

For use with: X-Connector Wythe Ties Installed in Insulation Sheets

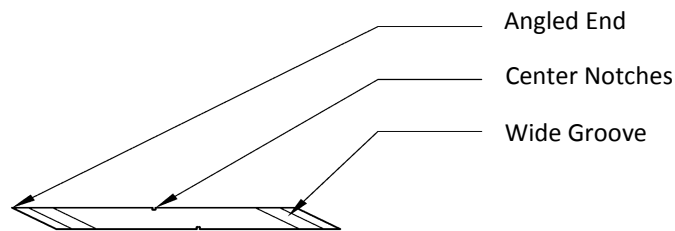
Introduction

This procedure outlines the proper installation of the X-Connector in the construction of site-precast (tilt-up) or plant-precast wall panels. This document is a supplemental guide to the installation procedures for either **System NC** or **System SC** and must be used in conjunction with one of those procedures. The information presented is based on the most recent industry standards and methods. Qualified designers, specifier, suppliers and contractors retained by the owner must confirm all information.

X-Connector Components

Wythe ties:

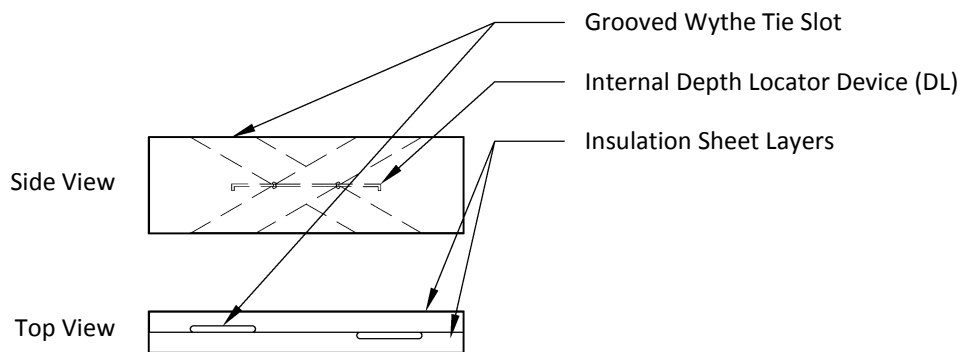
The two wythe ties supplied with the X-Connector assembly are easily distinguishable from other Thermomass connectors as they **do not** have over molded collars. Instead, they feature angled ends, a wide groove cut at the same angle as the ends, and small notches cut near the center of the tie.



XCONMINIGS002.05.17.12

Lock Box (LB) assembly with integral Depth Locator (DL):

The LB assembly consists of two layers of insulation grooved and assembled to accept X-Connector wythe ties. Internally, the LB houses a DL device designed to engage the center notches of the wythe tie to ensure proper wythe tie insertion and embedment depth.



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Do not attempt to separate the lock box assembly as such action will negatively impact performance.

Installation Procedure

1. Prepare/Cut welded wire mesh:

In order to fully insert tie through the insulation and into the lower concrete wythe, the welded wire mesh will need to be cut away from nearby areas. To do so, after installing wire mesh in panel formwork, use center line dimensions for LBs to cut a rectangle out of the wire mesh around each LB centerline to accommodate wythe insertion. See **Chart 1** for proper sizing of wire mesh cutout for your specific LB.

Insulation Thickness	X-Connector Type	Length of Mesh Cut-Out	Width of Mesh Cut-Out
2" to 6"	X60	18"	8"
Over 6"	X60	24"	8"

Chart 1 -Recommended cutout size of welded wire mesh around X-Connector. Cutout is stiffened with bar reinforcement around its perimeter.

Once wire mesh has been cut, tie four (4), #3 reinforcing bars to the cut edges of the wire mesh. See **Figure 1** below for further explanation. Cutting out the wire mesh in these areas will help avoid any obstructions when inserting the ties.

