

Section 13

Pouring

Attach a String Line

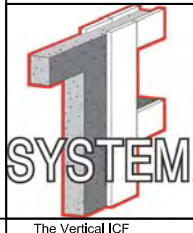
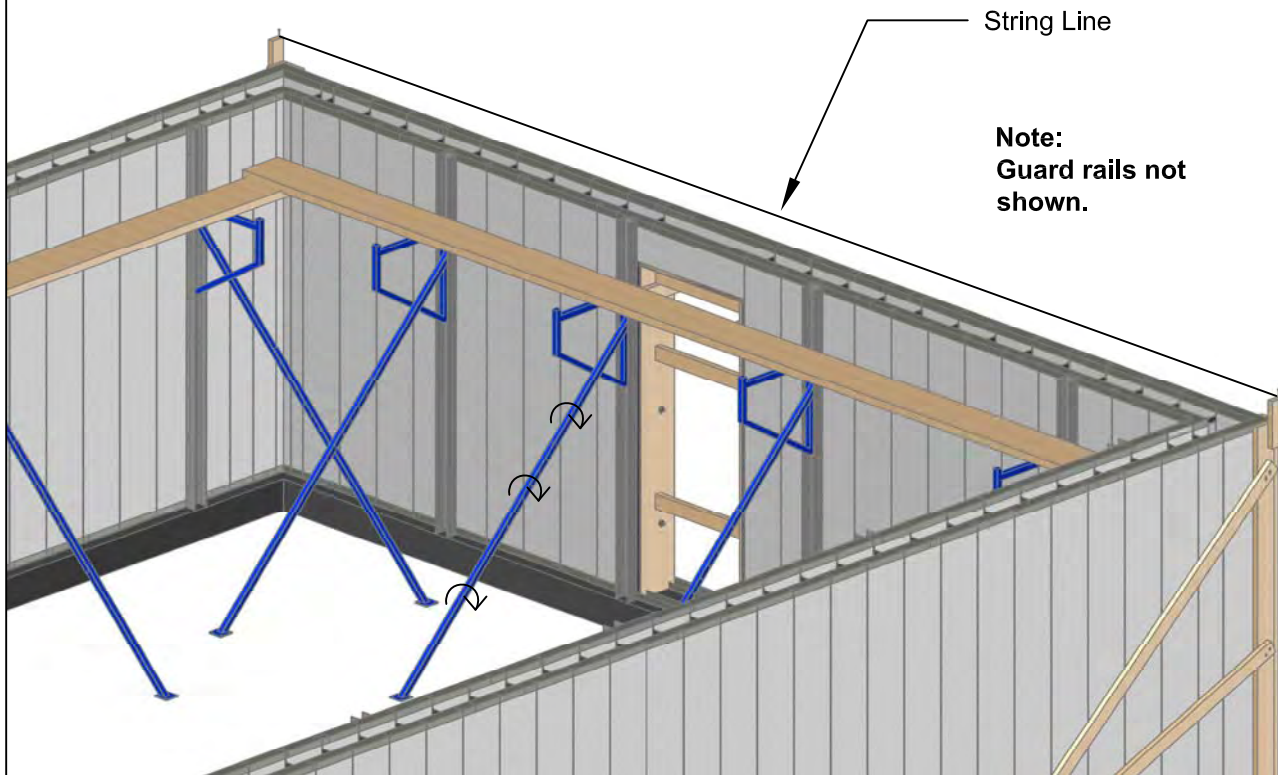
- Screw wood stakes on the corners
- Screw a wood stake to the first I-beam on each side of the corners on the exterior perimeter of the foundation. The stakes should protrude above the top of the wall at least four inches.

String a dry line around the perimeter

- Wrap a dry line around each stake at about three inches above the wall.
- Having the string above the wall enables one person to eye down the wall while standing on the banks of the excavation or on the scaffolding.
- Holding the string above the wall allows you to smooth off the top of the wall with out interfering with the dry line.

Straighten Walls

- Have one person eye down the top of the wall and line it up with the dry line while another person adjusts the kickers.
 - * This is where the turnbuckles really come in handy for adjusting the walls.



