



HYDRO BAN® Linear Drain

DS-034.0-0515

**Globally Proven
Construction Solutions**



1. PRODUCT NAME

HYDRO BAN® Linear Drain

2. MANUFACTURER

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3. PRODUCT DESCRIPTION

HYDRO BAN Linear Drain is a low profile linear floor drain specifically designed for bonded waterproofing installations with HYDRO BAN waterproofing membrane. HYDRO BAN Linear Drain allows for the use of large format tile or stone installations in a shower with a single plane slope to the drain. The HYDRO BAN Linear Drain can be installed near the wall or at medial locations in a variety of areas requiring waterproof applications. The HYDRO BAN Linear Drain is available with a standard vertical waste line or a horizontal side outlet.

Uses

- Interior or exterior
- Showers
- Industrial, commercial and residential bathrooms and laundries
- Kitchens and food processing areas
- Terraces, decks and balconies

Advantages

- Single slope to drain
- Allows for use of large format tile
- Tile in grate available to match floor tile
- Eliminates pre-slope and primary shower pan for a faster installation
- Made from heavy duty 304 stainless steel provides for long lasting performance
- HYDRO BAN waterproofing membrane bonds directly to stainless steel flange edge allowing for faster, easier installation

Suitable Substrates

- Concrete
- Exterior Glue Plywood (Interior Only)
- Cement Backer Board
- Cement Mortar Bed

Packaging

The HYDRO BAN Linear Drain is a two piece drain with a trough and removable grate. Available in six lengths and two grate configurations: offset oval in brushed, polished or oil rubbed bronze stainless steel and a tile in tray.

The HYDRO BAN Linear Drains are available in 24" (61 cm), 32" (81 cm), 36" (91 cm), 42" (107 cm), 48" (122 cm) and 60" (152 cm) lengths.

Limitations

- Adhesives/mastics, mortars and grouts for ceramic tile, pavers, brick and stone are not replacements for waterproofing membranes. When a waterproofing membrane is required, use HYDRO BAN (see Section 10 FILING SYSTEMS).

Note: Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile/brick installations or L/480 for thin bed stone installations where L=span length.

Cautions

- During cold weather, protect finished work from traffic until fully cured.
- All stainless steel surfaces must be clean and free of any dirt, oil, grease and fingerprints prior to coating with HYDRO BAN.

4. TECHNICAL DATA

Applicable Standard

Code approval per ASME A 112.18-2/CSA B125.2.05 (US and Canada)

Working Properties

The HYDRO BAN® Linear Drain series installs per IAPMO IGC 195. Waterproof using HYDRO BAN per TCNA B422.

5. INSTALLATION

Surface Preparation

All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, laitance, paint, concrete sealers or curing compounds. Dry dusty concrete slabs or masonry should be dampened and excess water swept off. Installation may be made on a damp surface. Expansion joints shall be provided through the tile work from all construction or expansion joints in the substrate. Follow ANSI specification A108.01-3.7: Requirements for Movement Joints: Preparations by Other Trades" or TCNA detail EJ-171 "Movement joints-Vertical & Horizontal". Do not cover expansion joints with mortar.

Typically Linear Drains should run from sill plate to sill plate (the width of the shower) against a wall (see ES-B415LD Bonded Corner Placement). Alternatively they can also be placed in medial locations (see ES-B415LD Unbonded Medial Placement) or at the shower entrance. In all locations the waste line for standard size HYDRO BAN Linear Drains are in the center of the linear drain. When installed against a wall the center of the waste line should be located far enough away from the sill plate to accommodate wall sheathing and finished tile surface. For 1/2" (12 mm) wall board and 3/8" (9 mm) tile the center of the waste line should be located far enough away from the sill plate to accommodate wall sheathing and finished tile surface. For 1/2" (12mm) wall board and 3/8" (9 mm) tile the center of the waste line should be located 2 1/4" (57mm) out from the sill plate.