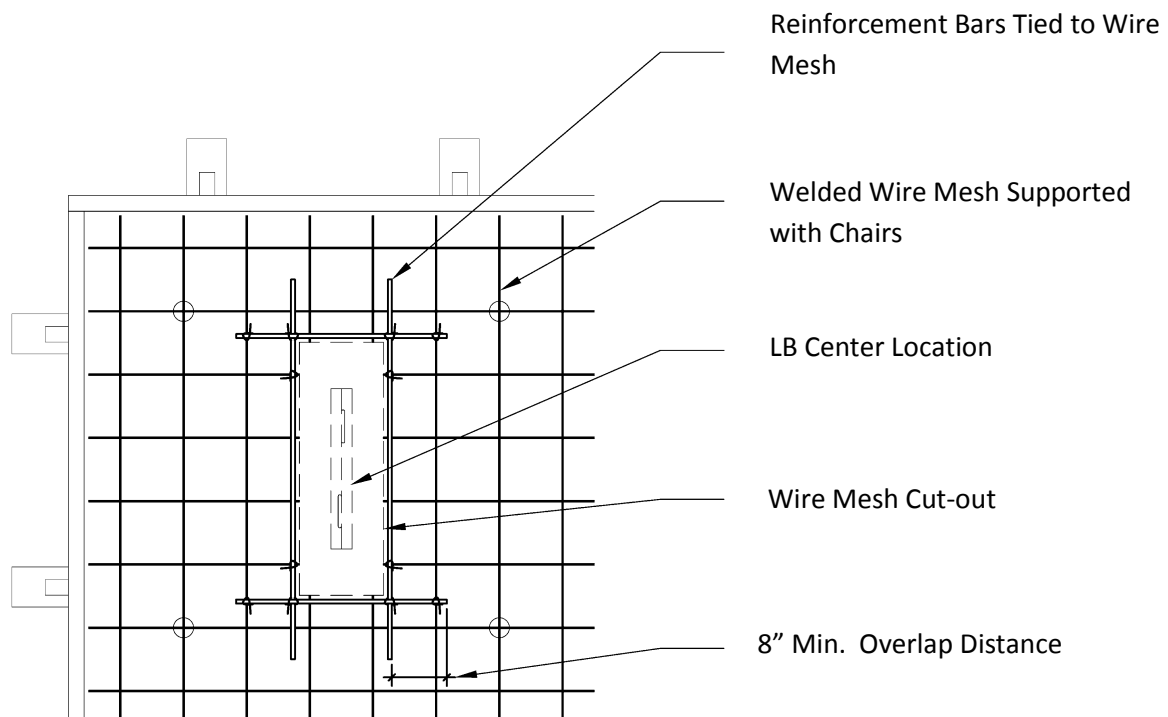


Figure 1 – Recommended procedure for trimming welded wire mesh around X-connector. Cutouts are stiffened with bar reinforcement around perimeter.

2. Locate top of LB assemblies in insulation sheets:

The top of each pre-inserted LB assembly is identified with a label or mark. Use this label or mark as a guide to correctly identify the top or “face-up” side of each sheet of insulation. Wythe ties **must only** be inserted into the top or face-up side of the LB.

3. Orientate LB assemblies / Place insulation sheets:

If fabrication drawings have been provided - Locate shallow notch cut into lower left corner corresponding to the tick marks shown on the panel drawings. Place insulation sheet into formwork so notch in insulation mimics that of the drawings. Proper placement of the notch will subsequently lead to proper installation of the insulation sheets which will correspond with Thermomass insulation layout drawings. After sheets have been correctly installed, locate center line dimensions for LB locations.

If fabrication drawings have not been provided - Contact Thermomass for additional installation information.

4. Insert wythe ties:

- A. Through one of the slots in the top of a LB located from step 3 above, insert tie as shown in **Figure 2**. Ties should be inserted with the flat, cut edge parallel to the top face of the insulation and parallel to the face concrete. The angled edge of the tie should never point downward as shown in the graphic below right.
- B. Slide the tie in a diagonal direction through the slot in the insulation.
- C. Push the bottom edge of the tie past the DL tab and continue insertion until it “clicks” into place. Do not push tie after the clicking sound is heard or click is felt as the proper embedment depth has been reached.

Note: Care should be taken to minimize excessive force when inserting the connectors as the insulation in and around the insert may be damaged. After wythe tie installation, check to be sure the top surface of each LB is level and flush (+/- 1/8” tolerance) with the top of insulation sheets.

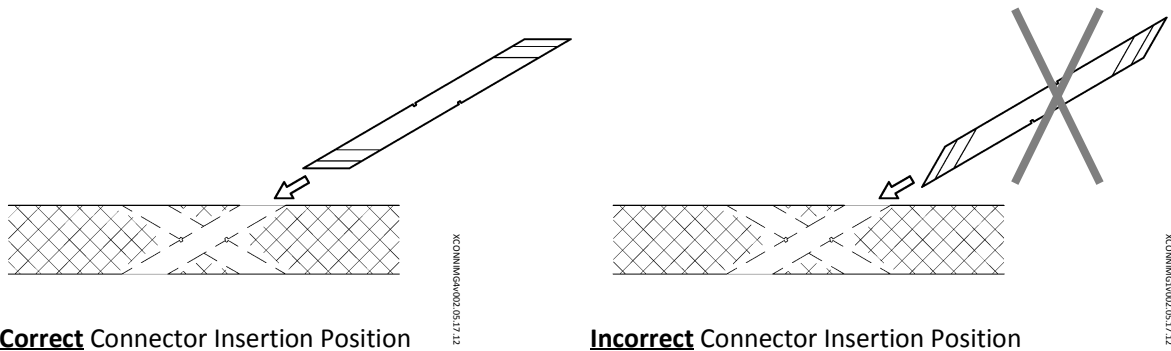


Figure 2 -Be sure ties are inserted in the correct position as shown. The sharp edge must never be inserted downward.

5. Consolidation of concrete around wythe ties:

Consolidate the concrete around the embedded ends of the ties by use of a vibrating screed (idle setting), stick vibrator or vibrating casting bed. To provide proper consolidation around embedded ends of ties, vibration equipment should come in direct contact with each wythe tie briefly, when possible.

6. Placement of reinforcing and top concrete wythe:

When casting on insulation, it's recommended to use reinforcing chairs with wide feet or sand plates to support rebar or wire mesh. You may need to cut wire mesh at X-Connector locations for it to be placed into its proper position. See **Figure 1** on the previous page for information on how to make the correct cuts. The use of chairs of this type will limit their sinking into insulation during reinforcement and concrete placement.

If you have additional questions or concerns, please call **(800) 232-1748** for:

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