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Closer to the goal, a stage at a time

With Doka, active project support is a 'given'.

The aim of all Doka's preliminary services is to achieve greater efficiency by providing transparently costed and optimized formwork concepts. With our active project support, we fulfill this aim in each successive stage of a project. As early as in the Project Development Stage, our know-how and expertise give our customers the basis on which to take well-founded decisions.

- **Project Development Stage**
  - The stage in which decisions are taken based on professional advice and consulting:
    - detailed analysis of the initial situation
    - identifying the risks applied to planning, execution and costs

- **Bidding Stage**
  - The stage in which the overall framework is defined:
    - selecting the optimum construction methods and formwork solution
    - determining the required formwork quantities
    - bid planning, incl. bills of materials
    - binding bid prices for rental and purchase

- **Project Mgmt. Planning Stage**
  - The stage in which the forming operations are organized & optimized for greater efficiency with the aid of optimised formwork concepts:
    - specifying the required formwork quantities
    - co-ordinating lead-times and delivery deadlines
    - logistics concept

Ongoing advice and support from a dedicated contact person

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Engineering

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myDoka
The sooner the Doka technicians start inputting their knowledge and experience into the project, the more efficiently it can then be carried out. In each of its stages and by staying with the project all the way until it is successfully completed, Doka builds long-term partnerships with its customers.
Framed formwork Frami Xlife

The lightweight clamp system in feet and inches
Frami Xlife is a complete system, which also comprises high-performance safety and workplace accessories. The Frami Xlife panels are lightweight and easy to handle, so they can be erected very quickly by hand, without the use of a crane. On sites with a crane, it is also possible to lift several panels at a time, in a gang-form. The ingenious modular design makes for optimum adaptability to all job site conditions.

**Slashes handset labor costs**
thanks to lightning fast assembly

This is how it is accomplished
- 80% fewer connections with only 3 clamps per 9ft. panel
- 75% fewer ties with only two ties for a 9ft. high pour, up to 13.5sq.ft. per tie
- uses the lightest fastening clamp—only 2.6 lbs. and it goes on with one hand
- no wood walers are required

**More labor cost cutting**
switching to gang forming at any time

The strong system allows
- gang forming with no additional hardware
- lifting core units with one crane pick
- cover 100% of the jobsite with one system

**Labor cost cutting continued**
savings in the details

Look at the full range
- hinged and adjustable pilaster forms make pilasters a snap
- the Framax Stripping corner attaches and allows the fastest strip possible for cores
- fillers are available in 6” increments plus 2”, 1 ½” and 1” steel fillers
- columns are formed with universal panels up to 36”—only one panel size for the whole job
- eliminate various required filler sizes and saves time and labor in storing, sorting and finding specific width panels

**Work in safety**
keep your people working safe

All that OSHA requires
- three safety handles per 9ft. panel
- the Frami safety tie-off handle meets OSHA requirements

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Frami Xlife is ideal for fast, cost-saving forming both with and without a crane.

6” grid
Permissible fresh-concrete pressure: 1000psf up to 1500psf
Xlife sheet

© 2013 Georgia Power Company

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Solutions on Site with Frami Xlife | Framed formwork Frami Xlife | 7
The complete system for walls, columns and footings

The ingenious modular design gives you unlimited possible combinations, in both width and height. You can use the panels either upright or horizontal, and the 6" increment together with the steel fillers (2", 1 ½", 1") gives you optimum adaptability of the formwork to the dimensions of the structure, at all times.

Complete system for typical low height forming

Frami Xlife is a complete system for typical low height forming. Easy to set by hand and rugged enough to be moved in gang by crane.

The Logical system grid

Panel width and height are designed to always give you a continuous panel joint. This simplifies work and increases speed.

Steel fillers

With a range of 2", 1 ½" and 1" steel fillers, Frami Xlife eliminates all wood filler work and costs from the jobsite.
Quick panel connection

Save time in assembly with only 3 lightweight Frami clamps per 9 ft. vertical joint. Just one blow with a hammer and the panels are joined and aligned.

