

WATER HAMMER ARRESTER (WHA) SIZING AND SELECTION

P.D.I. UNIT	A	B	C	D	E	F
FIXTURE UNIT	1-11	12-32	33-80	81-113	114-154	155-330

ALL WATER HAMMER ARRESTERS SHALL BE ACCESSIBLE. WHA'S LOCATED IN A CHASE OR INACCESSIBLE CEILING SHALL HAVE A 18"X18" ACCESS PANEL PAINTED TO MATCH WALL OR CEILING.

TYPICAL WHA LOCATION DETAIL

System No. W-J-2091

1. WALL ASSEMBLY --- MIN 8-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS* MAX DIAM OF OPENING IS 7-3/8 IN. SEE CONCRETE BLOCKS (CAZT) IN VOLUME 1 OF THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH-PENETRANTS --- ONE NONMETALLIC PIPE TO BE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE PIPE AND THE PERIPHERY OF THE OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 3/4 IN. FOR NOM 8 IN. DIAMETER PIPES AND MIN 0 IN. (POINT CONTACT) TO MAX 1/2 IN. FOR NOM 4 IN. DIAM (OR SMALLER) PIPES. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDERS OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:

A. POLYVINYL CHLORIDE (PVC) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR PVC CORE PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.

THE T RATING IS DEPENDENT UPON THE DIAM OF PIPE USED IN THE FIRESTOP SYSTEM. FOR NOM 4 IN. DIAM (OR SMALLER) PIPES, THE T RATING IS 4 HR. FOR PIPES GREATER THAN NOM 4 IN. DIAM, THE T RATING IS 2 HR.

3. FIRESTOP SYSTEM --- THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. FILL, VOID OR CAVITY MATERIAL - SEALANT* --- MIN 1-1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH SURFACE OF WALL.

B. FIRESTOP DEVICE --- FIRESTOP COLLAR --- THE FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. THE COLLAR SHALL BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO THE CONCRETE WALL WITH THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. (MINIMUM 2 ANCHOR HOOKS FOR 1-1/2 AND 2 IN. DIAM PIPES, 3 ANCHOR HOOKS FOR 3 AND 4 IN. DIAM PIPES AND 4 ANCHOR HOOKS FOR 6 IN. DIAM PIPES). THE ANCHOR HOOKS ARE TO BE SECURED TO THE WALL WITH 1/4 IN. DIA. 1-1/2 IN. LONG STEEL EXPANSION BOLTS, IN CONJUNCTION WITH STEEL NUTS AND 3/4 IN. DIA. STEEL WASHERS. AS AN ALTERNATE FOR PIPE SIZES OF NOM 4 IN. DIAM OR LESS, MIN NO. 10 BY 1-1/2 IN. LONG DRYWALL OR LAMINATE SCREWS WITH MIN 3/4 IN. DIA. STEEL WASHERS MAY BE USED.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- CP 643 50/1.5"N, CP 643 63/2"N, CP 643 90/3"N, CP 643 110/4"N OR CP 643 180/6"N FIRESTOP COLLAR *BEARING THE UL CLASSIFICATION MARK

Hilti Firestop Systems

System No. W-L-1054

1. WALL ASSEMBLY --- THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS --- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. WHEN STEEL STUDS ARE USED, THE DIA. OF STUDS SHALL BE 1/2 IN. LARGER THAN THE DIA. OF STUD CAVITY. THE OPENING SHALL BE FRAMED ON ALL SIDERS USING LEMMA OR INSTALLED INSIDE THE STUDS AND THE VERTICAL STUDS AND SCREW-ATTACHED TO THE STEEL STUDS A MIN 1/4 IN. FROM THE END OF THE STUD. THE WALL SHALL BE 4 TO 8 IN. WIDER AND 4 TO 8 IN. HIGHER THAN THE DIA. OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A MIN 1/4 IN. CLEARANCE IS PROVIDED BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDERS.

B. GYPSUM BOARD* --- 5/8 IN. THICK, 4 SIDE WITH J-GROOVE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN. THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32-1/4 IN. FOR STEEL STUD WALLS, MAX DIAM OF OPENING IS 14-1/2 IN. FOR WOOD STUD WALLS.

THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE F RATING OF THE WALL ASSEMBLY.

2. THROUGH-PENETRANTS --- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDERS OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE --- NOM 8 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.

