SECTION 05 12 16

FABRICATED FIREPROOFED STEEL COLUMNS

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\*\* NOTE TO SPECIFIER \*\* Fire Trol Fireproof; fire proof columns.
This section is based on the products of Fire Trol Fireproof, which is located at:164 School St.East Hartford, CT 06108Tel: 860-610-4084Email: [request info (info@fire-trol.com)](https://arcat.com/rfi?action=email&company=Fire%252BTrol%252BFireproof&message=RE%253A%2520Spec%2520Question%2520(05121ftl)%253A%2520&coid=53777&spec=05121ftl&rep=&fax=)
Web: <https://fire-trol.com>
 [ [Click Here](https://arcat.com/company/fire-trol-fireproof-53777) ] for additional information.
Aesthetically Pleasing Exposed Steel Columns with High Performance Fire Protection:
Fire Trol provides structural and fireproofing elements with architectural impact while simultaneously saving owners money and cutting installation time.
Factory applied fireproofing protected by a steel shell.
Exacting quality control performed by our inshop fabrication professionals.
Decreased long-term maintenance costs and the added durability of exterior steel shells.
Predictable scheduling as Fire Trol columns deliver to the job site completely fireproofed, ready for erection.
No additional trades needed for on-site fire protection application.
Building Columns with Multi Hour UL Fire Ratings:
Fire Trol Fireproof Columns are rated and labeled by Underwriters Laboratories, Inc. for fire retardant classifications of 2, 3 and 4 hours. Columns are completely shop fabricated and shipped to the job site ready to erect. Fire Trol is the manufacturer that you can count on to provide high quality fire proof steel columns. We design, manufacture and deliver the columns that capture the vision of architects, deliver on cost and integrity for engineers, and support the structures that delight occupants.
Fire Trol columns are prefabricated exposed steel columns that provide an aesthetically pleasing design while meeting UL fire ratings as well as AISC certifications. Fire Trol columns come in round, square, and rectangular profiles (along with customized shapes and sizes), designed for exposed exterior and interior loadbearing columns. You can admire Fire Trol columns in hospitals, schools, dormitories, cafeterias, shopping centers, and countless other structures. The protective steel shells of our columns make them the premier choice for parking garages and high traffic entryways. FireTrol specializes in fireproofing steel building columns, structural steel WF, pipe, and HSS squares and rectangular shapes. We meet ASTM and AISC standards, and all steel and concrete meets or exceeds UL regulations.

1. GENERAL
	1. SECTION INCLUDES
		1. Fabricated fireproofed steel columns.
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 09 91 13 - Exterior Painting.
		2. Section 09 91 23 - Interior Painting.
		3. Section 09 97 13 - Steel Coatings.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Institute for Steel Construction (AISC).
			1. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges.
			2. AISC 325 - Steel Construction Manual.
		2. ASTM International (ASTM):
			1. ASTM A36/A36M - Specification for Structural Steel.
			2. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
			3. ASTM A992/A992M - Standard Specification for Structural Steel Shapes.
			4. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
			5. ASTM F3125/F3125M - 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.
		3. Steel Structures Painting Council (SSPC):
			1. SSPC PA1, Shop, Field, and Maintenance Painting of Steel.
			2. SSPC SP3, Power Tool Cleaning.
			3. SSPC SP 6/NACE No. 3, Commercial Blast Cleaning.
			4. SSPC SP 10/NACE No. 2, Near-White Blast Cleaning.
		4. US Green Building Council (USGBC):
			1. LEED NC Version 2.2, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
				1. Product characteristics.
				2. Performance criteria.
				3. Material Safety Data Sheets (MSDS).
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.
		3. Shop Drawings: Show cross section of columns, configurations, and material thicknesses.
			1. Include base and bearing plates with bolt and bolt hole locations shown.
			2. Outer shells must be called out on the shop drawing showing location and fire rating.
			3. Include relationship with adjacent construction.
		4. Manufacturer's written Instructions, including:
			1. Delivery, storage, and handling recommendations.
			2. Preparation and installation recommendations.
		5. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
		6. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
		7. Manufacturer's Field Reports: Submit manufacturer's field reports within 3 days of each manufacturer representative's site visit and inspection.
		8. Fabricator's Experience: Submit verification of evidence of work similar to work of this Section.
		9. Erector's Experience: Submit verification of evidence of work similar to work of this Section.
		10. Warranty: Fully executed, issued in Owner's name, and registered with manufacturer, including:
			1. Manufacturer's 1 year warranty, from date of substantial completion, covering defects in materials.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Sustainable Design (LEED) Submittals:
			1. LEED Submittals: In accordance with Section 01 35 00 - Special Procedures.
			2. Submit verification for items when appropriate as follows:
				1. MR 5 - Regional Materials.
				2. MR 4 - Recycled Content.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Project Warranty: Refer to Contract Conditions for project warranty provisions.
		2. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
			1. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Fire Trol Fireproof, which is located at:164 School St.East Hartford, CT 06108Tel: 860-610-4084Email: [request info (info@fire-trol.com)](https://arcat.com/rfi?action=email&company=Fire%252BTrol%252BFireproof&message=RE%253A%2520Spec%2520Question%2520(05121ftl)%253A%2520&coid=53777&spec=05121ftl&rep=&fax=);Web: <https://fire-trol.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. FABRICATED FIREPROOFED STEEL COLUMNS
		1. Fabricated fireproofed steel columns consisting of load-bearing structural-steel members encased in manufacturer's standard insulating material for fire protection and enclosed in an outer non-load-bearing steel shell in configurations specified.
		2. Materials:
			1. Structural Steel: ASTM A36/A36M, ASTM A992, A572-50 and ASTM A572/A572M - 15.
			2. Structural Steel Bolts: ASTM F3125/F3125M.
			3. Steel Flanges and Casings: AISC 325.
		3. Column Configuration:

