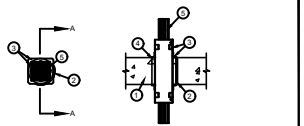
## System No. C-AJ-3214

F Ratings - 2 and 4 Hr (See Item 5)
T Rating - 1/2 Hr
L Rating At Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device Module (See Item 5)
L Rating At 400 F - Less Than 1, 2 or 3 CFM/Device Module (See Item 5)



Section A-A

1. **Floor or Wall Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Diam of opening to be 4 in. (102 mm).

   See **Concrete Blocks** category (CAZT) in the Fire Resistance Directory for names of manufacturers.
2. **Steel Sleeve** - (Optional) - Nom 4 in. (102 mm) diam Schedule 10 to Schedule 40 steel pipe or rigid steel conduit cast or grouted into concrete floor or wall flush with floor or wall surfaces.
3. **Firestop Device*** - One firestop device module centered within the opening. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the perimeter of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). Firestop device module secured in place by means of steel restraint plates sized to accommodate the firestop device module. Steel restraint plates each provided with a closed cell silicone gasket and sized to lap approx 1/2 in. (13 mm) on floor or wall surfaces. Steel restraint plate installed on both sides of floor or wall and secured to firestop device module with steel sheet screws. The firestop device module is to be installed with its ends projecting an equal distance beyond each surface of the floor or wall assembly. As an option, firestop device may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel restraint plates are optional.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker floors or walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel plates installed with gasketing material supplied with product. Steel plates installed on both sides of floor or wall and secured to each device or extension module(s) by means of steel set screws provided with plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the floor or wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension



4. **Fill, Void or Cavity Material* - Sealant or Putty** - Prior to installation of steel restraint plates, min 1 in. (25 mm) thickness of sealant or putty installed in annular space flush with top surface of floor or both surfaces of wall.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal Putty
5. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor or wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max 4 pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 5A, 5B, 5C, 5D or 5E is used, the F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 5F, 5G, 5H or 5I is used, the F Rating is 4 hr and the T Rating is 1 hr.**

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 5A is used, the L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 5F is used, the L Rating for each firestop device module with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F.When Item 5G or 5H is used, the L Rating for each firestop device module with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**

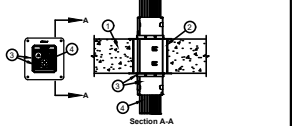
   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## System No. C-AJ-3260

F Rating - 2 Hr
T Ratings - 0 and 1/2 Hr (See Item 4)
L Rating At Ambient - Less Than 1, 2.3, 6.2, 6.7 or 7.4 CFM/Device Module (See Item 4)
L Rating At 400F - Less Than 1, 2.3, 4.5, 5 or 6.7 CFM/Device Module (See Item 4)



Section A-A

1. **Floor or Wall Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Floor may also be constructed of any UL Classified hollow-core **Precast Concrete Units*.** Diam of opening to be 6 in. (152 mm).

   See **Concrete Blocks** (CAZT) or **Precast Concrete Units** (CFTV) category in the Fire Resistance Directory for names of manufacturers.
2. **Steel Sleeve** - (Optional) - Nom 6 in. (152 mm) diam Schedule 10 to Schedule 40 steel pipe or rigid steel conduit cast or grouted into concrete floor or wall flush with floor or wall surfaces.
3. **Firestop Device*** - One firestop device module centered within the opening. The firestop device module consists of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Series 44 device modules have spring-loaded steel retainer plates. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the perimeter of the opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25 mm). Firestop device module secured in place by means of steel restraint plates sized to accommodate the firestop device module. Steel restraint plates each provided with an intumescent gasket and sized to lap onto floor or wall surfaces. Steel restraint plate installed on both sides of floor or wall and secured to firestop device module with steel set screws. The firestop device module is to be installed with its ends projecting an equal distance beyond each surface of the floor or wall assembly. As an option, firestop device may be cast or grouted into floor and assembly. When device is cast or grouted in place, the steel restraint plates are optional. To achieve air leakage ratings with the Series 44 device module only, integral hook and eye window attachment locations on right and left side of single installed pathways and ganged pathway groups must be sealed using the stickers provided with device module.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44 or Series 44+ Fire Rated Pathway

3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Extension module attached to ends of firestop device (Item 3) to increase its length to facilitate installation in thicker floors or walls. Each module consists of a 4 by 4-5/8 by 6 in. (102 by 118 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel plates installed with gasketing material supplied with product. Steel plates installed on both sides of floor or wall and secured to device or extension module by means of steel set screws provided with plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the floor or wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44+ Extension



4. **Cables** - Within the loading area for each firestop device module, the loose or grouped cables may represent a 0 to 100 percent visual fill. Cables to be rigidly supported on both sides of the floor or wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max 4 pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When cable fill within the device is min 0 percent (empty) to max 20 percent, the T Rating is 0 Hr. When cable fill within the device is greater than 20 percent, the T Rating is 1/2 Hr.**

   **For the Series 44 device module, the L Rating for the empty firestop device module is 2.3 cfm at ambient and at 400F. When Item 4A is used, the L Rating with 100 percent visual fill of cable is 7.4 CFM/firestop device module at ambient and 5 CFM/firestop device module at 400F. When Item 4F or 4G is used, the L Rating with 100 percent visual fill of cable is 6.2 CFM/firestop device module at ambient and 4.5 CFM/firestop device module at 400F.**

   **For the Series 44+ device module, the L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400 F. When Item 4A is used, the L Rating with 100 percent visual fill of cable is 7.4 CFM/firestop device module at ambient and 5 CFM/firestop device module at 400F. When Item 4F or 4G is used, the L Rating with 100 percent visual fill of cable is 6.7 CFM/firestop device module at ambient and at 400F.**

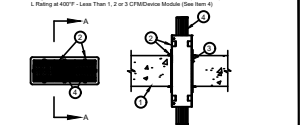
   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## System No. F-A-3015

F Ratings - 2 and 4 Hr (See Item 4)
T Rating - 1/2 Hr
L Rating at Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device Module (See Item 4)
L Rating at 400F - Less Than 1, 2 or 3 CFM/Device Module (See Item 4)



Section A-A

1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor. Opening to be min 14 in. (36 mm) to max 12 in. (13 mm) in diameter. Diam of opening and height dimensions of firestop device module(s).
2. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the perimeter of the opening shall be min 1/8 in. (3.2 mm) to max 1/4 in. (6 mm). Firestop device module(s) secured in place by means of steel restraint plates sized to accommodate either one, two, three, four or seven modules. Restraint plates provided with a closed cell silicone gasket and sized to lap approx 1/2 in. (13 mm) on floor surface. Steel restraint plates installed on both sides of floor and secured to firestop device module(s) with steel set screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the floor. As an option, devices may be cast into floor assembly. When device is cast in place, the restraint plates are optional.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3. **Fill, Void or Cavity Material* - Sealant or Putty** - Prior to installation of steel restraint plates, min 1 in. (25 mm) thickness of sealant or putty installed in annular space flush with top surface of floor.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Series SSS, SpecSeal LCI Sealant or SpecSeal Putty
4. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of each firestop device module. Cables to be rigidly supported on both sides of the floor or wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.