C. COPPER PIPE --- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.

D. COPPER TUBING --- NOM 8 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE.

E. COPPER PIPE --- NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

F. FLEXIBLE STEEL CONDUIT --- NOM 2 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT. SEE FLEXIBLE METAL CONDUIT (DMX2) CATEGORY IN THE ELECTRICAL CONSTRUCTION EQUIPMENT DIRECTORY FOR NAMES OF MANUFACTURERS.

3. FIRESTOP SYSTEM --- THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. FILL, VOID OR CAVITY MATERIAL* --- SEALANT --- MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. DIA. BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.

B. FIRESTOP DEVICE --- FIRESTOP COLLAR --- THE FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. THE COLLAR SHALL BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO THE CONCRETE WALL WITH THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. (MINIMUM 2 ANCHOR HOOKS FOR 1-1/2 AND 2 IN. DIAM PIPES, 3 ANCHOR HOOKS FOR 3 AND 4 IN. DIAM PIPES AND 4 ANCHOR HOOKS FOR 6 IN. DIAM PIPES). THE ANCHOR HOOKS ARE TO BE SECURED TO THE WALL WITH 1/4 IN. DIA. 1-1/2 IN. LONG STEEL EXPANSION BOLTS, IN CONJUNCTION WITH STEEL NUTS AND 3/4 IN. DIA. STEEL WASHERS. AS AN ALTERNATE FOR PIPE SIZES OF NOM 4 IN. DIAM OR LESS, MIN NO. 10 BY 1-1/2 IN. LONG DRYWALL OR LAMINATE SCREWS WITH MIN 3/4 IN. DIA. STEEL WASHERS MAY BE USED.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- FS-ONE SEALANT *BEARING THE UL CLASSIFICATION MARK

Hilti Firestop Systems

System No. W-L-2084

1. WALL ASSEMBLY --- THE FIRE-RATED GYPSUM WALLBOARD STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES NOTED BELOW. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY F RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE HOURLY T RATING IS 1-1/2 HR WHEN INSTALLED IN 2 HR FIRE-RATED WALL, 0 HR WHEN INSTALLED IN 1 HR FIRE-RATED WALL.

A. STUDS --- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.

B. GYPSUM BOARD* --- 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN.

2. THROUGH-PENETRANTS --- ONE NONMETALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MIN 1/4 IN. TO MAX 1-1/4 IN. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDERS OF THE WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:

A. POLYVINYL CHLORIDE (PVC) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SDR17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 40 SOLID-CORE OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.

D. FLAME RETARDANT POLYPROPYLENE (FRPP) PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.

3. METALLIC SLEEVE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR THINNER) STEEL PIPE CAST INTO WALL ASSEMBLY WITH JOINT COMPOUND AND INSTALLED FLUSH WITH WALL SURFACES.

4. METAL COVER PLATE --- MIN. 18 GA. STEEL WITH MAX LD. 1/4 IN. LARGER THAN O.D. OF PIPE. MIN. O.D. OF COVER PLATE TO BE 2-1/2 IN. LARGER THAN O.D. OF PIPE. INSTALLED BETWEEN COLLAR AND WALL SURFACES.

5. FIRESTOP DEVICE* --- FIRESTOP COLLAR --- FIRESTOP COLLAR SHALL BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND THE PIPE AND SECURED TO BOTH SIDERS OF THE WALL USING THE ANCHOR HOOKS PROVIDED WITH THE COLLAR. (MINIMUM 2 ANCHOR HOOKS FOR 1-1/2 AND 2 IN. DIAM PIPES, 3 ANCHOR HOOKS FOR 3 AND 4 IN. DIAM PIPES, AND 4 ANCHOR HOOKS FOR 6 IN. DIAM PIPES). THE ANCHOR HOOKS ARE TO BE SECURED TO THE SURFACE OF WALL WITH 3/16 BY 2-1/2 IN. LONG TOGGLE BOLTS ALONG WITH WASHERS. AS AN ALTERNATE FOR PIPE SIZES OF NOM 4 IN. DIAM OR LESS, MIN NO. 10 BY 1-1/2 IN. LONG DRYWALL OR LAMINATE SCREWS WITH MIN 3/4 IN. DIA. STEEL WASHERS MAY BE USED.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- CP 643 50/1.5"N, CP 643 63/2"N, CP 643 90/3"N, CP 643 110/4"N OR CP 643 180/6"N FIRESTOP COLLAR *BEARING THE UL CLASSIFICATION MARK

Hilti Firestop Systems

System No. W-J-2089

1. WALL ASSEMBLY --- MIN 3-3/4 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAMETER OF OPENING 10-1/2 IN. SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH-PENETRANTS --- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE OF MIN 0 IN. (POINT CONTACT) TO MAX 1-7/8 IN. IS REQUIRED WITHIN FIRESTOP SYSTEM. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDERS OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE --- NOM 8 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE --- NOM 8 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.

