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Anchor-Lok™ Installation Guidelines (Supplement to 4-5001PI Data Sheet)

This file contains the following literature for the installation of Anchor-Lok Lining System

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**If you can form it in concrete
you can laminate with Anchor-Lok**



Custom made for your project

- Trenches: any configuration, dimension or slope
- Sumps & Pits: square, rectangle, round
- Fabricated with
 - Grating seats
 - Trench stubs
 - Pipe inlets and outlets
 - Beam pockets

Fast installation

- Light weight easy to handle
- Standard form construction
- Standard concrete installation
- Set the Anchor-Lok and pour the concrete
- No expansion joints





Anchor-Lok Installation Guidelines Requirements of the Installing Contractor

Drawings:

Fabrication of the lining system components shall proceed only after a signed copy of the approved fabrication drawings are returned to Atlas.

Storage and Protection:

Receive, unload, and store all lining system materials at the project site. All lining materials are to be stored at temperatures above freezing, under waterproof covering, out of direct sunlight, and in a manner to prevent deformation or contamination from foreign substances. In the event of damage, immediately advise Atlas to make all repairs and replacements necessary at no cost to Atlas.

Installation:

Erect concrete form work and attach the Anchor-Lok. Based on shipping and installation limitations, interior form support for prefabricated trench sections and sumps can be supplied by Atlas.

Supply and installation of the concrete. Concrete mix design shall be established by the owner and / or specifier. Concrete design should be consistent with the intended purpose of the structure.

Remove all concrete forms and interior form support.

Clean debris and excess concrete:

Floors and walls are to be cleared of extraneous debris and dirt by sweeping followed by vacuuming. All surfaces of the Anchor-Lok Lining are to be cleaned with rags or sponge dampened with clean water to remove excess concrete and other contaminants. Use of wash down hose, sweeping compounds, dust preventative materials to clean Anchor-Lok is not permitted.

Site Welding Conditions:

Provide a minimum of 7 days advance notice for the arrival of the welders.

Protect work area from other trades.

Protect Anchor-Lok prior to, during and after the installation from overhead electric welding.

Prevent ground water infiltration and surface water contamination prior to and during welding of seams.

Provide sufficient illumination, as required by the welding supervisor.

Provide protection from direct sunlight, drafts, dirt, dust and other contaminants during welding operation.

Provide uninterrupted and unvarying electrical wattage supply.

Concrete and sand / cement substrates require a minimum of 3 days cure at 75°F (24°C) prior to welding.

Ambient air temperature in the local environment during welding must be maintained between 55°F (13°C) and 95°F (35°C).

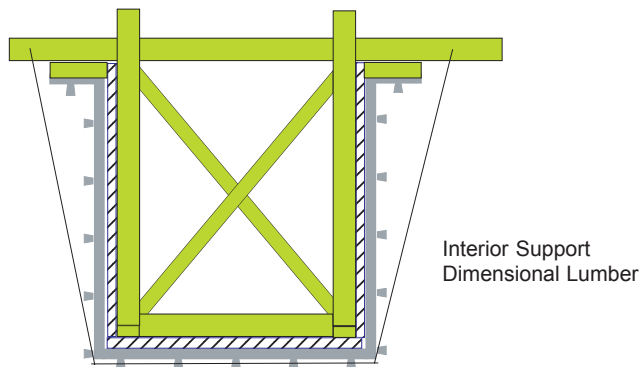
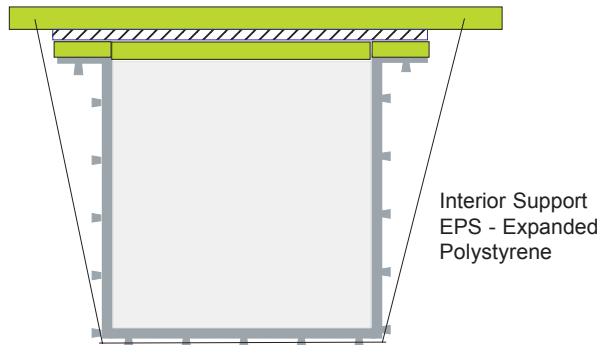
Provide temperature and humidity control when required. No welding can take place if the surface temperature of the sheet is less than 5°F (2.8°C) above the measured dew point or when the relative humidity is above 75%.

Provide low velocity ventilation in the areas where the lining system is to be installed as required by the welding supervisor.

Delays:

Time lost due to delays or interruptions to the welding schedule are subject to time and material charges.

Anchor-Lok Installation Guidelines Prefabricated Trench - Lining Existing Structure



Saw cut and excavate



Preparation: Interior Form Work

All Anchor-Lok structures require interior form support prior to installation and pouring of concrete. Consider Anchor-Lok as a “concrete form liner”. Interior and exterior forms should maximize the use of bracing and be sufficiently rigid to prevent movement during concrete installation.

For additional information on Expanded Polystyrene interior support and dimensional lumber interior support refer to A-L 130, Prefabricated Trench and Sumps - Interior Support.

Install interior support before setting trenches.

No penetrations such as nails, screws or fasteners are permitted through the Anchor-Lok Lining System.

No nails or screws are permitted to connect or align the lap joint of adjacent trench sections.

Preparation: Site Work

Existing Floor Slab

1. Saw cut existing concrete floor slab. Allowing sufficient space between the widest dimension of the trench and saw cut line for access to connect tie wires to secure adjacent trench sections and the concrete pour.
2. Excavate to a depth allowing for a compacted stone base plus a minimum of 3” to 4” (7.6 - 10.2 cm.) of concrete below trench and sump invert. Anchor-Lok requires a minimum of 2” (5 cm.) of concrete or grout to set the anchors.

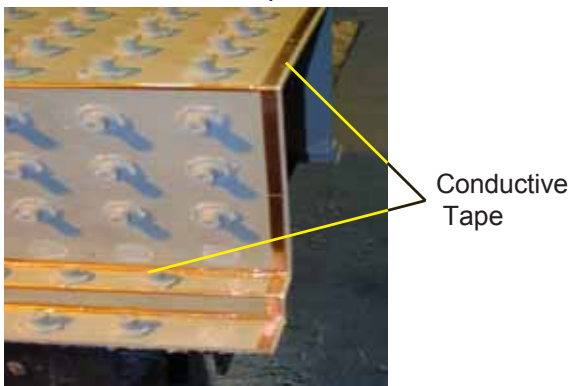
Remove deteriorated concrete



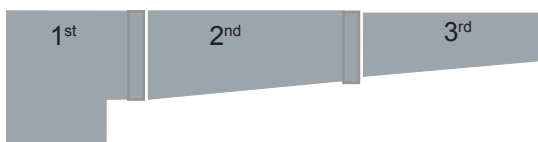
Prepare concrete interface



Check conductive tape



Set deepest section first



Preparation: Site Work

Relining of an existing trench or sump:

1. Remove existing trench lining system.
2. Remove all “soft” deteriorated concrete; remaining concrete substrate should be structurally sound.
3. Neutralize chemically contaminated concrete.

Preparation: Site Work

Interface Concrete Pours

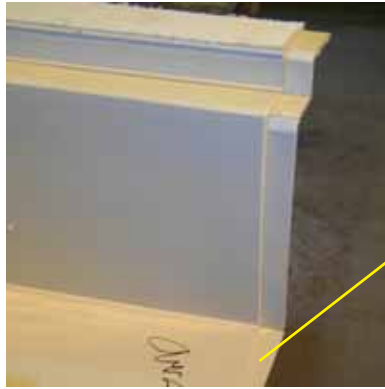
1. Use standard concrete construction practices to interface the existing concrete floor slab to the concrete over pour such as re-bar dowels or wire mesh with fasteners.

Setting of Trench Sections

1. Install interior support before setting trenches.
2. Before setting the Anchor-Lok ensure that the fabricator applied conductive tape is attached to all welded seams and the bottom of trench overlap. The conductive tape is required and is a ground for spark testing of welded seams. If the conductive tape is not in place, apply new tape which is available from the Anchor-Lok fabricator.

3. Place trench sections starting from the deepest end and working toward the shallow end.

Set next section on lap strip



Lap strip

4. Set each succeeding section on the lap strip of the previously set section.

Set first section at deepest end



5. With the interior support installed and batter boards attached, begin placing the sump or trench sections at the deepest end and working toward the shallow end.

Join sections with tie wire



Tie wire

6. Join sections with tie wire, by wiring anchors of adjacent sections. Wire approximately every 3rd or 4th anchor along the seam. Screws or nails are not permitted to connect or align sections.

Align gap, sides and bottom



1/16" to 1/8" gap

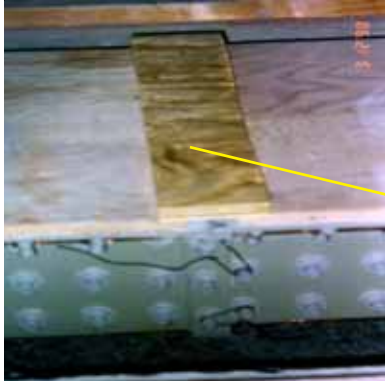
7. Adjust to align the seam widths to achieve a uniform gap between 1/16" (1.6 mm.) and 1/8" (3.2 mm.) and to maintain plane alignment of the side walls and floor of adjoining sections. Misalignment could restrict flow. Poor alignment of seam gap and plane affects seam welding efficiency and may result in extra welding costs beyond the original scope.

Shim and secure batter boards



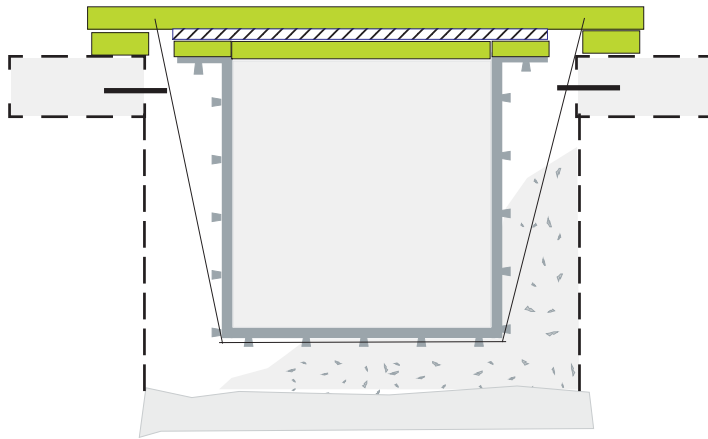
8. Shim batter boards to attain proper invert elevation and alignment. Secure batter boards to the existing concrete substrate.

Cap

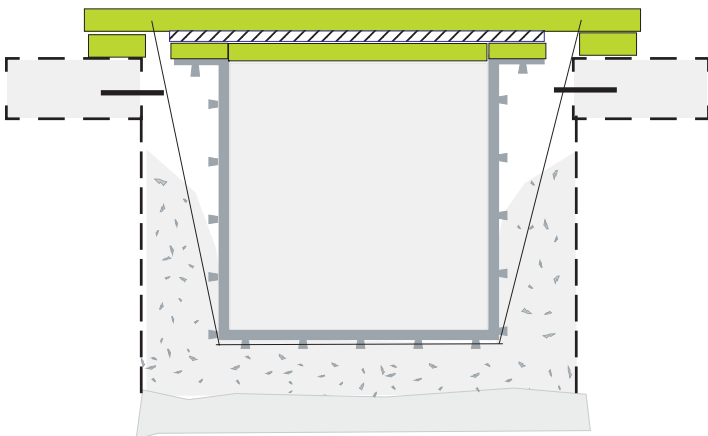


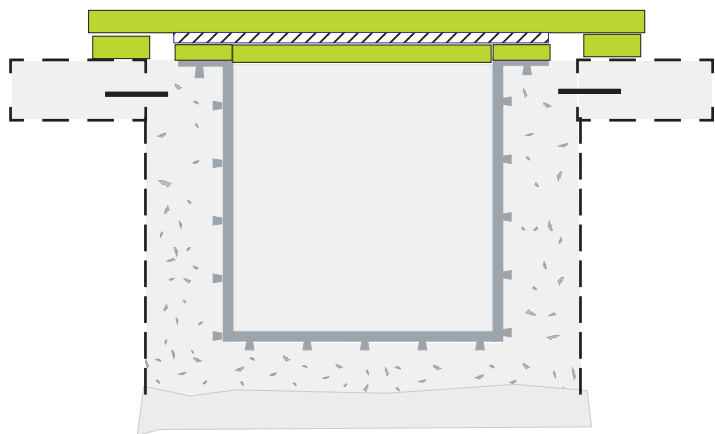
Plywood or
Dimensional
Lumber Cap

9. Plywood or dimensional lumber can be fastened across the gap between trench sections. The “cap” aids to secure and maintain alignment of adjoining sections. The cap also expedites concrete installation by reducing the time to protect the interior joint from excess concrete contamination during concrete pour.

**Pouring of Concrete**

1. After all trench sections have been set, verify elevations and alignment. Complete the securing of all batter board and trench fasteners prior to pouring of the concrete.
2. Start the concrete pour from one side of the trench. Pour and vibrate the concrete until the concrete flows under the floor of the trench and rises on the opposite side. Ensure that the underside of the trench is completely filled. A concrete design with a maximum 3/8” (9.5 mm.) aggregate is suggested.
3. Alternate the pour from one side to the other balancing the wet concrete forces and potential distortion on the form work. Sand bags or pails of sand may be place in / on the trench during the concrete pour to resist the floating or lifting effects of the concrete. Remove the optional tie wire sling.





4. Continue concrete pour using standard concrete pouring and vibrating practices to fill trench side walls.

Remove forms & clean



Remove Interior Forms and Clean

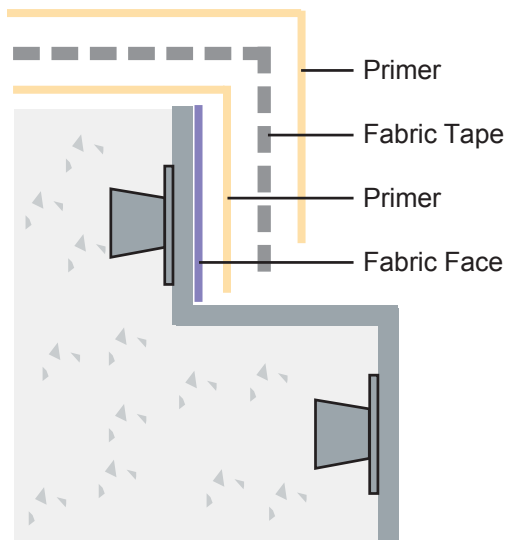
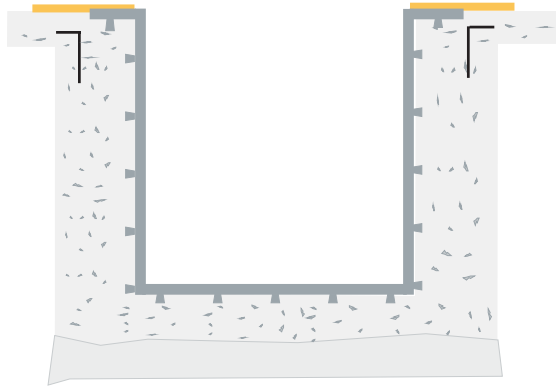
1. Allow sufficient cure time of the concrete before removing the forms. Care must be taken during form removal to prevent damage to Anchor-Lok Lining System.
2. Remove all extraneous debris and dirt by sweeping followed by vacuuming. Remove all excess concrete, concrete laitance and other contaminants from seams and adjacent surfaces. Clean with rags or sponges dampened with clean water. Water penetration of open seams will delay welding procedure. Cleaning with solvents, sweeping compounds or dust preventative materials is not permitted.

All seams thermal welded



Welding of Seams

1. All welding of Anchor-Lok must be preformed by an Atlas Minerals & Chemicals, Inc. Plastic Technician or an Atlas Certified Anchor-Lok Technician.
2. Concrete and sand / cement substrates require a minimum of 3 days cure at 75°F (24°C) prior to welding.
3. Refer to AL-100 Requirements of the Installing Contractor, for site welding condition requirements.