   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 5A is used, the max size of cable is 200 pair for the 4 hr F Rating. Otherwise, the F Rating is 2 hr.**

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 4A is used, the L Rating for each firestop device module with 100 percent visual cable fill is 4 cfm at ambient and 3 cfm at 400F. When Item 4F is used, the L Rating for each firestop device module with 100 percent visual cable fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 4G or 3H is used, the L Rating for each firestop device module with 100 percent visual cable fill is 7 cfm at ambient and 2 cfm at 400F.**

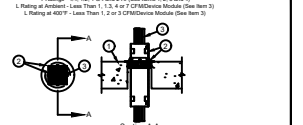
   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## System No. F-A-3021

F Ratings - 2 Hr and 4 Hr (See Item 4)
T Ratings - 1/4, 1/2, 1-3/4 and 2 Hr (See Items 1, 2, 3 and 4)
L Rating at Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device Module (See Item 3)
L Rating at 400°F - Less Than 1, 2 or 3 CFM/Device Module (See Item 3)



Section A-A

1. **Floor Assembly** - Reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. **The min concrete thickness for a 2 hr F Rating and for a 1/4 hr T Rating is 2-1/2 in. (64 mm). The min concrete thickness for a 3 hr F Rating and for a 1/2 hr T Rating is 4-1/2 in. (114 mm). The min concrete thickness for a 4 hr F Rating and for a 1-3/4 hr 2 hr T Rating is 6 in. (152 mm).** Diam of opening to be 4 in. (102 mm).
2. **Firestop Device*** - One firestop device module centered within the opening. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in conjunction with kick-in plate in accordance with the accompanying installation instructions. Kick-in plate consists of steel plate with vertical flanges on the top surface and with spring steel locking clips and intumescent foam wedges on the bottom surface. Kick-in plate secured to firestop device module with steel set screws in each of the four vertical flanges. Device with kick-in plate inserted into 4 in. (102 mm) diam core hole from top of floor and pushed into opening until bottom of plate is flush with the top surface of the floor to lock the device in position. The firestop device module is to be installed with its ends projecting an equal distance above and below the floor surface. **For a 1-3/4 or 2 hr T Rating, the firestop device module is to be installed to project 6 in. (152 mm) above the floor and 4-1/2 in. (114 mm) into the floor. When the firestop device module is cast or grouted into the floor assembly the T Rating is 2 hr.**

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3. **Cables** - Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed uniformly across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).



   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 3A is used, the max size of cable for a 1-3/4 hr or 2 hr T Rating is 100 pair. When Item 3A or 3B is used, an extension module (Item 4) is required to attain a 1-3/4 hr or 2 hr T Rating. Otherwise, the T Rating is 1/2 hr.**

   **When Item 3A is used, the max size of cable is 200 pair for the 3 hr F Rating. Otherwise, the F Rating is 2 hr.**

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual cable fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual cable fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual cable fill is 7 cfm at ambient and 2 cfm at 400F.**
4. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to top of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 2) to increase its length. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. **When Item 4 is used with Item 3A or 3B, the T Rating is 1-3/4 or 2 hr dependent upon the use or non-use of the kick-in plate.**

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

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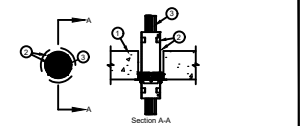
   *Bearing the UL Classification Mark



## System No. F-A-3025

F Rating - 2 Hr
T Rating - 3/4 Hr
L Rating at Ambient - Less Than 1, 1.3, 4 or 7 CFM/Device Module (See Item 3)
L Rating at 400°F - Less Than 1, 2 or 3 CFM/Device Module (See Item 3)



Section A-A

1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Diam of opening to be 4 in. (102 mm).
2. **Firestop Device*** - One firestop device module centered within the opening. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in conjunction with kick-in plate in accordance with the accompanying installation instructions. Kick-in plate consists of steel plate with vertical flanges on the bottom surface and with spring steel locking clips and intumescent foam wedges on the top surface. Kick-in plate secured to firestop device module with steel set screws in each of the four vertical flanges. Device with kick-in plate inserted into 4 in. (102 mm) diam core hole from bottom of floor and pushed into opening until top of plate is flush with the bottom surface of the floor to lock the device in position. The firestop device module is to be installed with its ends projecting an equal distance above and below the floor surface.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3. **Cables** - Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed uniformly across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max 4 pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).



   I. Aluminum or steel armored optical fiber cables jacketed with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   J. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual cable fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual cable fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual cable fill is 7 cfm at ambient and 2 cfm at 400F.**

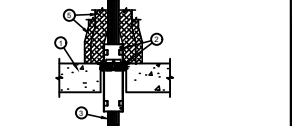
   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## System No. F-A-3049

F Rating - 2 Hr
T Rating - 2 Hr
L Rating at Ambient - Less Than 1, 1.3, 1.8, or 4 CFM/Device Module (See Item 3)
L Rating at 400°F - Less Than 1, 1.8, 2 or 3 CFM/Device Module (See Item 3)



Section A-A

1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Diam of opening to be 4 in. (102 mm).
2. **Firestop Device*** - One firestop device module centered within the opening. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in conjunction with kick-in plate in accordance with the accompanying installation instructions. Kick-in plate consists of steel plate with vertical flanges on the top surface and with spring steel locking clips and intumescent foam wedges on the bottom surface. Kick-in plate secured to firestop device module with steel set screws in each of the four vertical flanges. Device with kick-in plate inserted into 4 in. (102 mm) diam core hole from top of floor and pushed into opening until bottom of plate is flush with the top surface of the floor to lock the device in position. The firestop device module is to be installed with its ends projecting an equal distance above and below the floor surface.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3. **Cables** - Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed uniformly across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).



   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual cable fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual cable fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual cable fill is 1.8 cfm at ambient and 1.8 cfm at 400F.**
4. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to firestop device (Item 2) to increase its length. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension
5. **Duct Wrap Material*** - Nom 2 in. (51 mm) thick duct wrap tightly wrapped around grouped cables and pathway device to extend 36 in. (914 mm) above floor. An additional layer of nom 1 in. (25 mm) thick duct wrap tightly wrapped around the first layer of duct wrap to extend 12 in. (305 mm) above floor. All longitudinal seams of both layers of duct wrap are sealed with foil tape.

   **THERMAL CERAMICS INC** - FireMaster® Duct Wrap 2x2, FireMaster Duct Wrap 2x2+ or FireMaster FastWrap XL

   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## GENERAL NOTES:

1. Refer to section 07 84 00 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
   - Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
3. If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Engineering Judgments shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
4. References:
   - UL Fire Resistance Directory, Current Edition.
   - NFPA 101 Life Safety Code
   - All governing local and regional building codes
5. Firestop System installation must meet requirements of ASTM E814 (UL 1479) tested assemblies that provide a fire rating equal to that of the surrounding construction.

## PROJECT NAME:

xxxxxxxxxxxxxxxxxxxxxxxxx

## ARCHITECT/CONSULTANT:

xxxxxxxxxxxxxxxxxxxxxxxxx

## TITLE:

STI FIRESTOP SYSTEMS
FIRESTOP THROUGH PENETRATIONS

**DIVISION 26:** Electrical
**DIVISION 27:** Communications


**Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876**

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Phone: (908)526-8000
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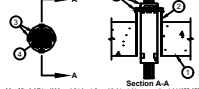
STI E-Mail:techserv@stifirestop.com
Website:www.stifirestop.com

## System No. F-A-3026

F Rating - 2 Hr
T Rating - 1 Hr



Section A-A

1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Floor may also be constructed of any min 6 in. (152 mm) thick hollow-core **Precast Concrete Units***.

   See **Precast Concrete Units** category (CFTV) in the Fire Resistance Directory for name of manufacturers.
2. **Steel Sleeve** - Nom 4 in. (102 mm) diam steel electrical metallic tubing (EMT), steel conduit, Schedule 5 (or heavier) steel pipe or rigid steel conduit cast or grouted into concrete floor. Sleeve to extend min 3/4 in. (19 mm) to max 2 in. (51 mm) from top surface of floor and installed flush with the bottom surface of the floor.
3. **Firestop Device*** - One firestop device module centered within the steel sleeve. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. Firestop device module secured in place by means of split steel restraint plate sized to accommodate the firestop device module. Steel restraint plate provided with an intumescent gasket and sized to cover the space between the firestop device module and the steel sleeve. Steel restraint plate installed on top and of steel sleeve and secured to firestop device module and steel sleeve with steel set screws. The firestop device module is to be installed with its ends projecting an equal distance beyond each edge of the steel sleeve.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

4. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   J. Aluminum or steel armored optical fiber cables jacketed with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   K. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

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   *Bearing the UL Classification Mark


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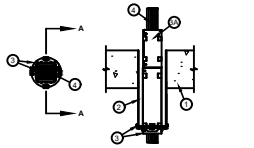
F-A-3026



## System No. F-A-3027

F Rating - 2 Hr
T Rating - 0/4 Hr



Section A-A

1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Floor may also be constructed of any min 6 in. thick hollow-core **Precast Concrete Units***.