Mortar Bed—Installation Over Concrete (see ES-B415LD Bonded Corner Placement and ES-B415LD Unbonded Medial) For a Bonded mortar bed over concrete installation, before placing mortar, apply a slurry bond coat made from 254 Platinum. While the slurry bond coat is wet, spread 3701 Fortified Mortar and compact well. Bonded mortar beds over concrete shall be 3/4"(19 mm) minimum to 2"(50 mm) maximum. For an unbonded installation over concrete (see ES-415LD Unbonded Medial) a cleavage membrane as specified in ANSI A108.02-3.8 should be used in place of the slurry bond coat. The 3701 Fortified Mortar should be reinforced with 2" x 2" (50 x 50 mm) reinforcing mesh. Unbonded mortar beds over concrete shall be 1-1/4"(32 mm) minimum to 2"(50 mm) maximum. In both bonded and unbonded mortar Bed installations place enough 3701 Fortified Mortar where the linear drain will be set to support the bottom and under the flanges of the drain trough. Minimum height from the flange to the substrate should be 1-1/2" (38 mm). Make the connection to the waste line when the drain is set into place using a no hub connection (not supplied), see installation instructions below. Next place a ribbon of 3701 Fortified Mortar along the opposite wall to create a 1/4" (6 mm) per foot slope to the HYDRO BAN Linear Drain. Fill the area between the drain and the walls with 3701 Fortified Mortar; screed and compact well. Mortar beds in excess of 2"(50 mm) thick shall be detailed by the architect per TCNA F112.

Mortar Bed – Installation Over Exterior Glue Plywood (EGP) (see ES-415LD EGP Bonded Corner Placement and ES-415LD EGP Unbonded Medial Placement)

For a bonded mortar bed over EGP installation, before placing mortar, install a cleavage membrane as specified in ANSI A108.02-3.8. Expanded metal lath (minimum 2.5 pounds (1.1 kg)/square yard (0.8 square meters) and complying with ANSI A108.02 3.6) is then nailed or stapled to the subfloor over the cleavage membrane. Following the lath spread 3701 Fortified Mortar and compact well. Bonded mortar beds over EGP shall be 3/4"(19 mm) minimum to 1 1/2"(38 mm) maximum. For an unbonded installation over EGP (see ES-415LD EGP Unbonded Medial Placement) install a cleavage membrane as specified in ANSI A108.02-3.8 and then spread the 3701 Fortified Mortar. In both bonded and unbonded mortar bed installations place enough 3701 Fortified Mortar where the linear drain will be set to support the bottom and under the flanges of the drain trough. Minimum height from the flange to the substrate should be 1-1/2" (38 mm). Make the connection to the waste line when the drain is set into place using a no hub connection (not supplied). Next place a ribbon of 3701 Fortified Mortar along the opposite wall to create a 1/4" (6 mm) per foot slope to the HYDRO BAN Linear Drain. Fill the area between the drain and the walls with 3701 Fortified Mortar; screed and compact well. Mortar beds in excess of 2"(50 mm) thick shall be detailed by the architect per TCNA F112.

Installation Instructions (Fig. 1)