Additional Information:

For additional information refer to the following ATLAS literature:

- Anchor-Lok Installation Instructions Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100 Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 111 Prefabricated Sump: Lining Existing Structure
- Anchor-Lok Guidelines A-L 120 Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 130 Prefabricated Trench and Sump: Interior Support
- Anchor-Lok Guidelines A-L 150 Onsite Construction Tank or Sump
- Anchor-Lok Guidelines A-L 151 Filling Concrete Voids

Sealing Between Anchor-Lok and Floor

1. After welding of all seams, the joint between the floor and Anchor-Lok structures equipped with the optional fabric facing can be sealed.

Typical Application Sequence - Sealing Between Anchor-Lok and Floor

1. Requires fabric faced Anchor-Lok.
2. Apply primer to fabric face and concrete floor with a brush or roller.
3. Embed 6" wide ChemPruf 8.5 oz. Fabric Tape into wet primed surfaces.
4. Saturate the ChemPruf Fabric Tape with a second coat of primer.
5. Allow the primer to dry before applying optional flooring system.

- Anchor-Lok Guidelines A-L 152 Pipe Inlets and Outlets

The information provided in the Anchor-Lok Installation Guidelines are provided as commonly accepted installation practices. The installing contractor must review the prescribed techniques with the Anchor-Lok fabricator prior to installation. The guidelines may be revised, modified or amended by the Anchor-Lok fabricator as deemed necessary by the individual structure and site conditions. No guarantee or warranty of any kind is made or implied by the Guidelines and ATLAS assumes no liability in connection with the use of the Guidelines or the information contained herein. ATLAS' product or performance warranties are limited to those expressly contained in its contract documents.



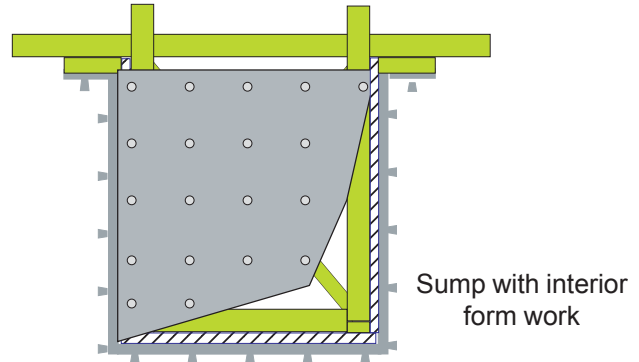
Atlas Minerals & Chemicals, Inc.



Anchor-Lok™ Installation Guidelines

A-L 111 (5-02)

Anchor-Lok Installation Guidelines Prefabricated Sump - Lining Existing Structure



Anchor-Lok is a thermoplastic lining used in conjunction with concrete construction. Consider the application of Anchor-Lok as a concrete form liner. Form release agents are not permitted on the forms covered with Anchor-Lok.

Standard concrete construction practices of form construction, steel reinforcement, pouring, vibrating and ambient temperature cure of concrete apply. Steam curing of concrete is not permitted.

Installation Sequence

- Interior Form Work
- Surface Preparation
- Setting Bed - Floor
- Placement of Sump
- Pouring of Concrete Walls
- Removal of Interior Forms and Clean-up

Preparation: Interior Form Work

All Anchor-Lok structures require interior form support prior to installation and pouring of concrete. Interior forms should maximize the use of bracing and be sufficiently rigid to prevent movement during concrete installation.

No penetrations such as nails, screws or fasteners are permitted through the Anchor-Lok Lining System.

No nails or screws are permitted to connect or align the lap joint of adjacent trench sections.

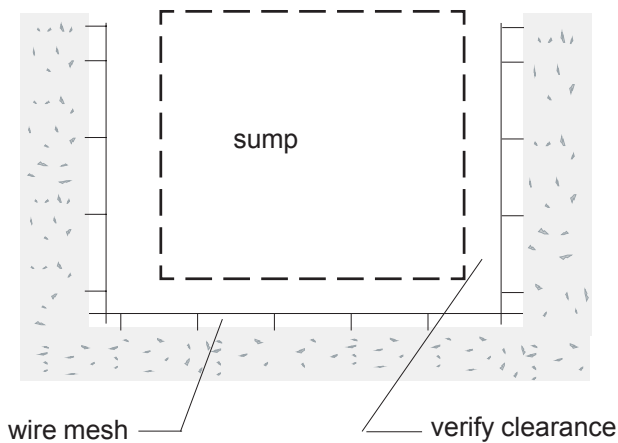
The interior support form is an independent structure and not attached to the floor or side walls of the sump. The interior form is attached to the top flange of the sump and the top flange is attached to batter boards. Refer to AL-130, Prefabricated Trench and Sumps - Interior Support, for additional information. Note: The floor of the sump must be lined with a minimum 3/4" (19 mm.) plywood sheathing.

Sumps less than 30" (76 cm.) wide may be installed in a similar manner as a trench. Refer to AL-110, Prefabricated Trench - Lining Existing Structure.

Surface Preparation

Remove any existing sump coating or lining. Remove all "soft" deteriorated concrete. The remaining concrete substrate should be structurally sound. Neutralize chemically contaminated concrete.

Use standard concrete construction practices to interface the existing concrete floor and wall to the concrete over pour; such as re-bar dowels and wire mesh with fasteners. Verify the dimensions between the re-bar / wire mesh and outside dimensions of the sump to ensure sufficient



clearance for placement of the sump and concrete pour.

Setting Bed - Floor

The sump is set into a wet sand cement setting bed.

Determine the finish floor elevation. Establish top of setting bed elevation reference points 1/2" to 1" (1.27 to 2.54 cm.) above the finish floor elevation.

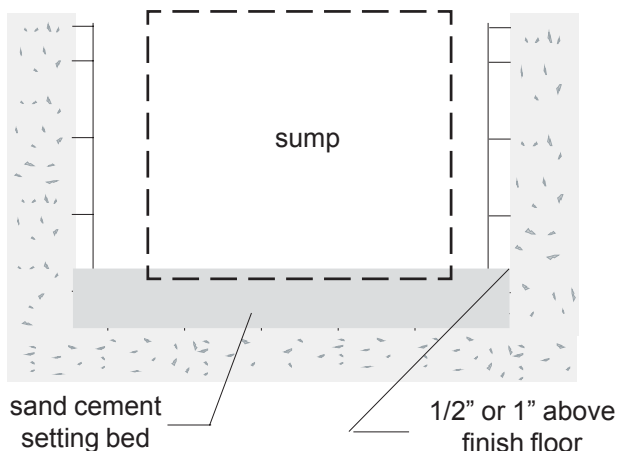
Follow standard construction practices for the installation of sand cement setting beds, such as wetting of concrete slab, cement slurry coat primer or concrete bonding agents.

Install the setting bed consisting of a sand cement mixture of:

Type I Portland Cement: (7) 94 lb. (42.6 kg.) bags [658 lb. (298 kg.)]

Masonry sand: 1 cubic yard (0.8 m³)

Water to attain a 5" to 7" (12.7 to 18.1 cm.) slump

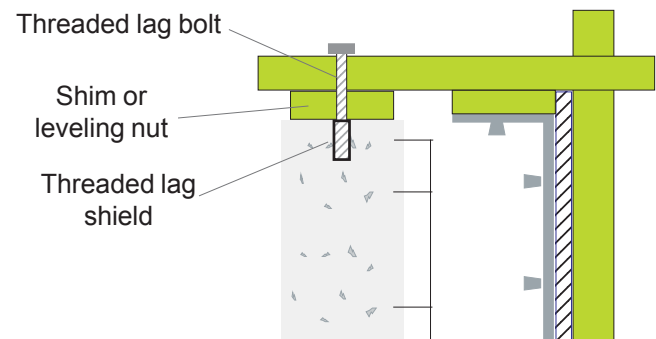
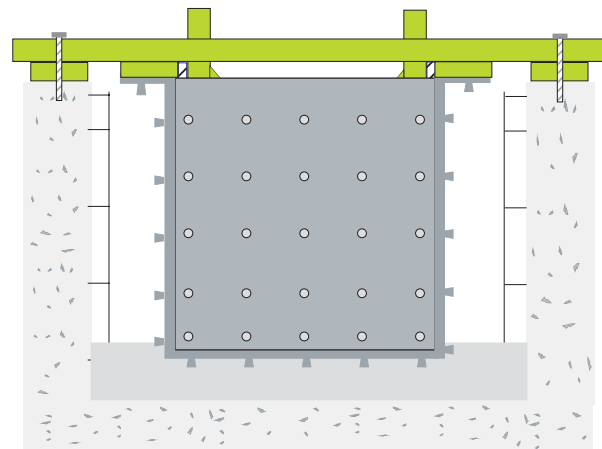


Compact and screed the setting bed to the prescribed elevation. Fill any depressions.

Placement of Sump

Ballast is placed on the floor of the sump during and after lowering of the sump. Five-gallon pails containing sand or sand bags weighing between 20 - 25 lb. (9 - 11 kg.) are suggested as ballast. The amount of ballast weight suggested is one pail or bag per 1-1/2 per ft² (0.14 m²).

The sump is installed and held in place by anchor bolts installed through the batterboards and attached to the existing substrate. Determine the position of the batter boards in relation to the finished horizontal and vertical placement of the sump. Install 1/2" to 3/4" threaded lag shields in the existing substrate.



Lower the Anchor-Lok sump. Before contact with the setting bed:

- Stabilize any rocking or side to side movement
- Verify the alignment between the Anchor-Lok side walls and existing structure
- Verify the bottom of the sump is parallel with the setting bed
- Verify alignment of lag bolt shields and lag bolt holes of the batter boards

Uniformly lower the sump into the setting bed ensuring all the anchors penetrate the setting bed simultaneously.

Install anchor bolts through batter boards and thread into lag shield.

Uniformly tighten the anchor bolts and place ballast on the sump floor, forcing the Anchor-Lok into the setting bed to attain proper sump floor elevation.

Tamp the plywood covered sump floor between the ballast using the butt end of a hand held tamper or butt end of a 4"x4" or 6"x6". As tamping is completed, place any remaining ballast.

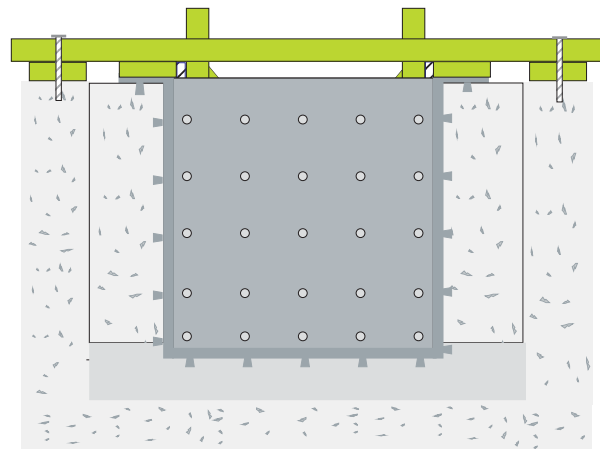
Tamp with just enough force and repetition to ensure that the setting bed encapsulates the anchors. Tamping must not distort the sump floor in any way. Excessive and concentrated tamping will depress and rebound the floor sheet resulting in hollow spots. Remove the sump and re-screed the bed if hollow spots are discovered by "sounding" during tamping.

If at any time during the placement of the sump the floor becomes dislodged or misaligned, remove the sump and re-screed the setting bed. Do not attempt to reposition the sump after initial contact with the setting bed.

Allow the sand cement bed to cure approximately 24 hours at 75°F (24°C) or until the bed cures sufficiently to secure the anchors and resist the floating or lifting effects during the concrete pour.

Pouring of Concrete Walls

During placement of the concrete do not exceed the rate of pour for which the forms are designed. Pour concrete balancing the wet concrete forces and potential distortion on the form work. Vibrate concrete in accordance with standard concrete construction practices.



Removal of Interior Forms and Clean-up

Allow sufficient cure time of the concrete before removing the forms. Care must be taken during form removal to prevent damage to Anchor-Lok Lining System.

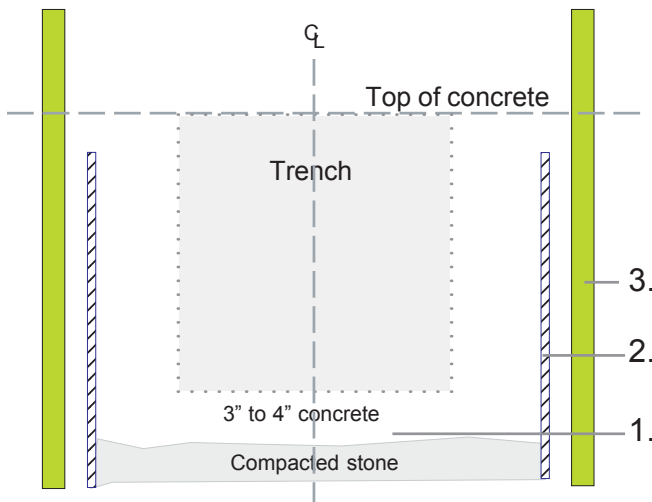
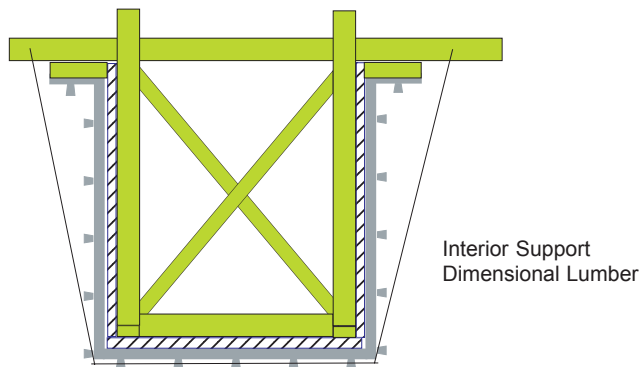
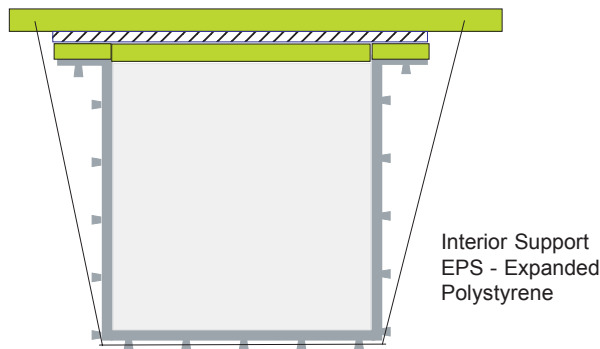
Remove all extraneous debris and dirt by sweeping followed by vacuuming. Remove all excess concrete, concrete laitance and other contaminants from seams and adjacent surfaces. Clean with rags or sponges dampened with clean water. Water penetration of open seams will delay welding procedure. Cleaning with solvents, sweeping compounds or dust preventative materials is not permitted.

Additional Information:

- Anchor-Lok Installation Instructions Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100 Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110 Prefabricated Trench: Lining Existing Structure
- Anchor-Lok Guidelines A-L 120 Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 130 Prefabricated Trench and Sump: Interior Support
- Anchor-Lok Guidelines A-L 150 Onsite Construction Tank or Sump
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- Anchor-Lok Guidelines A-L 152 Pipe Inlets and Outlets

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Anchor-Lok Installation Guidelines Prefabricated Trench - New Construction



Preparation: Interior Form Work

All Anchor-Lok structures require interior form support prior to installation and pouring of concrete. Consider Anchor-Lok as a “concrete form liner”. Interior and exterior forms should maximize the use of bracing and be sufficiently rigid to prevent movement during concrete installation.

For additional information on Expanded Polystyrene interior support and dimensional lumber interior support refer to A-L 130, Prefabricated Trench and Sumps - Interior Support.

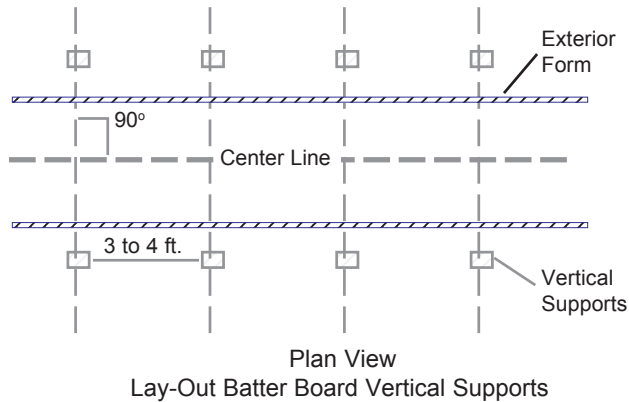
Install interior support before setting trenches.