Straightening Walls

TF System®
3030C Holmgren Way
Green Bay, WI 54304 USA
800-360-4634

Revision Date: 7/27/07

Page Number: 171

Pre-pour Inspection

- CHECK ALL CORNER BRACE ASSEMBLIES.
- Is the corner brace assembly screwed into the top cap and bottom C-channel on both sides?
- Is the corner brace assembly screwed together at least every 16 inches?
- CHECK THE CORNER ANGLE BRACES.
- Are the angle braces screwed (with four screws) into the corner post and to the bottom foot board?
- Check window and door bracing. Are all headers braced to prevent sagging and bulging?
- CHECK THE TOP CAP C-CHANNEL.
- Is the top cap screwed together at all the overlap joints?
- Is the top cap continuous all the way around the perimeter of the structure?
- CHECK THE KICKER BRACES.
- Are the kickers attached to the stakes and are the stakes firmly anchored?
- Are the kickers screwed to the wall?
- CHECK DIMENSIONS, SQUARE, HEIGHT, AND STRAIGHTNESS.
- Are the wall lengths correct?
- Is the squaring up dimension correct?
- Are there any dips or humps?
- Do the kickers need to be adjusted?
- CHECK PIPE PROTRUSIONS.
- Do you have all needed pipe protrusions through the wall? Sewer, water, electric, venting, etc....



The Vertical ICF

Pre-Pour Inspection

TF System®
 3030C Holmgren Way
 Green Bay, WI 54304 USA
 800-360-4634

Revision Date: 7/27/07

Page Number: 172

Concrete

- Always follow project specific engineering and applicable codes when determining the concrete mix design.
- A standard 3/4" aggregate wall mix is suitable in most cases.
- TF System® recommends a 4.5 - 5 slump.
- When pouring 4" wall cavities use 3/8" aggregate and a mid-range superplasticizer admixture.
- 3/8" aggregate is easier to place but requires the use of a higher cement content.

Methods of Placing Concrete

- Front Discharge Concrete Truck (recommended)
- Concrete Pump Truck (recommended)
 - * Reduce to a 3" hose with a double 90-degree bend on the end and shut off if available.
- Rear Discharge Concrete Truck
- Trailer or "Pony" Pump
- Conveyor Truck
- Crane and bucket

Pouring Tips:

- Pour in approximately four-foot lifts.
- Break the fall of the concrete by forcing the concrete to fall over the cross ties of the I-beams, over rebar intersection, or over a small square shovel to break the fall.
- Consolidate each lift separately without over consolidating the previous lift.
- Have personnel who have experience pouring concrete walls.

Post Pour:

- Be sure to install all anchor bolts or rebar for the next level.
- Smooth the top of the wall.
- Clean the C-channel after the pour - a small piece of polystyrene works well.



Concrete and Placement

TF System®
3030C Holmgren Way
Green Bay, WI 54304 USA
800-360-4634

Revision Date: 7/27/07

Page Number: 173

Consolidation

Mechanical Vibration

Use a 1-inch maximum diameter concrete vibrator to internally consolidate the concrete. (Contact a TF System® Technical Representative before using a vibrator bigger than 1 inch.)

Concrete should be a 4-1/2 to 5 inch slump.

Stay at least six feet behind where the concrete is filling the forms.

Run the vibrator down to the footing and pull it back up once in every cell between the I-beams on the first lift. You should see some water trickle out of the bottom of the forms between the footing and the C-channel.

If no water trickles out of the bottom then your concrete slump needs to be checked, it may not be flowing enough. For the second and succeeding lifts drop the vibrator head one foot into the preceding lift to help knit the lifts together.

Vibrating Walls: Do's and Don'ts

Do: Understand that any form system can be blown out by over vibrating. (Common sense is a must!)

Don't: Leave vibrator sit in one spot. Always keep it moving.

Don't: Try to move or flow the concrete in the walls with a vibrator

Do: Vibrate concrete walls when ever possible. A stiffer mixed concrete that is vibrated has much less head pressure than a wetter mix concrete that is not vibrated.

Don't: Pour a stiff mix and then not vibrate, the chances of getting a void or honeycomb in the wall are significantly increased.

