Albi Clad 800-A solvent-based intumescent mastic that protects exterior structural steel and other structural materials, resists weathering, UV exposure, and other extremes. Proven over decades in challenging environments, including offshore drilling platforms, dock facilities, and petrochemical plants. UL listed for up to 3-hr. Per ASTM E119 and UL 1709.

Albi DriClad - Natural basalt fireproofing fireboard for interior structural steel. Uniform density and thickness for cost-effective, UL-classified fire protection up to 2-hrs. DriClad cuts easily with a common table saw. Mechanically fastened with AlbiScrew® system for a fire-proven, sturdy joint.

Albi Clad TF and 800 have been UL tested for resistance to high humidity, heat, aging, CO2/SO4-industrial atmosphere, chlorine, and washing. Albi Clad 800 has also been UL tested with weatherometer, salt spray and freeze/thaw for exterior conditions. Field proven for decades.

AMERICAN GALVANIZERS ASSOCIATION
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Serving the needs of specifiers, architects, engineers, contractors and fabricators throughout North America since 1935, the American Galvanizers Association (AGA) provides information on the most innovative applications and state-of-the-art technological developments in hot-dip galvanizing for corrosion protection. Created to educate and train in the specification and use of hot-dip galvanizing, the AGA maintains a large technical library, distributes numerous industry publications, offers free educational seminars, and provides toll-free technical support to the specifying community.

AMERICAN INTERNATIONAL PERFORMANCE COATINGS & FINISHES GROUP
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Ameron International Performance Coatings & Finishes Group is a worldwide manufacturer and supplier of a broad line of high-performance coatings for structural steel including inorganic zinc primers, preconstruction primers, epoxies, polyurethanes, polysiloxanes and a variety of specialty coatings.

Ameron protective coatings products are suited for use in diverse industries such as oil and gas production, refining, petrochemical processing, fossil and nuclear power, bridge and infrastructure maintenance, general manufacturing, pulp and paper, municipal water and waste treatment, and original equipment manufacturing.

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Aztec Galvanizing Services, a division of AZZ, owns and operates 11 hot dip galvanizing plants located in the South and Southwest, with kettles ranging from 25’ to 58’ in length. With Aztec’s network of plants, they are able to accommodate the largest projects with customized turnaround time at a competitive price. Aztec has implemented “Galvxtra,” their Nickel-Zinc alloy process, which provides the ability to meet the highest quality standards necessary in the competitive after-fabrication steel market.

CORTEC CORPORATION
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Manufacturer of environmentally friendly materials-protection technologies including patented VpCI™ and MCI® products, biodegradable packaging materials and liquids, and additives. Product lines include: packaging, surface preparation, coatings, metalworking fluids, process additives, retail, concrete/construction, water treatment, industrial/MRO, preservation, and Total Corrosion Control™ Solutions. Full laboratory, testing, on-site consulting and technical assistance available.

March 2003 • Modern Steel Construction
PHOTO: FIREPROOFING SOLUTIONS

PRODUCT HIGHLIGHTS

DUNCAN GALVANIZING

Since 1890, Duncan Galvanizing has developed systems to protect today’s steel:
- DELTIGALV, enhanced galvanizing meeting all ASTM and AASHTO requirements, providing long-lasting corrosion protection with an architecturally pleasing surface.
- PRIMERALGV, a factory applied universal primer for galvanized steel which is to receive a field applied topcoat.
- COLORALGALV, a patented architectural finish for galvanized steel, available in any color and warranted for 20 years.

Duncan is introducing three new processes:
- DUNCAN COLORALGALV THERMOPLEX PROCESS, a high performance, dry-applied coating system designed to be a durable, thick, environmentally friendly architectural finish over galvanized steel, “black” steel, aluminum or other metals.
- DUNCAN THERMOSET, similar to Thermoplex, but a thinner, harder material available in an unlimited range of colors.
- DUNCAN COLORSHIELD, a water-based pigmented spray-over galvanized steel developed to identify OEM products or to mask the zinc appearance in selected applications.

ELCOMETER, INC.

For the precise measurement of coatings, the new Elcometer 456 offers radical advances in both design and performance. The Elcometer 456 coating-thickness gauge is remarkably easy to use. Step by step, this menu-driven instrument walks you through the entire calibration and data collection process. Get fast, accurate readings with full on-board statistics including storage of up to 40,000 readings in 999 batches.

GREGORY GALVANIZING, DIVISION OF GREGORY INDUSTRIES

In business since 1896, Gregory Galvanizing operates one of the largest galvanizing kettles in the country. Equipped with a 520’-long x 6’4’-wide x 8’6’-deep kettle, we are capable of galvanizing large bridge beams, transmission poles, monopole sections and other large structural fabrications that are designed for the galvanizing process. Small parts such as fasteners, steel hardware and OEM parts are galvanized at our small kettle on our centrifuge system, providing a high quality finished coating. All hot dip galvanizing is done to ASTM and AASHTO standards.

