



## ADDENDUM

### DuraLife® II FPLR FAS 90 Shielded/Unshielded Fire Resistive Cables 18AWG/2C, 16AWG/2C, 14AWG/2C, 12AWG/2C Phenolic System Guidelines FHIT/FHIT7 28C

#### System Overview:

Radix Wire & Cable has been 2-hour, UL 2196 certified for use in Champion Fiberglass XW™ phenolic system conduit. This certification will allow for a non-metallic solution for alarm system applications where the use of metallic raceways are not desired. This Addendum to the DuraLife® II FPLR/FPLR-CI Installation Guide will offer information as to the proper assembly of this unique system, as well as information as to the system components that have the 2-hour fire certification as listed for use in FHIT/FHIT7 28C.



UL 2196



CAN/ULC S-139

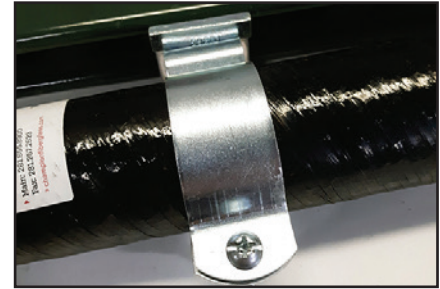
*Authorities Having Jurisdiction should  
be consulted before installation.*

## System Certified Components

DuraLife® II FPLR/FAS90 cables have been certified to UL 2196 for 2-hour fire compliance in Champion Fiberglass XW™ phenolic conduit and system components. The certified item nos. are listed below:

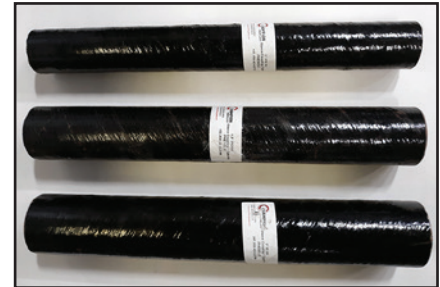
### A. Phenolic Conduit

Straight sections; standard lengths	Champion Fiberglass Part Nos.
1.00" trade I.D. (10ft.)	10E XW 10S
1.25" trade I.D. (20ft.)	12E XW 10S
1.50" trade I.D. (20ft.)	15E XW 10S
2.00" trade I.D. (20ft.)	20F XW 10S



### B. Phenolic Conduit Couplers

Straight sections	Champion Fiberglass Part Nos.
1.00" trade I.D.	10E XW 42
1.25" trade I.D.	12E XW 42
1.50" trade I.D.	15E XW 42
2.00" trade I.D.	20F XW 42



### C. Phenolic Elbow Joints

90° sections; 12" radius	Champion Fiberglass Part Nos.
1.00" trade I.D.	10E XW 90 P
1.25" trade I.D.	12E XW 90 P
1.50" trade I.D.	15E XW 90 P
2.00" trade I.D.	20F XW 90 P



### D. Phenolic Box Fittings

Non-threaded; pin assembly; O-ring	Champion Fiberglass Part Nos.
1.00" trade I.D.	10E XW 30 - 2196
1.25" trade I.D.	12E XW 30 - 2196
1.50" trade I.D.	15E XW 30 - 2196
2.00" trade I.D.	20F XW 30 - 2196



## Phenolic Conduit Fill Allowances

DuraLife® II FPLR/FAS90 cables are approved for multiple fill allowances in Champion XW phenolic conduit. See table below for maximum cable-fill:

**Fill Allowances: Horizontal/Vertical  
Conduit Size**

Cable	1"	1.25"	1.5"	2"
18 AWG Unshielded	3	6	9	X
18 AWG Shielded	3	5	7	X
16 AWG Unshielded	2	4	6	10
16 AWG Shielded	2	4	6	10
14 AWG Unshielded	2	3	4	10
14 AWG Shielded	1	3	4	10
12 AWG Unshielded	2	3	4	9

## Splice Allowance

DuraLife® II FPLR/FAS90 cables, both shielded and unshielded, can be mechanically spliced when using approved NEMA 1 splice boxes. Splices are allowed (up to 8 conductors) in both horizontal and vertical installations. Please refer to the approved splice procedure for FHIT System 28C, and the certified splice components on pages 7-9 in the DuraLife® II FPLR/FPLR-CI FAS90 Dual-Rated *Installation Instructions - Shielded and Unshielded*, for both approved splice methods.