Sturdy, torsion-resistant steel frames

The frames of the Frami panels are made of torsion resistant hollow-section steel profiles. High-quality hot dipped galvanizing ensures an extremely long life span.

Frami tie hole protection

The steel tie hole protection guarantees a long life span of the plywood with a very good finish.

Frami Xlife is extra strong

The solid construction and asymmetrical position of the ties allows full liquid head pours up to 9 ft. with only two ties.
**Fast resetting**

Frami Xlife panels are easy to set by hand and robust enough to be moved by crane.

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**Safe working platforms**

The Frami brackets can be hung into place on both vertically and horizontally placed panels and furthermore at any height level on the panel per your requirements.

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**Frami plumbing struts**

Perfect alignment with the easy-to-use plumbing struts. Connection rails over the entire width of the panels ensure fast installation of the plumbing struts – quick as a flash at any location on the horizontal stiffeners.
Corners and pilasters

The corner solutions are based on the strong, torsion-proof Frami inside corner. The Frami outside corner is an easy and problem free way of forming corners in narrow trench situations or where large wall thicknesses are called for.

Cores

The Framax stripping corner is compatible to the Frami Xlife, making stripping a core a snap. Just a simple ratchet action in each corner and all is ready to be set into the next floor.

Frami ties

Frami Xlife uses a lightweight high strength taper tie 1"- 3/4" with 5/8" ends. It combines the advantages of the taper tie with the convenience of the Doka Super plate, only one size and only one piece for each side. She bolts are also available when inner units with water stop are required.
**Frami safety tie off handles**

The Frami safety tie off handles meet the OSHA requirements.

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**Can be used for columns**

- form up to 36" square columns
- only one size panel width is required to form columns of any dimension in 2" increments.
- saves time and labor storing, sorting and finding various width panels
Sturdy, torsion-resistant steel frames

The frames of Frami Xlife panels are made of torsion resistant hollow-section steel profiles. High-quality hot dipped galvanizing ensures an extremely long lifespan.

Extremely long lifespan

The Xlife sheet delivers up to three times more durability than normal plywood. Its special plywood structure prevents flaking and swelling caused by nails and screws.

Less damages and easy reconditioning

Nailing through the Xlife sheet does not impair the clean face of the concrete. The surface of the sheet does not fracture and chip where the nails piercing impression lies, and even if there are damages on the sheet Doka has an easy solution to repair those areas instead of changing the whole sheet.

The damaged area is routed out with a special router bit and a plastic patch applied for a seamless finish.
Frami Xlife in the news

Visitors to the National September 11th Memorial are greeted by sheets of water cascading 30 feet down into twin reflecting pools set in the footprints of the Twin Towers. These manmade waterfalls have a scale that is unmatched. The Memorial consists of two massive pools set within the footprints of the Twin Towers with the largest manmade waterfalls in the country cascading down their sides.

Concrete contractor Navillus Concrete selected Doka’s framed formwork Frami to form the 720 lineal feet of walls on both fountains, each fountain spanning 200 feet by 200 feet. Because of the existing structural steel and the decking that was already in place, forming had to be handset for this project.

In addition to the memorial fountains, Doka provided more than 50,000 square feet of Frami and Framax wall formwork to construct the 9/11 museum exhibition. The museum features three levels descending below ground that provide access to the original foundation of the twin towers. Reaching heights of more than 63 feet, Navillus used Doka’s framed formwork Frami with custom aluminum walings on the un-exposed side of the new concrete walls.

The memorial and museum opened to the public September 11, 2011.
Journey to Churchill

Doka Frami formwork system exceeds expectations

Located in the Assiniboine Park Zoo in Winnipeg, Manitoba, the Journey to Churchill exhibit located in the 11-acre Arctic Animal area began in April 2012. The goal of this project was to profile the Churchill Manitoba area and the interesting flora and fauna common to the region. The owner sought to recreate arctic and sub-arctic tundra conditions accurately enough to look like the real thing.

Doka supplied framed formwork Frami for two main elements on this project, which was light enough to be used as a handset, yet could be ganged where appropriate. The barrier walls constructed were required to stop animals from escaping, and filtration tanks were used for the processing of the sea water required to maintain proper levels of salt water for seals and aquatic creatures.