External Consolidation

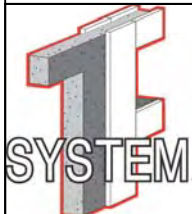
If you do not have access to a mechanical vibrator, use a hammer and piece of wood to tap the exterior of the wall.

Concrete should be at a five to six-inch slump when externally consolidating.

Stay at least six feet behind the filling spot.

Tap on the board placed horizontally across two I-beams with a hammer twice with two medium velocity hits at several levels of each poly panel.

NOTE: Common sense is a must. Vibrating walls takes skill and knowledge. You can blow out any form system if consolidation is done incorrectly.



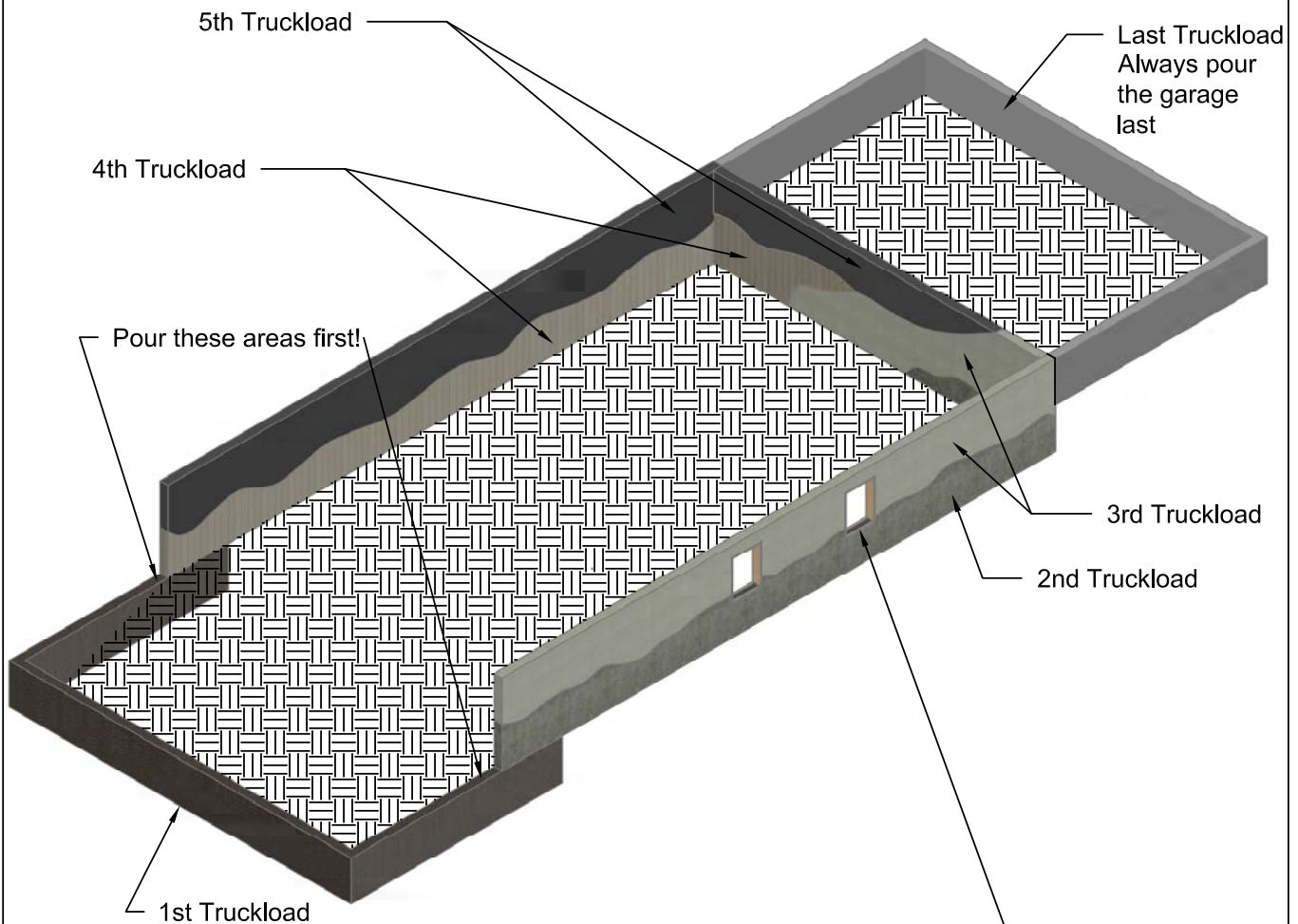
The Vertical ICF

Concrete Consolidation

TF System®
3030C Holmgren Way
Green Bay, WI 54304 USA
800-360-4634

Revision Date: 7/27/07

Page Number: 174



- Pour in approximately 4' lifts.
