CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)

1. **METAL PIPE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Metal pipe
   - Insulation and PVC jacket
   - With or without metal cladding
   - Maximum diameter of 2".

2. **MULTIPLE METAL PIPES THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Multiple metal pipes
   - Insulation and PVC jacket
   - With or without metal cladding
   - Maximum diameter of 2".

3. **PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Plastic pipe
   - Insulation and PVC jacket
   - Without metal cladding
   - Maximum diameter of 2".

4. **OPTICAL FIBER RACEWAY OR ENT THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Optical fiber raceway
   - Insulation and PVC jacket
   - Without metal cladding
   - Maximum diameter of 2".

5. **CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Cable bundle
   - Insulation and PVC jacket
   - With or without metal cladding
   - Maximum diameter of 2".

6. **CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Cable bundle
   - Insulation and PVC jacket
   - With or without metal cladding
   - Maximum diameter of 2".

7. **CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (1-HR.)**
   - Cable bundle
   - Insulation and PVC jacket
   - With or without metal cladding
   - Maximum diameter of 2".

---

Note:
- Refer to the following specifications for firestopping:
  - Type and thickness of fire-rated construction.
  - Water Rating (W-Rating)
  - Movement
  - Fire Rating (F-Rating)

- Details shown are up to date as of February 2015.

- For additional information on the details, refer to the most current "Underwriter's Laboratories Fire Resistance Directory (Volume 1.)" and "Underwriter's Laboratories Fire Resistance Directory (Volume 2.)".

- Contact Hilti Inc. for alternative systems or Engineering Judgments (800-879-8000) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems. In addition, the following information:
  - Water Rating (W-Rating)
  - Movement
  - Fire Rating (F-Rating)

- For quality control requirements, refer to the Quality Control section of the specification.

- Always refer to the UL system detail for complete firestopping and fire protection systems.

- NFPA 72 National Fire Alarm Code
- 2011 International Building Code
- 2011 International Plumbing Code
- 2011 International Mechanical Code
- 2011 International Electrical Code

- 1. Firestop System installation must meet requirements of ASTM E-119 (UL Test) for fire systems.
2. Details shown are general information only. Always refer to the UL system detail for complete firestopping requirements. 2011 International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems. In addition, the following information:
4. NFPA 72 National Fire Alarm Code
5. NFPA 750 National Electrical Code
7. For quality control requirements, refer to the Quality Control portion of the specification.
8. Contact Hilti Inc. for alternative systems or Engineering Judgments (800-879-8000) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems.
9. For additional information on the details, refer to the most current "Underwriter's Laboratories Fire Resistance Directory (Volume 1.)"
Notes:
1. Refer to the following specifications for firestopping:
   a. 07 84 00 Firestopping
   b. 07 84 13 Penetration Firestopping
   c. 22 00 00 Plumbing
   d. 23 00 00 HVAC
   e. 26 00 00 Electrical
   f. 27 06 37 Communication
   2. Details shown are typical details, containing general information only. Always refer to the full UL system detail for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified to ensure compliance with the details, including but not limited to the following:
      * Fire Rating (F-Rating)
      * Temperature Rating (T-Rating)
      * Leakage Rating (L-Rating)
      * Water Rating (W-Rating)
      * Annular Space
      * Percent Fill
      * Movement
      * Type and thickness of fire-rated construction
   3. If alternative details matching the field conditions are not available, manufacturer’s engineering judgment drawings are acceptable. Contact Hilti Inc. for alternative systems or Engineering Judgment (EJ) Drawings. Refer to the International Firestop Council (IFC) Guidelines for Evaluating Firestop Engineering Judgments.
   4. References:
      * 2013 Underwriter’s Laboratories Fire Resistance Directory, Volumes 1 & 2
      * NFPA 70: National Electric Code
      * All governing local and regional building codes
   5. Firestop System installation must meet requirements of ASTM E-1414 (UL 1479) tested assemblies. Provide a fire rating equal to that of the construction being penetrated.
   6. Electrical busway installed with a Hilti Firestop Label equipped with a QR code with the following information:
      * Warning! - Do Not Disturb
      * Through Penetration Firestop System
      * UL System # * Product(s) used
      * Hourly Rating (F-Rating)
      * Installation Date
      * Contractor’s Name
   7. For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV as classified by Underwriter’s Laboratories, Fire Resistance Directory (Volume 1.)

1. MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY (1-HR.)
2. CABLE TRAY THROUGH GYPSUM WALL ASSEMBLY (1-HR.)
3. ELECTRICAL BUSWAY THROUGH GYPSUM WALL ASSEMBLY (1-HR.)
4. MULTIPLE PENETRATIONS THROUGH GYPSUM WALL ASSEMBLY (1-HR.)