1. Connect outlet (D) to waste pipe (F) via 2"(50 mm) no hub connection using a rubber coupling (E) (not provided). Note: outlet section (D) is 3"(76 mm) long and can be modified for height adjustment. Grate A has adjustable feet for finer adjustment (Minimum tile height with thin-set is 3/8"(10 mm), maximum tile height is 3/4"(19 mm).
2. Using 3701 Fortified Mortar, set and level channel (C).
3. Spread 3701 Fortified Mortar, slope 1/4" per foot (19mm per m) to the drain in a single plane. Note: tile height should finish 1/16"(1.5 mm) higher than the grate height or the tile in the Tile in Drain Grate.
4. When the mortar is dry install backer board per manufacturer's instructions. The backer board will sit on the drain flange and mortar (see ES-B415LD Bonded Corner Placement or ES-B415LD EGP Bonded Corner Placement).
5. After the backer board has been installed waterproof the installation using HYDRO BAN per instructions in DS663.0 and DS663.5. The stainless steel needs to be clean and free of any grease, dirt or fingerprints prior to coating with HYDRO BAN. The HYDRO BAN should cover the metal flange on the linear drain trough to the top of the first radius and extend up the walls and over the entire mortar bed. If the gap between the linear drain flange and the wall board is larger than 1/8" (3 mm) it should be filled with a Polymer Modified Thin-Set (e.g. 254 Platinum). An alternative would be to use 6" (150 mm) wide Waterproofing/Anti-Fracture Fabric imbedded into the HYDRO BAN around four sides of the linear drain overlapping the flange and the 3701 Fortified Mortar. Lap Waterproofing/Anti-Fracture Fabric and HYDRO BAN liquid up the wall when adjacent to shower wall and over wall board. When using Waterproofing/Anti-Fracture Fabric with HYDRO BAN to bridge a gap larger than 1/8" (3 mm) the gap should be filled with a Polymer Modified Thin-Set (e.g. 254 Platinum) prior to waterproofing. DO NOT waterproof the inside walls and bottom of the linear drain channels.
6. Take measures to protect grate (A) prior to tiling. Keeping the grate (A) in the channel (C), thin-set and tile on the waterproof membrane. Ensure tile allows for easy removal of the grate (A). The height should finish 1/16" (1.5 mm) higher than the grate height or tile in the tile-in drain grate.

7. If the grate has adjustable feet then adjust grate (A) height with adjustable feet (B) as needed.
8. When installing the HYDRO BAN® Linear Tile-In Drain Grate (A) will need to be primed with two coats of HYDRO BAN prior to thin-setting the tile into the top grate. The stainless steel from the linear drains needs to be clean and free of any grease, dirt or fingerprints prior to coating with HYDRO BAN.
9. When the second coat of HYDRO BAN is dry the installation can be tiled using a polymer fortified thin-set and grouted with PERMACOLOR® Grout. or SPECTRALOCK® PRO Premium Grout†.

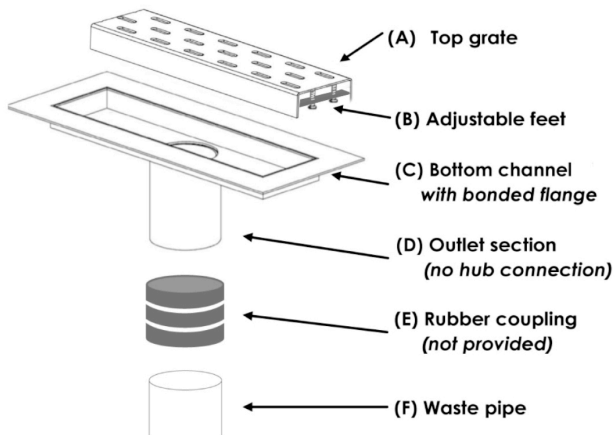


Fig. 1

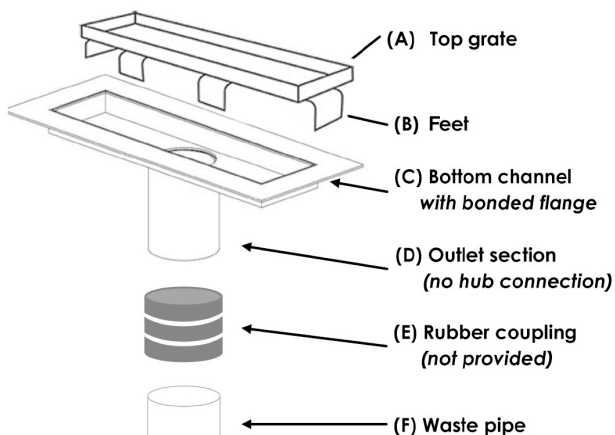


Fig. 2

Instructions to make a drain waste line connection with no access to tighten rubber coupling. Fig. 3 cut the 2" (50 mm) waste line (H) so the drain, a 2" (50 mm) rubber coupling (E), a length of 2" (50 mm) plastic pipe (F) (plastic pipe material should match waste line and plastic coupling material) and 2" (50 mm) plastic coupling (G) can be added to the drain outlet. Cement a 2" (50 mm) plastic coupling (G) to the length of the 2" (50 mm) diameter plastic pipe (F) using the appropriate cement for either PVC or ABS. Attach the rubber coupling (E) to the linear drain outlet and the length of 2" (50 mm) diameter plastic pipe (F). Tighten hose clamps on 2" (50 mm) rubber coupling (E). The final connection is made when the linear drain is installed by cementing the free end of the 2" (50 mm) diameter coupling (G) to the waste line (H).

