

three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
one quarter inch = one foot  
one half inch = one foot  
three quarters inch = one foot  
three eighths inch = one foot  
one eighth inch = one foot  
one eighth inch = one foot

| ASSEMBLY BEING PENETRATED                    | A- FLOOR, CONCRETE, 5 INCHES OR LESS                                               | B- FLOOR, CONCRETE, MORE THAN 5 INCHES                                             | J- WALL, MASONRY OR CONCRETE, 8 INCHES OR LESS                                    | K- WALL, MASONRY OR CONCRETE, MORE THAN 8 INCHES                                  | L- WALL, GYPSUM BOARD ON METAL STUDS                                              |
|----------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| L RATING                                     | NOT APPLICABLE                                                                     | NOT APPLICABLE                                                                     | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    |
| T RATING                                     | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    |
| F RATING                                     | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE WALL PENETRATED | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE WALL PENETRATED | NOT LESS THAN 1-HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE WALL PENETRATED |
| MOVEMENT                                     | NOT APPLICABLE                                                                     | NOT APPLICABLE                                                                     | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    | NOT APPLICABLE                                                                    |
| PENETRANTS                                   | UL DESIGN                                                                          | UL DESIGN                                                                          | UL DESIGN                                                                         | UL DESIGN                                                                         | UL DESIGN                                                                         |
| METAL PIPE, CONDUIT AND TUBING               | F-A-1000 SERIES, OR OPTION 2                                                       | F-B-1000 SERIES, OR OPTION 2                                                       | W-J-1000 SERIES, OR OPTION 1                                                      | C-K-1000 SERIES, W-K-1000 SERIES, OR OPTION 1                                     | W-L-1000 SERIES                                                                   |
| NON-METALLIC PIPE, CONDUIT AND TUBING        | F-A-2000 SERIES                                                                    | F-B-2000 SERIES                                                                    | W-J-2000 SERIES                                                                   | C-K-2000 SERIES OR W-K-2000 SERIES                                                | W-L-2000 SERIES                                                                   |
| ELECTRICAL CABLES                            | F-A-3000 SERIES                                                                    | F-B-3000 SERIES                                                                    | W-J-3000 SERIES                                                                   | C-K-3000 SERIES OR W-K-3000 SERIES                                                | W-L-3000 SERIES                                                                   |
| ELECTRICAL CABLES IN CABLE TRAYS             | F-A-4000 SERIES                                                                    | F-B-4000 SERIES                                                                    | W-J-4000 SERIES                                                                   | C-K-4000 SERIES OR W-K-4000 SERIES                                                | W-L-4000 SERIES                                                                   |
| INSULATED PIPES                              | F-A-5000 SERIES                                                                    | F-B-5000 SERIES                                                                    | W-J-5000 SERIES                                                                   | C-K-5000 SERIES                                                                   | W-L-5000 SERIES                                                                   |
| MISCELLANEOUS ELECTRICAL PENETRANTS          | F-A-6000 SERIES                                                                    | F-B-6000 SERIES                                                                    | W-J-6000 SERIES                                                                   | C-K-6000 SERIES                                                                   | W-L-6000 SERIES                                                                   |
| MISCELLANEOUS MECHANICAL PENETRANTS          | F-A-7000 SERIES                                                                    | F-B-7000 SERIES                                                                    | W-J-7000 SERIES                                                                   | C-K-7000 SERIES                                                                   | W-L-7000 SERIES                                                                   |
| MIXED PENETRANTS CONTAINING ANY OF THE ABOVE | F-A-8000 SERIES                                                                    | F-B-8000 SERIES                                                                    | W-J-8000 SERIES                                                                   | C-K-8000 SERIES                                                                   | W-L-8000 SERIES                                                                   |

- NOTES:**
- FIRESTOP SYSTEMS SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 WITH MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH OF WATER.
  - MAINTAIN INTEGRITY OF FIRE-RESISTANT-RATED ASSEMBLIES AT PENETRATIONS.
  - APPLIES TO FIRE-RESISTANCE-RATED:
    - WALLS
    - HORIZONTAL ASSEMBLIES
  - SLEEVES
    - WHERE INSTALLED, SECURELY FASTEN TO ASSEMBLY PENETRATED.
    - PROTECT SPACE BETWEEN PENETRANT AND SLEEVE AND BETWEEN SLEEVE AND ASSEMBLY BEING PENETRATED.
  - FIRE-RESISTANCE-RATED WALLS:
    - PROTECT THROUGH PENETRATIONS INTO OR THROUGH FIRE WALLS, FIRE BARRIERS, SMOKE BARRIERS AND FIRE PARTITIONS.
    - OPTION 1:
      - PENETRANT: METALLIC AND NOT MORE THAN 6 INCH NOMINAL DIAMETER
      - OPENING: NOT MORE THAN 144 SQUARE INCHES
      - FILL MATERIAL: CONCRETE, GROUT, OR MORTAR INSTALLED FULL THICKNESS OF WALL OR THICKNESS TO MAINTAIN FIRE RESISTANCE RATING
    - OPTION 2:
      - PENETRANT: METALLIC AND NOT MORE THAN 6 INCH NOMINAL DIAMETER
      - OPENING: NOT MORE THAN 144 SQUARE INCHES
      - FILL MATERIAL: CONCRETE, GROUT, OR MORTAR INSTALLED FULL THICKNESS OF FLOOR OR THICKNESS TO MAINTAIN FIRE RESISTANCE RATING
  - FIRE-RESISTANCE-RATED HORIZONTAL ASSEMBLIES:
    - PROTECT THROUGH PENETRATIONS OF FLOORS, FLOOR/CEILING ASSEMBLIES, AND CEILING MEMBRANE OF ROOF/CEILING ASSEMBLIES
    - OPTION 2:
      - PENETRANT: METALLIC AND NOT MORE THAN 6 INCH NOMINAL DIAMETER
      - OPENING: NOT MORE THAN 144 SQUARE INCHES
      - FILL MATERIAL: CONCRETE, GROUT, OR MORTAR INSTALLED FULL THICKNESS OF FLOOR OR THICKNESS TO MAINTAIN FIRE RESISTANCE RATING

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Drawing Title  
THROUGH PENETRATION FIRESTOP SYSTEMS

Approved Project Director  
K.JAPOWICZ

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Location  
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Date  
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Checked  
P.PATEL

Drawn  
CJO

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Office of Construction and Facilities Management

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