No penetrations such as nails, screws or fasteners are permitted through the Anchor-Lok Lining System.

No nails or screws are permitted to connect or align the lap joint of adjacent trench sections.

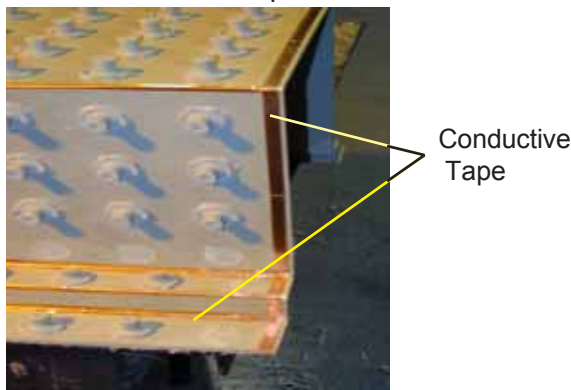
Preparation: Site Work

1. Layout center lines and width. Excavate to a depth allowing for a compacted stone base plus a minimum of 3” to 4” (7.6 to 10.2 cm.) of concrete below the trench and or sump invert.
2. Erect and brace exterior forms for trench concrete pour. Allow sufficient space between the widest dimension of the trench and form work for access to connect tie wires to secure adjacent trench sections.



3. Erect vertical legs of batter boards perpendicular to the center line and approximately 3' to 4' (7.6 to 10.2 cm.) on center. Brace and secure vertical legs sufficiently to prevent "floating" of the Anchor-Lok structure during application of the concrete.

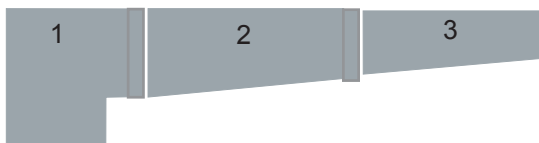
Check conductive tape



Setting of Trench Sections

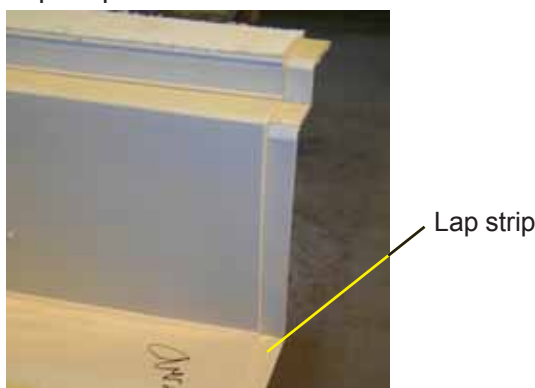
1. Install interior support before setting trenches.
2. Before setting the Anchor-Lok ensure that the fabricator applied conductive tape is attached to all welded seams and the bottom of trench overlap. The conductive tape is required and is a ground for spark testing of welded seams. If the conductive tape is not in place, apply new tape which is available from the Anchor-Lok fabricator.

Set deepest section first

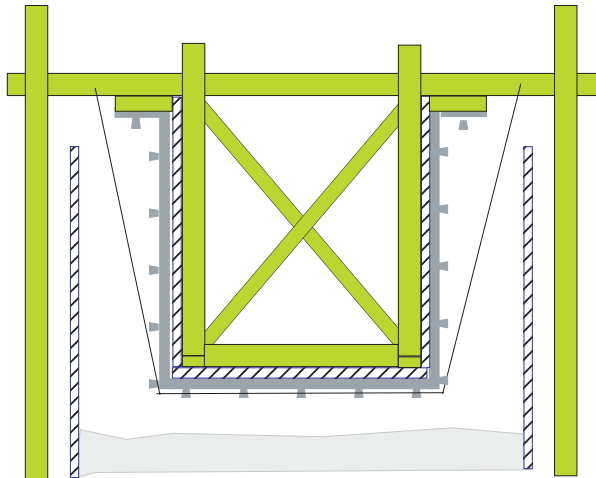


3. Place trench sections starting from the deepest end and working toward the shallow end.

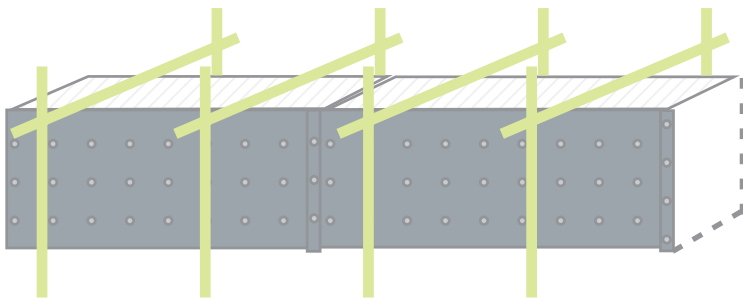
Lap strip for next section



4. Set each succeeding section on the lap strip of the previously set section.



5. Establish batter board elevation and temporarily secure the batter board to the vertical support. Temporarily attach interior support of trench to the horizontal batter board with fasteners and tie wire sling. Allow for adjustment of the trench elevation and alignment of sections.



Join sections with tie wire



Tie wire

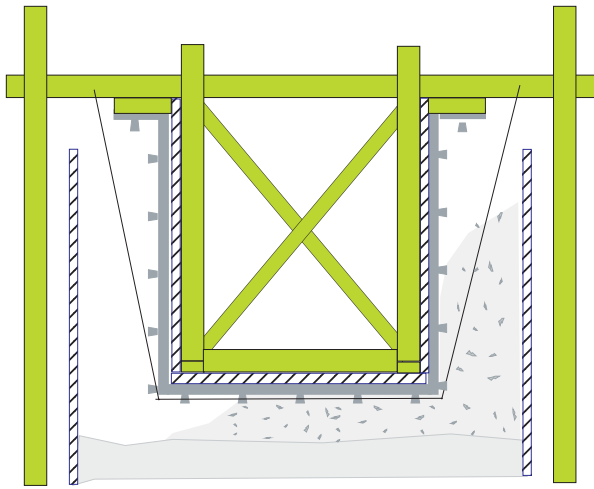
6. Join sections with tie wire, by wiring anchors of adjacent sections. Wire approximately every 3rd or 4th anchor along the seam. Screws or nails are not permitted to connect or align sections.

Align gap, sides and bottom



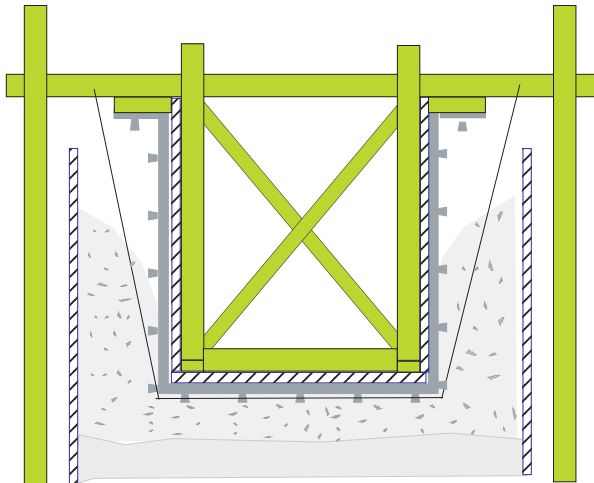
1/16" to 1/8" gap

6. Adjust to align the seam widths to achieve a uniform gap between 1/16" (1.6 mm) and 1/8" (3.2 mm) and to maintain plane alignment of the side walls and floor of adjoining sections. Misalignment could restrict flow. Poor alignment of seam gap and plane affects seam welding efficiency and may result in extra welding costs beyond the original scope.

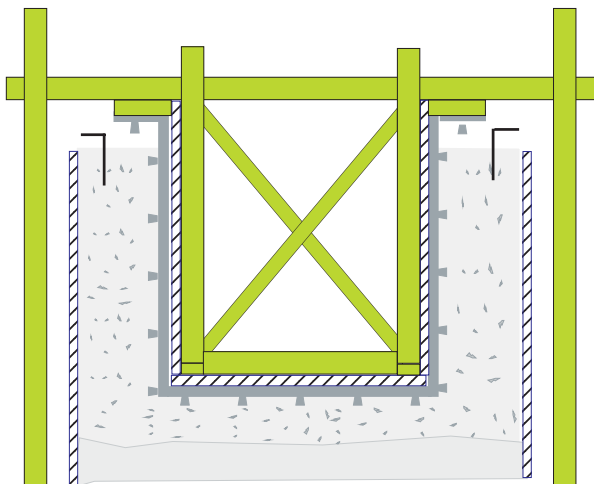


Pouring of Concrete

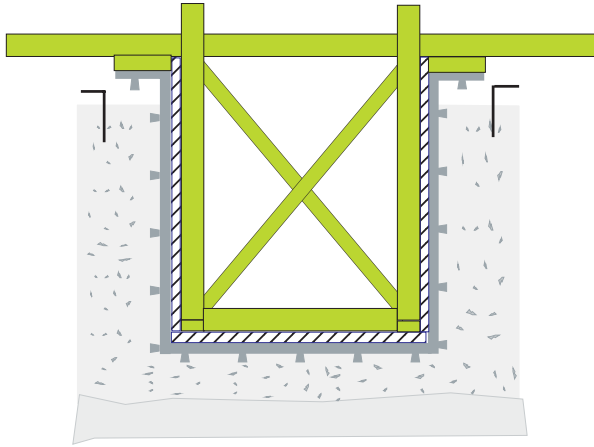
1. After all trench sections have been set, verify elevations and alignment. Complete the securing of all batter board and trench fasteners prior to pouring of the concrete.
2. Start the concrete pour from one side of the trench. Pour and vibrate the concrete until the concrete flows under the floor of the trench and rises on the opposite side. Ensure that the underside of the trench is completely filled. A concrete design with a maximum 3/8" aggregate is suggested.



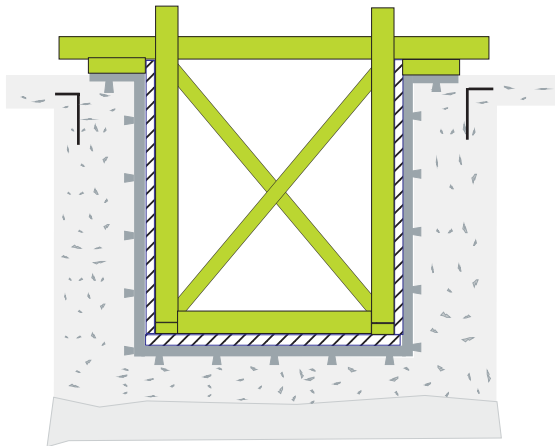
3. Alternate the pour from one side to the other balancing the wet concrete forces and potential distortion on the form work. Sand bags or pails of sand may be placed in / on the trench during the concrete pour to resist the floating or lifting effects of the concrete. Remove the optional tie wire sling.



4. Continue concrete pour using standard concrete pouring and vibrating practices to fill trench side walls.



5. Remove exterior form work after the concrete has cured sufficiently as not to disturb the concrete and Anchor-Lok.



6. Pour floor slab. Retain interior support during installation of floor slab to maintain trench top flange alignment.

Remove forms & clean



Remove Interior Forms and Cleaning

1. Allow sufficient cure time of the concrete before removing the forms. Care must be taken during form removal to prevent damage to Anchor-Lok Lining System.
2. Remove all extraneous debris and dirt by sweeping followed by vacuuming. Remove all excess concrete, concrete laitance and other contaminants from seams and adjacent surfaces. Clean with rags or sponges dampened with clean water. Water penetration of open seams will delay welding procedure. Cleaning with solvents, sweeping compounds or dust preventative materials is not permitted.

All seams thermal welded

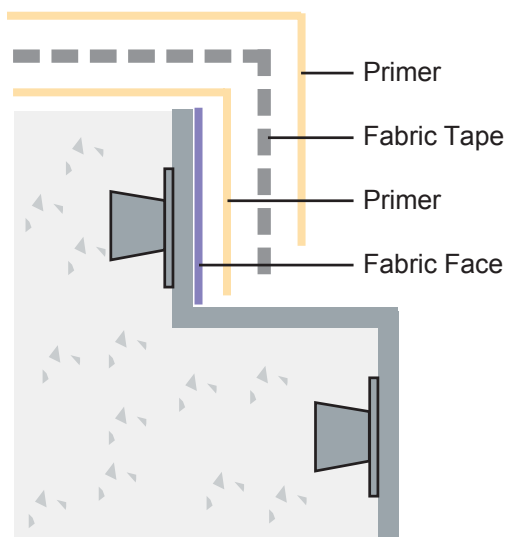
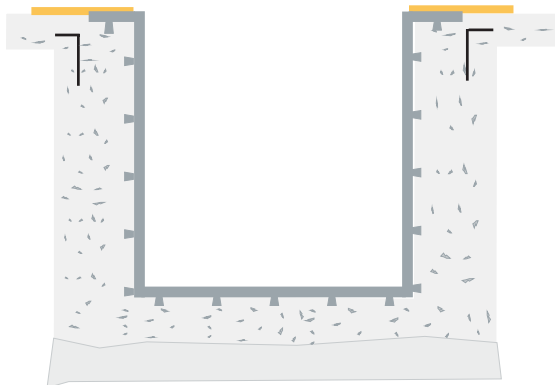


Welding of Seams

1. All welding of Anchor-Lok must be preformed by an Atlas Minerals & Chemicals, Inc. Plastic Technician or an Atlas Certified Anchor-Lok Technician.
2. Concrete and sand / cement substrates require a minimum of 3 days cure at 75°F (24°C) prior to welding.
3. Refer to the AL-100, Requirements of the Installing Contractor, for site welding condition requirements.

Sealing Between Anchor-Lok and Floor

1. After welding of all seams, the joint between the floor and Anchor-Lok structures equipped with the optional fabric facing can be sealed.



Typical Application Sequence - Sealing Between Anchor-Lok and Floor

1. Requires fabric faced Anchor-Lok.
2. Apply primer to fabric face and concrete floor with a brush or roller.
3. Embed 6" wide ChemPruf 8.5 oz. Fabric Tape into wet primed surfaces.
4. Saturate the ChemPruf Fabric Tape with a second coat of primer.
5. Allow the primer to dry before applying optional flooring system.

Additional Information:

- Anchor-Lok Installation Instructions
Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100
Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110
Prefabricated Trench: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 111
Prefabricated Sump: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 130
Prefabricated Trench and Sump: Interior
Support
- Anchor-Lok Guidelines A-L 150
Onsite Construction Tank or Sump
- Anchor-Lok Guidelines A-L 151
Filling Concrete Voids
- Anchor-Lok Guidelines A-L 152
Pipe Inlets and Outlets

The information provided in the Anchor-Lok Installation Guidelines are provided as commonly accepted installation practices. The installing contractor must review the prescribed techniques with the Anchor-Lok fabricator prior to installation. The guidelines may be revised, modified or amended by the Anchor-Lok fabricator as deemed necessary by the individual structure and site conditions. No guarantee or warranty of any kind is made or implied by the Guidelines and ATLAS assumes no liability in connection with the use of the Guidelines or the information contained herein. ATLAS' product or performance warranties are limited to those expressly contained in its contract documents.

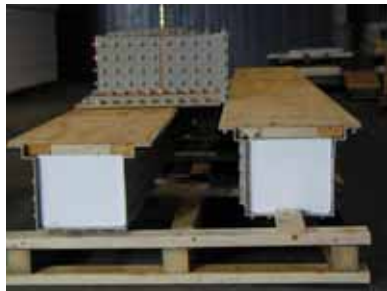


Anchor-Lok Installation Guidelines Prefabricated Trench and Sumps - Interior Support

All Anchor-Lok structures require interior form support prior to installation and pouring of concrete. Anchor-Lok should be considered as a “concrete form liner”. Interior and exterior forms should maximize the use of bracing and be sufficiently rigid to prevent bulging or movement during concrete installation.