Side outlet drains will be installed the same as the vertical waste line connections except the plumbing connections will be made through the wall.

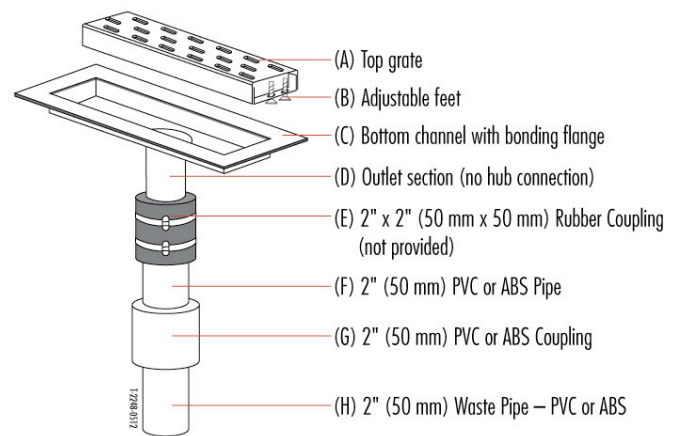


Fig. 3

Installation Instructions (Fig. 4)

When a drain installation requires a clamping ring with a primary shower pan this can be provided as a custom HYDRO BAN Linear Drain with a 2" (50.8 mm) threaded nipple 1 1/2" (38.1 mm) length. The installation instructions are as follows in Fig. 4.

1. Install the clamping ring drain body (G) to the domestic waste line. Clamping ring drains can be provided in ABS, PVC or Cast Iron. The ABS and PVC will be connected using the appropriate ABS or PVC pipe cement with primer. The cast iron clamping ring drains can either have a no hub connection or a female pipe threaded connection.
2. Connect clamping ring drain to the waste outlet as appropriate for the clamping ring drain construction material: follow the adhesive instruction for ABS or PVC as required, if a cast iron drain is used connect with either a no hub rubber connector (not provided) using the hose clamps provided or wrap the threads on the waste line with Teflon tape and thread on the clamping ring drain body.
3. Install a pre-slope using 3701 Fortified Mortar from the lip of the clamping ring drain body out to the walls with a 2% slope. When the 3701 Fortified Mortar has dried apply two coats of HYDRO BAN liquid applied waterproofing over the 3701 Fortified Mortar following DS 663.0 and 663.5.
4. Install the clamping ring (E) as recommended with a bead of LATASIL™ under the clamping ring but over the cured HYDRO BAN. Tighten down the clamping ring using the hex head bolts (F) provided.
5. Thread the 2" (50 mm) stainless steel threaded nipple (D) into the clamping ring (E) to the desired height. Apply a bead of HYDRO BAN Adhesive & Sealant around the outside of the channel throat (C) and place the channel (B) into the stainless steel threaded nipple (D).
6. Pack 3701 Fortified Mortar around the channel (B) up to the height of the flange on the channel and slope to the opposite walls with a 2% slope (1/4" (6 mm) per 12" (305 mm)).
7. When the 3701 Fortified Mortar is dry install backer board per manufacturer's instructions. The backer board will sit on the drain flange and mortar (see ES-B415LD Bonded Corner Placement or ESB415LD EGP Bonded Corner Placement).
8. After the backer board has been installed waterproof the installation using HYDRO BAN per instructions in DS663.0 and DS663.5. The stainless steel needs to be clean and free of any grease, dirt or fingerprints prior to coating with HYDRO BAN®. The HYDRO BAN should cover the metal flange on the linear drain trough to the top of the first radius and extend up the walls and over the entire mortar bed. If the gap between the linear drain flange or the 3701 Fortified Mortar and the wall board is