C. COPPER PIPE --- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR 6 IN. DIA. STEEL CONDUIT.

D. COPPER TUBING --- NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE.

E. COPPER PIPE --- NOM 4 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

F. FLEXIBLE STEEL CONDUIT --- NOM 2 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT. SEE FLEXIBLE METAL CONDUIT (DMX2) CATEGORY IN THE ELECTRICAL CONSTRUCTION EQUIPMENT DIRECTORY FOR NAMES OF MANUFACTURERS.

3. FIRESTOP SYSTEM --- THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL --- MIN 1-5/8 IN. OR 2-1/4 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING ON ONE SIDE OF THE WALL AS PERMANENT FORM FOR 1 AND 2 HR WALLS, RESPECTIVELY. PACKING MATERIAL TO BE RECESSED FROM ONE SIDE OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL* --- SEALANT* --- MIN 1-1/2 IN. THICKNESS APPLIED WITHIN OPENING, FLUSH WITH ONE SURFACE OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE AND WALL, A MIN 1/2 IN. DIA. BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE/WALL INTERFACE.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- FS-ONE SEALANT *BEARING THE UL CLASSIFICATION MARK

Hilti Firestop Systems

System No. C-AJ-5265

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 FLOOR. MIN 5 IN. (127 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE FLOOR. MIN 5 IN. (127 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 12 IN. (305 MM).

2. STEEL SLEEVE --- (OPTIONAL) --- NOM 12 IN. (305 MM) DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CAST OR GROUDED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES.

3. THROUGH-PENETRANT --- ONE METALLIC PIPE, TUBE OR CONDUIT TO BE INSTALLED WITHIN THE OPENING. THE FOLLOWING TYPES AND SIZES OF METALLIC PENETRANTS MAY BE USED:

A. STEEL PIPE --- NOM 8 IN. (152 MM) DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE --- NOM 6 IN. (152 MM) DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE.

C. COPPER PIPE --- NOM 6 IN. (152 MM) DIA. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

D. COPPER TUBING --- NOM 6 IN. (152 MM) DIA. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

4. PIPE COVERING* --- NOM 2 IN. (51 MM) THICK (OR THINNER) HOLLOW CYLINDRICAL HEAVY DENSITY GLASS FIBER UNITS JACKED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND PERIPHERY OF OPENING SHALL BE MIN 1/4 IN. (6 MM) TO MAX 1-5/8 IN. (41 MM).

SEE PIPE AND EQUIPMENT COVERING - MATERIALS (BRGL) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

THE T RATING IS 0 HR WHEN PIPE COVERING IS LESS THAN NOM 2 IN. (51 MM) THICK.

5. FIRESTOP SYSTEM --- THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL --- MIN 4 IN. (102 MM) THICKNESS OF 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION TIGHTLY PACKED INTO THE OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL* --- SEALANT* --- MIN 1/2 IN. (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC --- CP606 SEALANT *BEARING THE UL CLASSIFICATION MARK

Hilti Firestop Systems

Order Please

HARVARD • JOLLY ARCHITECTURE

2047 VISTA PARKWAY, SUITE 101 | WEST PALM BEACH, FL 33411 | www.harvardjolly.com | AOC000119

1450 Centrepark Boulevard, Suite 330
West Palm Beach, Florida 33401
(561) 689-2103 (561) 689-2102 Fax
www.hjard.com

Certification Number 60399

Michael P. Landrum, P.E. 30594
Charles C. Chubberson, P.E. 31936

STEM BUILDING
THE BENJAMIN SCHOOL - LOWER/MIDDLE SCHOOL
11000 Ellison Wilson Road, North Palm Beach, FL 33408
CONSTRUCTION DOCUMENTS

Correl. No: 16117.00
Job No: 117030
Date: 10-23-17
Drawn: GSQ

Revisions		
No.	Date	Note

© 2017 HARVARD JOLLY, INC.

J&J Project #117030

P4.3