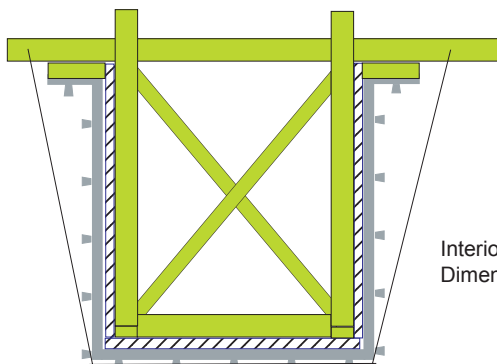
Interior Form work Options:

EPS, Expanded Polystyrene is a light weight interior support. It is convenient for trenches up to approximately 18” wide x 30” (46 x 76 cm.) deep and sumps up to approximately 4 ft.³ (0.4 m²).



Interior Support
EPS

Dimensional Lumber and plywood interior support is generally installed for prefabricated trenches greater than 18” wide x 30” deep and sumps larger than 4 ft.³.



Interior Support
Dimensional Lumber

Based on shipping and installation limitations Expanded Polystyrene or Dimensional Lumber interior support can be supplied by the authorized Anchor-Lok fabricator.

Interior support for prefabricated trenches and sumps can be field applied by the installing contractor.

Installation of Expanded Polystyrene is described on pages 2 to 5.

Installation of Dimensional Lumber is described on pages 6 to 8.

Guidelines for Field Installation of EPS and Dimensional Lumber Interior Support

- The interior support form is an independent structure and not attached to the floor or side walls of the Anchor-Lok. The interior form is attached to the top flange of the Anchor-Lok trench or sump. The top flange is attached to batter boards. The batter boards are supported across the excavation.

- No penetrations such as nails, screws or fasteners are permitted through the Anchor-Lok Lining System side walls or floor. Under limited conditions, screws may be permitted through the fabric faced top flange surfaces to aid the attachment of the Anchor-Lok structure to the interior form work.

- No nails or screws are permitted to align the lap joint of adjacent trench sections.

- Form release agents are not permitted. Release agents are incompatible with welding of the Anchor-Lok.

- The ambient temperature must be between 32°F (0°C) and 90°F (32°C). Protect the Anchor-Lok from direct sunlight when attaching the Anchor-Lok to forms.
- Start interior forms 3/4" (19 mm.) from the open end of adjoining trench sections. The 3/4" space between the form and end of Anchor-Lok trench permits visual inspection for alignment of adjacent sections.
- Do not attach Anchor-Lok sections to the reinforcing re-bar or wire mesh.

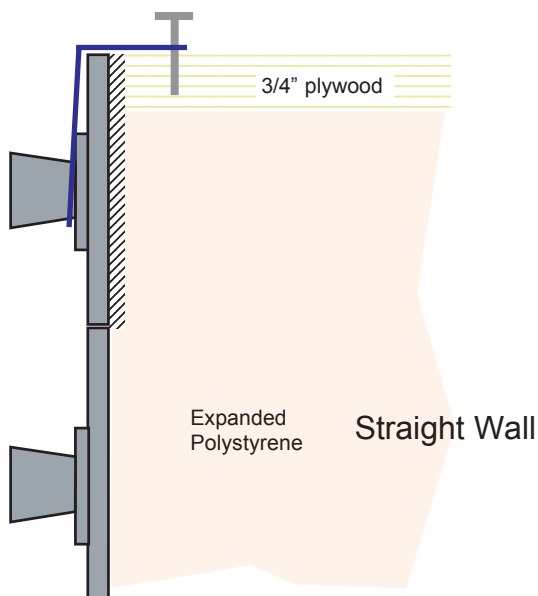
Field Installation of Expanded Polystyrene Interior Support

Top Flange Details:

Review the following five designs of top flange details. Select the design that compares to the top flange of the trench to be installed. The top flange detail will determine the interior height of the EPS and method the interior form is to be attached to the top flange. Installation of the EPS is described on pages 4 and 5.

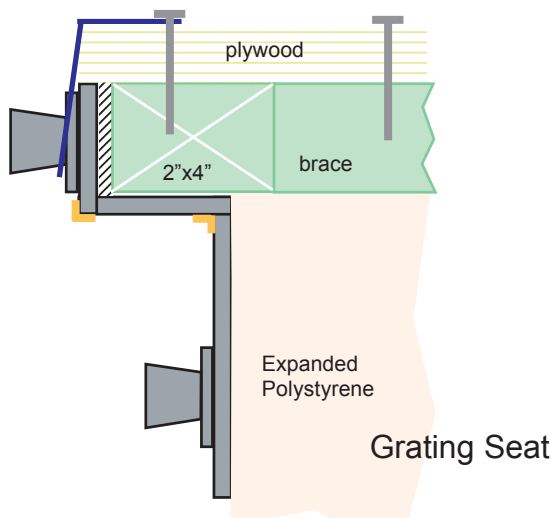
Straight Wall

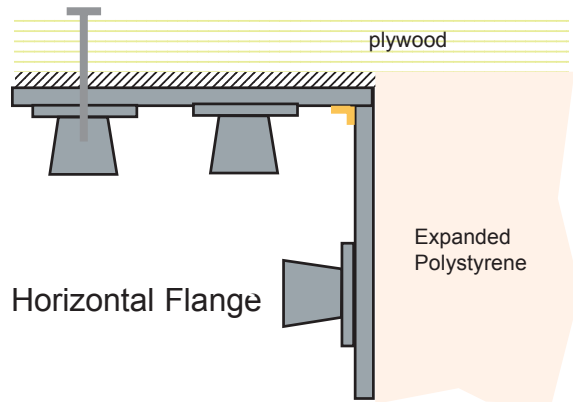
1. After the EPS is in place, cut 3/4" (19 mm.) plywood to fit interior width.
2. Attach coarse thread dry wall screws through plywood at intervals of every 4th or 5th anchor. Wrap tie wire around anchor and screw. Twist free ends of the tie wire to tighten.



Grating Seat

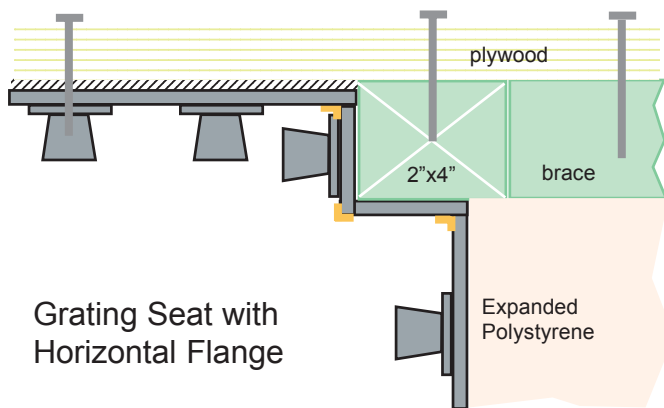
1. After the EPS is in place, cut 2"x4" to grating seat height, and install parallel to and level with each top edge of the grating seat.
2. Install 2" x 4" as horizontal cross brace approximately 16" to 24" (41 to 61 cm.) on center.
3. Attach plywood to 2" x 4" with coarse thread dry wall screws. Wrap tie wire around anchor and screw at intervals of every 4th or 5th anchor. Twist free ends of the tie wire to tighten.





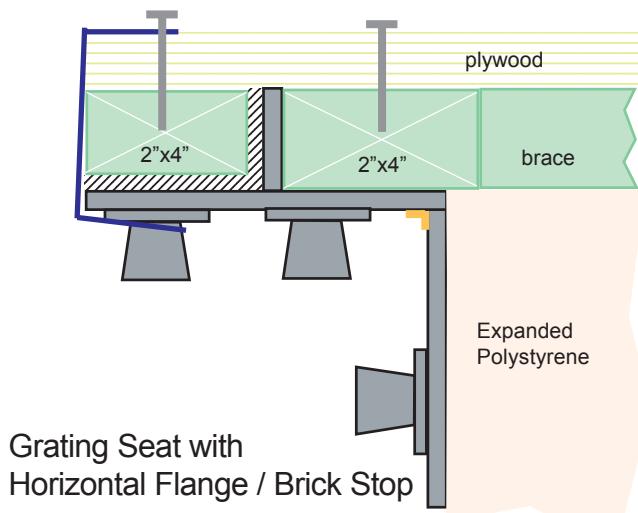
Horizontal Flange

1. After the EPS is in place, attach plywood directly to the fabric faced horizontal flange with coarse thread dry wall screws.
2. At intervals of every 4th or 5th anchor, locate center point of the anchor and drill pilot hole through the plywood, Anchor-Lok sheet and center of anchor to 3/4 (19 mm.) depth of the anchor.
3. Install dry wall screw through pilot hole to secure the plywood to the horizontal flange.



Grating Seat with Horizontal Flange

1. After the EPS is in place, cut 2" x 4" to grating seat height and install parallel to and level with each top edge of the grating seat.
2. Install 2" x 4" as horizontal brace approximately 16" to 24" (41 to 61 cm.) on center.
3. Attach plywood directly to the fabric faced horizontal flange with coarse thread dry wall screws. At intervals of every 4th or 5th anchor, locate center point of the anchor and drill pilot hole through the plywood, Anchor-Lok sheet and center of anchor to 3/4 depth of the anchor. Install dry wall screw through pilot hole to secure the plywood to the horizontal flange.
4. Secure the grating seat 2" x 4" and horizontal brace to the plywood with dry wall screws.

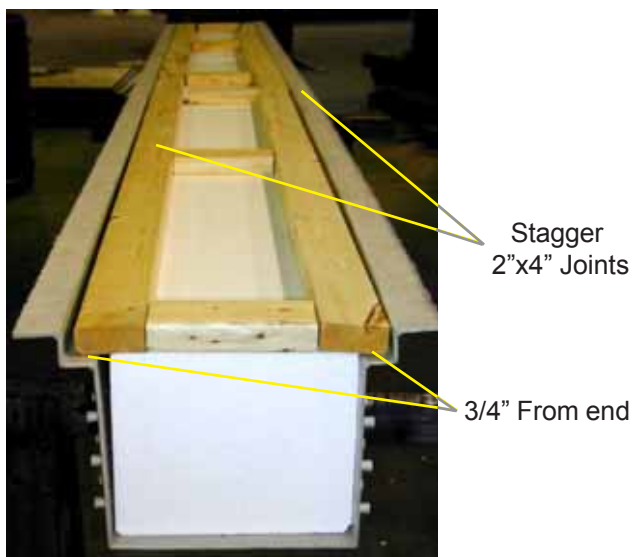
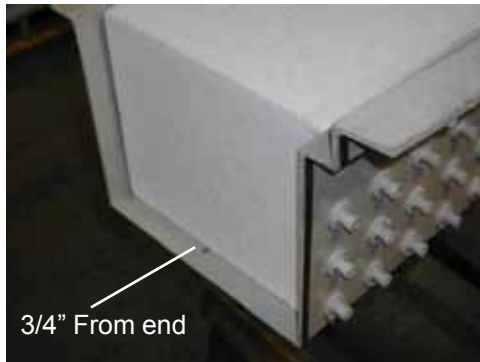
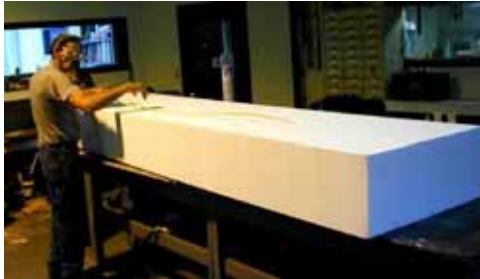


Grating Seat with Horizontal Flange / Brick Stop

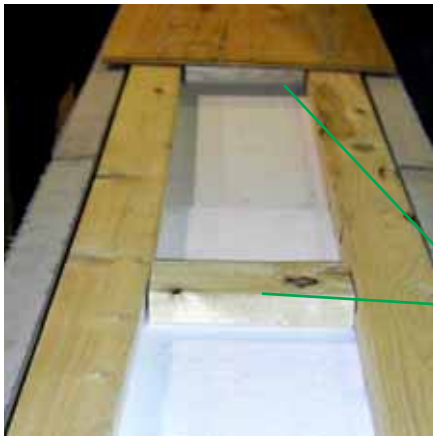
1. After the EPS is in place, install 2" x 4", cut to grating seat height, parallel to and level with each top edge of the grating seat.
2. Install 2" x 4" as horizontal brace approximately 16" to 24" (41 to 61 cm.) on center.
3. Cut 2"x4" to brick stop height and width, and install parallel to and level with each top edge of the brick stop.
4. Attached plywood to 2" x 4" with coarse thread dry wall screws. Wrap tie wire around anchor and screw at intervals of every 4th or 5th anchor.

EPS Interior Support

Expanded Polystyrene (EPS) with a minimum density of 2 lb. / ft³ is recommended.

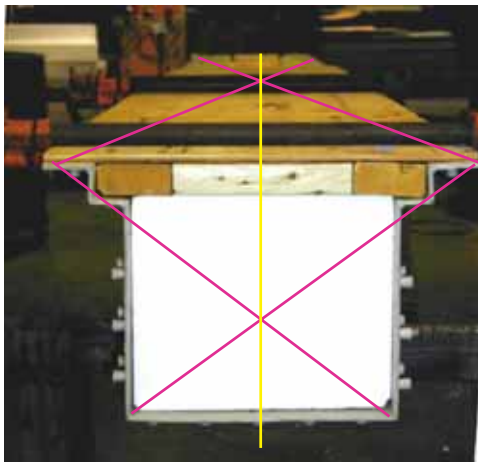


1. Cut the EPS to achieve a tight fit following the interior dimensions of width and side wall height / slope.
2. Start the EPS 3/4" (19 mm.) from the open end of adjoining trench sections.
3. Chamfer edge of 2" x 4" along grating seats to achieve a snug fit.
4. Lay out and stagger joints of the 2" x 4" along the length of each top flange of the trench section or sump.
5. Start the 2" x 4" 3/4" (19 mm.) from the open end of adjoining trench sections.



Braces
16" to 24"
on center

6. Cut perpendicular braces to proper length and lay out approximately 16" to 24" (41 to 61 cm.) on center.



7. Fabricate 3/4" (19 mm.) plywood as a top plate, cut to the finish width of trench.

8. Verify and maintain top and end dimensions for finish width, depth and square.



Screws

9. Secure 3/4" (19 mm.) plywood top plate to 2" x 4" with coarse thread dry wall screws.



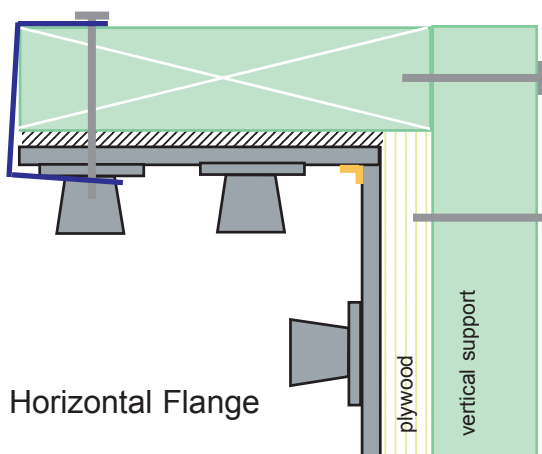
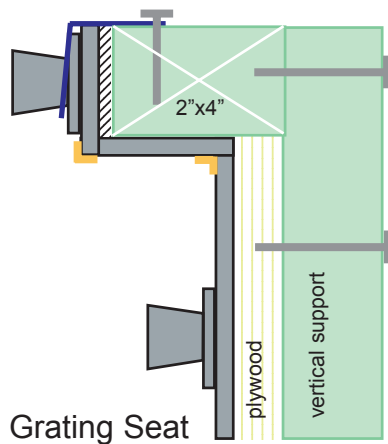
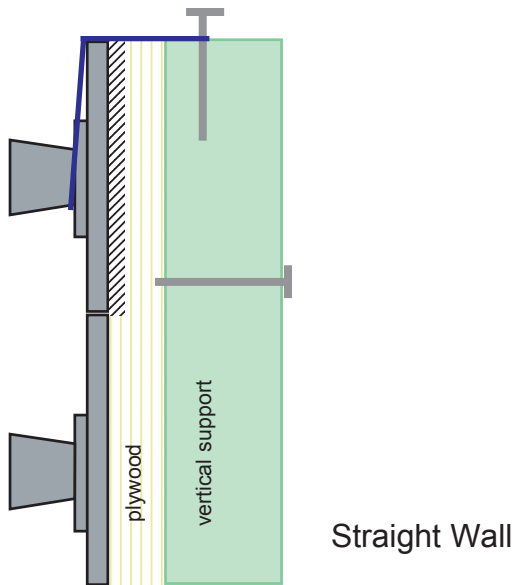
Tie wire

10. Secure tie wire around anchor and screw at intervals of every 4th or 5th anchor.

Field Installation of Dimensional Lumber Interior Support

Top Flange Details:

Review the following five designs of top flange details. Select the design that compares to the top flange of the trench to be installed. The top flange detail will determine the method with which the interior form support is to be attached to the top flange. Installation of the plywood and 2" x 4" interior form support is described on pages 7 to 9.