GRACE CONSTRUCTION PRODUCTS, SPECIALTY BUILDING MATERIALS

The Monokote and FlameSafe product lines offer a range of quality solutions. Monokote is a cementitious, spray-applied fireproofing product designed for fast and easy application to steel substrates and offers up to four hours of fire protection when used on structural steel columns, beams and fluted decking. Monokote is applied quickly and easily, requiring only the addition of water on the job site.

Monokote is available in a variety of formulations to provide the most efficient fire protection, MK-6HY, MK-6s, and RetroGuard are ideal for a wide range of concealed applications. Z-106 and Z-146 provide exceptional performance in exposed applications and high traffic areas.

Applications include commercial and government buildings; hotels, resorts and casinos; schools, museums and hospitals; and transportation centers.

FlameSafe, our comprehensive line of firestop products, includes: intumescent/elastomeric products, sealants, mortar, putty and putty pads, firestop bags, sleeves, devices and a line of cable protection products ideal for new or retrofit applications in commercial, industrial and residential buildings.
Galvanizing, Coatings and Fire Protection Products

**INGAL PRODUCTS AMERICA, INC.**

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Proprietary technologies include plasma surface treatment, composite system designs and welding processes. Our core competencies lie in fluoropolymer materials, corrosion systems engineering and plasma treatments.

**ITW DEVCON ENGINEERED COATINGS**

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ITW Devcon Engineered Coatings offers an advanced line of room-temperature-curing protective coatings available in sprayable, trowelable, and brushable formulations. They protect against chemicals, corrosion, high temperatures, impact and abrasion. The company has a network of engineers with the expertise to handle specific coating problems. Specialists will analyze the customer’s needs and formulate a detailed plan to maximize the cost-effectiveness, performance, and service life of a recommended coating. When necessary, these experienced technicians will develop a specialty product or perform periodic inspections. Products include Iraseal 200, a resilient polyurea coating formulated to protect surfaces subject to long-term immersion and weathering; Irathane 155, a polyurethane coating with a high-slip finish for protecting dry-material screens, bins, and hoppers in addition to coagulator tanks, clarifier tanks, etc.; and VE 9300, a glass-flake novolac vinyl ester lining system that withstands long-term exposure to caustic gases in applications such as flu gas desulfurization.

**METAL COATINGS INTERNATIONAL INC.**

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Metal Coatings International Inc., (MCII), is a developer of Water-Based Coating Technology, including proprietary corrosion-resistant coatings, sealers, and topcoats.

Our DACROMET and GEOMET coatings offer the galvanic (self-healing) properties necessary for a variety of applications. Our coatings are thin, water-based, inorganic corrosion-resistant coatings comprised primarily of zinc and aluminum flakes. Combined with our sealers, the DACROMET and GEOMET coating systems have been selected as a preferred metal finish by leading automotive and construction engineers for 25 years. These coatings have exceeded 1000 hours SST, 120 cycles GM 9540P and 100 cycles APGE, all accelerated corrosion tests required by automotive companies that have become the standard in the coatings industry.

Our coatings are applied to fasteners by immersion using conventional Dip-Spin coating equipment. Larger sized parts can be treated by the spray method. Advantages of coatings include bimetallic corrosion resistance with aluminum, solvent resistance, hydrogen embrittlement-free processing and four-way corrosion protection (barrier protection, galvanic action, passivation, and self-repairing properties). They have been used as a cost-effective replacement for galvanizing (both hot-dipped and mechanical), and cadmium and electro-zinc plating due to their environmentally friendly composition, corrosion protection and engineered lubricity levels.

Why use hot dip galvanized lintels for your construction project? From 100-story skyscrapers to new homes, buildings have many applications for galvanizing.

Long Life. Previously used only in commercial applications, galvanizing now can provide unsurpassed corrosion-free life to new homes. Quality builders and brick contractors know that galvanizing is the best long-term choice for brick construction projects.

High Quality. Galvanizing addresses renewed emphasis on the part of the consumer for improved quality in residential construction. The timeless quality of brick construction is enhanced by the superior corrosion protection of galvanizing versus prime painted.

Low Maintenance. No painting is required. The unsightly problems of rust staining and mortar cracking due to corrosion are eliminated.

Cost Competitive. Eliminating the cost of initial painting and the cost of repeated painting over the life of the home, galvanizing is the choice for corrosion resistant protection.

**INTEGUMENT TECHNOLOGIES, INC.**

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Integument Technologies is a science-based developer and manufacturer of engineered fluoropolymer systems of linings, films and coatings. Applications include pipe/tape wraps, specialty coatings and linings for secondary & primary containment applications and aerospace lightning strike protection, and paint-replacement.
PRODUCT HIGHLIGHTS

Galvanizing, Coatings and Fire Protection Products

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PPG High Performance Coatings manufactures and markets a full range of coatings to fill every possible application and end-use requirement for steel and/or galvanized steel. Whether your coatings requirements call for zinc-rich primers, fast-dry alkyds and acrylics, chemical-resistant epoxies, high-durability urethanes and air-dry fluoropolymer coating, or intumescent fireproofing, PPG High Performance Coatings should be your first call. Visit our website for further information or call 800-441-9695.