In an effort to reproduce landscape conditions of the Churchill area, large rebar cages covered with mesh will be fixed to the Doka formed barrier walls. These will then receive a layer of shotcrete to produce a rock-like appearance similar to the Hudson Bay topography the animals come from.

The Journey to Churchill exhibit, to be completed in the summer of 2014, enables visitors to experience Churchill in a realistic manner without having to make the expensive journey.

The project will profile the Churchill Manitoba area and the interesting flora and fauna in the region.

Doka’s framed formwork Frami is light enough to be used as a handset, yet can be ganged where appropriate.
The Florida Everglades underwent the largest environmental restoration project ever in the United States. One of the requirements of the project was to allow the water to flow from man-made canals back over the open landscape as it once did. To accomplish this, the use of cast-in-place culverts was implemented to allow water to flow underneath elevated roads and berms.

The Frami Box Culvert Traveler Form can be constructed out of any Doka wall formwork (Frami, Framax, or Top 50), allowing contractors to cast walls and an elevated deck as a single-pour concrete shell. In the Florida Everglades, a cast-in-place culvert was implemented to allow water to flow underneath elevated road and berms from a man-made canal to the open landscape. Using the Box Culvert system, to cast lengths of 50 ft. per pour, the system was easy to set up and move in less than a minute, allowing contractor Southwest Construction Services, to get in, set rebar, and prepare for the next pour.

In order to achieve the anticipated outcome, a fully rentable Box Culvert Traveler solution comprised of Doka’s framed formwork Frami, allowed the contractor to cast the walls and elevated deck as a single-pour concrete shell. The concrete shell is 8 feet-by-8 feet, with casting lengths of 50 feet per pour. Southwest Construction Services, Inc. have been highly satisfied to see how fast the Box Culvert is stripped, moved and reset into position for subsequent pours.

The system is fully rentable and because of its simple design, it is capable of rolling from pour to pour in minutes.

Location:
Florida, Everglades
Contractor:
Southwest Construction Services
Radius serpentine concrete walls improve design of gymnasium: Doka’s framed formwork Frami allows for quick, easy construction at varying heights and slopes.

The Foothill High School Auxiliary Gymnasium serves as a location for sports practices and for many other events, including parent meetings and AP testing. Using traditional wood forms in the past, the challenge was to find a new formwork system to construct the north and south retaining walls, leading into radium walls with serpentine shaped construction. The walls were running parallel at different heights, slopes, stepping conditions and intersection transitions. Many areas of the wall required an architectural finish that would be visible. Traditional lumber-built radius forms typically involve excessive and experienced labor in addition to costly lumber for the jobs specific built forming requirement. Therefore, an innovative and fast radius system was required.

In order to accomplish this goal, Frami formwork panels were selected as the best solution for inside and outside wall forms. The system adapted to all steps, height changes, transitions and sloping conditions on the project. The Frami panels are lightweight and easy to handle, so they can be erected very quickly by hand. The Frami Corded Radius System was very efficient for the serpentine radius changes as it incorporated fillers for the gain of the outside panels. The Frami panels were united with Circular formwork H20 radius forms by standard profile adapters for clamp connections on the tighter radius scope.

Overall, 1,500 lf of formwork were used on the entire project for walls and pilasters ranging from 6 feet to 42 feet high. For the concrete contractor, the biggest benefit was the savings they realized on labor, schedule and materials.
First time Doka’s framed formwork Frami Xlife users learn the ease of assembly.

This project is a recycling and waste disposal facility. Frami Xlife was used to pour the walls of the tipping floor and truck entry/loading tunnels of the recycling building. The interior walls of the tipping floor were in partially lined with a steel plate. Forming the concrete walls, was accomplished in two different ways. At the loading wall, the steel sheets were predrilled to match the tie hole pattern in the forms. The second method for each of the wing walls required embedded studs cast into the wall so that the steel plates could be plug welded after wall placement. The contractor was very pleased with the results, quality of drawings, the ease of assembly and ease of moving the forms. This was the first time Keystone Concrete had used Frami Xlife and after a short orientation, were successfully using the system with no additional on site assistance.
The estimated $1.8-billion project includes a new 800-megawatt, supercritical, coal-fired generating plant and a flue gas desulfurization system, which will allow the plant to produce twice the amount of electricity with fewer emissions.