- Let the first lift set for approximately 20 minutes before topping with second lift.
- Consolidate each lift after it is placed. Use a 1" maximum diameter vibrator. Do not over consolidate.
- Pour frost walls first. Allow time for the concrete at the step transition to take the initial set.
- Pour garage frost walls last. If the volume of concrete is short, this section of wall is less critical and can usually be reached with a chute, which will reduce the amount of time a pump truck is needed on site.

Be sure that concrete has filled the cavity underneath the windows in the first lift.



Pouring Example

TF System®
 3030C Holmgren Way
 Green Bay, WI 54304 USA
 800-360-4634

Revision Date: 7/27/07

Page Number: 175

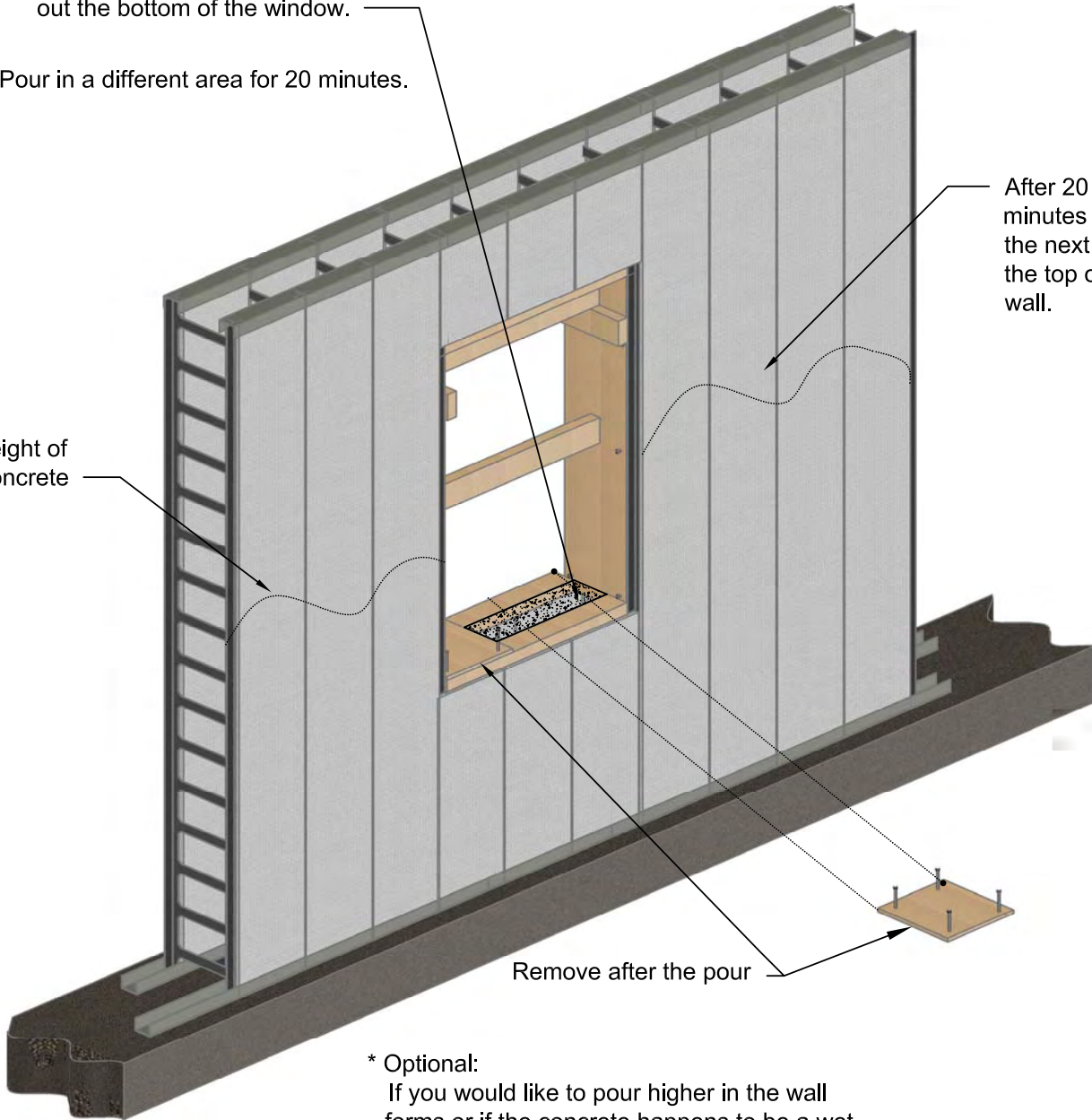
Fill the wall cavity with concrete on both sides of the window until the concrete begins to flow out the bottom of the window.