larger than 1/8" (3 mm) it should be filled with a Polymer Modified Thin-Set (e.g. 254 Platinum). An alternative would be to use 6" (150 mm) wide Waterproofing/Anti-Fracture Fabric imbedded into the HYDRO BAN® around four sides of the linear drain overlapping the flange and the 3701 Fortified Mortar. Lap Waterproofing/Anti-Fracture Fabric and HYDRO BAN liquid up the wall when adjacent to shower wall and over wall board. When using Waterproofing/Anti-Fracture Fabric with HYDRO BAN to bridge a gap larger than 1/8" (3 mm) the gap should be filled with a Polymer Modified Thin-Set (e.g. 254 Platinum) prior to waterproofing. DO NOT waterproof the inside walls and bottom of the linear drain channels.

9. Install either the offset oval grate of the tile-in grate as appropriate and set tile using 254 Platinum thin-set
10. The offset oval grate has adjustable feet for finer adjustment (Minimum tile height with thin-set is 3/8"(10 mm), maximum tile height is 3/4"(19 mm). The tile-in grate does not have adjustable feet as they are not required. Note: tile height should finish 1/16"(1.5 mm) higher than the grate height or the tile in the Tile-In Grate.
11. Take measures to protect grate (A) prior to tiling. Keeping the grate (A) in the channel (B), thin-set and tile on the waterproof membrane. Ensure tile allows for easy removal of the grate (A). If the grate has adjustable feet then adjust grate (A) height with adjustable feet as needed.
12. When installing the HYDRO BAN Linear Tile-In Grate (A) will need to be primed with two coats of HYDRO BAN prior to thin-setting the tile into the top grate. The stainless steel from the linear drains needs to be clean and free of any grease, dirt or fingerprints prior to coating with HYDRO BAN.
13. When the second coat of HYDRO BAN is dry the installation can be tiled using a polymer fortified thin-set and grouted with PERMACOLOR® Grout or SPECTRALOCK® PRO Premium Grout.

Custom HYDRO BAN Linear Drain Clamping Ring Assembly

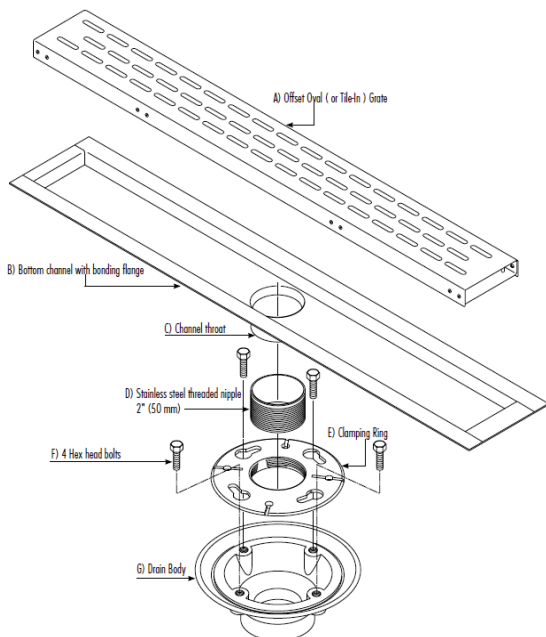


Fig. 4

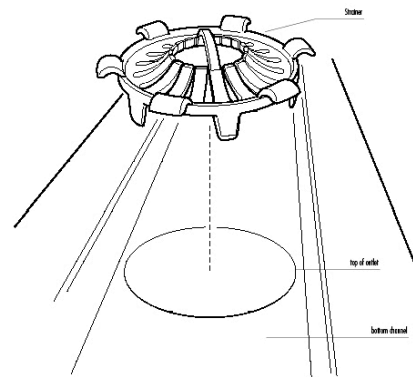


Fig. 5

Cleaning

Clean tools and tile work with water while the LATICRETE® products are fresh.

6. AVAILABILITY AND COST

Availability

LATICRETE and LATAPOXY® materials are available worldwide.