For the foundation slab and the pedestal, Shaw is using Doka’s framed formwork Frami, selected because it was the perfect height: only two sizes of Frami panels (six foot and nine foot panels) were needed on the multiple structures. A total of 9,000-square-feet of Frami was used for the foundation and 14,000-square-feet for the pedestal. Doka’s framed formwork Frami was also used in the construction of the ball mill to pour the 18-foot high high pedestals. This system eliminated the need for multiple ties and only one horizontal panel joint was required for the pour. Another challenge on this project was the boiler/feed water structure, which had heavy foundations, large columns and a two-level, heavy elevated slab. Doka supplied Frami to form the foundations and 5-foot thick shored slabs.

The new advanced clean coal unit is projected to come online in 2012, and Shaw Contractors is confident they can meet the construction schedule to keep the "lights on" for Rutherford and Cleveland counties’ residents.
Construction material supplier Brox Industries expanded its facilities at one of the largest asphalt plants in the Northeast.

The Massachusetts-based company, which has supplied asphalt, stone and sand products to the pavement and construction markets for more than 50 years, sought to increase production by replacing the existing facility at its quarry operation in Dracut, Massachusetts. The original plant was capable of producing up to 900 tons-per-hour of hot mix asphalt; the new plant is 235 feet long with 24-foot-high walls, and includes silos, conveyor systems, soils building, quality control building, and a new scale house.

The contractor, Southern New Hampshire Poured Concrete Construction, used 3,000 square feet of Doka’s framed formwork Frami to construct both the footing sides and the walls. Because the contractor had a short timeframe for the new plant, keeping on schedule was of utmost importance. Being able to use one lightweight system and reuse the components proved to be a real time-saver on this project.

Brackets can be placed either horizontally or vertically at any height level on the panel.

3,000 square feet of Doka’s framed formwork Frami was used to construct both the footing sides and the walls.
Braves Stadium

A new $58.1-million stadium comes to Gwinnett County, Georgia, to house the Atlanta Braves’ AAA minor league baseball team.

The ballpark, with a capacity of 10,000, is the center point of a mixed-use entertainment district, featuring new hotels, shops and restaurants. Although the structure itself was designed to be a scaled-down version of the major league stadium in Atlanta, the field layout will have the same dimensions as the larger stadium to give players a chance to experience games on a standard-size field. In addition to the challenging design of this project, the concrete contractor, Precision Concrete Construction, Inc., also faced a fast-paced construction schedule – work started in June 2008 and was completed by opening day in April 2009.

To achieve the historic ballpark aesthetic specified for the structure, Precision used Doka’s framed formwork Frami to construct many of the stadium’s exposed columns, which required a smooth finish so they could be water-blasted and painted. In addition, Doka’s proximity to the site (the company’s office in Lawrenceville, Ga., is located only a few miles from the new stadium) allowed for quick turnaround on orders and design changes, which proved invaluable in keeping the project on schedule.

The world-class stadium is an impressive place for baseball fans to experience the game, and returns one of the classic AAA franchises to its roots in Georgia.
A new 63-story office/retail building in New York City is one of five towers being constructed on the World Trade Center site, commemorating the events of September 11, 2001, and symbolizing the rebirth of Lower Manhattan.

The 975-foot-tall Tower 4 (the fourth largest tower on the new site) features two distinctly shaped floor plates: For the lower- and mid-rise sections, the floor plates are in the shape of a parallelogram echoing the configuration of the site; the highrise section will feature a trapezoidal floor plate. The trapezoid, shaped and fluted to open toward the tip of Manhattan, will be triangulated from the lower floors to face the largest structure in the complex, the Freedom Tower.

