

Stala Integrated Assemblies, LLC

Systems to Assemble, Link and Align ICF Construction

5101 Commerce Crossings Drive Suite A.
Louisville, KY 40229
www.stalaframing.com

NOTES FOR CONSIDERATION - [insert project name & location]

[date]

** These notes are general in nature based on experience and past use of this product on many projects. They are to be used for reference only as project specific details, pour sequencing and construction bracing are developed. Project specific bracing instructions available upon request. **

- ❖ Care should be taken in the handling of assemblies during unloading, moving, and setting in place so the assemblies remain square, plumb, and straight as manufactured. When using mechanical equipment such as lulls to move the assemblies, it is recommended that lumber (2" x 10") of enough length or a transport frame be used to avoid crimping or point loads by the forks. The spreader bars at the bottom of the assemblies or internal "x" bracing should not be used to lift assemblies as this can cause distortion. The spreader bars are not a gauge for final placement but an aid in transportation.
- ❖ Door and window assemblies are permanent units and require being "set" square and plumb to receive doors and hardware or window units as specified. Periodically check assemblies during wall erection and initial set-up.
- ❖ Door and window assemblies are designed and reinforced for specified hardware, provide anchorage to the [insert the type block being used for this project], provide a bulkhead system for wall construction, and need to be braced to receive temporary construction loads above the openings as described below in order to limit assembly jamb and head deflections. Installation and function of the doors and windows will be compromised if deflections are not controlled and checked during the process and as the wall cures. Wall concrete needs to be cured sufficiently to carry dead and live loads around the opening for pours above the openings as designed. Temporary door and window assembly bracing and supports should not be removed until the adjacent concrete has gained enough strength for beam action per structural drawings.
- ❖ Provide horizontal wall supports adjacent to the assembly jambs. Wall should be supported on both sides in order to keep the assemblies plumb and straight within the wall plane.
- ❖ Avoid discharging concrete from the pump (limit impact and pumping head) directly on the assembly jamb sides or head. Concrete should be placed such that pumping impact is limited and concrete vibrated such that it "flows" along the assembly jamb and head until covered completely and no void exists. Caution not to over vibrate.
- ❖ Concrete needs to be placed "balanced" on both sides of the assembly jambs (with one-foot maximum differential). Unbalanced loads could cause twisting and torque on the frame if not

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frame if not braced for such with enough “X-bracing” or “bulkhead”. Corners on assemblies on large spans need to be braced to avoid rotation and twist.

- ❖ Bracing needs to be within the concrete area of the assembly and spread with blocking. Bracing needs to be placed to avoid entering “torque” into the assembly jambs and heads.
- ❖ Basic rule of thumb – watch combined loadings on bracing and supports. Generally, it has been best practice to keep vertical loads from the concrete placement above assemblies’ head separate from other bracing and to be transferred through assembly bracing down to the footings by struts and not back into the ICF form or into horizontal wall bracing.
- ❖ Jamb assemblies for the doors are to be placed after the floor slab has been poured and anchored in place except as noted on the second-floor area. As mentioned above, the spreaders are used only for handling and additional wood struts should be used at floor level to control tolerances, twists, and stability of the frame assembly during construction. [modify the above for frame jambs with extenders below the finished floor should have a strut (brace) across the bottom unless there will be initial slab pour that can reach enough strength to serve as a strut (brace). Concrete strength and size shall be enough to assure adequate anchorage of the base door frame embedment assembly before placing side wall concrete adjacent to the door frame].
- ❖ [INCLUDE SPECIAL PROJECT SPECIFIC NOTES HERE TO TAILOR TO THIS SPECIFIC PROJECT]
 - ✓ Various options and pour sequences should be considered. Various bracing schemes will be acceptable if the assembly remains stable and within acceptable tolerances to allow for operation of the doors and installation of the windows. Most assemblies can be braced with “basement jacks” or struts and blocking with limited risk if pours are controlled around them, impact and unbalanced loads avoided, and concrete is “set” prior to going above the frame head a couple of feet; however, the assemblies wider than six feet with 12 inch walls is much more risky (especially with several feet of pour above). Bulkhead with wedges needs to be strongly considered on those if total pour is attempted. In fact, the bulkhead system might be the easiest (but much heavier, etc.) to assure success.
 - ✓ More care must be maintained with wider assemblies especially with several feet of concrete placement above. As mentioned above, bulkhead with wedges is an alternate approach to be considered on those if total pour is attempted. In fact, the bulkhead system with wedges might be the easiest assure success in setting of assemblies and bracing during pour as well as facilitating the setting of larger assemblies during lay up of ICF wall forms. Wedges will probably need to be placed every 12” to 18” to assure allowable deflections are maintained.
 - ✓ Bracing needs to be applied so they are in line with the loads from the concrete.

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- ✓ Diagonal shipping struts and spreader bars used for shipping are not designed to be used for construction bracing.

Below is a general discussion of typical conditions that may be encountered and considerations concerning those conditions:

- ✓ Three to six-foot openings with an approximate 4' concrete over head. Two options are usually considered – pour to top of assembly in first pour or total pour of up to twelve feet. Both require a strut at the bottom and horizontal bracing at 1/3 point and 2/3 point, although if going only to the top of the assembly with the pour only one horizontal brace will probably be enough. Pours above the assembly head will require vertical center bracing.
- ✓ Six foot to around eight-foot assembly with 4' of wet concrete over head. It is recommended these are braced horizontally at the 1/3 point and 2/3 point as well as a strut at the bottom and vertically at two points on the head. Assemblies of this size in walls with more than 5' over the head need to consider pour sequencing and potential bulkhead with wedges if sufficient time now allowed for concrete to gain strength to carry dead loads.
- ✓ Large assemblies spanning lengths greater than eight feet need to be braced to carry vertical loads from above the assemblies to the structure below no greater than three feet to four feet apart approximately 4' of wet concrete over the head.
- ✓ Where assemblies are not being used, enough support needs to be given to the steel plate or wooden buck similar to what is mentioned above.

Attached are some photographs of typical bracing that has been used successfully on past projects.

Please contact us anytime with questions or concerns.

502-779-2118