



CHAMPION FLAME SHIELD[®] PHENOLIC CONDUIT

Champion Flame Shield Phenolic conduit is UL 2196 Listed up to 2-Hours as part of FHIT 130 & FHIT 502 for both vertical & horizontal installations.

High-rise Commercial Buildings • Hospitals

- Firepumps
- Emergency Feeder Cables
- Ventilation Fans
- Exit Lighting
- Elevators

Tunnels • Subways • Underground Utilities

- Vent Shafts
- Emergency Circuits
- Ventilation Fans
- Emergency Lighting

Additional Benefits

The proprietary Champion Fiberglass phenolic curative system does not generate any latent free formaldehyde

No formaldehyde exposure risk to contractors since there is no free formaldehyde, therefore no emission

Up to 7 conductors per conduit. Conductor count is a critical factor for performance and circuit integrity in UL 2196 testing. FHIT 502 is the only Listed 2-hr FRR RHW-2 wet listed system with enough conductor count for 3-phase + Neutral + Ground (5C) circuits

Up to 38% fill ratio under fire conditions, in both vertical and horizontal orientations

Champion Fiberglass is an ISO 14001:2015 registered company



National Electrical Code - Article 728

Fire Resistive Cable Systems

2-Hour fire-resistant systems per UL 2196

NFPA 70 Article 728 covers the installation of fire-resistive cables, conductors and other system components that are used for the survivability of critical circuits that ensure continuous operation during a specified time under fire conditions as required in the Code.

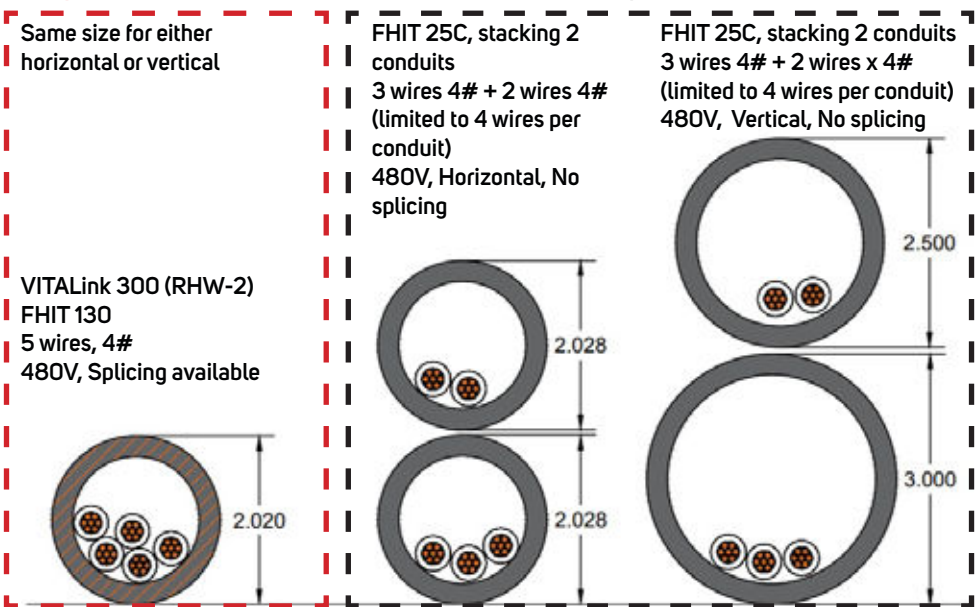
NFPA 70 Article 700.10 describes the occupancies where emergency systems must meet additional requirements for fire protection.

728.3 Other articles

Wherever the requirements of other articles of the NEC and Article 728 differ, the requirements of Article 728 shall apply.

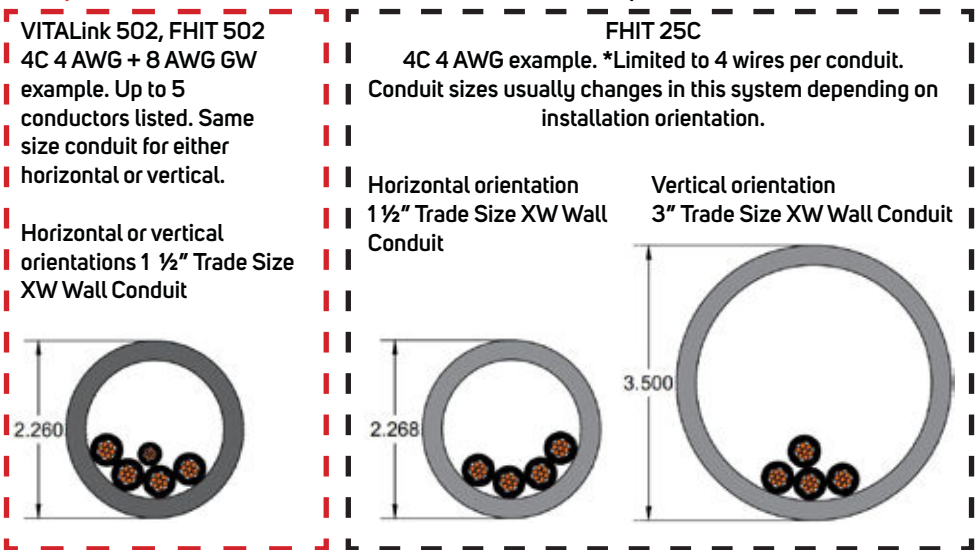
FHIT 130 Conduit Fill VS Competitor

Champion & Marmon Solution



FHIT 502 Conduit Fill VS Competitor

Champion & Marmon Solution



Dimensions in inches, drawn to scale.