Pour in a different area for 20 minutes.

After 20 minutes pour the next lift to the top of the wall.

Height of Concrete

Remove after the pour



*** Optional:**

If you would like to pour higher in the wall forms or if the concrete happens to be a wet mix that flows easily, you can temporarily screw a board down to the bottom of the window buck. The farthest you should need to cover in from each end is one foot, leaving the middle area open.



Pouring Around Windows

TF System®
3030C Holmgren Way
Green Bay, WI 54304 USA
800-360-4634

Revision Date: 7/27/07

Page Number: 176

REPAIRING A BLOWOUT

Once in a while a poly plank will fail (or "blowout" as it is commonly referred to) and concrete will escape from the form. This can be the result of improper bracing, lack of bracing in necessary places, incorrect pouring techniques, or possibly a plank that was damaged in transport or installation.

RULE NO. 1- DON'T PANIC!

Blowouts happen with any type of concrete form including steel, plywood and aluminum. The bottom line with TF System is that a blowout will be only one plank, you will lose only a small amount of concrete, and if repaired correctly the resulting wall will be the correct dimension and nobody will ever know the difference.

RULE NO. 2- DON'T RUSH IT!

Let the concrete set up slightly so it doesn't continue to run out of the form as you attempt to repair it. Use this time to organize the tools you will need to complete the repair. You will likely need a shovel and wheelbarrow; drywall saw, handsaw, screw gun and screws, and plywood or 2 x 4's to cover the replacement plank.

RULE NO. 3- DON'T HOLD UP THE POUR!

Have the rest of your crew continue to pour in another area while you repair the form. A blowout is no reason to risk the wrath of the concrete company by keeping their trucks on the jobsite too long.

STEP NO. 1 - REMOVE THE CONCRETE

that has spilled from the form. It can be put back in the wall if it is possible to reach or spread out in a thin layer to keep it from interfering with pouring the concrete floor (if this is a basement pour).

STEP NO. 2 - REMOVE THE DAMAGED PLANK,

or as much of the damaged plank as required to complete the repair. If a portion of the plank is intact it may still be used in the form.

STEP NO. 3 - REPLACE THE DAMAGED PLANK

or the portion of the poly plank that is damaged with a replacement plank that has the shoulders removed to allow you to simply push it in place from ground level.

STEP NO. 4 - HOLD THE REPLACEMENT PLANK IN PLACE

with plywood or 2 x 4 bracing. Remember, the replacement poly plank has no shoulders to hold it in place!

STEP NO. 5 - CAREFULLY PLACE CONCRETE IN REPAIRED AREA

in a few lifts so as not to put undue strain on the repaired area.

If you follow these directions carefully a blowout is quickly and easily repaired and does not affect the pour or the resulting wall in any way. The replacement poly plank will adhere to the concrete behind it and will stay in place after the temporary bracing is removed.