   See **Precast Concrete Units** category (CFTV) in the Fire Resistance Directory for name of manufacturers.
2. **Steel Sleeve** - Nom 4 in. (102 mm) diam steel electrical metallic tubing (EMT), steel conduit, Schedule 5 (or heavier) steel pipe or rigid steel conduit cast or grouted into concrete floor. Sleeve to be flush or extend max 6 in. (152 mm) from top surface of floor and extend min 1 in. (25 mm) to max 6 in. (152 mm) from the bottom surface of the floor.
3. **Firestop Device*** - One firestop device centered within the steel sleeve. The firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Firestop device secured in place by means of split steel restraint plate. Steel restraint plate provided with an intumescent gasket and sized to cover the space between the firestop device module and the steel sleeve. Steel restraint plate installed on bottom end of steel sleeve and secured to firestop device and to steel sleeve with steel set screws. The firestop device is to be installed with its top end projecting min 3 in. (76 mm) above top edge of steel sleeve (Item 2) and min 1-1/2 in. (38 mm) from bottom edge of steel sleeve (Item 2). When firestop device module project min 3 in. (76 mm) above top of sleeve, an extension module (Item 3A) shall be used.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

3A. **Firestop Device* - Extension Module** - When firestop device (Item 3) does not project min 3 in. (76 mm) above top of steel sleeve, extension module(s) shall be used to lengthen firestop device as needed. Extension module attached to end(s) of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. The firestop device (Item 3) with extension module is to be installed with its top end projecting min 3 in. (76 mm) from top edge of steel sleeve (Item 2) and min 1-1/2 in. (38 mm) from bottom edge of steel sleeve (Item 2).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension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F-A-3027



4. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   J. Aluminum or steel armored optical fiber cables jacketed with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   K. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

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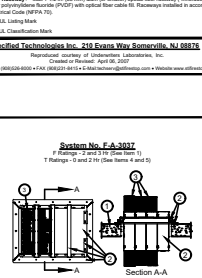
W-J-3130



## System No. F-A-3037

F Ratings - 2 and 3 Hr (See Item 3)
T Ratings - 0 and 2 Hr (See Items 4 and 5)



Section A-A

1. **Floor Assembly** - Min 2-1/2 in. (63 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3 ) concrete floor. Min 6-1/2 in. (114 mm) floor thickness required for 3 hr F Rating.
2. **Firestop Device*** - The range-taking Floor Grid System shall be installed in accordance with the accompanying installation instructions. The Floor Grid System provides one to four slots for mounting banks of four "ganged" firestop device modules and is made up of multiple steel components. End, side and splice brackets shall be secured together forming various rectangular Floor Grid Systems by means of bolts and nuts (provided) located at each corner. The Floor Grid System may be installed blank through the use of intumescent cover plates, steel clips and steel holders. The Floor Grid System shall be activated with optional rows of "ganged" firestop device modules. Optional "ganged" modules with holder plates shall be placed into open slots within the Floor Grid Systems and shall be secured to the steel frame through the use of bolts and nuts (provided). The frame of the Floor Grid System shall be installed with gasketing material (provided) and secured to the top surface of the floor through predrilled openings located on the floor brackets using min 3/16 in. (4.8 mm) diam by 1 1/4 in. long steel concrete screws. As an alternate to the steel concrete screws, min 1 1/4 in. (32 mm) long steel powder actuated fasteners provided with min 3/4 in. (19 mm) diam steel washers may be used. Each firestop device module consists of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Series 44 device modules have spring loaded steel retainer plates. Firestop device modules to be installed in accordance with the accompanying installation instructions. Four device modules are "ganged" together by means of an integral hook and eye window attachments. Two holder plates, one on each side of the four "ganged" modules, are to be attached to each end module using an integral hook and eye window attachment. The space between the firestop device and the periphery of the opening shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm). The opening size and maximum number of pathway modules for each Floor Grid System shall be as shown in the following table.

| Part No. | Description | Max No. of Pathway Modules | Max Opening Size |
|---|---|---|---|
| EZGGA44 or EZGGA44S | Single Bank Floor Grid System | 4 | 8 by 18 in. (203 by 457 mm) |
| EZGGA44 or EZGGA44S Or Two (2) EZGGA44 | Single Bank Floor Grid System With Splice Plate(s) | 16 | 8 by 81 in. (203 by 2057 mm) |
| EZGGA44, EZGGA44S, EZGGA44 or EZGGA44S | Double Bank Floor Grid System | 8 | 12 by 18 in. (305 by 457 mm) |
| EZGGA44, EZGGA44S, EZGGA44 or EZGGA44S | Quad Bank Floor Grid System | 16 | 24 by 18 in. (610 by 457 mm) |

**SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44 or Series 44+ Fire Rated Pathway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F-A-3037



2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of firestop device module (Item 2) to increase its length to facilitate installation in thicker floors. Each module consists of a 4 by 4-5/8 by 6 in. (102 by 118 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44+ Extension

3. **Cables** - Within the loading area for the firestop device modules, the loose or grouped cables may represent a 0 to 100 percent visual fill. Cables to be rigidly supported on both sides of the floor assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation or plenum-rated jacketing and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation or plenum-rated jacketing and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket or plenum-rated jacketing and insulation.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation or plenum rated jacketing and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).
4. **Firestop Device*** - Not Shown - Optional - Nom 2 in. (51 mm) thick blanket to be installed in accordance with the accompanying installation instructions. Blanket tightly wrapped around grouped cables and pathway devices to extend 36 in. (914 mm) above floor and secured with integral closure straps.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH TRK444 Grid T Rating Kit
5. **Duct Wrap Material*** - Not Shown - Optional, for use in lieu of item 4 - Nom 2 in. (51 mm) thick duct wrap tightly wrapped around grouped cables and pathway devices to extend 36 in. (914 mm) above floor. All longitudinal seams of duct wrap to be sealed with foil tape.

   **THERMAL CERAMICS INC** - FireMaster Duct Wrap 2x2, FireMaster Duct Wrap 2x2+ or FireMaster FastWrap XL

   **NOTE: When Item 4 or 5 is used the T Rating is 2 hr, otherwise, the T Rating is 0 hr.**

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F-A-3037



## System No. W-J-3098

F Ratings - 2 and 4 Hr (See Item 3)
T Ratings - 3/4 and 1 Hr (See Item 3)
L Rating At Ambient - Less Than 1, 1, 3, 4 or 7 CFM/Device Module (See Item 3)
L Rating At 400 F - Less Than 1, 2 or 3 CFM/Device Module (See Item 3)

Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3 ) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Opening to be max 144 in. (6 mm) larger than width and height dimensions of firestop device.