For Distributor Information:

Toll Free: 1.800.243.4788

Telephone: +1.203.393.0010

For on-line distributor information, visit LATICRETE at www.laticrete.com

Cost Contact a LATICRETE Distributor in your area.

7. WARRANTY

See 10. FILING SYSTEM:

DS 230.13: LATICRETE Product Warranty

A component of

DS 230.10: LATICRETE 10 Year System Warranty (United States & Canada)

DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)

DS 230.99: LATICRETE Lifetime System Warranty (United States and Canada)

8. MAINTENANCE

The non-finish or non-exposed portion of the HYDRO BAN® Shower System products require no maintenance. However, installation performance and durability may depend on properly maintaining products and finishes that cover the HYDRO BAN Shower System products and those supplied by other manufacturers. The exposed portion of the stainless steel HYDRO BAN Drains can be cleaned and maintained using a non-abrasive stainless steel cleaner or polish with a clean soft white cotton cloth. When cleaning the oil rubbed bronze drains use a non-abrasive cleaner and clean soft cloth. When cleaning the stainless steel or oil rubbed bronze drains contact the cleaner manufacturer if another cleaner type will be used to ensure compatibility with the drain material.

9. TECHNICAL SERVICES

Technical Assistance

Information is available by calling

Toll Free: 1.800.243.4788, ext. 235
Telephone: +1.203.393.0010, ext. 235
Fax: +1.203.393.1948

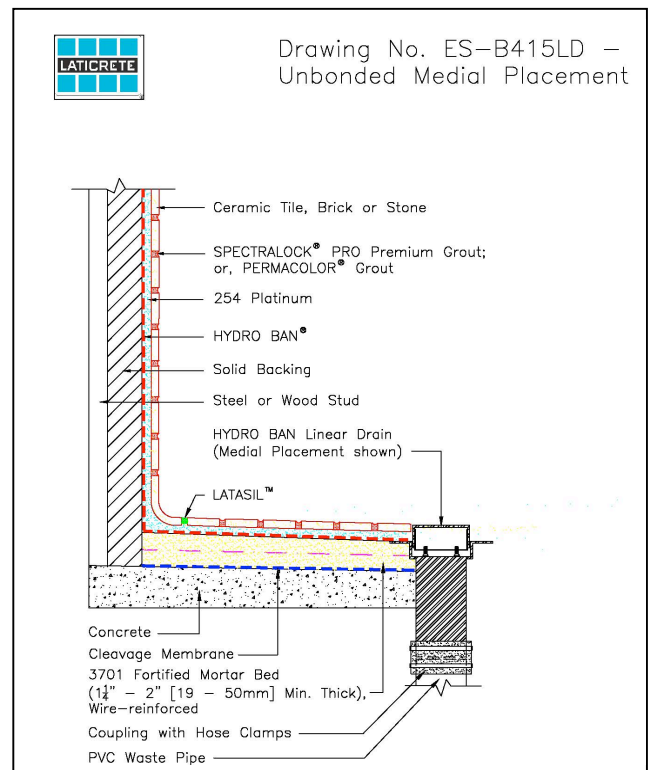
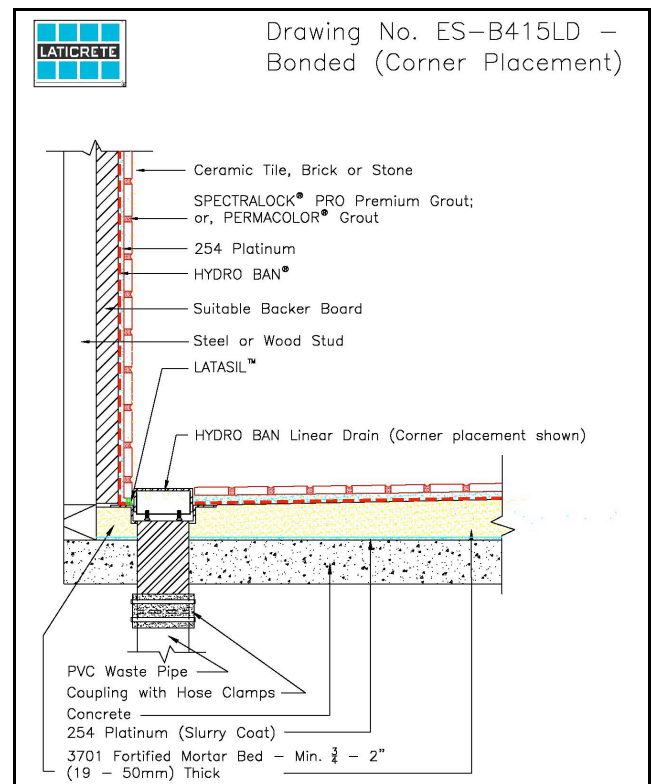
Technical and Safety Literature

