils wet, 1.0-1.2 mils dry. Clear coat: 2.0-3.0 mils wet, 0.4-0.6 mils dry. Total system: 1.6-2.2 mils dry. |
| Gloss Range | 25 to 35% @ 60° angle. |
| Cure Schedule | Lab bake cycle 10 minutes @ 450° F. Production cure varies with line speed and oven temperature. Metal temperature must achieve 450° F and be maintained for 2 minutes minimum. |
| Cure | H+ pencil hardness and 50 MEK double rubs. |
| Note | To help facilitate color uniformity, a special primer (P1 or P2) may be required. Please see Product Data Sheet. |

AAMA 2605 specification

| Test | Description | Coating Requirements | TRINAR® TEC and TMC Performance |
|---------|---|---|------------------------------------|
| 7.1 | Color Uniformity | Visual Control | Instrument and visually controlled |
| 7.2 | Specular gloss at 60°, ASTM D 523 | Medium and low gloss ranges | Controlled to custom spec ±5 units |
| 7.3 | Dry film hardness, ASTM D 3363 | F minimum | H+ |
| 7.4 | Film adhesion (dry, wet and boiling water), crosshatch 1/16 inch squares | No removal between scribed times | No removal |
| 7.5 | Impact resistance (direct) 0.10 inch distortion | No removal of film | No removal |
| 7.7.1 | Chemical resistance (10% muriatric acid) | 15 minutes, no visual changes | Meets or exceeds spec |
| 7.7.2 | Chemical resistance (mortar, alkali) | 24 hours, no visual changes | Meets or exceeds spec |
| 7.7.3 | Resistance to acid pollutants (70% nitric acid) | 30 minutes, maximum 5ΔE NBS units color change | Meets or exceeds spec |
| 7.7.4 | Detergent resistance | 72 hours, no effect | Meets or exceeds spec |
| 7.8.1 | Humidity resistance, ASTM B 2247 | 4,000 hours, few #8 blisters (maximum) | Meets or exceeds spec |
| 7.8.2 | Salt spray resistance, ASTM B 117 | 4,000 hours, minimum 7 rating on scribe and minimum blister rating of 8 (ASTM D 1654) | Meets or exceeds spec |
| 7.9.1.2 | Weathering, color retention, ASTM D 2244 | 10 years, 45° S. South Florida, max 5ΔE NBS units color change | Meets or exceeds spec |
| 7.9.1.3 | Weathering, chalk resistance, ASTM D 4214 | 10 years, 45° S. South Florida, max 8 rating for colors, 6 rating for whites | Meets or exceeds spec |
| 7.9.1.4 | Gloss retention | 10 years, 50% minimum | Meets or exceeds spec |
| 7.9.1.5 | Weathering, erosion resistance | 10 years, 45° S. South Florida, maximum 20% loss | Meets or exceeds spec |

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Revision Date: July 2009

Product specifications of

TRINAR®

2-coat solid color liquid spray exterior metal finish for architectural extrusion applications



AkzoNobel

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All TRINAR® coatings are formulations of 70% KYNAR 500® or HYLAR® 5000 polyvinylidene fluoride (PVDF) resin, which makes it the best choice for monumental or institutional projects.

Our history with this incredible technology dates back to the early 1970's.

Continually monitored AkzoNobel research and production quality assurance programs have produced years of actual 45° S. South Florida exposure data.

This data demonstrates TRINAR®'s remarkable resistance to exterior weathering such as fading, color change, chalking and cracking.

One of the secrets of TRINAR®'s superior durability lies in the molecular structure of the polyvinylidene fluoride resin. This unique carbon/fluorine bond is the key to unsurpassed thermal, chemical and ultraviolet resistance properties. When coupled with AkzoNobel developed premium ceramic and inorganic pigmentation, this system demonstrates remarkable resistance to weathering, fading, cracking and chalking. When properly applied, TRINAR® easily passes the rigorous testing requirements of the American Architectural Manufacturer's Association specification AAMA 2605.

To assure proper application, AkzoNobel utilizes a process of Applicator Certification. Only after meeting stringent repeatable quality standards is an applicator granted this approval. This helps protect the integrity of the finish for all parties concerned.

TRINAR® has become a very popular coating for factory application on aluminum as well as galvanized metal roofing and zinc/aluminum coated steel substrates. TRINAR® coatings provide long-term beauty for a wide range of metal building components such as panel systems, curtain-wall, window systems, louvers, canopies, mullions, store fronts and fascia.

If your specifications require a coating for several of these components on the same project, we have formulated TRINAR® for both spray and coil coating applications using the same pigmentation. This ensures continuity of color throughout an entire project.

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TRINAR[®] product specifications

| | |
|---------------------------------|--|
| Product Type | 70% KYNAR 500 [®] or HYLAR [®] 5000 coating. |
| Specification | Meets or exceeds all AAMA 2605 specifications. |
| Primer | KY1C17839A |
| Percent Solids (Package) | Weight solids 39-43%, Volume solids 25-27%. |
| Percent Solids (Reduced) | Weight solids 31-34%, Volume solids 20-22%. |
| Reduction | Primer: 1-1 with Xylene. Topcoat: 15-25% by volume of Xylene/Butyl Carbitol blend then add Butyl Carbitol as needed for flow. |
| Viscosity | Primer: 20-25 seconds #3 Zahn @ 77° F (package), 16-18 seconds on Zahn #2 (reduced). Topcoat: 20-23 seconds #4 Zahn @ 77° F (package), 22-25 seconds on Zahn #2 (reduced). |
| Film Thickness | Primer: 1.0-2.0 wet mils, 0.2-0.4 mils dry. Topcoat: 4.0-6.0 wet mils, 1.0-1.2 mils dry. Total system: 1.2-1.6 mils dry. |
| Gloss Range | 25 to 35% @ 60° angle. |
| Cure Schedule | Lab bake cycle 10 minutes @ 450° F. Production cure varies with line speed and oven temperature. Metal temperature must achieve 450° F and be maintained for 2 minutes minimum. |
| Cure | H+ pencil hardness and 50 MEK double rubs. |

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| 7.9.1.2 | Weathering, color retention, ASTM D 2244 | 10 years, 45° S. South Florida, max 5ΔE NBS units color change | Meets or exceeds spec |
| 7.9.1.3 | Weathering, chalk resistance, ASTM D 4214 | 10 years, 45° S. South Florida, max 8 rating for colors, 6 rating for whites | Meets or exceeds spec |
| 7.9.1.4 | Gloss retention | 10 years, 50% minimum | Meets or exceeds spec |
| 7.9.1.5 | Weathering, erosion resistance | 10 years, 45° S. South Florida, maximum 20% loss | Meets or exceeds spec |

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