\*\* NOTE TO SPECIFIER \*\* Delete options not required. Custom configurations are a possibility. Contact the Manufacturer,

* + - 1. Round shell casing with interior round structural column.
			2. Round shell casing with interior H-flange structural column.
			3. Square shell casing with interior H-flange structural column.
			4. Rectangular shell casing with interior H-flange structural column.
			5. Rectangular shell casing with interior rectangular flange structural column.

\*\* NOTE TO SPECIFIER \*\* Edit the following Paragraphs to suit project requirements. Contact Fire-Trol Fireproof Column Co. for standard shell casing sizes and interior column sizes. Custom sizes are available upon request.

* + - 1. Shell casing size: \_\_\_\_\_\_\_\_.
			2. Shell casing size: As indicated on the Drawings.
			3. Interior column size: \_\_\_\_\_\_\_\_.
			4. Interior column size: As indicated on the Drawings.
		1. Insulated Column Fill: Concrete mixture consisting of Portland cement, fire-resistive coating, aggregates, and other additives as required.
		2. Fire Resistance: Tested and approved US and Canada.
			1. UL Rating: X106 - 2 hour.
			2. UL Rating: X104 - 3 hour.
			3. UL Rating: X101 - 4 hour.
			4. UL Rating: As indicated.
		3. Acceptable Material:

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs not required.

* + 1. Choose Type OO when a round shell casing with an interior round flange structural column are required.
		2. Choose Type OS when a round shell casing with an interior square structural column are required.
		3. Choose Type OH when a round shell casing with an interior H-flange structural column is required.
		4. Choose Type SH when a square shell casing with an interior H-flange structural column is required.
		5. Choose Type RH when a rectangular shell casing with an interior H-flange structural column is required.
		6. Choose Type RR when a rectangular shell casing with an interior rectangular flange structural column is required.
			1. Fire-Trol Fireproof Column Co., Type OO.
			2. Fire-Trol Fireproof Column Co., Type OS.
			3. Fire-Trol Fireproof Column Co., Type OH.
			4. Fire-Trol Fireproof Column Co., Type SH.
			5. Fire-Trol Fireproof Column Co., Type RH.
			6. Fire-Trol Fireproof Column Co., Type RR.
	1. FABRICATION
		1. Use only fabricators with training and verifiable experience of work similar to work of this Section.
		2. Design and fabricate fireproofed steel columns to AISC 325.
			1. Include base and bearing plates.
		3. Shop Priming:

\*\* NOTE TO SPECIFIER \*\* Edit the following Paragraph to meet project requirements.

* + - 1. Prime exposed column surfaces except as follows:
				1. Surfaces embedded in concrete or mortar.

Extend priming of partially embedded members two inches deep.

* + - * 1. Surfaces to be field welded.
				2. Surfaces to be high-strength bolted with slip-critical connections.
				3. Surfaces to receive sprayed-in-place fireproofing.
			1. Surface Preparation: Clean surfaces to be painted.
				1. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits.
				2. Prepare surfaces to SSPC SP 3.
			2. Priming: Apply primer immediately after surface preparation is completed in accordance with manufacturer's written recommendations.
				1. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
				2. Application rate: To SSPC PA1 recommendations.
				3. Thickness: 1.5 mil minimum.
		1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete structural steel bolts paragraph not required.