Straight Wall

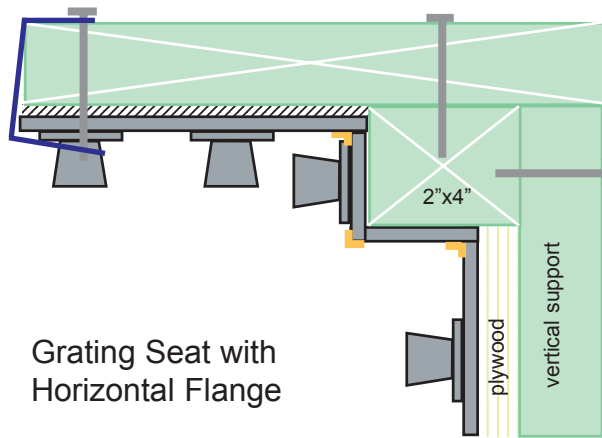
1. After the interior plywood and vertical supports are in place, wrap tie wire around anchor and screw at intervals of every 4th or 5th anchor.

Grating Seat

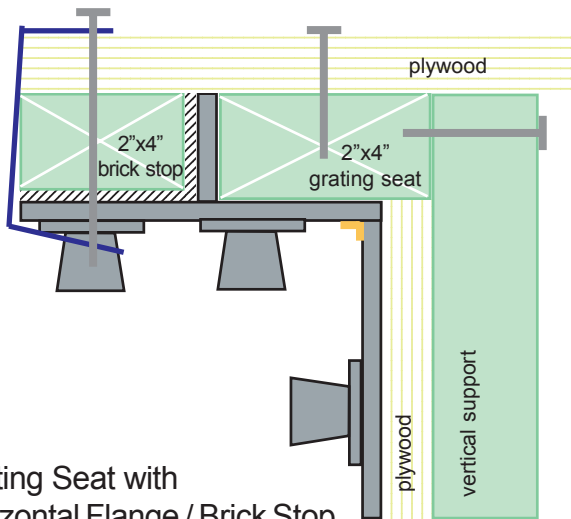
1. Cut 2" x 4" to grating seat height for installation parallel to and level with each top edge of the grating seat.
2. Attached to vertical support with coarse thread dry wall screws.
3. Wrap tie wire around anchor and screw at intervals of every 4th or 5th anchor.

Horizontal Flange

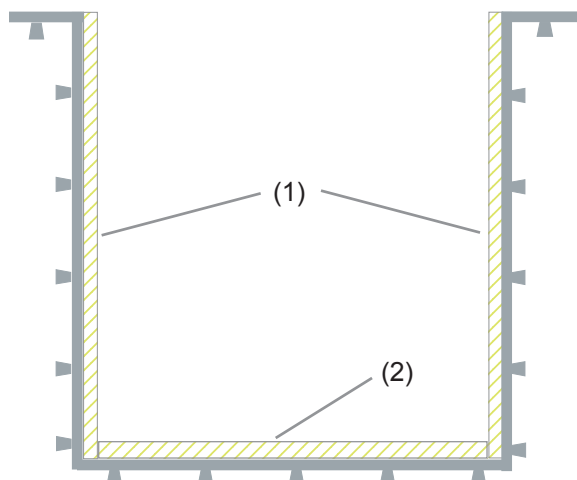
1. After the interior plywood and vertical supports are in place, attach dimensional lumber directly to the fabric faced horizontal flange with coarse thread dry wall screws.
2. Locate center point of the anchor and drill pilot hole through the dimensional lumber, Anchor-Lok sheet and center of anchor to 3/4 depth of the anchor.
3. Attach dry wall screws at intervals of every 4th or 5th anchor. Wrap tie wire around anchor and screw.



Grating Seat with
Horizontal Flange



Grating Seat with
Horizontal Flange / Brick Stop



Grating Seat with Horizontal Flange

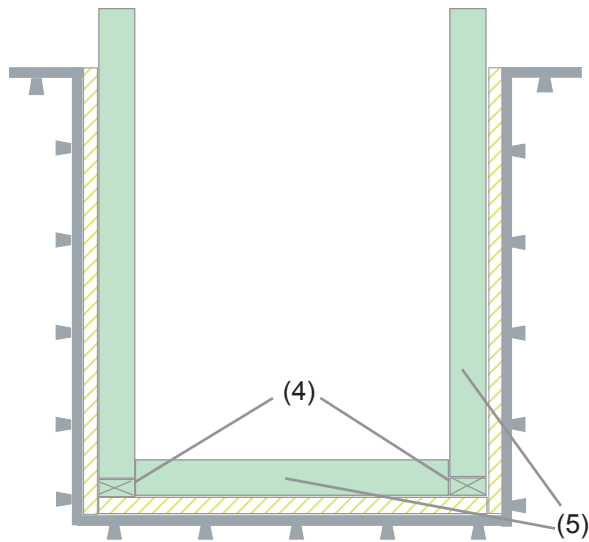
1. Cut 2" x 4" to grating seat height for installation parallel to and level with each top edge of the grating seat.
2. Attach dimensional lumber directly to the fabric faced horizontal flange with coarse thread dry wall screws.
3. Locate center point of the anchor and drill pilot hole through the dimensional lumber, Anchor-Lok sheet and center of anchor to 3/4 depth of the anchor.
4. Attach dry wall screws at intervals of every 4th or 5th anchor. Wrap tie wire around anchor and screw.

Grating Seat with Horizontal flange / Brick Stop

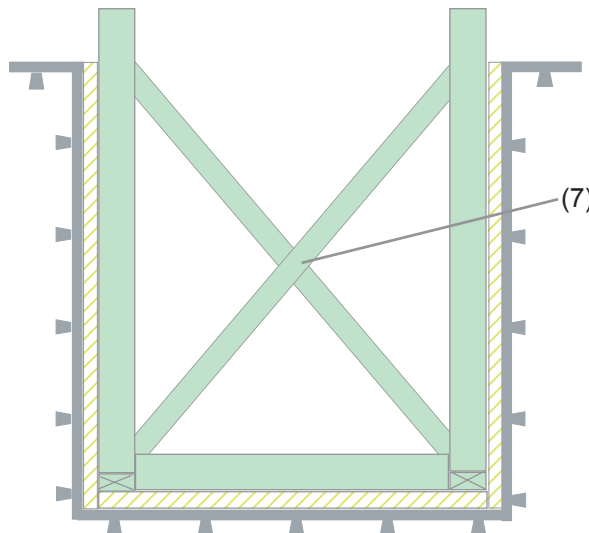
1. Cut 2" x 4" to grating seat height for installation parallel to and level with each top edge of the grating seat.
2. Cut 2" x 4" to brick stop height and width for installation parallel to and level with each top edge of the brick stop.
3. Attached plywood to grating seat and vertical support 2" x 4" with coarse thread dry wall screws.
4. Attach brick stop 2" x 4" directly to the fabric faced horizontal flange with coarse thread dry wall screws. Locate center point of the anchor and drill pilot hole through the plywood, 2" x 4", Anchor-Lok sheet and center of anchor to 3/4 depth of the anchor.
5. Attach dry wall screws at intervals of every 4th or 5th anchor. Wrap tie wire around anchor and screw.

Interior Support - Dimensional Lumber

1. Layout and place 3/4" (19 mm.) thickness plywood for side walls.
2. Layout and place 3/4" (19 mm.) thickness plywood for bottom of the trench / sump.
3. Start the plywood 3/4" (1.9 cm.) from the open end of adjoining trench sections.

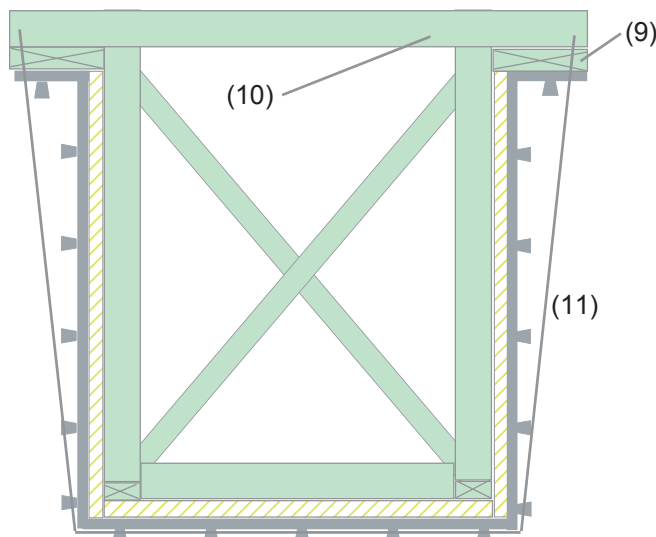


4. Layout and place 2" x 4" along the bottom length of each side wall and bottom of the trench / sump. Stagger the joints.
5. Layout and place 2" x 4" vertical supports and horizontal cross brace a minimum of 3' to 4' (0.9 to 1.2 m.) on center.
6. Attach 2" x 4" to plywood with coarse thread dry wall screws. Do not penetrate Anchor-Lok with screws. Do not screw or nail Anchor-Lok to interior support.



7. Layout and position diagonal bracing at vertical supports.
8. Verify and maintain top and end dimensions for finish width, depth and square. Attach diagonal bracing with coarse thread dry wall screws.

Do not penetrate Anchor-Lok with screws. Do not screw or nail Anchor-Lok to interior support.



9. Lay out and install top flange detail. Attach top flange to vertical support with coarse thread dry wall screws. Verify and maintain top and end dimensions for finish width, depth and square during installation.
10. Attach horizontal batter board to top flange detail. Verify and maintain top and end dimensions for finish width, depth and square during installation.
11. Support bottom of trench / sump with metal banding or tie wire to relieve stress on flange.

Additional Information:

- Anchor-Lok Installation Instructions
Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100
Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110
Prefabricated Trench: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 111
Prefabricated Sump: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 120
Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 150
Onsite Construction Tank or Sump
- Anchor-Lok Guidelines A-L 151
Filling Concrete Voids
- Anchor-Lok Guidelines A-L 152
Pipe Inlets and Outlets

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Anchor-Lok Installation Guidelines Onsite Construction Tank or Sump

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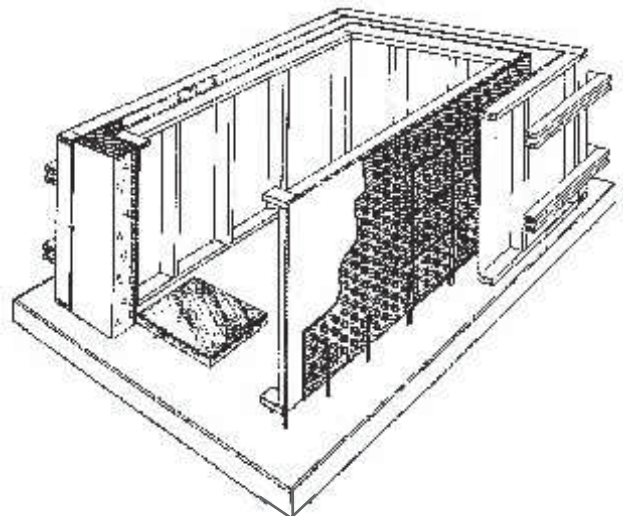
Anchor-Lok is a thermoplastic lining used in conjunction with concrete construction. Consider the application of Anchor-Lok as a concrete form liner. Form release agents are not permitted on the forms covered with Anchor-Lok.

Standard concrete construction practices of form construction, steel reinforcement, pouring, vibrating and ambient temperature cure of concrete applies. Steam curing of concrete is not permitted.

All seams are welded by an Anchor-Lok fabricator. Proper installation of Anchor-Lok sheets and seam alignment is critical. Poor alignment, of seam gap and plane affects seam welding efficiency and may result in extra welding costs beyond original scope. All seams must be connected with the carbon impregnated conductive H-Zip strip, an overlap strip with copper tape or approved method prescribed by the Anchor-Lok fabricator.

Refer to A-L 100, Requirements of the Installing Contractor, for storage, protection and site welding conditions.

Installation Sequence	Page
1. Foundation	2
2. Interior Forms	2
Design & Bracing	
3. Mount Anchor-Lok on Wall Forms	2-5
Secure Top of Wall Sheet	
Secure Bottom of Wall Sheet	
H-Zip Strip	
Horizontal Seams	
4. Reinforcing Steel	5
5. Exterior Forms	5-7
Form Ties	
Inlets / Outlets	
Wall Caps	
6. Placing of Concrete	7
Cure of Concrete	
7. Removal of Forms	7-8
Cleaning and Floor Preparation	
Concrete Voids	
Sealing Dissimilar Inlets / Outlets	
8. Floor	8-13
Wall Screed Strip	
Floor Screed Strip	
Setting Bed	
Setting Floor Sheets	



FOUNDATION

On properly graded, tamped and filled excavation, pour a reinforced concrete slab with a coarse finish as obtained by a broom or wood float.

The top elevation of the base slab should be 2-1/2" to 6" (63 mm. to 150 mm.) below the final elevation of the finished Anchor-Lok floor.

In areas where potential for hydraulic pressure exists, the top elevation of the base slab should be 3-1/2" to 6" (89 mm. to 150 mm.) below the finished Anchor-Lok floor to accommodate increased setting bed thickness and mechanical anchors required for tying the setting bed to the base slab. The mechanical anchors must be integral with the base slab. Mechanical anchors should be placed when pouring the base slab.



Concrete Foundation

INSTALL INTERIOR WALL FORMS

Anchor-Lok is sufficiently versatile to accommodate a variety of standard concrete form work.

Wood forms: Plywood with dimensional lumber reinforcement

Wood forms: Plywood face with metal frames

Metal forms: Metal face and frames

Form design for concrete structures to be lined with Anchor-Lok should utilize outside bracing as much as possible while being sufficiently rigid in order to minimize form ties that penetrate the Anchor-Lok. Form rigidity is also required to prevent form bulging or movement that could create Anchor-Lok misalignment.

Form release agents are not recommended as

it will leave a film on the Anchor-Lok which will be detrimental to the welding process.



Plywood with dimensional lumber



Metal face and frames



Plywood face and metal frames

MOUNT ANCHOR-LOK ON WALL FORMS

Refer to Anchor-Lok fabrication drawings for wall sheet dimensions and lay out schedule.

The ambient temperature during sheet installation must be between 32°F (0°C) and 95°F (35°C).

In most cases Anchor-Lok wall sheets are either fabricator shop welded or field welded to achieve the full height of the wall. One piece full height wall sheets are mounted by "hanging" the sheet from the top to the bottom of the interior form walls.

Multiple piece wall sheets with horizontal seams are mounted from the bottom of the interior form wall to the top, by securing the lowest sheet first.

Position and Plumb Corner Sheet on Form

Start mounting the Anchor-Lok at a corner. Establish a plumb line off set from the corner the same dimension as the length of one side of the pre-formed corner wall sheet.



Position and plumb
pre-formed corner
wall sheet



Anchor-Lok
floor elevation

Install finish nail below
Anchor-Lok floor elevation

Secure Top of Wall Sheet to Form

Secure the top of the wall sheet to the top of the interior form at intervals of every 5th to 7th anchor. Wrap tie wire around the anchor and attach to the top of the form.

Wood forms: Wrap tie wire around a nail driven into the top of the form. Twist free ends to tighten.

Metal frames: Wrap tie wire through holes in the stiffeners. Twist free ends to tighten.



Wrap tie wire
around anchor

Attach tie wire to
top of form



Join Adjacent Wall Sheets with H-Zip Strip

Slide the H-Zip strip onto edge of the previously install sheet. Ensure the center divider of the H-Zip strip is tight against the edge of the sheet. Slide next sheet into H-Zip strip. Ensure the edge of the sheet is tight against the center divider of the H-Zip strip.