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for name of manufacturers.
2. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/8 in. (3.2 mm). In round openings, the space between the firestop device and the periphery of the opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. When devices may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel wall plates are optional.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension


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W-J-3098



3. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 3A, 3B, 3C, 3D or 3E is used, the F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G, 3H or 3I is used, the F Rating is 4 hr and the T Rating is 1 hr.**

   **The L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F.When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**

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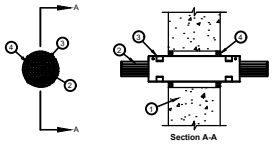
W-J-3098



## System No. W-J-3099

F Rating - 2 Hr (See Item 1)
T Ratings - 3/4 and 1 Hr (See Item 2)
L Rating At Ambient - Less than 1, 1.3, 4 or 7 CFM/Device (See Item 3)
L Rating At 400 F - Less than 1, 2 or 3 CFM/Device (See Item 3)



Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3 ) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. When Item 4 is used, opening to be max 14 sq in. (90 cm2) with a max dim of 4 in. (102 mm) or nominal 4 in. (102 mm) diameter.

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 100 pair, 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
   G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).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W-J-3099



   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 3A, 3B, 3C, 3D or 3E is used, the T Rating is 3/4 hr.Otherwise, the T Rating is 1 hr.**

   **The L Rating for the empty firestop device is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for the firestop device with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for the firestop device with 100 percent visual fill is 1.4 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for the firestop device with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**
3. **Firestop Device*** - Firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, attachment screws and bit removed from device to capture grouped cables. After installation of cables, lid replaced and reattached with same screws. Device slid along cables into wall such that lid is on top and device project an equal distance from the approximate centerline of the wall assembly. The space between the device and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/2 in. (13 mm).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

4. **Fill, Void or Cavity Material*** - **Sealant** - Min 5/8 in. (16 mm) thickness of sealant to be applied in annular space between firestop device and periphery of opening on each side of wall assembly. Nom 3/8 in. (10 mm) diam bead of fill material applied at the firestop device/concrete interface on both sides of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, Pensil 300 Sealant or SpecSeal Series SL300 Sealant
5. **Fill, Void or Cavity Material*** - **Mortar** - (Not Shown) - As an alternate to Item 4, mortar applied to fill annular space between firestop device and periphery of opening flush with both surfaces of the wall.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Mortar

5A. **Mortar** - (Not Shown) - As an alternate to Items 4 and 5, mortar or hydraulic cement applied to fill annular space between firestop device and periphery of opening flush with both surfaces of the wall.

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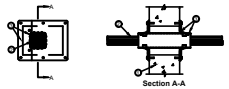
W-J-3099



## System No. W-J-3124

F Rating - 2 Hr
T Ratings - 3/4 and 1 Hr (See Item 2)



Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Opening in concrete to accommodate firestop device may be round, square or rectangular. Min distance between periphery of through opening and edge of two-piece steel sleeve (Item 3) is 1 in. (25 mm).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum rated jacket and insulation.
   J. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).

   **When Item 2A, 2B, 2C, 2D or2E is used, the T Rating is 3/4 hr. Otherwise the T Rating is 1 hr.**
3. **Firestop Device*** - Firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, attachment screws and bit removed from device to capture grouped cables. After installation of cables, lid replaced and reattached with same screws. Device slid along cables into wall such that lid is on top and device project an equal distance from the approximate centerline of the wall assembly. Two-piece steel plate supplied by manufacturer installed on each side of wall according to manufacturer's instructions. Steel plate incorporates an insulation gasket material installed prior to installation of steel plates. Steel plates fastened to concrete with nom 1/8 in. (3.2 mm) diam steel concrete anchors in conjunction with nom 1 in. (25 mm) steel fender washers. Steel plates installed on each side of the wall to cover opening with min 1 in. (25 mm) overlap beyond periphery of through opening.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH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W-J-3124



3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

   *Bearing the UL Classification Mark

   *Bearing the UL Listing Mark


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W-J-3124



# GENERAL NOTES:

1. Refer to section 07 84 00 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
   - Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
3. If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Engineering Judgments shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
4. References:
   - UL Fire Resistance Directory, Current Edition.
   - NFPA 101 Life Safety Code
   - All governing local and regional building codes
5. Firestop System installation must meet requirements of ASTM E814 (UL 1479) tested assemblies that provide a fire rating equal to that of the surrounding construction.

# PROJECT NAME:

XXXXXXXXXXXXXXXXXXXXXXXXX

# ARCHITECT/CONSULTANT:

XXXXXXXXXXXXXXXXXXXXXXXXX

# TITLE:

STI FIRESTOP SYSTEMS
FIRESTOP THROUGH PENETRATIONS

**DIVISION 26:** Electrical
**DIVISION 27:** Communications


**Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876**

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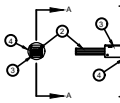
## System No. WJ-3131

F Rating - 2 Hr
T Ratings - 1-1/4 and 1-3/4 Hr (See Item 2)
L Rating At Ambient - Less than 1 cm 1.4 CFM (See Item 3)
L Rating At 400 F - Less Than 1 CFM cm 1.4 CFM (See Item 3)



Section A-A

1. **Wall Assembly** - Min 6 in. (154 mm) thick reinforced lightweight or normal weight (100-150 pcf) concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 9 sq in. (59 cm2) with a max dim of 3 in. (76 mm) or 3 in. diam (76 mm).

   See **Concrete Blocks** (CAZT) category in Fire Resistance Directory for names of manufacturers.

2. **Cables** - Within the loading area for each firestop device, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) or plenum rated jacketing and insulation.
   B. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 mm).
   C. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/4 in. (6 mm).

   **The T Rating is 1-1/4 hr when cables are installed. Otherwise the T Rating is 1-3/4 hr.**

   **The L Rating for the empty firestop device is 1.4 cfm at ambient and at 400F. The L Rating with 100 percent visual fill of cables is less than 1 CFM/firestop device at ambient and at 400F.**

3. **Firestop Device*** - Firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, lid removed from device to capture grouped cables. After installation of cables, lid replaced and snapped into place. Device slid along cables into wall such that lid is on top and ends project an equal distance from the approximate centerline of the wall assembly. The space between the device and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Firestop

4. **Fill, Void or Cavity Material* - Sealant** - Min 5/8 in. (16 mm) thickness of sealant to be applied in annular space between firestop device and periphery of opening on each side of wall assembly. Nom 3/8 in. (10 mm) diam bead of fill material applied at the point contact location between the firestop device and concrete wall on both sides of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal LCI50 Sealant, Pensil 300 Sealant or SpecSeal Series SIL300 Sealant

5. **Fill, Void or Cavity Material* - Mortar** - (Not Shown) - As an alternate to item 4, mortar applied to fill annular space between firestop device and periphery of opening flush with both surfaces of the wall.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Mortar

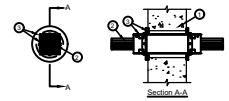
5A. **Mortar** - (Not Shown) - As an alternate to items 4 and 5, mortar or hydraulic cement applied to fill annular space between firestop device and periphery of opening flush with both surfaces of the wall.

*Bearing the UL Classification Mark



## System No. WJ-3138

F Ratings - 2 and 3 Hr (See Item 2)
T Ratings - 3/4, 1 and 1-1/2 Hr (See Item 3)
L Rating At Ambient - Less than 1, 1.3, 4 or 7 CFM (See Item 3)
L Rating At 400 F - Less than 1, 2 or 3 CFM (See Item 3)



Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3 ) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device.

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

1A. **Steel Sleeve - (Optional, Not Shown)** - Nom 4 in. diam Schedule 10 or heavier steel pipe, EMT steel conduit, or EMT sleeve cast or grouted into concrete wall flush with wall surfaces.