*See NFPA 70 - 2023 - Article 300.3(2) regarding grounding and bonding conductors' requirement within the same raceway with respect to 3 phase circuits totaling 5 wires (3 conductors for each of the 3 phases + neutral + ground wire) as only up to 4 conductors are allowed per FHIT 25C listing as of 07/14/2023. Conductor count matters as part of the fire resistive system as it relates to fire load and circuit integrity performance.

Certified FHIT Systems

FHIT 130

NFPA 130 - Standard for Fixed Guideway Transit and Passenger Rail Systems

1-Hour fire-resistant systems per UL 2196

NFPA 130 Chapter 12 Article 12.5 defines the requirements for fire-resistive cables used in emergency circuits. They must be UL 2196 tested systems for no less than 1 hour operation using the ASTM E119 time-temperature curve which reaches temperatures of up to 1700°F.

These cables must be tested as a complete system in both horizontal and vertical orientations, including all components, such as conductors, cables, splices, and raceways.

Typical installations

Emergency ventilation • Emergency circuits • Emergency power • Emergency lighting

Champion Flame Shield® Phenolic Conduit & Marmon Wire/Cable

Gauge sizes (AWG up to 4/0, kcmil for larger)

12, 10, 8, 6, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0, 250, 300, 350, 400, 500

Installation methods – As defined in the FHIT system and installation manual.

Additional Information

Champion Flame Shield® Phenolic Conduit

FHIT 130 Conduit Support Distances*

Conduit: Type RTRC – Champion Type XW Phenolic Heavy Wall Conduit w/Champion XW Phenolic

Sleeve Couplings

Conduit Sizes: ¾" to 3 ½"

Orientation: Horizontal of Vertical Installations

1 ½" trade size and smaller shall be supported maximum every 5 feet OC horizontally or vertically.

Conduit larger than 1 ½" trade size shall be supported maximum every 4 feet OC horizontally or every 5 feet vertically..

*Consult FHIT130 Listing for additional support span details.

FHIT 130 Maximum Fill Ratio/Cable quantity inside conduit:

12 AWG – 4/0 AWG: 38% - no more than 7 cables

250 KCMil - 500 KCMil - no more than 5 cables

Wire fill - As defined in FHIT (Listing)

FHIT 130 with: Listed splices available

Up to 7 conductors per conduit, 34% maximum for sizes 250 KCMIL and larger.

38% maximum for all other sizes.

Same fill ratio for both horizontal and vertical orientations

Legend



Competition Upsizing

Our Compact Solution

FHIT 502

NFPA 502 - Standard for Road, Tunnels, Bridges, and Limited Access Highways

2-Hour fire-resistant systems per UL 2196

NFPA 502 Chapter 12 Article 12.1. defines the requirements for fire-resistive cables used in emergency circuits. They must be UL 2196 tested systems for no less than 2 hour operation using the ASTM E119 time-temperature curve which reaches temperatures of up to 1850°F.

These cables must be tested as a complete system in both horizontal and vertical orientations, including all components, such as conductors, cables, and raceways.

Typical installations

Tunnel closure and traffic control • Tunnel drainage • Jet fans • Exit Signs • Emergency ventilation • Emergency lighting • Emergency communication • Fire alarm and detection • Fire fighting • Closed-circuit TV or video

Champion Flame Shield® Phenolic Conduit & Marmon Wire/Cable

Gauge sizes (AWG up to 4/0, kcmil for larger)

12, 10, 8, 6, 4, 3, 2, 1, 1/0, 2/0, 3/0, 4/0, 250, 300, 350, 400, 500

Installation methods – As defined in the FHIT system and installation manual.

Additional information

Art. 728.4 General. Fire-resistive cables, fire resistive conductors and components shall be tested and listed as a complete system, shall be designated for use in a specific fire-rated system, and shall not be interchangeable between systems.

FHIT 502 Conduit Support Distances*

Conduit: Type RTRC – Champion Type XW Phenolic Heavy Wall Conduit w/Champion XW Phenolic Sleeve

Couplings

Conduit Sizes: 1" to 4"

Orientation: Horizontal of Vertical Installations

- All conduit sizes supported maximum 5 ft OC vertically.
- 1" trade size shall be supported maximum every 4 feet OC horizontally.
- Conduit 1 ¼" to 3 ½" trade size shall be supported maximum every 5 feet OC horizontally.
- 4" trade size shall be supported maximum every 3 feet OC horizontally.

*Consult FHIT 502 Listing for additional support span details.

FHIT 502 Maximum Fill Ratio/Cable quantity inside conduit:

Art. 728.5 Installations. Paragraph. C) The raceway fill for each system shall comply with the listing requirement for the system and shall not be greater than the fill permitted in Table 1, Chapter 9.

FHIT 502 with up to 5 conductors per conduit for sizes 12 AWG to 4/0 AWG

FHIT 502 with up to 4 conductors per conduit for sizes 250 KCMIL to 500 KCMIL

Same fill ratio for both horizontal and vertical orientations

Champion Flame Shield® Phenolic Conduit

Support Distance - As defined in FHIT (Listing): Wire fill - As defined in FHIT (Listing):

FHIT 502 with up to 5 conductors per conduit

Same fill ratio for both horizontal and vertical orientations