The structure has four structural concrete levels below-grade with slabs up to 36 inches thick and columns up to 7 feet in diameter and 6 feet by 6 feet square. The concrete contractor, Roger and Sons Concrete, Inc., used Doka’s framed formwork Frami with integrated working platforms to construct the tower’s core and shear walls, which allowed them to handset the outside formwork under the slabs rather than climbing it.

With the concrete work planned for completion by 2011, Tower 4 along with Towers 2 and 3, are slated to be finished in 2012, marking a major milestone in the redevelopment of downtown New York.

**World Trade Center**

**Location:**
New York City, New York

**Contractor:**
Roger and Sons Concrete, Inc.

Doka’s framed formwork Frami allowed the contractor to handset the outside formwork under the slabs rather than climbing it.
Midtown Crossing at Turner Park is a unique 15-acre, $300-million mixed-use development under construction in the heart of Omaha’s historic Midtown neighborhood.

Consisting of seven towers, each eight or nine stories in height, with a total of more than a million square feet, the development will offer 297 luxury condominiums and 268 apartments, many with views of the recently revitalized park. Midtown Crossing also features more than 220,000 square feet available for restaurants, retailers and entertainment venues as well as parking for more than 3,000 vehicles.

With a fast-track schedule to meet and cranes already ordered, general contractor The Weitz Company needed a versatile formwork solution, so they selected Doka’s framed formwork Frami for use on the outside of the towers as well as shaft platforms on the inside. With their easy assembly and adaptability to the crane, the Frami panels proved ideal for the project. The system also was able to accommodate the project’s varying pour heights. The development is on schedule to be completed in June 2010.

Midtown Crossing

Location:
Omaha, Nebraska
Contractor:
The Weitz Company

The ease of assembly and adaptability to the crane, Doka Frami panels proved to be the ideal solution for the project.
Located adjacent to the Erie Prairie Center mall, Windsor Plaza is one of the first steps in a plan to create a town center in Eden Prairie, Minnesota, that will make the area more walkable.

The development encompasses 35,000 square feet of retail space on the ground level, including two 7,000-square-foot casual-dining restaurants. It also features 110,000 square feet of office space on the building’s top four floors.

In order to get the building’s core erected as quick as possible without access to a large crane, Northland Concrete and Masonry, the project’s concrete contractor, chose Doka’s framed formwork Frami system. In addition to crane-less assembly, the system also allowed for quick and easy repositioning. The project crew – longtime handset users – adapted easily to the Frami formwork, which helped to keep the project on its fast-track schedule.
To accompany its status as one of Princeton Review’s best southeastern colleges, the University of West Georgia is getting a new athletic complex.

The new complex will include a 9,000-seat football stadium as well as a 7,500-seat soccer stadium, varsity softball field and multi-field softball complex, football practice fields, and soccer practice fields. The university hopes the project will aid in attracting new students, with a goal to move up to NCAA Division I status.

One of the major challenges on the $29-million project was the formation of a 70-foot triple elevator core. In order to meet the needed shear conditions, concrete contractor Foundation Contractors, Inc., used 3,000 square feet of Doka’s framed formwork Frami. The formwork was stripped, cleaned and reused in place, requiring less crane time. With this boost in efficiency, the elevator core was completed in just two and a half months. The rest of the stadium is scheduled for completion by the end of 2009.

GA Sports Complex

Location:
Carrollton, Georgia
Contractor:
Foundation Contractors, Inc.

One of the major challenges of the project – a 70-foot triple elevator core – was successfully solved by the application of 3,000 sq. feet by Doka’s framed formwork Frami.
The Audie L. Murphy Memorial Veterans Hospital in South Texas recently underwent renovations in an effort to expand the facility and extend its capabilities.

The hospital received funds from the Department of Veteran’s Affairs (VA) in July 2007 for general renovations, and later received additional funds to update its existing Surgical Intensive Care Unit. Transitional housing at the new Polytrauma Rehabilitation Center also was added to support veterans who have suffered multiple traumatic injuries with the goal of returning them to independent living. The $10.5 million renovation project began in November 2007, and added 50,000 square feet to the hospital’s existing footprint.

