Bulletin 3-1

Chemical-Resistant Industrial Brick Floors

atlas

Chemical-Resistant Industrial Brick Floors for New Construction and Renovation Projects

More than 60 years of success in high-performance, heavy-duty flooring

CHEMICAL-RESISTANT INDUSTRIAL FLOOR SYSTEMS

Rugged Floors for Aggressive Environments

Atlas industrial brick floors utilize an impervious membrane and chemical-resistant brick, jointed with corrosion-resistant mortar. These floors provide outstanding resistance to aggressive chemical environments, vehicular and human traffic, impact and abrasion ... while maintaining 100% integrity against water.

Atlas industrial floors were introduced in the early 1940s, and have been proven in a broad range of industries.

In steel and metalworking plants, Atlas floors protect against pickling, plating and galvanizing chemicals, and they stand up to the intense physical demands of these applications.

In the chemical, petrochemical, pharmaceutical, textile, textile finishing, food and beverage industries ... Atlas floors have successfully handled a multitude of indoor and outdoor applications.

Tank farms, bulk chemical unloading stations, waste holding and treating areas depend on Atlas industrial brick floors to ensure against environmental pollution, including soil contamination.

Atlas industrial flooring systems preserve the structural integrity of buildings, slabs, curbs, trenches and foundations. They also protect against a wide range of the most aggressive corrosives and solvents, even at elevated temperatures. This advantage is unique to industrial brick floor systems — it's not offered by any other type of flooring system.

One of the design factors contributing to the success of Atlas flooring systems is that they allow the brick sheathing to move independently of the membrane — which is particularly important if the floor is exposed to thermal cycling and is above-grade. The brick and mortar provide the chemical, thermal and mechanical protection for the chemical-resistant membrane.

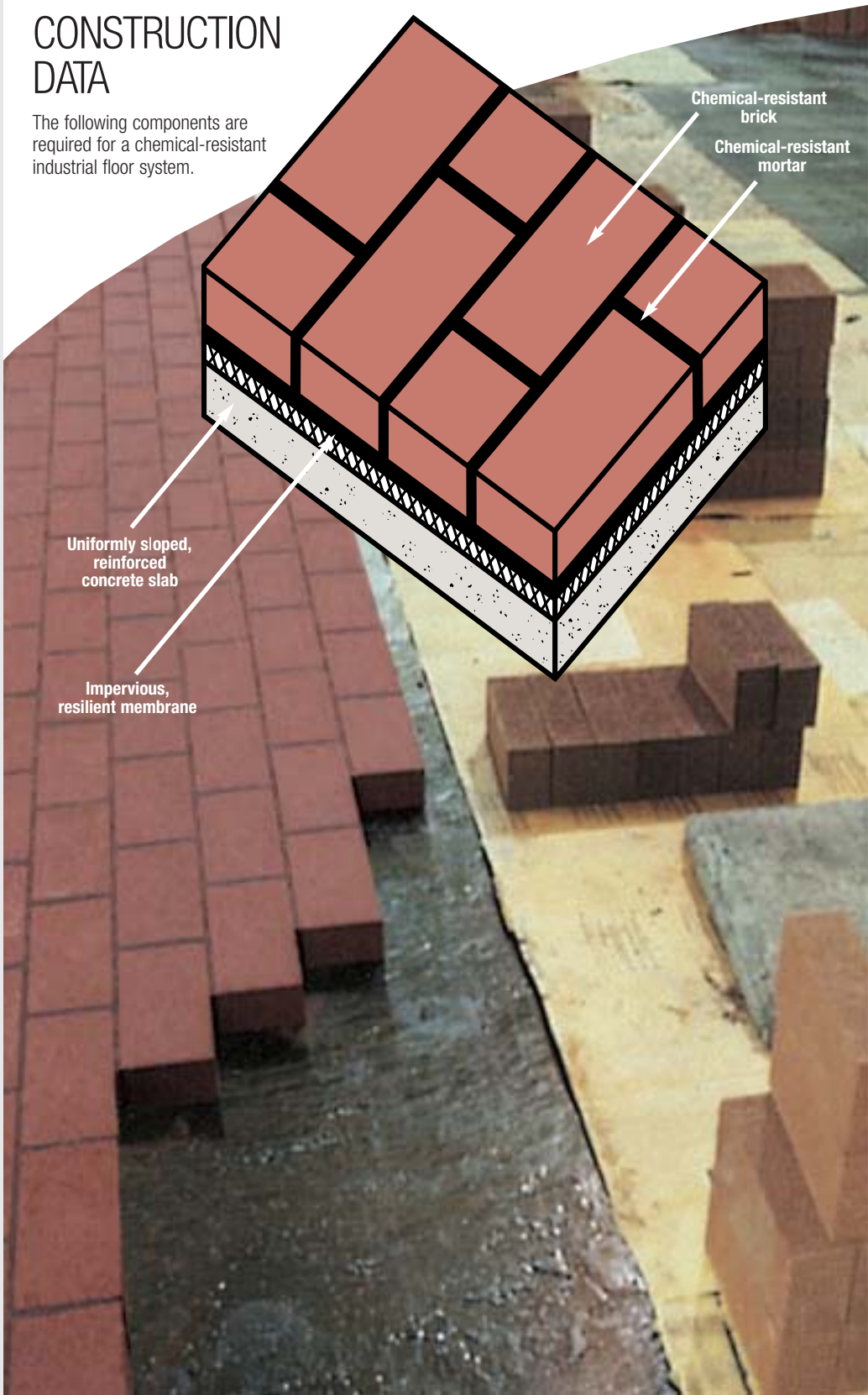
Atlas industrial floors are installed over properly engineered and placed reinforced concrete slabs. These slabs are uniformly sloped to drains and trenches. The proper selection of the membrane, brick and mortar is predicated on the chemical, temperature and mechanical conditions to which the floor will be subjected. Proper slab design and material selection will dictate the permanence of the flooring system.