**THE SHERWIN-WILLIAMS COMPANY**
Paint Stores Group
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Sherman-Williams Industrial and Marine Coatings group recently added Fast Clad DTM Urethane to its ExpressTech coatings family. The new single-coat, direct-to-metal urethane equals the performance of conventional epoxy/urethane systems. An aliphatic polyurea, Fast Clad DTM Urethane outperforms conventional urethanes because it can be applied at 6 to 9 mils DFT in a single coat with no outgassing or pinholing. Conventional urethane systems can be applied at only 2 to 3 mils DFT, so more coats are required to achieve adequate substrate protection. Using one coat instead of two minimizes the high cost of hourly labor, and the coating’s fast-dry formulation helps speed jobs to completion. Fast Clad DTM Urethane can be applied with airless spray equipment, brush or roll, and has a two-hour pot life. It can be recoated in two hours, a feature sure to broaden its appeal in industrial markets and fabrication shop applications.

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There is growing evidence that the structural integrity of many buildings is being compromised due to corrosion on uncoated steel. Tnemec Company has introduced Series 394 Perimeprime, a high-performance primer designed to bond with the most popular types of fireproofing while providing outstanding, long-term protection to structural steel. Perimeprime’s tenacious adhesion to steel that has received an SSPC-SP3 Power Tool Cleaning keeps costs low, and its tolerance to a wide range of environmental conditions keeps jobs going on time.

**PRODUCT CASE STUDY**

**WTC Temporary PATH Station**

Michael H. Zilnik

Design and construction of the temporary Port Authority Trans-Hudson (PATH) Station for the Port Authority of New York and New Jersey began with a sense of urgency. Permanent redesign and construction of the new stations, tunnels and tracks for the 1 and 9 subways and the PATH system was to be a long process. However, it was essential to present improvements to the PATH station at Ground Zero before the first anniversary of 9/11/2002.

The temporary design calls for three tracks, a platform and a rebuilt underground station for the PATH trains entering lower Manhattan. Steel columns, which stub off about a foot above the roof of the station, are designed to support a wide range of redevelopment options above-ground.

AISC-member Cannon Construction Corp. of Conklin, NY subcontracted about 1450 tons of the structural steel order. The order was placed in late April 2002 with deliveries to begin in August. Typical column sizes were W14 x 257, with 18”, 24”, and 30” beams located on the platform level and the roof. Connections were standard beam-to-beam shear connections, with double-angle vertical bracing.

Port Authority specs called for a three-coat paint system: organic zinc-rich primer, epoxy intermediate coat and aliphatic polyurethane finish coat. Sherwin Williams Zinc Clad IV, Macropoxy and Hi Solids Polyurethane coatings were utilized. In accordance with Port Authority specifications, the company provided a technical advisor during the project start up.

Bridgewater Protective Coatings, Inc. (BPC), of Bridgewater, NJ, applied the coatings. BPC’s 50,000-sq.-ft facility can process, sandblast and paint a large order in just hours. The company also has a 40,000-lb. crane capacity indoors and a 100,000-lb capacity outside.

The paint had to be applied within a few hours of sandblasting, before oxidation began. Minimum cure times had to be allowed between coats, since successive coats could not be applied until the previous coat had dried, and the finish coat had to cure sufficiently to load the steel without damaging the coating.

BPC loaded the steel onto trailers with special care. About 100 fabricated pieces were placed on each trailer with special nylon straps to avoid damage to the coating.

The project’s high profile and accelerated erection schedule pushed the coating of all 67 truckloads of steel to completion in just eight weeks—seven weeks less than originally quoted. BPC facilitated the speed-up by scheduling two 12-hour shifts daily. The time constraint was pressing in view of the complex coordination between fabrication, sandblasting, the application of each coat of paint, and erection.

The PATH coated-steel order is fitting up well at the site, according to general contractor Yongkers/Tully/Pegno, A Joint Venture. The construction is considered fairly standard, with beam and two-tier columns plus three levels of framing. Deliveries of the coated structural steel began to arrive at the site in August 2002, well before September 11. Observers at the steel mesh of the south-viewing platform could see the first of the columns going into place— a small triumph in the face of tragedy.

Michael H. Zilnik is a project manager at the WTC Temporary PATH Station. He is a product manager for AISC-member Cannon Construction Corporation of Conklin, NY.
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Voigt & Schweitzer, Inc. is part of the largest galvanizing company in the world. This year will mark 72 plants, with the opening of V&S Taunton Galvanizing, in Taunton, MA. The company will see the V&S Lebanon Galvanizing facility open their Duplex Coating line in Jonestown, PA. This plant is the largest duplex coating facility in North America with over 175,000 sq. ft under one roof, and specializing in the COLORZING process of applying paint over hot dip galvanizing. This system has proven to be successful, with over a decade of performance in the United States.

The demand for luncheon seminars given for architects, departments of transportation and steel fabricators will reach a milestone this year, nearing 20,000 individuals who have participated in this program since it began in 1992. The web site www.hotdipgalvanizing.com is updated weekly.