Facing unique beam conditions that required a cantilever beyond the perimeter, contractor McGoldrick Construction selected approximately 4,600 square feet of Doka’s framed formwork Frami to form the core walls and beam sides. The system provided the contractor with a quick, cost-effective means to construct the perimeter of the building. By hand-setting the formwork, McGoldrick also was able to save considerably on equipment and labor costs. With the expanded and improved facilities, the Audie L. Murphy Memorial Veterans Hospital is a state-of-the-art facility with plenty of space and resources for those who need it.

VA Hospital

Location:
San Antonio, Texas
Contractor:
McGoldrick Construction

The contractor McGoldrick was able to save considerably on equipment and labor costs due to Frami’s easy hand-setting feature.

Frami panels are easy to set by hand which makes for significant saving on crane expenses.
The River House Condominiums, a 36-story horizontal and vertical post-tensioned concrete structure in Grand Rapids, Michigan, provides the city with additional downtown residences.

To help speed along the construction process, which began in 2006, concrete contractor Kent Companies used Doka’s framed formwork Frami in conjunction with the company’s TLS lifting system to build the concrete frame for the structure. Frami was used to construct all of the vertical concrete on each floor – columns, shear walls and cores.

Upon its completion in spring 2008, the structure earned the status of the second tallest building in the state.

River House Condominiums

Location:
Grand Rapids, Michigan

Contractor:
Kent Companies
Framed formwork Frami excels in a Manhattan tight spot.

Expansion of a subway is no easy task. The South Ferry station, the southern terminal for the Broadway-7th Avenue subway line in New York City, was no exception. The existing station, used by more than 6 million people each year, was built in 1905 and can only accommodate the first five cars of each modern train. However, the $260-million expansion and new station will accommodate two entire trains, allowing the line to meet the growing need for efficient transportation.

More than 80-feet below street level and under three other operational subway lines, the expansion had to be carried out while keeping all area streets open. The downtown Manhattan construction site was extremely tight for contractor Schiavone Construction Co., Inc. Materials could be unloaded by crane, but inside the tunnel, they had to be moved primarily by hand. In order to meet these challenges, the contractor selected Doka’s framed formwork Frami as it fits the need for a lightweight, hand-set system. In addition, Schiavone needed a system that was easy to teach to new carpenters.

One-face sandwalls were formed using D-22’s and Aframes with Frami panels. Two sided walls were also formed using Frami panels. In total, more than 27,000-square-feet of Doka’s framed formwork Frami was used.

Working inside a tunnel requires high flexibility of the construction materials which is a key feature of Doka’s framed formwork Frami.

South Ferry Terminal

Location:
New York City, New York
Contractor:
Schiavone Co., Inc.

< South Ferry Terminal

Frami Xlife in the news | Solutions on Site with Frami Xlife
The Opera Shaft, the first of seven similarly constructed shafts, is the latest completion on Portland, Oregon’s East Side Tunnel Combined Sewer Overflow (CSO) project.

The 20-year, $1.4 billion program is designed to reduce combined sewage and stormwater overflow by 94 percent. Work on the project began in 1993 with improvements to the sewer system. In 1999, the CSO program got underway, diverting streams that once flowed into the sewer system back into the Willamette River, upgrading pumping stations and installing a CSO tunnel on the western side of the river. The project has reached its final stage: the construction of an East Side CSO tunnel.

To service the six-mile-long, 26-foot-diameter tunnel, seven shafts will connect existing overflow pipes and provide above ground access. The Opera Shaft will serve as the main mining shaft for the tunnel construction. In order to prepare the shaft, contractor Kiewit-Bilfinger Berger poured a 3-foot-thick concrete lining in the 115-foot-deep, 67-foot-diameter shaft.