To acquire technical and safety literature, please visit our website at www.laticrete.com.

10. FILING SYSTEM

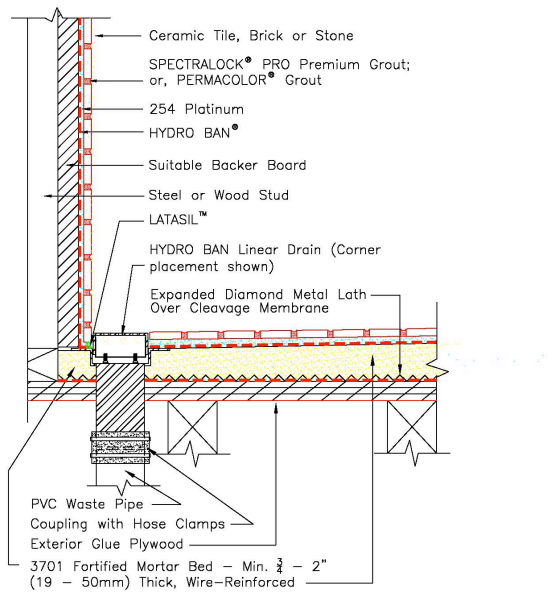
Additional product information is available on our website at www.laticrete.com. The following is a list of related documents:

DS 230.13:	LATICRETE Product Warranty
DS 230.10:	LATICRETE 10 Year System Warranty (United States & Canada)
DS 025.0:	LATICRETE 25 Year System Warranty (United States and Canada)
DS 230.99:	LATICRETE Lifetime System Warranty (United States and Canada)
DS 100.0:	3701 Fortified Mortar
DS 250.0:	PERMACOLOR Grout
DS 663.0:	HYDRO BAN
DS 677.0:	254 Platinum
DS 681.0:	SPECTRALOCK® PRO Premium Grout†
DS 663.5:	HYDRO BAN How to Instructions

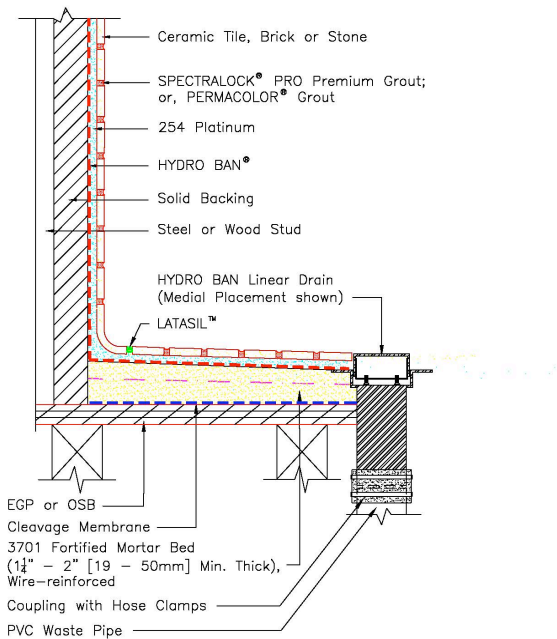




Drawing No. ES-B415LD –
Bonded (Corner Placement)



Drawing No. ES-B415LD –
EGP Unbonded Medial Placement



^ United States Invention Patent No.: 6,784,229 (and other Patents)

† United States Invention Patent No.: 6,881,768 (and other Patents)