Metal forms: Prior to installation, apply double sided adhesive tape or construction adhesive to the form side of the H-Zip strip.

Loosely secure the top of the sheet with tie wire to maintain alignment of the sheet.



H-Zip strip
joining two sheets

Secure Bottom of Wall Sheet to Form

Secure the bottom of the sheet to the form at intervals of every fifth to seventh anchor.

Wood forms: Drill a pilot hole through the Anchor-Lok sheet and install a finish nail below the Anchor-Lok floor elevation. Finish nails should be long enough to extend at least 1/4" (6 mm.) through the form so they can be pulled through the Anchor-Lok after the concrete has hardened and before the forms are removed.

Metal forms: Attach tie wire to interior form and loop under the bottom edge of the sheet. Wrap the tie wire around anchor. Twist free ends to tighten.

Secure Adjacent Sheets with Tie Wire

At intervals of every 4th or 5th anchor along the H-Zip strip. Wrap tie wire around an anchor and pull tightly diagonally across the H-Zip strip seam and wrap the wire around an anchor of the adjacent sheet. Wrap the free ends together and twist to tighten, bringing the sheet tight against into the H-Zip strip slot. Alternate the diagonal pattern and ensure the sheet is tight against form.

Tighten the wire tie connection at the top of the sheet.

Secure the bottom of the sheet with finish nail or wire as previously described.



Wrap and draw tie wire across diagonal anchors

Secure the H-Zip Strip to Wood Forms

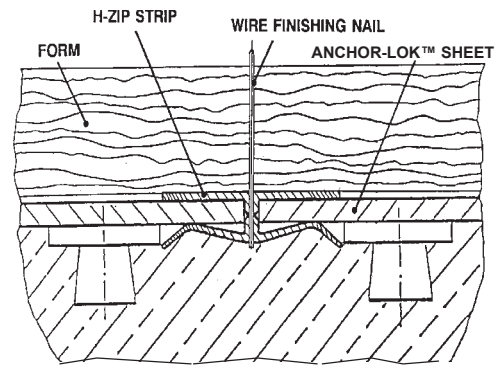
To keep the sheet tight to the form, the sheet may be secured with finish nails to the wood form installed through the center of the H-Zip strip. This is only done after the adjacent sheets have been pulled together and diagonally wired as described above.

NO NAILS, SCREWS OR FASTENERS ARE TO BE USED IN THE MAIN FIELD OF THE SHEET.

At intervals of approximately 10" to 12" (25 cm. to 30 cm.) drill a pilot hole through the center web of the H-Zip strip. Install finish nail. Finish nails should be long enough to extend at least 1/4" (6 mm.) through the form so they can be pulled through the Anchor-Lok after the concrete has hardened and before the forms are removed.



Pre-drill through center of H-Zip Strip and install finish nail



Seal Top Edge of Wall Sheet and Form

Apply duct tape as a seal to prevent concrete and construction debris from entering the gap between the top of the Anchor-Lok sheet and form.

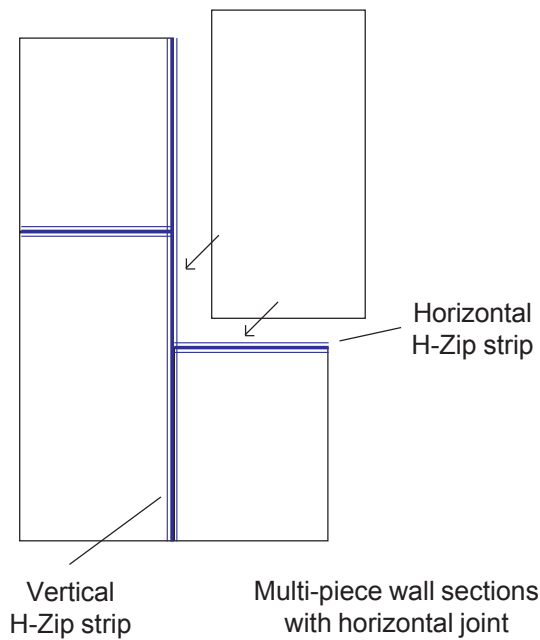
Horizontal Seams

In most cases Anchor-Lok sheets are either fabricator shop welded or field welded to achieve the full height of the wall.

Based on overall design criteria as determined by the fabricator and installing contractor, the height of wall sheets may be provided as multi-piece and require a horizontal seam. Multi-piece wall sections with horizontal seams are mounted by securing the lowest sheet first. Horizontal seams may be joined with the H-Zip strip or fabricator supplied lap joint.

Horizontal seam lay out must be staggered so that a maximum of three sheets meet at any one place.

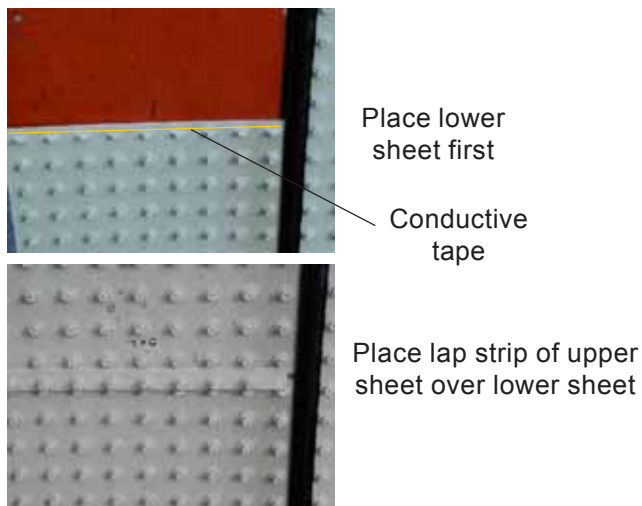
H-Zip Strip: Position the lowest sheet and seat the vertical edge into the adjacent vertical H-Zip strip. Secure the bottom of the wall sheet as previously described. Install the horizontal H-Zip strip on the top edge of the lowest sheet. Position the next vertical wall sheet section into the vertical and horizontal H-Zip strip. Secure the adjacent sheets with wire tie and the H-Zip to the form as previously described.



Lap Joint: Position the lowest sheet and seat the vertical edge into the adjacent vertical H-Zip strip. Secure the bottom of the wall sheet as previously described. Position the next vertical wall sheet section with the fabricator applied lap strip over the top of the lower sheet. Ensure the fabricator applied conductive tape is attached to the top edge of the lower sheet. If the conductive tape is not in place apply new tape.

Metal forms: Prior to placing the upper sheet, apply double sided adhesive tape to the form side of the upper sheet.

The upper and lower sheets are joined in a similar manner as described by sections "Secure Adjacent Sheets with Tie Wire" and "Attachment of the H-Zip Strip to Wood Forms".



INSTALL REINFORCING STEEL

Install reinforcing steel as established by the owner or specifier schedule. Do not attach or "tie" Anchor-Lok to reinforcing steel.



INSTALL EXTERIOR WALL FORMS

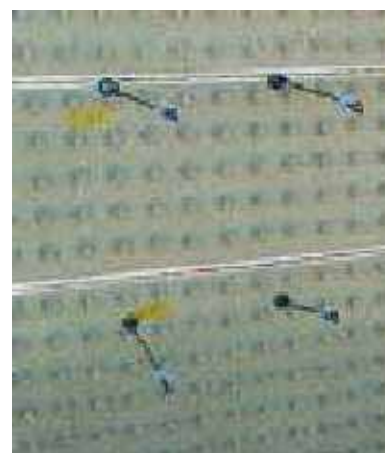
Form design should utilize outside bracing as much as possible while being sufficiently rigid in order to minimize form ties that penetrate the Anchor-Lok. Form rigidity is also required to prevent form bulging or movement that could create Anchor-Lok misalignment.

Form Ties

Consult with the Anchor-Lok fabricator to ensure the number of form ties to be used complies with the estimated schedule of the fabricator. Excess form ties will incur additional field welding costs.

If form ties are used, drill a maximum of 1" (25 mm.) diameter hole through the Anchor-Lok sheet to accommodate the form tie.

Wood forms: Finish nails may be used to secure



Drill 1" hole through sheet to insert form ties

the sheet against the form at the form tie hole. Drill a pilot hole no more than 1/4" (6 mm.) from tie hole. Install no more than two finish nails. Finish nails should be long enough to extend at least 1/4" (6 mm.) through the form so they can be pulled through the Anchor-Lok after the concrete has hardened and before the forms are removed.

After the forms have been removed and the form tie is broken off, the holes in the sheet are sealed by the Anchor-Lok fabricator. A 3" (75 mm.) diameter disc seal or extrusion weld is welded over the hole. If form ties are removed, the hole through the concrete must be filled prior to application of the disc seal.



Welding of disc seal over form tie hole



Extrusion welding of form tie hole

Inlets / Outlets

All pipe, pipe sleeves and drain penetrations should be fitted with keeper rings and /or bars on their exterior for anchoring into the concrete.

Plastic pipe must be compatible with the type of the Anchor-Lok sheet. If the pipe is not supplied by the fabricator, the contractor must submit information or plastic resin used in the pipe to the fabricator prior to installation.

Two methods can be used to install Inlets / Outlets.

Method 1.

Pipe, sleeves and drains may be fitted to the Anchor-Lok sheets as the sheets are mounted. Determine location of pipe. Scribe the sheet to fit the outside diameter of the pipe. Cut a hole through the form and Anchor-Lok sheet to form a snug tight fit around the pipe.

Install the pipe through the hole. Position and extend the end of plastic pipe a minimum of 3/4" (19 mm.) beyond the smooth face of the Anchor-Lok sheet. Extend the end of dissimilar pipe such as steel or clay a minimum of 4" (10.2 cm.) beyond the Anchor-Lok sheet. Ensure that the pipe is not disturbed or damaged when erecting the forms, placing reinforcement, or pouring and vibrating the concrete.



Method 1 Inlet outlet installation

Method 2.

Pipe, sleeves and drains may be fitted to the Anchor-Lok sheets after the form has been removed.

Determine location of pipe and mark location reference on the smooth side of the Anchor-Lok sheet. Block out a space within the form work using foam block. After the forms are stripped, cut a hole in the Anchor-Lok. Remove the foam block and insert the pipe through the wall. Position and extend the end of plastic pipe a minimum of 3/4" (19 mm.) beyond the smooth face of the Anchor-Lok sheet. Extend the end of dissimilar pipe such as steel or clay a minimum of 4" (10.2 cm) beyond the Anchor-Lok sheet.

Fill the annular space between the pipe and concrete with a suitable grouting material. The Anchor-Lok fabricator will fit a collar over the pipe and weld the collar to the Anchor-Lok sheet.

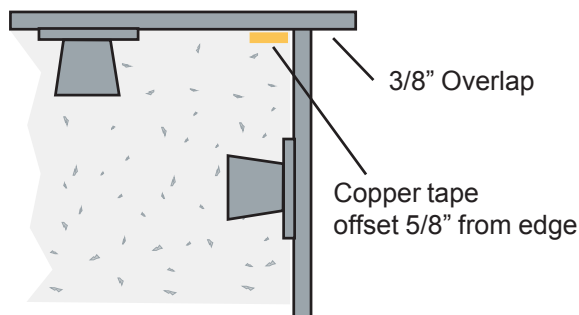


Collar over pipe
welded to sheet

Wall Caps

Wall cap pieces are pre-cut and oversized to be wider than the outside dimension of the finished wall. Set wall caps allowing a minimum 3/8" (9.5 mm.) overlap of the wall sheet.

Before setting the wall cap pieces, ensure conductive copper tape is attached to the bottom side of the cap pieces. Tape should be offset approximately 5/8" (1.6 cm.) from the edge.



Wall Cap

Two methods can be used to install the Wall Caps.

Method 1.

Wall caps may be installed at the same time the walls are poured.

Construct the forms level with the top of the finish wall elevation. Pour the walls and screed off level with the top of the sheet. Set the wall cap pieces into wet concrete and tamp the sheet gently into place. Cover with plywood and place ballast weight on plywood.

Method 2.

Wall caps may be installed after the walls have been poured and concrete hardened. If the forms have been removed, new form supports may be required to ensure that the top of the wall sheet is held straight.

Pour the concrete to a minimum of 2" (5.1 cm.) below the finish elevation of the top of the wall sheet. Allow the concrete to harden. Install a suitable grout completing the wall pour, and screed off level with the top of the sheet. Set the wall cap pieces into grout and tamp the sheet gently into place. Cover with plywood, and place ballast weight on plywood.

PLACE CONCRETE

Prior to placing of concrete a detailed, pre-pour inspection is recommended to ensure the lining system and forms have been properly placed and secured.

During placement of the concrete do not exceed the rate of pour for which the forms are designed. Vibrate concrete in accordance with standard concrete construction practices.



Pour
concrete
walls

CURE OF CONCRETE

The Anchor-Lok Lining has no effect on the cure rate of the concrete. Cure the concrete in accordance with recommended industry ambient temperature cure practices. **DO NOT STEAM CURE** Anchor-Lok lined concrete, related components or structures.

REMOVE FORMS

Remove all nails that have penetrated the Anchor-Lok by pulling the nail through the form.

Remove forms when the concrete has cured sufficiently making sure not to disturb the concrete or Anchor-Lok.

Shelter the tops of the walls after form removal until they are welded or sealed to prevent any moisture contamination or construction debris migration between the Anchor-Lok and concrete.

Cleaning of Anchor-Lok

Floors and walls are to be cleared of extraneous debris and dirt by sweeping followed by vacuuming. All surfaces of the Anchor-Lok Lining are to be cleaned with rags or sponge dampened with clean water to remove excess concrete and other contaminants. Use of wash down hose, sweeping compounds, dust preventative materials to clean Anchor-Lok is not permitted.

Fill Concrete Voids

Commercially available cement based or epoxy resin based grouts are acceptable for filling voids around pipe penetrations, wall caps and hollow areas behind the Anchor-Lok sheet.

Hollow spots behind the sheet due to “honey combing” can be detected by sounding the sheet with a hard rubber or plastic head hammer. Refer to AL-151, Filling Concrete Voids, for the procedure describing the injecting of grout through the liner.

Seal Around Dissimilar Pipe Inlets and Outlets

The sealing of the gap between dissimilar pipe such as steel or clay requires the application of a fabric faced collar and an overlay of corrosion resistant resin and fiberglass overlay. Refer to AL-152, Pipe Inlets and Outlets, for a description of the procedure.

FLOORS

Wall seams must be welded by the Anchor-Lok fabricator prior to installation of the floor. Provide advance notice and coordinate installation schedule with the fabricator.

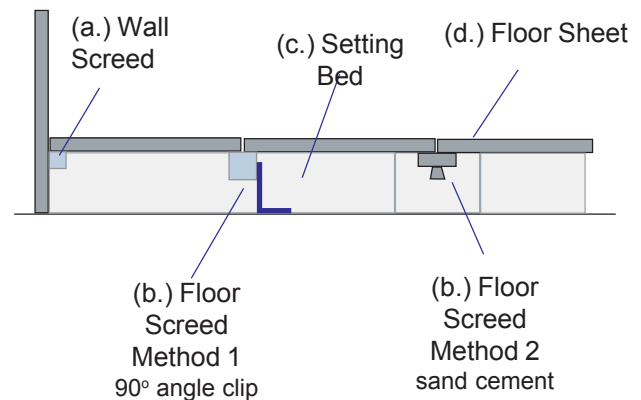
The entire floor area must be protected from direct sunlight during the installation of the floor sheets. The ambient temperature during sheet installation must be between 32°F (0°C) and 95°F (35°C).

The floor must be dry and protected from ground water and rain water until the floor sheets have been set and completely welded.

Refer to AL-100, Requirements of the Installing Contractor, for additional site welding conditions.

Installation Sequence: Overview

- The Wall Screed (ledger strip) is attached to the interior perimeter walls for mounting and welding floor sheets to wall.
- Floor Screed Strips are ledger strips that are placed in the floor field for mounting and welding adjacent floor sheets.
- The Setting Bed is a sand cement mixture screeded over the concrete sub base to anchor the floor sheets.
- Floor Sheet Installation. Individual sheets are placed in the grout bed.



