1. Metal pipe through concrete floor (2-HR.)

2. Multiple metal pipes through concrete floor (2-HR.)

3. Plastic pipe through concrete floor (2-HR.)

4. Plastic pipe through concrete floor (2-HR.)

5. Metal pipe with AB/PVC insulation through concrete floor (2-HR.)

6. Metal pipe with glass fiber or calcium silicate insulation through concrete floor (2-HR.)

7. Metal duct (without damper) through concrete floor (2-HR.)

8. Round sheet metal duct through concrete floor (2-HR.)

9. Sheet metal duct with glass fiber insulation through concrete floor (2-HR.)

10. Multiple penetrations through concrete floor (2-HR.)

Notes:

1. Refer to the following specifications for firestopping:
   a. 1213 Underwriter's Laboratories Fire Resistance Directory, Volume 1 & 2
   b. NFPA 70 - National Electric Code
   d. NFPA 72 - National Electric Code
   e. All governing local and regional building codes

2. Firestop System installation must meet requirements of ASTM E-141 (UL 141) tested assemblies that provide a fire rating in accordance with the requirements of the construction being protected.

3. Systems are not limited to the following:
   a. For Quality Control requirements, refer to the Quality Control procedures appropriate to the manufacturer.
   b. For Quality Control requirements, refer to the Quality Control procedures appropriate to the manufacturer.
   c. System requirements. If field conditions do not match the system requirements, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
   d. Type and thickness of fire-rated construction.
   e. Type and thickness of fire-rated construction.
   f. Type and thickness of fire-rated construction.
   g. Type and thickness of fire-rated construction.
   h. Type and thickness of fire-rated construction.
   i. Type and thickness of fire-rated construction.
   j. Type and thickness of fire-rated construction.
   k. Type and thickness of fire-rated construction.
   l. Type and thickness of fire-rated construction.
   m. Type and thickness of fire-rated construction.
   n. Type and thickness of fire-rated construction.
   o. Type and thickness of fire-rated construction.
   p. Type and thickness of fire-rated construction.
   q. Type and thickness of fire-rated construction.
   r. Type and thickness of fire-rated construction.
   s. Type and thickness of fire-rated construction.
   t. Type and thickness of fire-rated construction.
   u. Type and thickness of fire-rated construction.
   v. Type and thickness of fire-rated construction.
   w. Type and thickness of fire-rated construction.
   x. Type and thickness of fire-rated construction.
   y. Type and thickness of fire-rated construction.
   z. Type and thickness of fire-rated construction.

4. References:
   a. 2014 International Building Code
   c. NFPA 70 - National Electric Code
   e. All governing local and regional building codes

5. Firestop System installation must meet requirements of ASTM E-141 (UL 141) tested assemblies that provide a fire rating in accordance with the requirements of the construction being protected.

6. Firestop Systems are not limited to the following:
   a. For Quality Control requirements, refer to the Quality Control procedures appropriate to the manufacturer.
   b. For Quality Control requirements, refer to the Quality Control procedures appropriate to the manufacturer.
   c. System requirements. If field conditions do not match the system requirements, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
   d. Type and thickness of fire-rated construction.
   e. Type and thickness of fire-rated construction.
   f. Type and thickness of fire-rated construction.
   g. Type and thickness of fire-rated construction.
   h. Type and thickness of fire-rated construction.
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   t. Type and thickness of fire-rated construction.
   u. Type and thickness of fire-rated construction.
   v. Type and thickness of fire-rated construction.
   w. Type and thickness of fire-rated construction.
   x. Type and thickness of fire-rated construction.
   y. Type and thickness of fire-rated construction.
   z. Type and thickness of fire-rated construction.

7. For outlet boxes requiring protection, use only Wall Opening Protection Devices, category D or as approved by Underwriter's Laboratories, Fire Resistance Directory (Volume 1.)

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

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

10. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
    a. Type and thickness of fire-rated construction.
    b. Type and thickness of fire-rated construction.
    c. Type and thickness of fire-rated construction.
    d. Type and thickness of fire-rated construction.
    e. Type and thickness of fire-rated construction.
    f. Type and thickness of fire-rated construction.
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    v. Type and thickness of fire-rated construction.
    w. Type and thickness of fire-rated construction.
    x. Type and thickness of fire-rated construction.
    y. Type and thickness of fire-rated construction.
    z. Type and thickness of fire-rated construction.

11. For outlet boxes requiring protection, use only Wall Opening Protection Devices, category D or as approved by Underwriter's Laboratories, Fire Resistance Directory (Volume 1.)

12. Notes (for designer - delete this note after reading and replace with title block information)
1. Any modification to these details could result in an application/system not meeting the 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 for compliance with the details, including but not limited to the following:

- **Type and thickness of fire-rated construction.**
- **Movement**
- **Percent Fill**
- **Water Rating (W-Rating)**
- **Annular Space**
- **Leakage Rating (L-Rating)**
- **Temperature Rating (T-Rating)**
- **Fire Rating (F-Rating)**

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

3. For outlet boxes requiring protection, use only Wall Opening Protection Materials, category CLIV as classified by Underwriter’s Laboratories Fire Resistance Directory (Volume 1.).

4. References:

   - 1233 Firestop System manufacturer's engineering judgment drawings are acceptable. Contact Hilti Inc. for alternative systems or Engineering Judgment (800-879-8000).
   - Systems Engineering Judgments. Firestop Council (IFC) Guidelines for Evaluating Firestop Systems (1995) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop System Requirements. If field conditions do not match the firestop 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 for compliance with the details, including but not limited to the following:

   - **Type and thickness of fire-rated construction.**
   - **Movement**
   - **Percent Fill**
   - **Water Rating (W-Rating)**
   - **Annular Space**
   - **Leakage Rating (L-Rating)**
   - **Temperature Rating (T-Rating)**
   - **Fire Rating (F-Rating)**

5. Firestop System installation must meet requirements of ASTM E119, UL 1479, and NFPA 70 requirements for fire resistivity. For Quality Control requirements, refer to the Quality Control Manual. For Quality Control requirements, refer to the Quality Control Manual.

6. 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 for compliance with the details, including but not limited to the following:

   - **Type and thickness of fire-rated construction.**
   - **Movement**
   - **Percent Fill**
   - **Water Rating (W-Rating)**
   - **Annular Space**
   - **Leakage Rating (L-Rating)**
   - **Temperature Rating (T-Rating)**
   - **Fire Rating (F-Rating)**

7. For outlet boxes requiring protection, use only Wall Opening Protection Materials, category CLIV as classified by Underwriter’s Laboratories Fire Resistance Directory (Volume 1.).