To accommodate multiple pours at different heights, Kiewit-Bilfinger Berger used 2,630-square-feet of segmented Doka’s framed formwork Frami to form the one-sided final concrete lining. The 200-mm tolerance for the final concrete lining allowed for the segmental (or chorded) approach. Further, because there were only four lifts, it was important to utilize a system that would be quick to assemble. With the successful renovation of the Opera Shaft completed, the project remains on schedule for completion date in 2011.
Frami Xlife on Site
20 Barrel 10x10' Box Culvert

**Location:**
San Antonio, Texas

**Contractor:**
Relmco

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**Dallas Salmon**

**Location:**
League City, Texas

**Contractor:**
Industrial Concrete
• South Cover Manor
  Location: Quincy Point, Massachusetts
  Contractor: Liberty Construction Services

• Broken Spoke
  Location: Austin, Texas
  Contractor: BCS Concrete Structures

• Belmont Village
  Location: Austin, Texas
  Contractor: BCS Concrete Structures

• Cookeville Water Treatment Plant
  Location: Baxter, Tennessee
  Contractor: W&O Construction

• Grover Elementary School
  Location: Marblehead, Massachusetts
  Contractor: North Atlantic Concrete
Heritage Place

**Location:**
Winnipeg, Manitoba
Canada

**Contractor:**
Crystal Construction

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Hoffman Garage

**Location:**
Alexandria, Virginia

**Contractor:**
Miller & Long
<New Mega Shredder>
Location: Johnston, Rhode Island
Contractor: JL Marshall & Sons, IncServices

<Killarney WTP>
Location: Killarney, Manitoba, Canada
Contractor: WBS Construction

<Private Land Dam>
Location: Kerrville, Texas
Contractor: Graham Construction

<Newburyport Equalization Plan>
Location: Newburyport, Massachusetts
Contractor: North Atlantic Concrete

<Loan Star Recycling Center>
Location: Houston, Texas
Contractor: Keystone Concrete
Pre-Engineered Solutions with Frami Xlife
Areas of use
Formwork used in concrete construction typically equates to 20 percent of the cost, with labor representing the other 80 percent. When selecting a forming system, there are several questions that must be considered, including:

- Do you own any material?
- What systems do your employees have experience with?
- Will a crane be available?
- What are the jobsite considerations?
- Available labor conditions?
- What is the project schedule?
- What is your relationship with the supplier?
- What is the location of the equipment?
- What will be your total forming cost? (labor + materials)

Comparison of Doka’s framed formwork Frami Xlife to traditional handset form

In a head-to-head comparison, Doka’s framed formwork Frami Xlife proves to be the optimal solution over handset forming systems in several areas, including labor, material savings, and safety.

Labor Savings

- Less parts to handle = less labor
  Example: For 188 square feet of form, Doka’s framed formwork Frami Xlife only needs 134 pieces compared to the 447 required with a handset forming system. This equates to 70 percent less pieces with Frami Xlife.
- One lightweight Frami clamp replaces 6 wedge bolts.

Material Savings

- Doka’s framed formwork Frami Xlife has reusable ties eliminating the purchase of consumable snap ties for every pour. Saving increases over every use.

Safety

- OSHA compliant tie-off handles are built into every panel

Renting Doka’s framed formwork Frami Xlife can provide a 31 percent labor savings when compared to handset, a cost savings that cannot be ignored. While some argue that owning equipment makes renting Doka’s framed formwork Frami Xlife cost prohibitive, in fact, renting Doka’s framed formwork Frami Xlife can save as much as 23 percent compared to using traditional handset you already own. When considering the total cost of both material and labor, Doka’s framed formwork Frami Xlife provides the optimal cost savings.
Project Example

- **Total contacted area to be formed**: 36,000 sq. ft. of contact area
  - Example: 12 ft. high walls x a total length of 1500 ft.
- **Contact area to be formed at one time**: 3,600 sq. ft. of contact area per pour
  - Example: Assume 10 pours for the 36,000 sq. ft. of wall
- **Labor cost per hour**: $30
  - Include hourly rate plus overhead cost

