



FORMWORK:

Casting Spandrels Just Got Easier

Self-stressing casting table at Coreslab Structures (INDIANAPOLIS), Inc.

Coreslab Indianapolis recently replaced an old casting table with a new table built by Hamilton Form. "The self-stressing bed we had been using was made with steel plate that had seams every 40 feet. It was old and pitted. We re-skinned it with wood and finished it with an epoxy coating hoping to eliminate the seams and get a better finish" explains Matt Ballain, general manager at Coreslab Structures, Indianapolis. "The problem we had is the wood deck would shorten when the bed was stressed, then move again as it was de-tensioned and eventually crack the coating. The bed was insulated which exacerbated the problem. We still had seams every 40 feet and were constantly repairing the surface." That's when Matt decided to call Hamilton Form.

Hamilton Form fabricated a 220 foot self-stressing casting table. The table is designed with load bearing steel compression bars that float under the table so as not to transfer load to the skin. The skin remains dormant as the load is carried through the compression bars to "gravity type" abutments at each end of the table. Most of the tables that utilize this design are topped with wood and an architectural finish; the skin of this table, however, is steel plate.

Once the form sections were set in place, leveled and pulled together, Hamilton Form sent a welding crew to Indianapolis to smooth and weld the seams. "The new table better fits our needs," explains Ballain. "It has more stressing capacity, is designed for spandrel loading and the steel surface provides the option of using magnetic side rails." The table features adjustable jacking plates, and the steel plate delivers a quality finish that meets the need of the customer. "The finish looks great," continues Ballain. "We're casting 60 foot spandrels and the seams are not visible."



Coreslab is casting 60 foot spandrels on its new self-stressing casting table.

PRODUCT NEWS:

NEW Hydraulic Power Unit

Precision Performance, Rugged Reliability

Described by users as “well-thought-out and easy to use,” Hamilton Form’s new Power Unit is built to last and delivers superior performance.



Designed for both ease of use and quick operation, Hamilton Form’s new 3500 Power Unit has a 10HP – 3 phase motor and features an advanced, energy saving variable displacement pump that reduces heat build-up in the hydraulic fluid.

The controls are intuitive for ease of operation. Large, dual scale gauges measure PSI and force for initial and final set. The gauges and other components are protected with safety relief valves to prevent accidental over pressure. A pivoting cover protects the gauges when not in use.



Our new Power Unit pulls up to .60 strand at 8 seconds/per foot, making it one of the fastest machines on the market, but precision is what sets it apart. Testing has verified that it’s easy to calibrate, and after initial loading, final load is typically reached on the first pull requiring no additional correction.

Mounted on forklift tubes for easy transport, it can be lifted by crane using the integral lifting lugs, or ordered with an optional, easy to maneuver 3-wheel cart or fitted to a jack handling A-frame.

Two quick-coupled, 15-foot hoses are included for attachment to the jack. A 20-foot electrical cord, warning light and horn are also included. The safety horn automatically comes on with pressure – only during the stressing operation.

Along with our power units, Hamilton Form also offers both pull type and center hole ram single-strand tensioning jacks.

When you’re ready to upgrade or add new stressing equipment – call Hamilton Form for more information: 817 590-2111.





FORMWORK:

To Split or Not to Split....I-Beam Sideforms

Hamilton Form has produced literally hundreds of miles of girder or I-beam sideforms over the past several years. Recently, several states have developed new designs to take advantage of new materials, increase span length, improve production efficiencies and reduce costs.

Many states have developed cross sections so that split girder formwork can be used. Split girder formwork is both practical and economical in many applications. Split girder formwork uses a common base and/or top section with fillers so several different beams can be cast using the same base form.

However, there is a limit to how many cross sections can be made using the same base form. For instance, Hamilton Form generally doesn't recommend stacking multiple fillers. Depending on height, several bolted sections may not withstand the hydrostatic pressure against the sideforms when pouring tall beams. And, if aesthetics are important, multiple fillers with multiple seam lines may not be acceptable.

Hamilton Form has built a number of split girder packages for customers. One recent project included a standard 4" soffit with a 36" girder to produce the new Florida-I-Beams. The 36" girder is split to accept a 9" riser to produce 45" girders or an 18" riser to produce 54" girders. These components allow the bed to be efficiently configured to

produce three different beams with the same base form making the most out of the customer's investment in formwork. Another customer ordered a split form to produce 82" girders with a 14" filler to produce 96" girders.