TYPICAL PLANT USES

- Aerospace
- Plating
- Refineries
- Plastics
- Battery
- Explosives
- Beverage
- Printing
- Detergent
- Fertilizer
- Food Processing
- Smelters
- Textile
- Chemical
- Pipe & Tube
- Steel Mills
- Pharmaceutical
- Petrochemical

CONSTRUCTION DATA

The following components are required for a chemical-resistant industrial floor system.



TYPICAL SYSTEMS

With the development of new materials, there is a broad choice of membranes and mortars that can be used with various sizes of red shale, fire clay or carbon brick.

Membranes

Atlastic® 31 — Hot-melt, chemical-resistant asphalt

Atlastic® 40 — Atlastic 31 reinforced with impregnated fiberglass fabric

Atlastic® 50 — High-temperature resistant, hot-melt, chemical-resistant asphalt with or without fiberglass reinforcement. Available for application as hot melt or in sheet form.

Atlastic® CT-30 — Elastomeric urethane/asphalt, cold-applied, self-leveling system

Ureklad® CT-80 — 100% solids, self-leveling flexible urethane

Chempruf — Flake glass and fabric reinforced lining systems based on epoxy, vinyl ester, furan and polyester resins. See Bulletin 4-2 for additional information.

ChemPruf membranes are installed in varying thicknesses and layers of reinforcement depending on the service conditions.

Mortars

Alkor® — The original furan resin mortar. In use since 1941.

Carbo-Alkor® — 100% carbon-filled, furan resin mortar

Furathane — High bond, 100% carbon-filled mortar

Carbo-Korez® — 100% carbon-filled, phenolic resin mortar

Chemester® — Vinyl ester resin mortar

Rezklad® HP — Water-washable novolac epoxy mortar. LT formulation cures as low as 34º F.

Rezklad® SR/SR-C — Novolac epoxy mortar, available 100% carbon-filled

Vitrex® II — Water-resistant, sodium silicate mortar

Vitrex® K — Potassium silicate mortar

Vitrex® K-HF — Halogen-free potassium silicate mortar

Vitrex® K-HFS — Single component, halogen-free modified silicate mortar

Vitroplast® II— Silica-filled, polyester mortar

Vitrobond® — Silica-filled, hot-poured, plasticized sulfur cement

Carbo-Vitrobond® — Carbon-filled, hot-poured, plasticized sulfur cement

Hot-pour sulfur cements are used with industrial brick floor systems. They are used to minimize downtime. The original plasticized sulfur cements, Vitrobond and Carbo-Vitrobond, are quick-setting materials that offer fast economical installation.