* + - 1. Structural Steel Bolts: In accordance with manufacturer's written recommendations.
			2. Structural Steel Bolts: To ASTM F3125/F3125M.

\*\* NOTE TO SPECIFIER \*\* Delete Primer paragraphs not required. If primer is specified in another Section, verify the Section number.

* + - 1. Primer: Fabricator's standard lead-and-chromate free, non-asphalt, rust-inhibiting primer.
			2. Primer: In accordance with Section 09 91 13 - Exterior Painting.
			3. Primer: In accordance with Section 09 91 23 - Interior Painting.
			4. Primer: In accordance with Section 09 97 13 - Steel Coatings.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph when primer is not being specified in this Section.

* + - 1. Primer: Fire-Trol Fireproof Column Co., Standard Primer.
1. EXECUTION
	1. EXAMINATION
		1. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for fabricated fireproofed steel columns installation in accordance with manufacturer's written recommendations.
			1. Ensure substrate is smooth, sound, clean, dry, and free of contaminants and other deleterious materials.
			2. Visually inspect substrate in presence of Architect.
			3. Inform Architect of unacceptable conditions immediately upon discovery.
			4. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to Starting installation of fabricated fireproofed steel columns implies substrate conditions are acceptable for Work of this Section.
	2. INSTALLATION
		1. Do structural steel work to AISC 325.
		2. Set structural steel accurately in locations and to elevations indicated.
		3. Base and Bearing Plates: Clean concrete and masonry bearing surfaces and roughen surfaces prior to setting base and bearing plates.
			1. Clean bottom surface of base and bearing plates.
			2. Maintain erection tolerance of structural steel to AISC 303.
		4. Take care during erection and handling to prevent damage or disfigurement of column's shell casing.
			1. Inspect and contact the manufacturer for compliance for any columns damaged or disfigured during erection and handling.
		5. Touch up primer damaged during transportation, handling and erection.
		6. Finish Application:
			1. Paint in accordance with Section 09 91 13 - Exterior Painting.
			2. Paint in accordance with Section 09 91 23 - Interior Painting.
			3. Coating in accordance with Section 09 97 13 - Steel Coatings.
	3. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with Section 01 45 00 - Quality Control.

\*\* NOTE TO SPECIFIER \*\* Specify requirements if manufacturers are to provide field quality control with onsite personnel for instruction or supervision of product application, erection, or construction. Manufacturer field reports are included under PART 1, Submittals.

* + 1. Manufacturer's Services:

\*\* NOTE TO SPECIFIER \*\* Use the following Paragraphs only when manufacturer's field services are provided and are required to verify the quality of the installed components. Establish the number and duration of periodic site visits required by manufacturer and specify below. Contact Fire-Trol Fireproof Column Co., to determine any costs associated with Technical Representatives providing manufacturer's field services. Delete if field services are not required.

* + - 1. Coordinate manufacturer's services with Section 01 45 16.13 - Contractor Quality Control.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if no costs are associated with manufacturer's services.

* + - 1. Arrange for payment for manufacturer's services.
			2. Have manufacturer review work involved in handling, storage, and installation of fabricated fireproofed steel columns, and submit written reports in acceptable format to verify compliance of Work with Contract conditions.
			3. Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and
			4. periodic site visits for product installation review in accordance with manufacturer's instructions.
				1. Report any inconsistencies from manufacturer's recommendations immediately to Architect.

\*\* NOTE TO SPECIFIER \*\* Edit the following Paragraph to meet project requirements. Coordinate site visits with manufacturer or delete the Paragraph and all of its subparagraphs if site visits are not required.

* + - 1. Schedule site visits to review work at stages listed:
				1. After delivery and storage of fabricated fireproofed steel columns, and when preparatory work on which Work of this Section depends is complete, but before application begins.
				2. During progress of work.
				3. Upon completion of Work, after cleaning is carried out.
				4. Obtain reports within three days of review and submit immediately to Architect.
	1. CLEANING
		1. Perform daily progress cleaning.
			1. Leave work area clean at end of each day.
		2. Upon completion, remove surplus materials, rubbish, tools, and equipment.
		3. Collect recyclable waste and dispose of in accordance with manufacturer's written recommendations and at appropriate recycling facilities.

\*\* NOTE TO SPECIFIER \*\* Specify protection methods completed after installation, but prior to acceptance by the owner. Include only statements unique to this Section. Coordinate the following Article with Section - Protecting Installed Construction.

* 1. PROTECTION
		1. Protect installed fabricated fireproofed steel columns from damage during construction.
		2. Repair or replace adjacent materials damaged by installation of fabricated fireproofed steel columns.

END OF SECTION