Installation of Wall Screed Strip

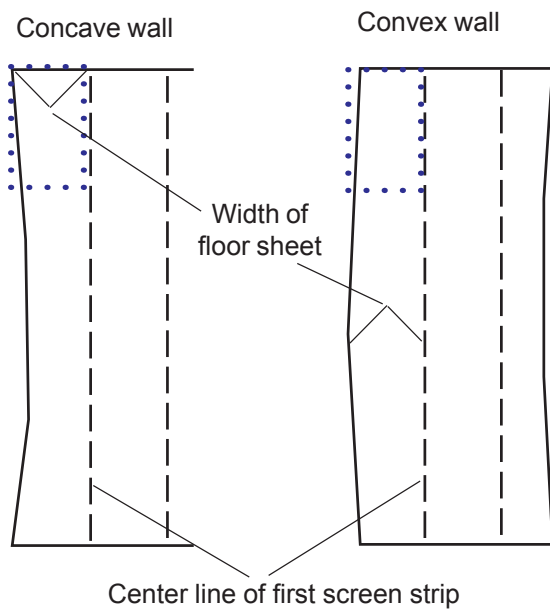
A 1/2" x 1/2" (1.3 x 1.3 cm.) wall screed strip (ledger strip) is welded to the interior perimeter by the Anchor-Lok fabricator. The top elevation of the wall screed strip is positioned 3/16" (5 mm.) or 1/8" (3 mm.) below the finish elevation of the floor.

Establish Floor Screed Strip Center Lines

Refer to Anchor-Lok fabrication drawings for floor sheet dimensions and lay out schedule.

Establish a center line for the first screed strip. Using a string line, string a line parallel to one of the long walls. Position the string line end points where the maximum distance from the string line to the wall and all points along the string line are equal to or less than the width of the floor sheet.

Mark end points on the walls and snap a chalk line on the substrate. Using the first center line as a reference, establish parallel center lines for the next screed strips at intervals of the sheet width plus 1/8" (3.2 mm.)



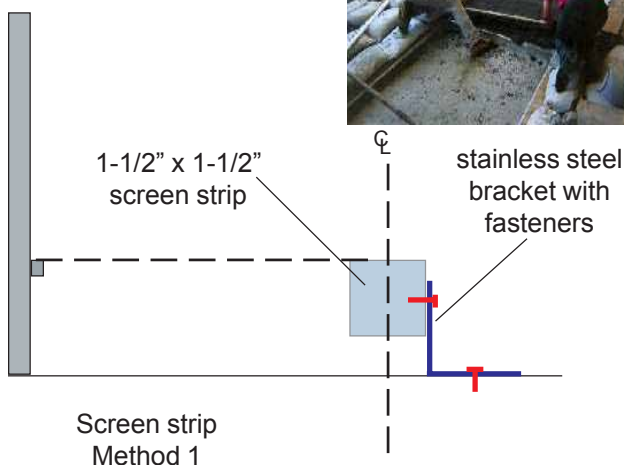
Install Floor Screed Strip

The floor screed strip support the floor sheets, and determine the finish floor elevation. Set the top elevation of the floor screed strip 3/16" (5 mm.) or 1/8" (3 mm.) below the finish elevation of the floor.

Two methods can be used to install the Floor Screed Strips.

Method 1. Stainless steel bracket

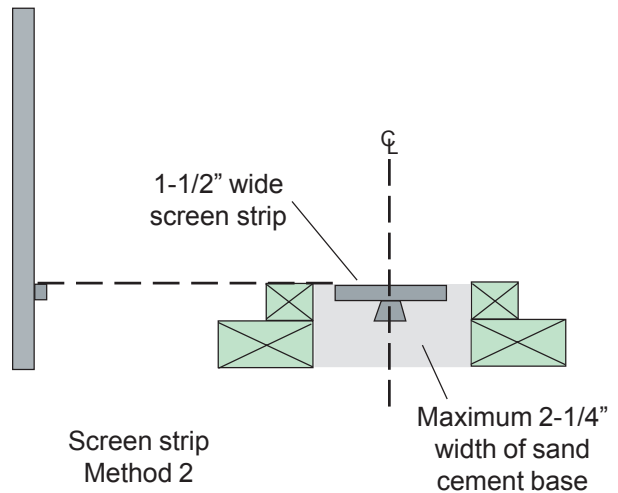
Slotted stainless steel 90 degree angle brackets are used to mount 1-1/2" x 1-1/2" (3.8 x 3.8 cm.) screed strip stock to the concrete substrate.



Center the square stock over the center line. Position and mechanically attach the horizontal leg of bracket to the concrete base at intervals of 36" on center. Determine top of screed strip elevation, mark and drill pilot hole into the square stock. Attach vertical leg of bracket to screed strip with stainless steel fastener.

Method 2. Sand cement bed

A 1-1/2" (3.8 cm.) wide strip of Anchor-Lok is placed in a sand cement setting bed.



Using dimensional lumber construct screed strip forms with a maximum 2-1/4" (5.7 cm.) width. Center the screed strip form over the center line. Determine top of screed strip form elevation and secure the form to the concrete base. Fill the form with a sand cement mixture consisting of:

- Type I Portland Cement: (7) 94 lb. bags [658 lb. (298 kg.)]
- Masonry sand: 1 cubic yard (0.8 m³)
- Water to attain a 4" to 5" (10.2 to 12.7 cm.) slump

Follow standard construction practices for the installation of sand cement setting beds; such as wetting of concrete slab, cement slurry coat primer or concrete bonding agents.

Compact and screed the setting bed to an elevation level with the top of the screed form. Fill any depressions.

Center the 1-1/2" (3.8 cm.) screed strip over the center line. Press and lightly tap the screed strip to seat the screed strip into the setting bed.

Remove all setting bed and foreign substances from the surface of the screed strips with a damp sponge to ensure the floor sheet will lay properly.

Only place setting bed in an area that will immediately covered with the Anchor-Lok floor sheet.

Install Setting Bed

Migration of liquids from outside sources, such as ground water and rain, must be prevented during all phases and for the complete installation of the grout bed, setting of floor sheets, cure of setting bed and welding of seams of the floor system.

A sand cement setting bed is placed between the floor screed strips and the floor sheets are placed in the wet setting bed.

The design of the sand cement setting bed consists of:

Type I Portland Cement: (7) 94 lb. bags [658 lb. (298 kg.)]

Masonry sand: 1 cubic yard (0.8 m³)

Water to attain a 4" to 5" (10.2 to 12.7 cm.) slump

Follow standard construction practices for the installation of sand cement setting beds, such as wetting of concrete slab, cement slurry coat primer or concrete bonding agents.

Place the mixed setting bed and wire mesh, if specified, between two adjoining screed strips.

Compact and screed the setting bed to an elevation level with the top of the screed strips. Fill any depressions. Finish the surface with a wood or magnesium float.

Remove all setting bed and foreign substances from the surface of the screed strips with a damp sponge to ensure the floor sheet will lay properly.

Only place setting bed in an area that will immediately covered with the Anchor-Lok floor sheet.



Screed sand cement setting bed

Install Floor Sheets

Plywood sheathing and ballast materials are required to set floor sheets:

Plywood Sheathing:

After the Anchor-Lok floor sheet has been placed in the grout bed, 3/4" plywood sheathing is placed over the sheet to evenly distribute ballast weight. Size the plywood sheathing to expose approximately 1/8" (3.2 mm.) of the four perimeter edges of the floor sheet. The undersized sheathing allows visual inspection and minimizes interference during placement of adjacent sheets.

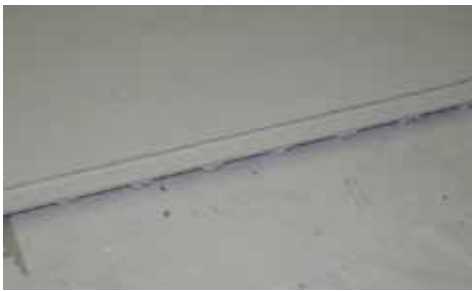
Ballast:

The amount of ballast weight to be used is 18 lb./ft² (88 kg./m²). Five-gallon pails containing sand or sand bags weighing between 20 - 25 lb. (9 - 11 kg.) are suggested as ballast.

A 39" x 78" (1 m. x 2 m.) floor sheet requires 400 lb. (181 kg.) per sheet or 16 pails or sand bags.

A 59" x 118" (1.5 m. x 3 m.) floor sheet requires 900 lb. (408 kg.) per sheet or 36 pails or sand bags. Refer to Anchor-Lok fabrication drawings for floor sheet dimensions and lay out schedule.

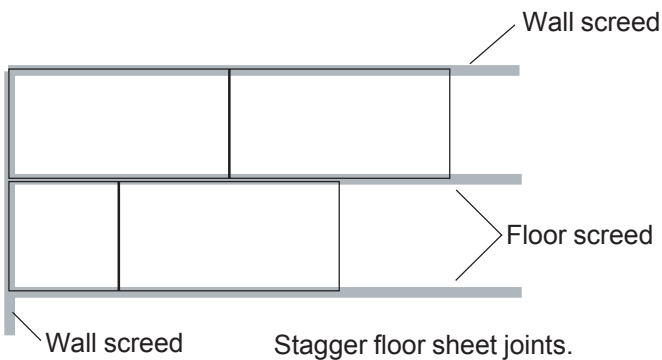
Floor sheets are normally supplied with an overlap strip applied to the one of the short dimension ends of the sheet.



Lap strip of floor sheet

Sheets should be laid out and arranged in advance, trimmed as needed to seat tightly against the wall perimeter and on the floor screeds.

Lay out must be staggered so that a maximum of three sheets meet at any one place.

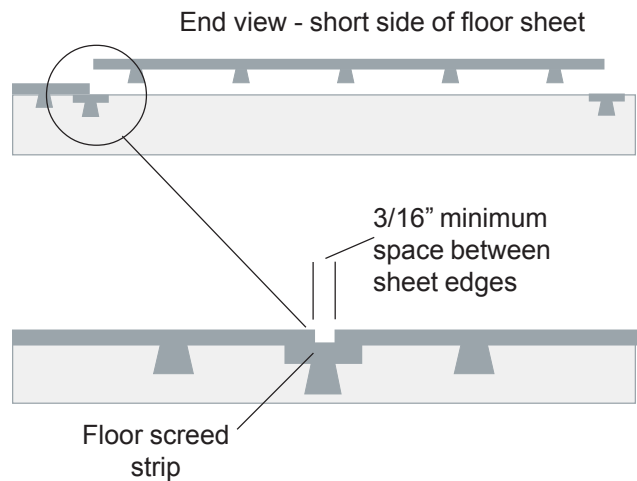


Position the floor sheet over the screeded setting bed. Align the floor sheet edge parallel to and off set 3/32" (2.4 mm.) from the screed strip center line. Avoid side to side movement.

Gently press the sheet edges firmly onto the screed strip. Do not try to push the entire sheet into bed.

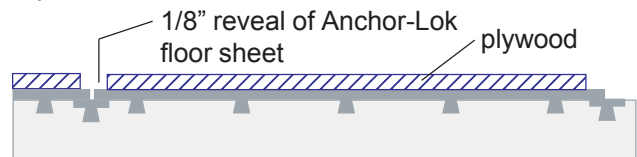


Place floor sheet over setting bed



Carefully lay the pre-sized plywood sheathing over the floor sheet. Do not dislodge or move the floor sheet side to side during placement of the plywood.

Allow 1/8" (3.2 mm.) reveal of the four perimeter edges of the Anchor-Lok floor sheet and plywood.



Place plywood over floor sheet

Uniformly place 1/2 of the ballast, 9 lb./ft² (44 kg./m²) on the plywood which will begin to force the anchors into the setting bed.

For a 39" x 78" (1 m. x 2 m.) floor sheet place approximately 8 pails or sand bags.

For a 59" x 118" (1.5 m. x 3 m.) floor sheet place approximately 18 pails or sand bags.



Place ballast on plywood

Tamp the plywood between the ballast using the butt end of a hand held tamper or butt end of 4x4 or 6x6.



Tamp to seat anchors, do not over tamp

Tamping must not distort the sheet in any way.

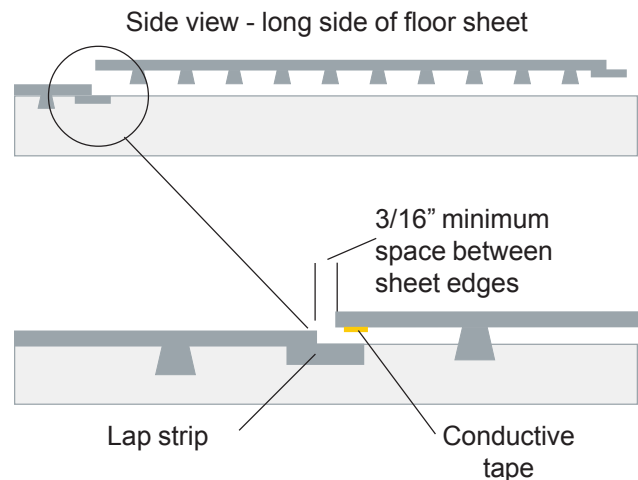
Tamp with just enough force and repetition to insure that the setting bed encapsulates the anchors and the sheet edges seat firmly on the screed strips.

Excessive and concentrated tamping will depress and rebound the floor sheet resulting in hollow spots. Remove the sheet and re-screed the bed if hollow spots are discovered by "sounding" during tamping.

As the tamping is completed, place the remaining ballast.

If at any time during the installation of the Anchor-Lok floor sheet becomes dislodged or misaligned remove the sheet and re-screed the setting bed.

Place the next floor sheet. Place the short edge of the sheet on the lap strip of the previously installed floor sheet. Install in the same manner as described leaving a 3/16" (48 mm.) space between the edges of the adjacent sheets. Ensure the fabricator-applied conductive tape is attached to the anchor side of the sheet edge that is placed on to the lap strip. If the conductive tape is not in place, apply new tape.



Allow the setting bed to cure undisturbed for a minimum of 3 days at 75°F (24°C) before removing ballast and plywood sheathing.

Cleaning of Anchor-Lok

Floors and walls are to be cleared of extraneous debris and dirt by sweeping followed by vacuuming. All surfaces of the Anchor-Lok Lining are to be cleaned with rags or sponge dampened with clean water to remove excess concrete and other contaminants. Use of wash down hose, sweeping compounds, dust preventative materials to clean Anchor-Lok is not permitted.

Floor and wall seams are to be welded by the Anchor-Lok fabricator.

Additional Information:

For additional information refer to the following ATLAS literature:

- Anchor-Lok Installation Instructions
Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100
Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110
Prefabricated Trench: Lining Existing Structure
- Anchor-Lok Guidelines A-L 111
Prefabricated Sump: Lining Existing Structure
- Anchor-Lok Guidelines A-L 120
Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 130
Prefabricated Trench and Sump: Interior
Support
- Anchor-Lok Guidelines A-L 151
Filling Concrete Voids
- Anchor-Lok Guidelines A-L 152
Pipe Inlets and Outlets

The information provided in the Anchor-Lok Installation Guidelines are provided as commonly accepted installation practices. The installing contractor must review the prescribed techniques with the Anchor-Lok fabricator prior to installation. The guidelines may be revised, modified or amended by the Anchor-Lok fabricator as deemed necessary by the individual structure and site conditions. No guarantee or warranty of any kind is made or implied by the Guidelines and ATLAS assumes no liability in connection with the use of the Guidelines or the information contained herein. ATLAS' product or performance warranties are limited to those expressly contained in its contract documents.



Atlas Minerals & Chemicals, Inc.



Anchor-Lok™ Installation Guidelines

A-L 151 (12-01)

Anchor-Lok Installation Guidelines Filling of Concrete Voids

Commercially available cement based or epoxy resin grouts are acceptable for filling voids round pipe penetrations and hollow areas behind the Anchor-Lok sheet.

The installing contractor must review the prescribed procedure for filling voids with the Anchor-Lok fabricator prior to installation.

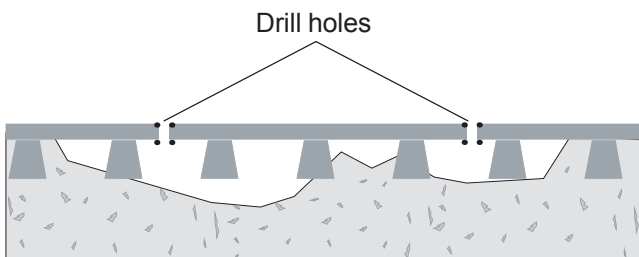
Floors and Walls

Hollow spots behind the floor and wall sheets can be detected by sounding the sheet with a hard rubber or plastic head hammer.