2. **Firestop Device*** - Single firestop device module consisting of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. The space between the firestop device and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/2 in. (13 mm). Firestop device secured in place by means of circular steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Firestop device is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 2) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension



3. **Cables** - Within the loading area for the firestop device, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum rated jacket and insulation.
   J. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 3A, 3B, 3C, 3D or 3E is used, the F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G, 3H, 3I or 3J is used, the F Rating is 4 hr and the T Rating is 1 hr.**

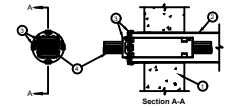
   **The L Rating for the empty firestop device is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for firestop device with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for firestop device with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for firestop device with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**

   *Bearing the UL Classification Mark



## System No. WJ-3150

F Rating - 2 Hr
T Rating - 1 Hr



Section A-A

1. **Wall Assembly** - Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall assembly may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 4-1/2 in. (114 mm).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Steel Sleeve/Conduit** - Nom 4 in. (102 mm) diam steel electrical metallic tubing (EMT), steel conduit or Schedule 5 (or heavier) steel pipe cast or grouted into wall assembly. Conduit to run continuously on one side of the wall and extend min 3/4 in. (19 mm) to max 6 in. (152 mm) beyond second wall surface. Sleeve to extend min 3/4 in. (19 mm) to max 6 in. (152 mm) beyond one or both wall surfaces.

3. **Firestop Device*** - One firestop device module centered within the steel sleeve. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. Firestop device module secured in place by means of split steel retainer plate(s) sized to accommodate the firestop device module. Steel retainer plate(s) each provided with an intumescent gasket and sized to cover the space between the firestop device module and the steel sleeve. Steel restraint plate/module assembly installed on open end of steel conduits and on both ends of steel sleeves that are shorter than 6-1/2 in. (216 mm) in total length. Steel restraint plates secured to firestop device module and to steel sleeve or conduit with steel set screws.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH

4. **Cables** - The cable fill within the loading area of the firestop device module may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.

   **B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation**

   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   J. Aluminum or steel armored optical fiber cables jacketed with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   K. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

5. **Fill, Void or Cavity Material* - Putty** - (Not Shown) - When sleeves are longer than 8-1/2 in. (216 mm) in length, SpecSeal Putty applied to a min 1 in. (25 mm) thickness within steel sleeve around device or cables, flush with edge of steel sleeve on side of opening opposite spill steel restraint plate.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Putty

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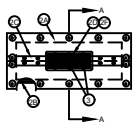
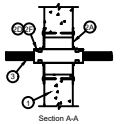
*Bearing the UL Classification Mark



## System No. WJ-3145

F Rating - 2 Hr
T Rating - 3/4 Hr





Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 192 sq in. (0.12 m2) with max dimensions of 24 in. (610 mm).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Firestop System** - The firestop shall consist of the following:

   A. **Fill, Void or Cavity Material* - Steel Sheet** - Flat-faced sheet with galv steel sheet backer. Sheets may be installed as one solid sheet, cut in two pieces (top and bottom) or split on one side of the penetrant(s). Opening in composite sheet to be max 3/16 in. (5 mm) larger than width and height dimensions of firestop device(s). Sheet to be cut to lap each other 2 in. (51 mm) on the wall on all sides. Sheets to be installed on each side of wall with foil facing against wall surface and secured with min 3/16 in. (5 mm) diam by 1-1/4 in. (32 mm) long steel screws in conjunction with min 1-1/4 in. (32 mm) diam steel fender washers. Spacing of fasteners not to exceed 6 in. (152 mm) OC.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal CS Composite Sheet

   B. **Fill, Void or Cavity Material* - Putty or Sealant** - Nom 3/16 in. (5 mm) wide by 3/16 in. (5 mm) thick putty strips or nom 1/4 in. (6 mm) diam bead of sealant applied beneath composite sheet around entire perimeter of through opening on both sides of wall.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Putty, SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

   C. **Steel Cover Strip** - The steel cover strip is required when the sheet is installed on both sides to accommodate the firestop devices (Item 2D). Min 2 in. (51 mm) wide strip of min 0.020 in. (0.51 mm) thick (26 gauge) galv steel centered over entire length of each butted seam or still made in the intumescent sheet (Item 2A). Prior to installation of the steel strip, the seam or slit in the intumescent sheet shall be covered with a nom 1/8 by 1/2 in. (3.2 by 13 mm) ribbon of putty or a nom 1/4 in. (6 mm) diam bead of sealant (Item 2C). Steel cover strip secured to galv steel sheet backer of intumescent sheet with steel sheet metal screws or rivets spaced max 3 in. (76 mm) OC on each side of seam or slit.



D. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm) for square or rectangular plates and min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm) when circular wall plates are used. Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with wall plates. Four and seven- gang steel wall plates shall be secured to wall using four steel screws or to composite sheet using four steel sheet metal screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway

E. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 2D) to increase its length to facilitate installations in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2D) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

F. **Firestop Device*** - One firestop device module consisting of a 1 4 by 1 4 by 10-1/2 in. (36 by 36 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Pathway

3. **Cables** - The cables may represent a 0 to 100 percent visual fill within the loading area for each firestop device module (Items 2D through 2F). Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

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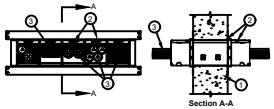
## System No. WJ-3158

F Rating - 2 Hr
T Ratings - 0, 1/2, 3/4, 1, 1-1/2 and 2 Hr (See Item 3)
L Rating At Ambient - Less Than 1, 2.3, 6.2, 6.7 or 7.4 CFM/Device Module (See Item 3)
L Rating At 400F - Less Than 1, 2.3, 4.5, 5 or 6.7 CFM/Device Module (See Item 3)



Section A-A

1. **Wall Assembly** - Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s). As an option when a single firestop device (Item 2) is installed, max diam of round opening is 6 in. (152 mm).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Firestop Device*** - One, two, three, four or five firestop device modules ganged together and secured by means of integral hook and eye window attachment. Each firestop device module consists of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Series 44 device modules have spring loaded steel retainer plates. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). In round openings, the space between the firestop device and the periphery of the opening shall be min 0 in. (0mm, point contact) to max 1 in. (25 mm). Firestop device module(s) secured in place by means of steel wall brackets installed with gasketing material supplied with product. Steel wall brackets installed on both sides of wall and secured to adjacent device modules by means of steel set screws provided with brackets. Wall brackets secured to each side of wall through predrilled holes in brackets by means of nom 1/8 in. (3.2 mm) concrete screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. As an option, devices may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel wall plates are optional.
   G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   J. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

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3. **Cables** - Within the loading area for each firestop device module, the loose or grouped cables may represent a 0 to 100 percent visual fill. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 2/0 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **For the Series 44 firestop devices and when Item 3A is used, the T Rating is 1 hr. When Item 3B, 3C, 3D, or 3E is used, the T Rating is 1/2 Hr. When Item 3F or 3G is used, the T Rating is 1-1/2 Hr. When Item 3H is used, the T Rating is 2 Hr. When Item 3I is used, the T Rating is 3/4 Hr. When device is empty, the T Rating is 0 Hr.**

   **For the Series 44+ firestop devices and when Item 3A, 3B, 3C, 3D or 3E is used, the T Rating is 1 hr. When Item 3F or 3G is used, the T Rating is 2 Hr. When Item 3H is used, the T Rating is 3 Hr. When Item 3I is used, the T Rating is 1-1/2 Hr.**

   **For the Series 44 firestop devices, the L Rating for each empty firestop device module is 2.3 cfm at ambient and at 400F. When Item 3A is used, the L Rating with 100 percent visual fill of cable is 7.4 CFM/firestop device module at ambient and 5 CFM/firestop device module at ambient and 400F. When Item 3F or 3G is used, the L Rating with 100 percent visual fill of cable is 6.2 CFM/firestop device module at ambient and 4.5 CFM/firestop device module at 400F.**

   **For the Series 44+ firestop devices, the L Rating for each empty firestop device is less than 1 cfm at ambient and at 400 F. When Item 3A is used, the L Rating with 100 percent visual fill of cable is 7.4 CFM/firestop device module at ambient and 5 CFM/firestop device module at 400F. When Item 3F or 3G is used, the L Rating with 100 percent visual fill of cable is 6.7 CFM/firestop device module at ambient and at 400F.**

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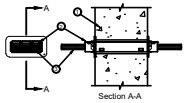
## System No. WJ-3172

F Rating - 4 Hr
T Ratings - 1, 1-1/4 and 1-3/4 Hr (See Item 3)



Section A-A

1. **Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks***. Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Firestop Device*** - Three firestop device modules consisting of a 1 4 by 1 4 by 10-1/2 in. (36 by 36 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device modules and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. As an option, devices may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel wall plates are optional.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Pathway

3. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 200 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket or plenum-rated jacketing and insulation.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway** – Max 3/4 in. (19 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).