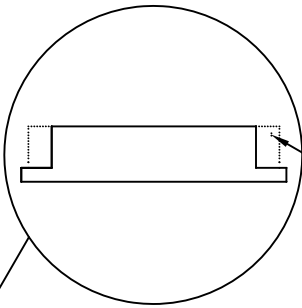
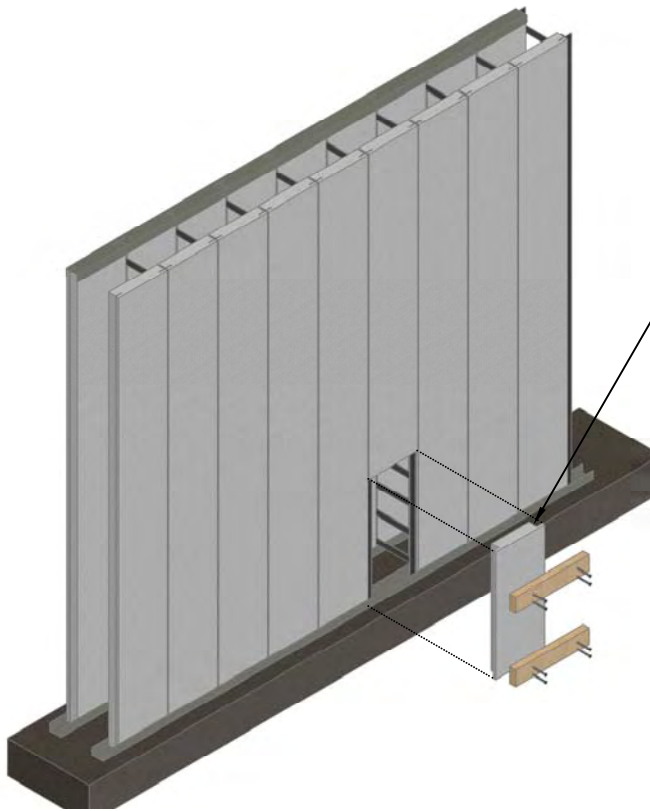
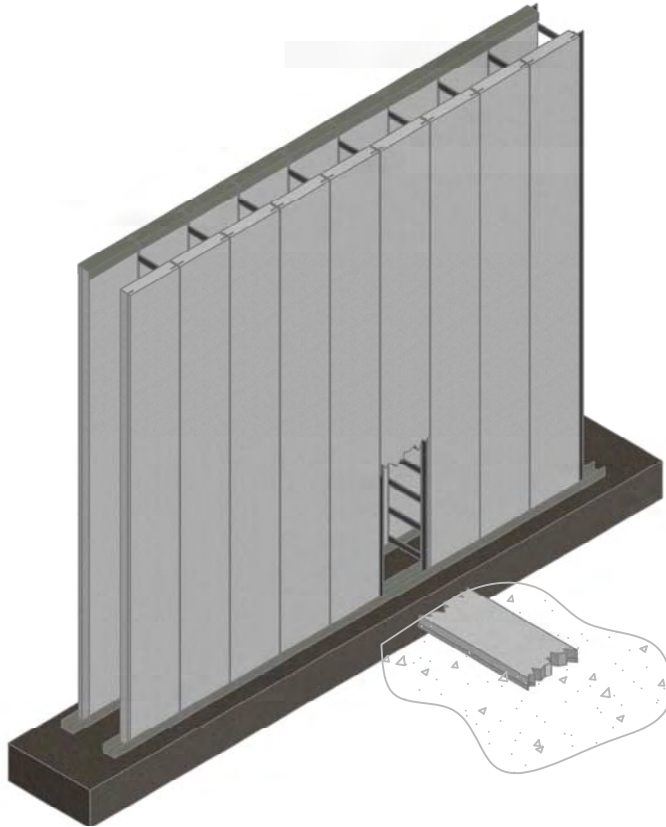


Repairing a Blowout

TF System®
3030C Holmgren Way
Green Bay, WI 54304 USA
800-360-4634

Revision Date: 7/27/07

Page Number: 177



Cut shoulders off of poly panel

- 1) Remove spilled concrete.
- 2) Cut out damaged area with a drywall saw.
- 3) Replace with new panel that has the shoulders cut off.
- 4) Screw plywood or 2x4's to hold patch panel in place.
- * Note: Replacement panel has no shoulders to hold it in place.
- 5) Carefully place concrete in repaired area in a few lifts.



Repairing a Blowout (Cont.)

TF System®
 3030C Holmgren Way
 Green Bay, WI 54304 USA
 800-360-4634

Revision Date: 7/27/07

Page Number: 178