Typically voids are filled by injecting grout through a hole tapped into the Anchor-Lok sheet. The maximum diameter of the hole may not exceed 1/2" (12.7 mm.). The Anchor-Lok fabricator seals the holes by welding a 3" (7.6 cm.) diameter disc seal or extrusion weld over the hole. The grout can be injected with a caulking gun or pressure grouting equipment.

Determine the perimeter of the void area. Void areas less than 4 ft² to 5 ft², (0.4 to 0.5 m²) locate and mark two opposing points near the edges of the void area. For larger void areas locate and mark three or more points spaced 18" to 24" (46 to 61 cm.) on center.

Holes are drilled at the marks. Select a drill bit size that will allow 3/8" or 1/2" (9.5 or 12.7 mm.) diameter pipe threads to tap its own threads into the sheet.

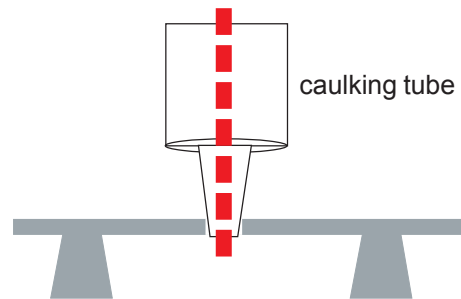


The type of grout selected should be compatible for injection application through 1/2" (12.7 mm.) diameter or less delivery system.

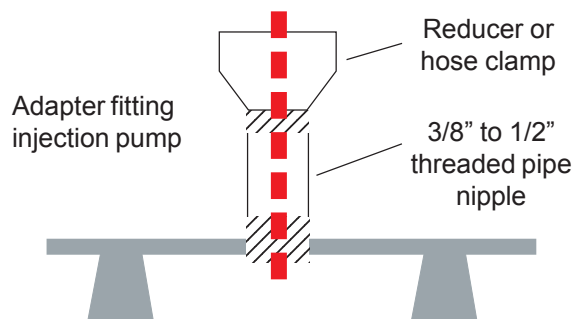
Begin filling voids on vertical surfaces at the lowest point. Continue the fill pattern from the lowest point to the highest point.

Method of Injecting Grout:

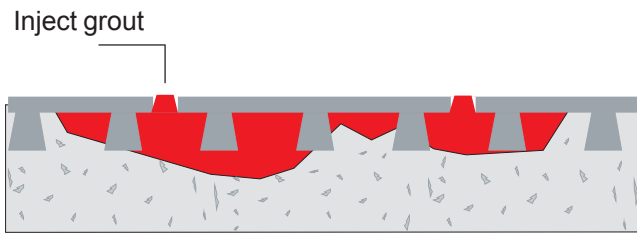
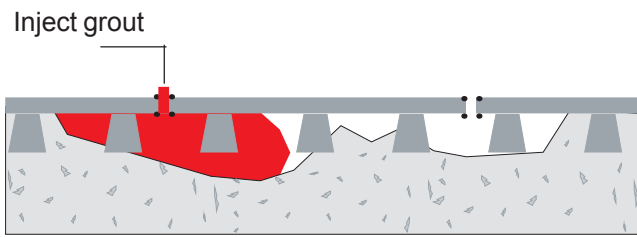
Caulking gun: Place the mixed grout into an empty one quart caulking tube cartridge. Cut the tip of the cartridge to fit snugly into the hole drilled into the Anchor-Lok sheet.



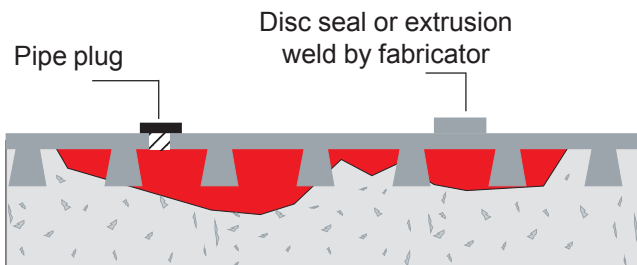
Injection pump: Adapt delivery nozzle as required to inject the grout. An adapter can be fabricated from a 3/8" or 1/2" (9.5 or 12.7 mm.) threaded pipe nipple. Attach pump delivery nozzle to the pipe nipple by use of a pipe reducer or hose clamp.



Slowly inject the grout with the caulking tube or injection pump until the grout extrudes through an adjacent hole. Remove residual grout from the sheet surface.



Temporarily cap the filling hole by screwing a threaded pipe plug into the filling hole. Continue a pattern of filling and capping until the void is completely filled. Allow the grout to cure prior to application of the hole seal by the Anchor-Lok fabricator.



Epoxy grouting materials for filling voids are available from Atlas.

Additional Information:

For additional information refer to the following ATLAS literature:

- Anchor-Lok Installation Instructions Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100 Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110 Prefabricated Trench: Lining Existing Structure
- Anchor-Lok Guidelines A-L 111 Prefabricated Sump: Lining Existing Structure
- Anchor-Lok Guidelines A-L 120 Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 130 Prefabricated Trench and Sump: Interior Support
- Anchor-Lok Guidelines A-L 150 Onsite Construction Tank or Sump
- Anchor-Lok Guidelines A-L 152 Pipe Inlets and Outlets

The information provided in the Anchor-Lok Installation Guidelines are provided as commonly accepted installation practices. The installing contractor must review the prescribed techniques with the Anchor-Lok fabricator prior to installation. The guidelines may be revised, modified or amended by the Anchor-Lok fabricator as deemed necessary by the individual structure and site conditions. No guarantee or warranty of any kind is made or implied by the Guidelines and ATLAS assumes no liability in connection with the use of the Guidelines or the information contained herein. ATLAS' product or performance warranties are limited to those expressly contained in its contract documents.

Anchor-Lok Installation Guidelines Inlet and Outlet Installation Sealing Around Dissimilar Pipe Inlets and Outlets

Inlet and Outlet Installation

All pipe, pipe sleeves and drain penetrations should be fitted with keeper rings and /or bars on their exterior for anchoring into the concrete.

Plastic pipe must be compatible with the type of the Anchor-Lok sheet. If the pipe is not supplied by the fabricator, the contractor must submit information on plastic resin used in the pipe to the fabricator prior to installation.

Method 1.

Pipe, pipe sleeves and drains may be fitted to the Anchor-Lok sheets as the sheets are mounted.

Determine location of pipe. Scribe the sheet to fit the outside diameter of the pipe. Cut a hole through the form and Anchor-Lok sheet to create a snug fit around the pipe.

Install the pipe through the hole. Position and extend the end of plastic pipe a minimum of 3/4" (1.9 cm.) beyond the smooth face of the Anchor-Lok sheet. Extend the end of dissimilar pipe, such as steel or clay, a minimum of 4" (10.2 cm.) beyond the Anchor-Lok sheet. Ensure the pipe is not disturbed or damaged when erecting the forms, placing reinforcement, or pouring and vibrating the concrete.

Method 2.

Pipe, pipe sleeves and drains may be fitted to the Anchor-Lok sheets after the concrete has been poured and the form has been removed.

Determine location of pipe and mark location reference on the smooth side of the Anchor-Lok sheet. Block out a space within the form work using foam block. After the forms are stripped, cut a hole in the Anchor-Lok. Remove the foam block and insert the pipe through the wall. Position and extend the end of plastic pipe a minimum of 3/4" (1.9 cm.) beyond the smooth face of the Anchor-Lok sheet. Extend the end of dissimilar pipe, such as steel or clay, a minimum of 4" (10.2 cm.) beyond the Anchor-Lok sheet.

Fill the annular space between the pipe and concrete with a suitable grouting material. The Anchor-Lok fabricator will fit a fabric faced collar over the pipe and weld the collar to the Anchor-Lok sheet.



Method 1

Sealing Around Dissimilar Pipe Inlets and Outlets

The end of dissimilar pipe, such as steel or clay, must be extended a minimum of 4" (10.2 cm.) beyond the Anchor-Lok sheet.

Prior to starting the project, review with the Anchor-Lok fabricator the method in which pipe will be installed. Based on the method of pipe installation, the Anchor-Lok fabricator will provide the appropriate fabric faced collar to place over the pipe. After placement of the fabric

faced collar the fabricator will weld the collar to the Anchor-Lok sheet.

A chemically resistant resin and hardener system is applied as a saturant with fiberglass reinforcement from the fabric faced collar onto the pipe. Selection of the resin system is critical to the performance of the lining system and must be resistant to the chemical exposure. Consult Atlas Minerals & Chemicals, Inc. for the appropriate resin system recommendation mixing and application instructions.

Preparation of Fabric Reinforcement

Preparation of fiberglass reinforcement

The fiberglass reinforcement is prepared from ChemPruf 1.5 oz. Reinforcing Mat and ChemPruf 10 mil Surface Mat.

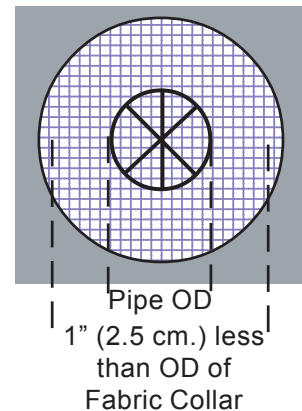
Donut with Fingers

- Prepare two pieces from ChemPruf 1.5 oz. Reinforcing Mat.
- Prepare one piece from ChemPruf 10 mil Surface Mat.

From a common center point draw two concentric circles. Draw the first circle with a diameter 1" (2.5 cm.) less than the outside diameter of the fabric face collar. Draw the second circle with a diameter equal to the outside diameter of the pipe.

Cut the larger circle from the ChemPruf Mats. With a utility knife, diagonally cut the center circle forming a minimum of six to eight triangular "fingers".

Donut with Fingers



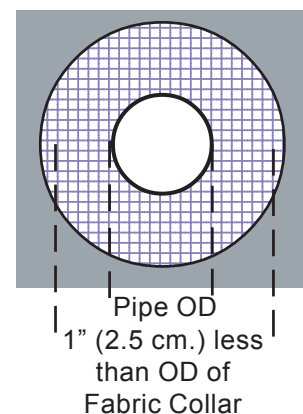
Donut

- Prepare one piece from ChemPruf 1.5 oz. Reinforcing Mat.

From a common center point draw two concentric circles. The first circle with a diameter 1" (2.5 cm.) less than the outside diameter of the fabric face collar. Draw the second circle with a diameter equal to the outside diameter of the pipe.

Cut the larger circle from the ChemPruf Mat. Cut and remove the center circle.

Donut



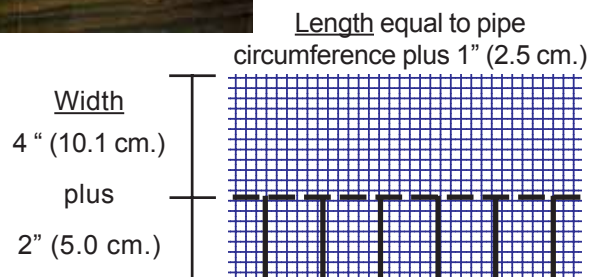
Pipe Wrap with Fingers

- Prepare two pieces from ChemPruf 1.5 oz. Reinforcing Mat.
- Prepare one piece from ChemPruf 10 mil Surface Mat.

Draw a rectangular shape with a length equal to the circumference of the pipe plus 1" (2.54 cm.) and width equal to 6" (15.2 cm.).

Cut the rectangle from the ChemPruf Mats.
Cut 1" (2.5 cm.) wide fingers.

Pipe Wrap with Fingers



Pipe Wrap

- Prepare one piece from ChemPruf 1.5 oz. Reinforcing Mat.
- Prepare one piece from ChemPruf 10 mil Surface Mat.

Draw a rectangular shape with a length equal to the circumference of the pipe plus 1" (2.54 cm.) and a width equal to 4" (10.2 cm.).

Cut the rectangle from the ChemPruf Mats.

Pipe Wrap



Length equal to pipe circumference plus 1" (2.5 cm.)

Width equal to 4" (10.1 cm.)

Preparation of the Pipe and Fabric Reinforcement Installation

Consult Atlas Minerals & Chemicals, Inc. for the appropriate resin system and corresponding mixing instructions.

Where directed, apply the saturant mixture of resin and hardener with a brush. Apply enough saturant to remove the whiteness of the fabric and produce a uniform darker appearance. Smooth the surface with the brush to eliminate wrinkles in the fabric and remove entrapped air.

Step 2.

Fill void

Fill any gaps and voids between the pipe and fabric collar. Fill the void with a commercially available fiberglass putty or combine the mixed saturant with Atlas Atlastasil to form a paste consistency. Fill the void forming a radius from the pipe to the fabric collar.



Step 1.

Surface preparation of the pipe
After the fabric faced collar has been installed prepare the surface of the pipe. The surface of the pipe must be structurally sound, clean, dry and free of all contaminants, such as sealer, coatings, oil, dirt, rust, scale or water. Previously applied coatings or paint must be removed. Abrade the surface with coarse grit sandpaper or grit blasting.

Step 3.**Saturant**

Apply the saturant to the fabric faced collar and pipe. Apply a continuous even coat to the pipe.

**Step 4.****First 1.5 oz. Donut with Fingers**

Immediately position the first 1.5 oz. Donut with Fingers over pipe and press onto the fabric collar. Apply the saturant.

**Step 5.****First 1.5 oz. Pipe Wrap with Fingers**

Immediately position the first 1.5 oz. Pipe Wrap with Fingers around the pipe and press fingers onto the fabric collar. Apply the saturant.

**Step 6.****Second 1.5 oz. Donut with Fingers**

Immediately position the second 1.5 oz. Donut with Fingers over pipe and press onto the fabric collar. Apply the saturant.



Step 7.

Second 1.5 oz. Pipe Wrap with Fingers

Immediately position the second 1.5 oz. Pipe Wrap with Fingers around the pipe and press fingers onto the fabric collar. Apply the saturant.

**Step 8.**

1.5 oz. Donut

Immediately position the 1.5 oz. Donut over pipe and press onto the fabric collar. Apply the saturant.

**Step 9.**

1.5 oz. Pipe Wrap

Immediately position the 1.5 oz. Pipe Wrap around the pipe. Apply the saturant. Allow the saturant to harden. Proceed with the next step within 24 hours. If the surface is allowed to harden for more than 24 hours, lightly sand the surface.

**Step 10.**

10 mil Donut with Fingers

Position the 10 mil Donut with Fingers over pipe and press onto the fabric collar. Apply the saturant.



Step 11.**10 mil Pipe Wrap with Fingers**

Immediately position the 10 mil Pipe Wrap with Fingers around the pipe and press fingers onto the fabric collar. Apply the saturant.

**Step 12.****10 mil Pipe Wrap**

Immediately position the 10 mil Pipe Wrap around the pipe. Apply the saturant. Allow saturant to harden.

**Completed Installation**

Additional Information:

For additional information refer to the following ATLAS literature:

- Anchor-Lok Installation Instructions
Data Sheet 4-5001PI
- Anchor-Lok Guidelines A-L 100
Requirements of the Installing Contractor
- Anchor-Lok Guidelines A-L 110
Prefabricated Trench: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 111
Prefabricated Sump: Lining Existing
Structure
- Anchor-Lok Guidelines A-L 120
Prefabricated Trench: New Construction
- Anchor-Lok Guidelines A-L 130
Prefabricated Trench and Sump: Interior
Support
- Anchor-Lok Guidelines A-L 150
Onsite Construction Tank or Sump
- Anchor-Lok Guidelines A-L 151
Filling Concrete Voids

The information provided in the Anchor-Lok Installation Guidelines are provided as commonly accepted installation practices. The installing contractor must review the prescribed techniques with the Anchor-Lok fabricator prior to installation. The guidelines may be revised, modified or amended by the Anchor-Lok fabricator as deemed necessary by the individual structure and site conditions. No guarantee or warranty of any kind is made or implied by the Guidelines and ATLAS assumes no liability in connection with the use of the Guidelines or the information contained herein. ATLAS' product or performance warranties are limited to those expressly contained in its contract documents.