



**BLACK ROCK
FIREPROOF COLUMN**
A DIVISION OF UNITED STEEL



1. Product Name

- Black Rock Fireproof Columns

2. Manufacturer

Black Rock Fireproof Column Company
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3. Product Description

Basic Use

Black Rock Prefabricated Fireproof Columns were introduced in 1972, and now are a market leader in the UL Listed prefabricated fireproof column industry.

Black Rock Columns are designed as a prefabricated fireproof unit consisting of a load-bearing steel column encased in a proprietary insulating material which is permanently protected by an outer shell of non-load-bearing steel.

Black Rock columns are rated and labeled by Underwriters Laboratories for fire retardant classification of 2, 3 and 4 hour rating as per ASTM E 119, as well as the latest specifications of the American Institute of Steel Institute, (AISI), and the American Concrete Institute, (ACI).

The inner load-bearing core column can be a wide-flange, (WF), pipe or hollow steel section, (HSS) shape, meeting current ASTM grades, when HSS is specified, 5K psi concrete is pumped into the core column to maintain the UL fire rating.

All core column fabrication is within accordance with American Institute of Steel Construction, (AISC), standards and practices.

All connections are attached to the core column and can be designed to penetrate the outer shell without affecting the hourly rating and maintaining the AISC standards.

Black Rock Column's maintenance free outer steel shell provides a clean, smooth exterior finish available in many shapes and sizes along with custom sizing available depending on building design and customers special needs. These attractive architecturally exposed structural steel, (AESS), outer shells make it the premier choice for all exposed areas, including window wall construction, schools, dormitories, hospitals and parking garages.

Structural WF, pipe, and HSS square and rectangular shapes meet ASTM standards and all outer shells are coated with standard metal primer (unless specified otherwise) prior to shipping.

Galvanizing, SP-6 sandblasting and high-performance coatings are readily available if required.

Black Rock Columns are specified on projects nationwide, delivered by the Black Rock's trucking fleet complete with dedicated over-the-road haulers for jobsites country-wide.





For indoor and outdoor structural use, architects and engineers appreciate the strength, versatility and long-term reduced maintenance cost provided by Black Rock Fireproof Columns.

Materials and Composition

Interior Core Column

Specified by the engineer consisting of one of the following:

- WF: A992
- HSS (A 500 Grade B and C shape)*
- Pipe (A-53 Grade B) or a A106B seamless*

* Hollow core columns are filled with concrete as per ASTM C94; 5K in 28 days.

Vermiculite

Proprietary vermiculite-based insulating material is UL-approved and conforms to ASTM C516-80.

- Batched and pumped in-house to maintain quality and consistency
- Minimum covering of proprietary fireproofing is in accordance with minimum hourly rating requirements established by UL classification ANSI/UL 263, ASTM E119

Outer Shells

- The outer shell is filled with a proprietary vermiculite-based insulating material
- The outer non-load bearing steel shell is available in round, square or rectangular shapes
- Wall thickness varies from 10 gauge to $\frac{3}{16}$ inch depending on size and shape
- Shop priming of all shells is our shop standard
- When specified sandblasting and high performance primers are available, all are performed in-house
- Custom sizes are available upon request



Taconic Connection

Shop Drawings

- All detailing is provided by the steel fabricators
- All detailing will be required to show all outer shell locations along with sizing and extent of fire protection

Benefits

- Factory fireproofing (factory fabrication eliminates need for field labor to apply standard fireproofing)
- Consistent quality by our in-shop factory professionals
- Added durability and ruggedness unavailable with other forms of fireproofing, which dramatically reduces maintenance costs and avoids long-term appearance issues
- Fast production times to maintain erection schedule
- Predictable scheduling as Black Rock Fireproof Columns are delivered to jobsite complete and ready for erection
- No trades other than steel erectors needed
- Confidence of working with an AISC-certified structural fabricator
- Black Rock assures on-time deliveries by maintaining a trucking fleet of 15 tractors and 40 trailers with a network of over-the-road trucking firms whenever needed to meet owner demands

Types

Black Rock prefabricated fireproof columns' design is based on standard structural steel shapes including WF and HSS shapes for its load-bearing core column which is protected by an outer steel shell which can be round, square or rectangular and includes custom shapes and sizes depending on scope.



Models and Sizes

Complete standard sizes available online, custom sizes available by special order. Click on each configuration to launch website information on each.

- **Type OH:** WF core column with round outer shell
- **Type SH:** WF core column with square shell
- **Type OO:** round core column with round shell
- **Type SO:** round core column with square shell
- **Type SS:** square core column with squared outer shell
- **Type RR:** rectangular core column with rectangular shell

Fire Ratings

All columns are available in three different hourly ratings:

- **X106:** two-hour
- **X104:** three-hour
- **X101:** four-hour

Options

Custom sizing for outer shells along with high-performance prep and finish options.

Outer shell reinforcement available for parking garage applications and high bay industrial doorways.

Product Limitations

Columns are suitable for interior and exterior applications. Special handling is needed during the unloading and erection process to avoid damage to the finish on the outer shells.

4. Technical Data

Applicable Standards

American Institute for Steel Construction (AISC).

- **AISC 303-[2010]** Code of Standard Practice for Steel Buildings and Bridges
- **AISC 325-[2011]** Steel Construction Manual

ASTM International (ASTM).

- **ASTM A36/A36M-[2014]** Specification for Structural Steel
- **ASTM A123** Standard Specification for Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.

- **ASTM A572/A572M - 15** Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
- **ASTM A992/A992M - 11** Standard Specification for Structural Steel Shapes.
- **ASTM A1003** Standard Specification for Steel Sheet, Carbon, Metallic and Nonmetallic-Coated for Cold-Formed Framing Members
- **ASTM C150** Standard Specifications for Portland Cement
- **ASTM C404** Standard Specification for Aggregates for Masonry Grout
- **ASTM C1107** Standard Specification for Packaged Dry, Hydraulic Cement Grout (Nonshrink)
- **ASTM E119** Standard Test Methods for Fire Tests of Building Construction and Materials
- **ASTM F3125/F3125M-[2015]** Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions

American Welding Society (AWS):

- **AWS D.1.3** Structural Welding Code - Sheet Steel

The Society for Protective Coatings (SSPC)

- **SSPC-Paint 20** - Zinc Rich Primers - Type I Inorganic And Type II Organic

Steel Structures Painting Council (SSPC).

- **SSPC PA1-[2016]** Shop, Field and Maintenance Painting of Steel
- **SSPC SP3-[2004]** Power Tool Cleaning
- **SSPC SP 6/NACE No. 3**, Commercial Blast Cleaning.
- **SSPC SP 10/NACE No. 2**, Near-White Blast Cleaning.

UL International

- **UL FILE NUMBER R8199**

US Green Building Council (USGBC).

- **LEED NC Version 2.2-[2014]** LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations

Approvals

- New York City Building Acceptance Report

5. Installation

Follow manufacturer's written instructions for handling.

6. Availability and Cost

Contact manufacturer for pricing and availability.

7. Warranty

A one-year limited warranty is provided by manufacturer.

8. Maintenance

Maintenance instructions provided with product, follow provided instructions.

9. Technical Services

Black Rock offers complete technical services.

10. Filing Systems

- ConstructConnect
- Additional product information is available from the manufacturer upon request ↷