- One to two cables can use a 8x8x4 splice box
- Three or more cables can use a 10x10x4 splice box
- Vertical splicing can use a 12x6x4 splice box



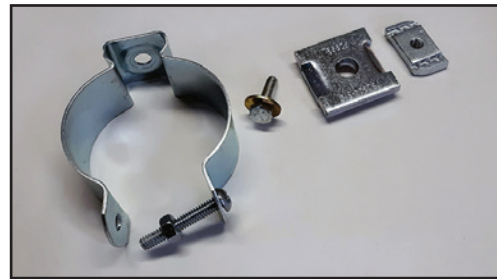
## Phenolic System Support Requirements

Required wall support must be a min 12 gauge, by 1½ in. wide or 1- 5/8 in. wide, painted or unpainted, slotted steel channels with hemmed flange edges. Channel bottom with or without holes. Lengths of slotted steel channels 5 ft. and less shall be secured to the wall or floor with a min of two ¼ in. diameter (or larger) by 2¼ in. min long concrete screws, or ¼ in. diameter (or larger) by 1¾ in. long min steel masonry anchors. One screw or anchor must be located at each end of the slotted steel channel. Lengths of slotted steel channel in excess of 5 ft. require a min of three screws or anchors, one at each end of the channel and one centrally located within the length of the channel. For horizontal cable installations, the supports shall be spaced at a maximum of 5 ft. OC. For vertical cable installations, the supports shall be spaced a maximum 6 ft. OC. When installing DuraLife® II Brand cable(s) shielded and unshielded in vertical runs, the maximum vertical rise allowance of cable within shall be:

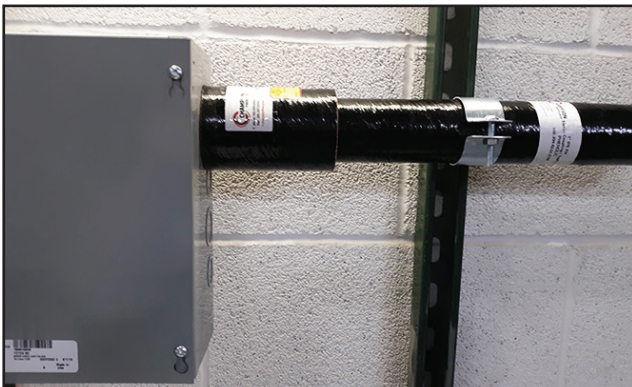
- 30 ft. between terminating points for 18 AWG
- 35 ft. for 16, 14 AWG and 12 AWG (unshielded only)

Approved phenolic conduit support clamps are:

Part Number: ERICO ER-CD2B (1")  
ERICO ER-CD3B (1.25")  
ERICO ER-CD4B (1.5")  
ERICO ER-CD5B (2")



**\*\*NOTE -** Due to the system assembly requirement of adhesive for in-line couplers, box fittings, elbow joints, a support clamp should be used within 24" of the location of the bonded joint. See illustrations below:





## Adhesive Joint Application

### General Method:

The components of the phenolic system should be glued before the conduit is placed on the wall supports. This method below will describe the proper practice to use the epoxy adhesive:

- The two component adhesive system will begin to cure in 3 - 7 minutes, and requires approximately 30 minutes of set time before handling or pulling cables. The two component system will be supplied in adhesive tubes with an accompanying mixer tip that will mix the two components together. The adhesive tube should be inserted into the applicator dispenser (must be purchased separately). The mixer tip should then be attached to the adhesive tube and then the adhesive is ready to be applied.

Part Nos.: Champion Fiberglass Mix CM-2070

- Epoxy – Super Fast Gel #43558
- Hardener – #43558
- Mixing Tip – CM-MT-20
- Adhesive Gun – CM-AG-20



- The end surface of the conduit (approx. 9") should be lightly sanded to remove the sheen from the surface prior to application of the adhesive (see illustration below).



- When the adhesive applicator trigger is depressed, the adhesive will self-mix in the mixer tip. A few squirts of adhesive should be cleared from the tube to get the proper component mix ratio. The adhesive should be liberally spread with a steel spatula leaving an approx. 10-15 mil thickness over the sanded surface of conduit end. The conduit end can then be inserted into the corresponding coupling, or box fitting, while using a slight twisting motion. Any excess adhesive can be scraped off with the steel spatula or wiped off with a rag. Gloves and safety glasses are recommended when using the adhesive.

