

## Flying and Handling Concrete Formwork

Concrete formwork can typically be divided into two categories, “hand set” and gang or “crane set”. Each category requires careful consideration to ensure jobsite safety.

Handset formwork is made up of individual lightweight and compact components such that they can be lifted and handled by an average worker. Training and policies should be in place to establish proper lifting and handling techniques.

Gang or “crane set” formwork may be made up of pieces too large to be handled manually or assembled from handset components into larger gangs. When lifting gang forms, it is of critical importance to know the total weight of the gang being lifted, capacity of all lifting devices (brackets/slings/hooks) and crane capacity. A qualified individual should always establish the number and location pick points to equalize loads on lift brackets and ensure that no individual component is overloaded. Overloading any of these may result in catastrophic failure causing substantial damage to property, severe injuries or even death.

Any lift should be planned carefully before any rigging takes place. Lifting devices should be inspected for damage or defects prior to any lift. Damaged or defective equipment should be tagged, replaced, and removed from the jobsite. Prior to initiating a lift, lifting, and landing areas should be cleared of unnecessary personnel and equipment and all personnel involved should have a full understanding of the procedure. Special consideration should be given to the lifting characteristics of non-symmetrical gangs, curved gangs, and cores.

When lifting a gang form from the horizontal position to vertical, the bending capacity of the walers (or the gang itself in a walerless system) must be considered. Under no circumstances should an individual stand underneath a gang while it is being lifted into the vertical position. Environmental conditions, especially wind loading, should be considered prior to beginning any pick. Similar consideration must be made when setting a gang from vertical back to a horizontal position.

When gangs are in a horizontal position (flat) they should not be moved laterally.

Once the gang is in a vertical position, gang should be moved in a careful manner, avoiding passing over jobsite personnel when practical. The gang must be equipped with one or two tag lines to permit in handling and guiding the form into its final position keeping personnel out of harms way. Prior to shipping, attach crane and attachment hardware before removing all of the ties. When removing a gang from a wall, the crane shall not be used to pull the gang away, instead support the gang with the crane and use pry bars or other tools to remove the gang from the wall.

Prior to and between lifts, gang forms should be inspected by the contractor or contractor’s designee for any loose or missing components. Loose components could become dangerous projectiles if they fall during a lift or worse yet, cause a catastrophic failure of the gang.

This Technical Bulletin was prepared by members of the Scaffold & Access Industry Association SSFI Committee.

SSFI is a committee comprising manufacturers of shoring, scaffolding, forming, and suspended scaffolding. The committee focuses on engineering and safety aspects of scope products.

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