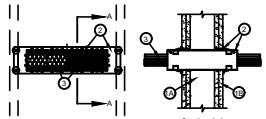
   **The T Rating is 1-1/4 hr when cables are installed and 1-3/4 hr when no cables are installed.**

   *Bearing the UL Classification Mark



## System No. W-L-3218

F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Ratings - 3/4 and 1 Hr (See Item 3)
L Rating At Ambient - Less Than 1, 1.3, 4 or 7 CFM (See Item 3)
L Rating At 400 F - Less Than 1, 2 or 3 CFM (See Item 3)



Section A-A

1. **Wall Assembly** - The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:

   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be nom 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.

   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s).

   **The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.**

2. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/8 in. (3.2 mm). In round openings, the space between the firestop device and the periphery of the opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Each four- and seven-gang steel wall plate shall be fastened to the studs with steel screws sized to extend through the gypsum board layers and penetrate 1/4 in. (13 mm) into the framing member. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   As an alternate, the four- and seven-gang steel wall plates may be installed directly against the studs for walls having 16 and 24 in. (406 and 610 mm) center-to-center stud spacing, respectively, prior to installation of the gypsum board layers. The steel wall plates shall be secured to the studs by means of steel screws. After installation of the steel wall plates and firestop device modules, the gypsum board shall be installed as specified in the individual U300 or U400 Design with a maximum 1/8 in. (3.2 mm) gap between the firestop device module and the cutout in the gypsum board. Gap between the firestop device module and the cutout in the gypsum board may be filled with gypsum joint compound or fill material (Item 4).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway



2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

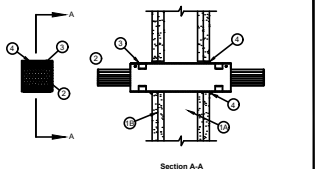
3. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:

   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway*** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When the hourly rating of the wall assembly is 1 hr,

## System No. W-L-3219

F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 3/4 and 1 Hr (See Item 2)
L Rating At Ambient - Less than 1, 1.3, 4 or 7 cfm (See Item 3)
L Rating At 400 F - Less than 1, 2 or 3 cfm (See Item 3)




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, U400 or V400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to accommodate firestop device to be max 4 in. (102 mm) wide by max 3-1/2 in. (89 mm) high, or nom 4 in. (102 mm) diameter.

   **The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.**
2. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.



F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) or plenum rated jacketing and insulation.
G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
I. **Optical Fiber Raceway+** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly rating of the wall assembly is 2 hr, the T Rating is 3/4 hr when Item 2A, 2B, 2C, 2D or 2E is used. Otherwise the T Rating is 1 hr.**

   **The L Rating for the empty firestop device is less than 1 cfm at ambient and 2 cfm at 400F. When Item 3A is used, the L Rating for the firestop device with 100 percent visual fill is 4 cfm at ambient and 5 cfm at 400F. When Item 3F is used, the L Rating for the firestop device with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for the firestop device with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**
3. **Firestop Device*** - Firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, attachment screws and fill removed from device to capture grouped cables. After installation of cables, fill replaced and reattached with same screws. Device slid along cables into wall such that lid is on top and ends project an equal distance from the approximate centerline of the wall assembly. The space between the device and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/2 in. (13 mm).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension
4. **Fill, Void or Cavity Material* - Sealant** - Min 5/8 in. (16 mm) thickness of sealant to be applied in annular space between firestop device and perimeter of opening on each side of wall assembly. Nom 3/8 in. (10 mm) diam bead of fill material applied at the firestop device/gypsum board interface on both sides of the wall assembly.

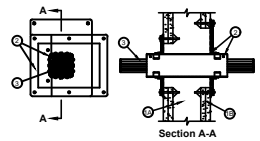
   **SPECIFIED TECHNOLOGIES INC** - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, Pensil 300 Sealant or SpecSeal Series SL300 Sealant

   *Bearing the UL Classification Mark



## System No. W-L-3248

F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 3/4 and 1 Hr (See Item 2)




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to accommodate firestop device to be max 3 in. (76 mm) wide by max 2-1/2 in. (64 mm) high, or nom 2 in. (51 mm) diameter.

   **The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.**
2. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.



H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum rated jacket and insulation.
J. **Optical Fiber Raceway+** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).

   **When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly rating of the wall assembly is 2 hr, the T Rating is 3/4 hr when Item 2A, 2B, 2C, 2D or 2E is used. Otherwise the T Rating is 1 hr.**
3. **Firestop Device*** - Firestop device consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, attachment screws and fill removed from device to capture grouped cables. After installation of cables, fill replaced and reattached with same screws. Device slid along cables into wall such that lid is on top and ends project an equal distance from the approximate centerline of the wall assembly. The space between the device and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/2 in. (13 mm).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
3A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension

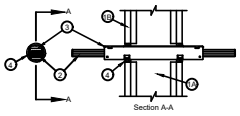
   *Bearing the UL Classification Mark

   +Bearing the UL Listing Mark



## System No. W-L-3256

F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 1, 1-1/4 and 1-3/4 Hr (See Item 2)
L Rating At Ambient - Less Than 1 or 1.4 CFM (See Item 3)
L Rating At 400 F - Less Than 1 or 1.4 CFM (See Item 3)




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, U400 or V400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to accommodate firestop device to be max 3 in. (76 mm) wide by max 2-1/2 in. (64 mm) high, or nom 2 in. (51 mm) diameter.

   The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) or plenum rated jacketing and insulation.
   B. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   C. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/4 in. (6 mm).

   **The T Rating is 1 hr and 1-3/4 hr in 1 hr and 2 hr rated walls, respectively, when no cables are installed in firestop device. The T Rating is 1 hr and 1-1/4 hr in 1 hr and 2 hr rated walls, respectively, when cables are installed in firestop device.**

   **The L Rating for the empty firestop device is less than 1.4 cfm at ambient and at 400F. When Item 3A is used, the L Rating with 100 percent visual fill of cable is less than 1 CFM at ambient and at 400F.**



3. **Firestop Device*** - Firestop device consists of a 1.4 by 1.4 by 10-1/2 in. (35 by 35 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device to be installed in accordance with the accompanying installation instructions. Prior to installation within wall, fill removed from device to capture grouped cables. After installation of cables, fill replaced and snapped into place. Device slid along cables into wall such that lid is on top and ends project an equal distance from the approximate centerline of the wall assembly. The space between the device and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Pathway
4. **Fill, Void or Cavity Material* - Sealant** - Min 5/8 in. (16 mm) thickness of sealant to be applied in annular space between firestop device and periphery of opening on each side of wall assembly. Nom 3/8 in. (10 mm) diam bead of fill material applied at the point contact between the firestop device and gypsum board wall on both sides of the wall assembly.

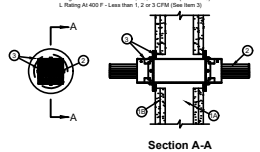
   **SPECIFIED TECHNOLOGIES INC** - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, Pensil 300 Sealant or SpecSeal Series SL300 Sealant

   *Bearing the UL Classification Mark



## System No. W-L-3265

F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Ratings - 3/4, 1 and 1-1/2 Hr (See Item 3)
L Rating At Ambient - Less than 1, 1.3, 4 or 7 CFM (See Item 3)
L Rating At 400 F - Less than 1, 2 or 3 CFM (See Item 3)




Section A-A

1. **Wall Assembly** - The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Max diam of opening to be 4 in. (102 mm).