TYPES OF FLOOR CONSTRUCTION

Brick Thickness

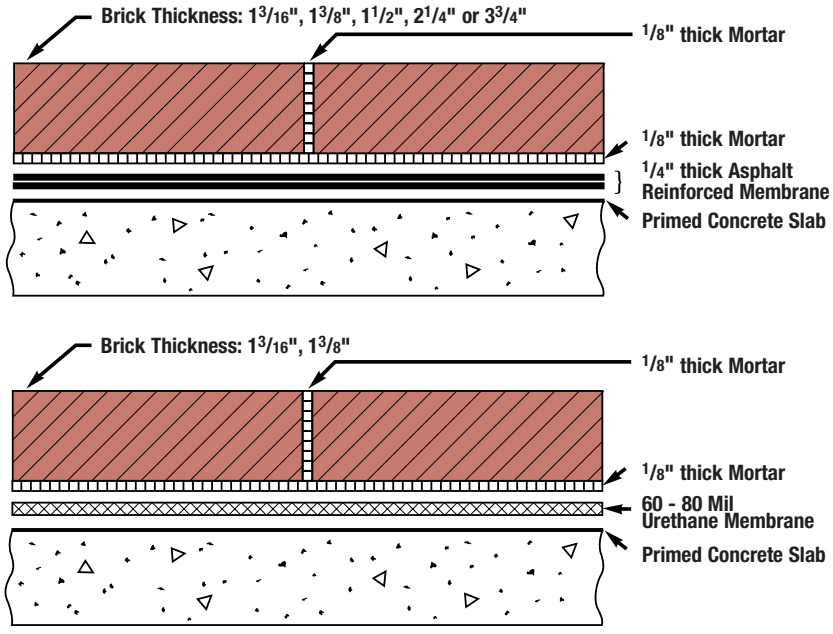
Light/Medium Duty — 13/16-inch, 13/8-inch or 11/2-inch thick brick suitable for foot traffic, light trucking, splash and spill. Various surface finishes are available, i.e. smooth to high-friction finishes.

Without Bedjoint

Most industrial floors use 13/8-inch-thick pavers. The 21/4-inch and 33/4-inch thick brick are used where severe physical abuse, dynamic loading and impact are experienced. For light to medium exposure, the brick can be set directly on the membrane without using a bedjoint.

With Bedjoint

A bedjoint is recommended for excessively wet floors subjected to aggressive chemicals and heavy dynamic loading. The bed and joints utilize the same mortar. When using a resin mortar, a 1/8-inch thick bed is trowel-applied onto the section of the membrane into which the bricks are set. When using a hot-melt sulfur cement, a skim coat of sulfur cement is applied on the membrane. The bricks are then placed on the skim coat using 1/4-inch spacer chips to facilitate attaining a 1/4-inch thick bed beneath the brick.



Heavy Duty — 21/4-inch thick single brick for heavy trucking and extremely wet operations.

Extra Heavy Duty — 33/4-inch thick double brick for use where severe physical abuse is experienced. Used primarily in steelmaking and metalworking operations.

About Atlas …

Atlas Minerals & Chemicals, Inc. has attained its position as a leader in the field of chemical-resistant, non-metallic construction materials through extensive product development and innovative methods of construction.

A History of Innovation

In the 1930s, Atlas developed the first hot-pour, plasticized sulfur cement, red shale acid-proof brick and double brick … along with such brick installation methods as dual, modified dual and standard construction as well as interlocking expansion joints for brick-lined tanks. Atlas continued to develop chemical-based product "firsts" which have become standards in the industry … Alkor®, the original furan mortar in the U. S. … Carbo-Korez®, a phenolic resin mortar … Zerok® 101, a polyvinyl chloride co-polymer coating … Neobon®, a neoprene coating.

As the need for corrosion protection increased, Atlas continued to lead the development of new products. In the early 1950s, Atlas introduced Alfane, the first epoxy resin mortar for jointing chemical-resistant brick; Vitroplast, the first polyester resin mortar for brick lining ClO_2 towers in the pulp and paper industry; Furnane® floors, a dual cement floor system for the food and beverage industries; and Rezklad®, an epoxy resin monolithic flooring for use in a host of industries where corrosion, abrasion and sanitation are problems.

Atlas Today

Technological innovation at Atlas has ensured that the industrial brick floor system continues to meet the demands of industry. New mortars, such as Rezklad® HP and Carbo-Chemester®, along with resin-based, cold-applied membranes and sheet asphalt membranes, have been developed to address changing chemical environments, installation schedules and restrictions, and environmental concerns.

Anchor-Lok™, a thermoplastic corrosion-resistant lining, has found wide use in trenches and sumps in conjunction with the industrial brick floor system. The use of Anchor-Lok™ with the flooring system eliminates potential high leakage areas. Anchor-Lok™ trenches and sumps can be provided with a leak detection system to ensure compliance with the most demanding environmental mandate.

Quality … Always the Result

Atlas offers its customers the innovative thinking of a pioneer and the proven experience of a leader. Through all phases of our operations, we are committed to quality consistent with the goals of other national and international quality standards. Let Atlas put its experience to work for you. Call 800-523-8269 or write to arrange for a free survey of your flooring needs.

For qualified and objective recommendations to solve your corrosion problems …

ask Atlas,

we have a world of answers.

atlas

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