Other customers, especially large volume producers, opt for dedicated sideforms for each beam. This option eliminates the work and time involved in breaking down and reconfiguring the sideforms. As an example, we recently built sideforms to produce the 78" Florida I-Beam for a customer that wanted to dedicate a bed to that particular beam. The customer also wanted a single sideform to eliminate multiple seams in the product.



82" split sideform with 14" filler



A single sideform with no filler produces beams with no noticeable seams.

There are also options to consider for handling sideforms. Vertical lifting devices allow the sideforms to be picked at the center of gravity so they can be moved horizontally without pivoting. Another option is a rollback system that can be manual or hydraulically operated.

As always, your best option when considering new formwork and handling systems is to talk to the folks at Hamilton Form. We have many years of experience in designing both formwork and production equipment. Our experience is your advantage in developing efficient and practical solutions.



Vertical lifting apparatus for handling sideforms

TECHNICALLY SPEAKING: Planning Pays Off

Plan ahead

Frequently customers request a quote for forms with just a single purpose in mind: meet the needs of a specific project. But because purchasing and installing custom formwork is an expensive proposition, it makes good business sense to broaden your thinking to how you might use those forms in the future. While it might take a little longer and involve more cost up front, designing formwork that can be adapted for multiple applications now, can be the key to a bigger payoff later.

Still, some customers want forms for a project knowing they'll have little use for those forms in the future, and not all forms can be or should be modified. In those instances, we design and fabricate forms to meet project requirements as economically as possible, but whenever possible, we want to help maximize your investment and your opportunities.

Flexibility

When ordering new formwork, think about how it might be modified, or adjusted - within reason - to cast different products. There is a practical limit to what one form can do, but simple strategies such as magnetic side rails to easily change product widths and using fillers and risers to change product configurations make sense. An Inverted Tee can easily be designed for different width, height and ledge variations. And, if we know up front that you may add a riser to a side rail in the future, we can make allowances for that now rather than running into a more difficult and costly solution later.

Stadium projects usually require a number of forms that are designed to multi-task. Hamilton Form is very experienced in this arena and can help develop a formwork package using base forms, fillers and risers to cast several cross sections in each form. We've even worked with customer's existing forms to adapt them for a new project.

Bridge projects, including girder sideforms are another one of our specialties. Many DOTs are designing I-beams with common flanges that make a split girder practical. Rolling systems to help handle bulky sideforms are also best developed during the design phase.

Talk to us about header designs that work best for you. We've designed one-piece, two-piece and other types of headers depending on customer's production practices. Adding Vibrotrack™ is simple when the form is being built, but more difficult to add after the form has been in use for several years.

Load capacity

Always call Hamilton Form before considering stressing an existing form beyond the stated capacity. We may be able to guide you through some options. However, customers are often disappointed to learn that their self-stressing form cannot be modified to add capacity. That unpleasant surprise can be avoided if you think long-term when specifying the capacity for a new form. If Hamilton Form is contracted to design a self-stressing form for 1200 kips, we build a form for 1200 kips. However, a small investment can easily increase that form's capacity to 1600 kips to accommodate future needs and may well be worth the investment.

In developing the requirements for a Double Tee form, consider now if you may need deck strand in the future. Moving the CG higher can be simple when the form is being designed. Another example is adding spandrel loading to a casting table built for wall panels. Adding spandrel loading to one side of the table gives you the flexibility of casting products other than just wall panels. Adding spandrel loading to both sides keeps everything symmetrical and can further increase the potential of your formwork. Think of these and other scenarios when specifying the capacity of a new form.

Automation and safety

Designing new formwork is also a great time to consider the use of equipment on, or around, the bed to help streamline production and enhance safety. A Utility Machine or Tarp Roller can run on the ground, on a track next to the form or on the edge of the form. There are advantages to having machines that ride on the ground and other advantages to having a machine ride on the form. It's easy to make accommodations for a tarp cart or utility machine to ride on the form during initial design so that you have the option to choose which solution works best for you if you add machinery in the future.

Also think about what equipment is used around the bed. Do you need hooks or hangers for storage of hoses, top ties or other accessories? Do you need to make accommodations for steam lines or electric heat? Depending on form height, you may need provisions for catwalks and safety railings or add steps to reach the top of the form. Thinking through how formwork can be designed to help facilitate the production process will improve productivity and save time and money in the long run.