<table>
<thead>
<tr>
<th></th>
<th>Handset</th>
<th>Frami Xlife</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approximate List Price per square foot for purchasing forms including panels, filler and accessories.</strong></td>
<td>$20</td>
<td>$50</td>
</tr>
<tr>
<td><strong>List Price Value of equipment</strong>&lt;br&gt;3,600 sq ft x list price per sq ft</td>
<td>$72,000</td>
<td>$180,000</td>
</tr>
<tr>
<td><strong>Waler Lumber</strong>&lt;br&gt;Assume: 300 lf of 2x4 wood sill and 900 lf of 3dbl horizontal @ $.50 per lf, plus 480 lf of 1 dbl vertical at 8’ ctr @ $.75 per lf</td>
<td>$960</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Square foot of wall area per tie</strong></td>
<td>2.5</td>
<td>13.5</td>
</tr>
<tr>
<td><strong>Ties – Total required total contact area divided by 2 multiplied  by sq ft per tie</strong></td>
<td>7,200</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Cost per tie</strong>&lt;br&gt;Assumed $.50 for 12 inch wall</td>
<td>$.50</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total tie cost</strong></td>
<td>$3,600</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Productivity per man hour</strong>&lt;br&gt;Handset: Typically 15-20 sf per mh is an average for forming activities&lt;br&gt;Frami: 40 sf per mh or greater</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td><strong>Labor costs per sq ft</strong>&lt;br&gt;(hourly rate divided by sf per mh)</td>
<td>$1.50</td>
<td>$0.75</td>
</tr>
<tr>
<td><strong>Total formwork labor costs</strong>&lt;br&gt;(Total contact area x labor cost per sf)</td>
<td>$54,000</td>
<td>$27,000</td>
</tr>
<tr>
<td><strong>Total of lumber, ties and labor</strong></td>
<td>$58,560</td>
<td>$27,000</td>
</tr>
</tbody>
</table>

Contact your Doka Account Manager for a copy of Doka’s framed formwork Frami Xlife vs. Handset time trials video where experienced handset users put Frami Xlife to the test.

<table>
<thead>
<tr>
<th>Rental (2 Months)</th>
<th>Handset</th>
<th>Frami Xlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>(12’ tall x 150’ long set-up)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>List Price per sq ft value of equipment</td>
<td>$20</td>
<td>$50</td>
</tr>
<tr>
<td>Monthly rental – 5% (rates vary by location)</td>
<td>$1.00</td>
<td>$2.5</td>
</tr>
<tr>
<td>Total rental (Assume 1 pour per week)</td>
<td>$7,200</td>
<td>$18,000</td>
</tr>
<tr>
<td>Total of lumber, ties and labor</td>
<td>$58,560</td>
<td>$27,000</td>
</tr>
<tr>
<td><strong>Total cost of rent and use</strong></td>
<td>$65,760</td>
<td>$45,000</td>
</tr>
</tbody>
</table>

31% savings by renting framed formwork Frami Xlife!

<table>
<thead>
<tr>
<th>Purchase (Small Project)</th>
<th>Handset</th>
<th>Frami Xlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material and labor to build 1,500 lf of total wall at the same 750 lf per month with 3,600 sf of forms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>List Price Value of equipment</td>
<td>$72,000</td>
<td>$180,000</td>
</tr>
<tr>
<td>Total of lumber, ties and labor</td>
<td>$58,560</td>
<td>$27,000</td>
</tr>
<tr>
<td><strong>Total cost to purchase (material) and use (labor)</strong></td>
<td>$130,560</td>
<td>$207,000</td>
</tr>
</tbody>
</table>

A small project such as this will not pay for the purchase of framed formwork Frami Xlife, but let’s compare a somewhat larger project ...

<table>
<thead>
<tr>
<th>Purchase (Large Project)</th>
<th>Handset</th>
<th>Frami Xlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material and labor to build 6,000 lf of total wall at the same 750 lf per month with 3,600 sf of forms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>List Price Value of equipment</td>
<td>$72,000</td>
<td>$180,000</td>
</tr>
<tr>
<td>Total of lumber, ties and labor</td>
<td>$231,360</td>
<td>$108,000</td>
</tr>
<tr>
<td><strong>Total cost to purchase (material) and use (labor)</strong></td>
<td>$303,360</td>
<td>$288,000</td>
</tr>
</tbody>
</table>

Savings continue to multiply when you own and use framed formwork Frami Xlife!

* Finishing costs not included