   The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. **Firestop Device*** - Single firestop device module consisting of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. ( 0 mm, point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of circular steel wall plates installed with gasketing material supplied with product. Circular steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Firestop device module to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension



3. **Cables** - Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum rated jacket and insulation.
   J. **Optical Fiber Raceway+** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70)

   **When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly rating of the wall assembly is 2 hr, the T Rating is 3/4 hr when Item 2A, 2B, 2C, 2D or 2E is used. Otherwise the T Rating is 1 hr.**

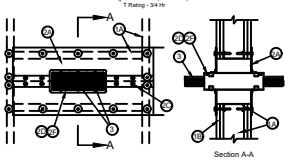
   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**

   *Bearing the UL Classification Mark



## System No. W-L-3271

F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 3/4 Hr




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Steel Studs** - Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. Additional studs shall be installed horizontally to form a rectangular box around the through penetrants (Item 2D).
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Max area of opening is 182 sq in. (0.12 m2) with max dimension of 22-3/4 in. (578 mm).

   **The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall in which it is installed.**
2. **Firestop System** - The firestop system shall consist of the following:
   A. **Fill, Void or Cavity Material*- Composite Sheet** - Foil-faced sheet with galv steel sheet backer. Sheets may be installed as one solid sheet, cut in two pieces (top and bottom) or slit on one side of the penetrant(s). Opening in intumescent sheet to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s). Sheets cut to lap min of 2 in. (51 mm) on the wall on all sides of the opening. Sheets to be installed on each side of wall with foil facing against wall surface and secured to framing, through gypsum board layers, with min 2 in. (51 mm) long steel drywall screws in conjunction with min 1-1/4 (32 mm) diam steel fender washers. Spacing of fasteners not to exceed 6 in. (152 mm) OC.

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal CS Composite Sheet
   B. **Fill, Void or Cavity Material* - Putty or Sealant** - Nom 3/16 in. (5 mm) wide by 3/16 in. (5 mm) thick putty strips or 1/4 in. (6 mm) diam bead of sealant applied beneath composite sheet around entire perimeter of through opening

   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Putty, SpecSeal Series SSS Sealant or SpecSeal LCI Sealant
   C. **Steel Cover Strip** - The steel cover strip is required when the sheet is cut/slit to accommodate the firestop devices (Item 2D). Min 2 in. (51 mm) wide strip of min 0.020 in. (0.51 mm) thick (26 gauge) galv steel centered over entire length of each butted seam or slit made in the intumescent sheet (Item 2A). Prior to installation of the steel strip, the seam or slit in the intumescent sheet shall be covered with a nom 1/8 by 1/2 in. (3.2 by 13 mm) ribbon of putty or a nom 1/4 in. (6 mm) diam bead of sealant (Item 2C). Steel cover strip secured to galv steel sheet backer of intumescent sheet with steel sheet metal screws or rivets spaced max 3 in. (76 mm) OC on each side of seam or slit.



D. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm) for square or rectangular plates and min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm) when circular wall plates are used. Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with wall plates. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway
E. **Firestop Device* - Extension Module*** - (Optional, Not Shown) - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 2D) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2D) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH EXTENSION
F. **Firestop Device*** - One firestop device module consisting of a 1.4 by 1.4 by 10-1/2 in. (35 by 35 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Pathway
3. **Cables** - The cables may represent a 0 to 100 percent visual fill within the loading area for each firestop device module. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway+** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 4A, 4B, 4C, 4D or 4E is used, the max F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 4F, 4G, 4H or 4I is used, the max F Rating is 4 hr and the T Rating is 1 hr.**

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at 400F. When Item 3F is used, the L Rating for each firestop device with 100 percent visual fill is 1.3 cfm at ambient and less than 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual fill is 7 cfm at ambient and 2 cfm at 400F.**

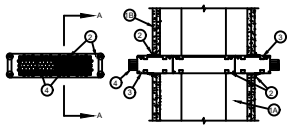
   *Bearing the UL Listing Mark

   *Bearing the UL Classification Mark



## System No. W-L-3286

F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 4)
T Ratings - 3/4 and 1 Hr (See Item 4)
L Rating At Ambient - Less than 1, 1.3, 4 or 7 CFM/Device Module (See Item 3)
L Rating At 400 F - Less than 1, 2 or 3 CFM/Device Module (See Item 3)




Section A-A

1. **Wall Assembly** - The 1, 2, 3 or 4 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. **Studs** - Wall framing may consist of either single, double or staggered wood studs or steel channel studs. Wood studs to consist of min 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s) for rectangular openings. Diameter of circular opening to be max 4 in.

   **The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.**
2. **Firestop Device*** - One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3 mm) for square or rectangular plates and min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm) when circular wall plates (not shown) are used. Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Each four- and seven-gang steel wall plate shall be fastened to the studs with steel screws sized to extend through the gypsum board layers and penetrate min 1/2 in. (13 mm) into the framing member. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

   As an alternate, the four- and seven-gang steel wall plates may be installed directly against the studs for walls having 16 and 24 in. (406 and 610 mm) center-to-center stud spacing, respectively, prior to installation of the gypsum board layers. The steel wall plates shall be fastened to the stud by means of steel screws. After installation of the steel wall plates and firestop device modules, the gypsum board shall be installed as specified in the individual U300, U400 or V400 Design with a maximum 1/8 in. (3 mm) gap between the firestop device module and the cutout in the gypsum board. Gap between the firestop device module and the cutout in the gypsum board may be filled with gypsum joint compound or fill material (Item 5).

   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 33 Fire Rated Pathway



3. **Firestop Device* - Extension Module** - Module attached to ends of 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long firestop device (Item 2) to increase its length. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.

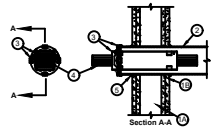
   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Extension
4. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. **Optical Fiber Raceway+** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).

   **When Item 4A, 4B, 4C, 4D or 4E is used, the max F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 4F, 4G, 4H or 4I is used, the max F Rating is 4 hr and the T Rating is 1 hr.**

   **The L Rating for each empty firestop device module is less than 1 cfm at ambient and

## System No. W-L-3287

F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1 Hr




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel stude. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be 4-1/2 in. (114 mm) diameter.
   The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. **Steel Sleeve/Conduit** - Nom 4 in. (102 mm) diam steel electrical metallic tubing (EMT), steel conduit or Schedule 5 (or heavier) steel pipe friction-fitted into 4-1/2 in. (114 mm) diam cutouts in gypsum board. Conduit to run continuously on one side of the wall and extend min 3/4 in. (19 mm) to max 6 in. (152 mm) beyond second wall surface. Sleeve to extend min 3/4 in. (19 mm) to max 6 in. (152 mm) beyond one or both wall surfaces.
3. **Firestop Device*** - One firestop device module centered within the steel sleeve. The firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. Firestop device module secured in place by means of split steel restraint plate(s) sized to accommodate the firestop device module. Steel restraint plate(s) each provided with an intumescent gasket sized to cover the space between the firestop device module and the steel sleeve. Steel restraint plate/module assembly installed on open end of steel conduit and on both ends of steel sleeve that is shorter than 5-1/2 in. (216 mm) in total length. Steel restraint plates secured to firestop device module and to steel sleeve or conduit with steel set screws.
   **SPECIFIED TECHNOLOGIES INC** - EZ PATH
4. **Cables** - The cable fill within the loading area of the firestop device module may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation



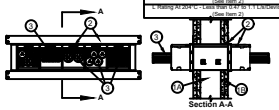
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
J. Aluminum or steel armored optical fiber cables jacketed with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
K. **Optical Fiber Raceway** - Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).
5. **Fill, Void or Cavity Material*** - **Putty** - Nom 1/4 in. (6 mm) diam "rope" of putty installed around steel sleeve or conduit at its egress from each side of the wall assembly. When sleeve is longer than 8-1/2 in. (216 mm) in length, putty applied to a min 1 in. (25 mm) thickness within steel sleeve around device or cables, flush with edge of steel sleeve on side of opening opposite the split steel restraint plate.
   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Putty
   *Bearing the UL Listing Mark
   †Bearing the UL Classification Mark



Classified by
Underwriters Laboratories, Inc.
to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115

## System No. W-L-3306

| ANSI/UL1479 (ASTM E814) | CAN/ULC S115 |
|---|---|
| F Rating - 1 or 2 Hr (See Item 1) | F Rating - 1 or 2 Hr (See Item 1) |
| T Ratings - 1, 1-1/2 and 2 Hr (See Item 3) | FT Ratings - 1, 1-1/2 and 2 Hr (See Item 3) |
| L Rating At Ambient - Less than 1 to 2.5 CFM/Device Module (See Item 2) | FH Rating - 1 or 2 Hr (See Item 1) |
| L Rating At 400 F - Less than 1 to 2.5 L/M/Device Module (See Item 2) | FTH Ratings - 1, 1-1/2 and 2 Hr (See Item 3) |
| | L Rating At Ambient - Less than 0.47 to 1.1 L/s/Device Module (See Item 2) |
| | L Rating At 204 C - Less than 0.47 to 1.1 L/s/Device Module (See Item 2) |




Section A-A

1. **Wall Assembly** - The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, V300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. When two banks of firestop device modules (Item 2) are installed, additional framing members shall be used to completely frame around the opening.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 14 in. (6 mm) larger than width and height dimensions of firestop device(s).
   **The hourly F and FH Ratings are dependent upon the hourly rating of the wall in which it is installed.**
2. **Firestop Device*** - One or two banks each consisting of one, two, three, four or five firestop device modules ganged together and secured by means of integral hook and eye window attachment. Each firestop device module consists of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall brackets installed with gasket material supplied with product. Steel wall brackets installed on both sides of wall and secured to outermost device modules by means of steel set screws provided with brackets. Wall brackets secured to each side of wall through predrilled holes in brackets by means of nom 1/8 in. (3.2 mm) Type C steel screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. As an alternate when one bank of firestop device modules are installed, the multi-gang steel wall brackets may be installed directly against the studs for walls having 24 in. (610 mm) center-to-center stud spacing prior to installation of the gypsum board layers. The steel wall plates shall be secured to the stud by means of steel screws. After installation of the steel wall plates and firestop device modules, the gypsum board shall be installed as specified in the individual Design with a maximum 1/8 in. (3.2 mm) gap between the firestop device module and the cutout in the gypsum board. Gap between the firestop device module and the cutout in the gypsum board may be filled with gypsum joint compound or fill material (Item 4). The L Ratings vary according to whether the device module is blank (no cables) or loaded (with cables) and which cable type and size is used, as tabulated below.



| Max Visual Cable Fill | Cable Type | L-Rating CFM/Device Module (L/s/Device Module) | |
|---|---|---|---|
| | | Ambient | 400 °F (204°C) |
| 0% | - | Less Than 1 (0.47) | Less Than 1 (0.47) |
| 1-25% | 3A-3I | 1 (0.47) | 1 (0.47) |
| 26-50% | 3A-3I | 2.1 (1.1) | 2.1 (1.1) |
| 51-75% | 3A-3I | 2.1 (1.1) | 2.1 (1.1) |
| 76-100% | 3A-3I | 2.1 (1.1) | 2.1 (1.1) |

**SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44+ Fire Rated Pathway

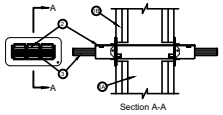
2A. **Firestop Device* - Extension Module** - (Optional, Not Shown) - Module attached to ends of firestop device (Item 2) to increase its length to facilitate installation in thicker walls. Each module consists of a 4 by 4-5/8 by 6 in. (102 by 118 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module secured in place by means of steel plates installed with gasketing material supplied with product. Steel plates installed on both sides of wall and secured to each device or extension module by means of steel set screws provided with plates. Firestop device and extension module assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 44+ Extension
3. **Cables** - Cables may represent a 0 to max 100 percent visual fill within the loading area for each firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 750 kcmil single copper conductor power cable with XLPE jacket and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
   G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   I. Max RG6/U coaxial cable with fluorinated ethylene, polyethylene (PE), PVC or plenum rated jacketing and insulation.
   **For the Series 44+ firestop device and when Item 3A, 3B, 3C, 3D, 3E or 3I is used, the T, FT and FTH Ratings are 1 hr. When Item 3F or 3G is used, the T, FT and FTH Ratings are 1 and 1-1/2 Hr for 1 and 2 Hr rated assemblies respectively. When Item 3H is used, the T, FT and FTH Ratings are 1 and 2 Hr for 1 and 2 Hr rated assemblies respectively. When device is empty, the T, FT and FTH Ratings are 1 and 1-1/2 Hr for 1 and 2 Hr rated assemblies respectively. When two banks of firestop device modules are installed, the T, FT and FTH Ratings are 1 Hr.**
4. **Fill, Void or Cavity Material* - Sealant or Putty** - (Not Shown) - As an alternate to gypsum joint compound, the gap between the firestop device module and the cutout in the gypsum board may be sealed with fill material on each side of the wall assembly when multi-gang steel wall brackets are installed directly against the wood or steel studs.
   **SPECIFIED TECHNOLOGIES INC** - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant, SpecSeal Putty
   *Bearing the UL Listing Mark

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



## System No. W-L-3339

F Ratings - 1, 2, 3 and 4 Hr (See Item 1)
T Ratings - 1, 1-1/4 and 1-3/4 Hr (See Item 2)




Section A-A

1. **Wall Assembly** - The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs** - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 2 in. (51 mm) diam or 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s).
   **The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.**
2. **Firestop Device*** - Three firestop device modules consisting of a 1-4 by 1-4 by 10-1/2 in. (35 by 35 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device modules and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
   **SPECIFIED TECHNOLOGIES INC** - EZ PATH Series 22 Fire Rated Pathway
3. **Cables** - Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   A. Max 200 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation.
   B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation or plenum-rated jacketing and insulation.
   C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation or plenum-rated jacketing and insulation.
   D. Max 3/C No. 20 AWG metal clad or armored cable with steel or aluminum jacket.
   E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket or plenum-rated jacketing and insulation.
   F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.



G. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 mm).
H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation or plenum rated jacketing and insulation and having a max diam of 5/8 in. (16 mm).
I. Optical Fiber Raceway† - Max 3/4 in. (19 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).
   When the hourly rating of the wall assembly is 1 hr, the T Rating is 1 hr. When the hourly fire rating of the wall assembly is 2 hr, the T Rating is 1-1/4 hr when cables are installed and 1-3/4 hr when no cables are installed.
   *Bearing the UL Classification Mark



## GENERAL NOTES:

1. Refer to section 07 84 00 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
   - Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
3. If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Engineering Judgments shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
4. References:
   - UL Fire Resistance Directory, Current Edition.
   - NFPA 101 Life Safety Code
   - All governing local and regional building codes
5. Firestop System installation must meet requirements of ASTM E814 (UL 1479) tested assemblies that provide a fire rating equal to that of the surrounding construction.

## PROJECT NAME:

XXXXXXXXXXXXXXXXXXXXXXXXX

## ARCHITECT/CONSULTANT:

XXXXXXXXXXXXXXXXXXXXXXXXX

## TITLE:

STI FIRESTOP SYSTEMS
FIRESTOP THROUGH PENETRATIONS

**DIVISION 26:** Electrical
**DIVISION 27:** Communications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