Explore your options

Take advantage of the experience and expertise at Hamilton Form. Our sales and engineering departments can help you develop formwork that is both practical and affordable. Our goal is to offer competitively priced solutions that incorporate the elements you need to keep current and future projects moving forward-efficiently. We want to help you make the most out of your investment, now and in the future.

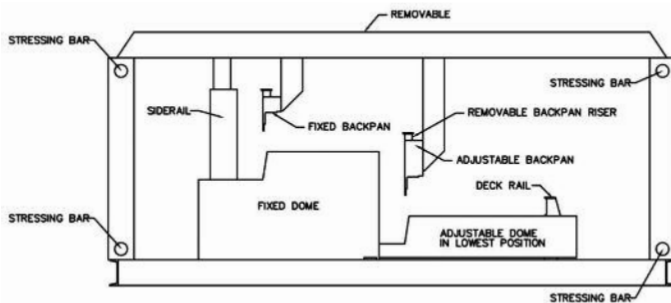
Making the Most by Thinking Ahead

CHALLENGE:

How do you design formwork for a quick turnaround stadia project, knowing that the same customer is expecting another stadium project in just a few months?

SOLUTION:

A self-stressing frame was built as the base for adjustable stadia components. Components can be installed in the stressing frame. Once the project is completed, the frame can be used for the next project, using the same or different stadia components.



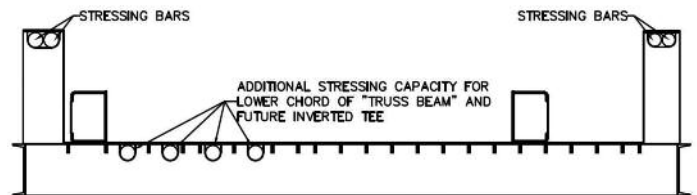
Self-Stressing Frame with Stadia Components

CHALLENGE:

The customer required a form to cast variable depth truss beams for a project. The beams were heavily stressed in the lower cord, with only about half the amount of stress in the upper cord. The form required considerable flexibility since there were a variety of different sizes.

SOLUTION:

Hamilton Form built a table with stressing bars on one side for the heavily stressed upper cord of the beam. The side rail on the opposite side is adjustable for varying product dimensions. Thinking beyond the project, the form was designed so that inverted tee beams and wall panels could be cast in the same frame. This solution gave the customer added capabilities to maximize their investment in formwork.



Casting Table with Beam and Spandrel Capabilities

FORMWORK: Evolution and New Solutions Self-Stressing Architectural Casting Tables

As the market for precast architectural wall panels has grown, more and more precasters are looking for options to casting on wood forms. Wood forms require on-going maintenance, present disposal problems when they're ready to be taken out of service and are difficult to use for casting large panels that require prestressing. Attaching a wood deck to a conventional self-stressing table becomes a problem when the steel table shortens under load causing the wood to buckle or the fiberglass to crack or "check."

Hamilton Form's Architectural Casting Table Frame offers an alternative. The frame transfers the prestress load through floating bars to abutments at each end of the table. The frame can be topped with a wood deck and architectural finish.

Because the load is carried under the table, not through the skin, the casting surface doesn't shorten when the form is stressed. The result is a durable, smooth surface that lasts for many, many pours, delivering the best of both worlds; self-stressing capabilities and high quality architectural finishes.



Hamilton Form's self-stressing architectural casting frame is installed, then topped with a wood deck and architectural finish.

Over the past several years, Hamilton Form has built various Architectural Casting Table Frames. Several have included hydraulic side rails, many have opted for sliding jacking plates to adjust for different strand patterns. We've built frames with capabilities for spandrel loading. We even built a frame with a steel skin.

If you're ready for a new solution for casting architectural panels, call Hamilton Form, 817-590-2111.



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MAINTENANCE TIP: Stem Fillers Care and Cleaning

Using stem fillers?

Double tee forms are often used with stem fillers to shorten the leg of the tee. If you are using stem fillers in your double tee, remember to take out the fillers at least every 30 days, and clean the leg of the tee. Debris and moisture left to accumulate under the stem fillers for long periods of time are a recipe for corrosion. Taking out the stem fillers, cleaning, then wiping down the leg of the tee with form oil will help keep the steel in good condition.

Storing stem fillers?

After removing stem fillers, clean and wipe them with form oil for protection. Band together and store them upside down to help prevent moisture from pooling on the casting surface.

As always, good maintenance procedures protects your investment in forms and equipment.



Stem fillers should be cleaned and banded together before storage.