

REINFORCING NEWS

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Pre-welded reinforcing assembly built for Quick Span

By George T. Biro, P.Eng.

Recently introduced to the Ontario marketplace is a precast concrete product that makes full use of a pre-welded reinforcing assembly. Supplied complete with stainless steel spacers, all that the precaster has to do is place the assembly into the form and pour the concrete. There are no additional steps, and the precaster is assured that the specified concrete cover over the reinforcement has been engineered into the design of the assemblies. Pre-welded reinforcing often contributes to net cost savings of a precaster by reducing labour costs, cost of materials and other overhead expenses.

Reinforcement assemblies were fabricated on a specially designed jig at StelCrete's Fort Erie plant, so that all assemblies were consistent



Pre-welded reinforcing assembly with stainless steel stirrups — ready to receive concrete.

in design. The design called for 30M rebar spaced at 150 mm on centre around the exterior corner of the bridge sections. The leg sections were additionally reinforced with wire stirrups, specially fabricated on the MEP automatic stirrup machine at Ronco Steel, StelCrete's affiliated plant in Burlington, Ontario. The precast units were designed in accordance with the Canadian Highway Bridge Design Code to support significant loads from trucks and approximately 1.4 metres of earth fill. The assemblies were shipped to the precaster, as required,

to speed production and to help make best use of floor space and human resources at their plant.

StelCrete is fully certified by The Canadian Welding Bureau (CWB) to CSA Standard W186M, "Welding of Reinforcing Bars in Reinforced Concrete Construction," and to CSA Standard W47.1, "Fusion Welding of Steel Structures." The first standard governs the rebar assembly products produced, and the second standard covers products that incorporate

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structural shapes, such as cast-in hardware for concrete work. Domestic steel is used in the assemblies and is CSA-certified under standard G30.18, "Billet-Steel Bars for Concrete Reinforcement."



StelCrete is fully certified by the Canadian Welding Bureau to CSA Standards.

Hanson Pipe & Products Canada, Inc produced the precast *Quick Span* with a pre-welded reinforcement assembly. It was installed in Waterloo, Ontario immediately north of the University of Waterloo campus by E & E Seegmiller Limited, contracted in March 2004 to undertake the Regional Road 50 (Northfield Drive) widening. Included in the \$5.6 million contract was the Westmount Road extension from Northfield Drive to Bearinger Road. The four-lane extension passes through the southern extremity of the Laurel Creek Conservation Area and crosses Laurel Creek. The width of the travelled road and design elements required by the Grand River Conservation Authority made a three-sided precast concrete structure the best alternative for the crossing.

Design flows of Laurel Creek through all seasons, as well as wildlife passage are accommodated by the structure. It was designed with a light portal in the centre for place-

ment in the road median, and a cobble bed to enhance the aquatic ecosystem of the stream. StelCrete delivered two special assemblies for the cast-in place portal as well as assemblies for the concrete barrier walls with rebar dowels pre-attached to the reinforcing cages. Hanson's casting method meant that expensive dowel bar couplers could be substituted with normal rebar projecting through the top of the precast deck. Assemblies were also provided for 8 wing wall units, 20 typical units, and two narrow units to meet the overall culvert length specified on this project. Hanson poured the *Quick Span* units with 45 MPa design-strength using



Reinforcement assemblies designed for a light portal in the structure.

self-compacting concrete. The stripping strength was well over 25 MPa. Twenty-six units were produced in their Whitby plant, as well as eight precast wing wall units over a production period of 35 days. The culvert was installed over Laurel Creek in less than two days once the footings were poured in place. Pre-welded reinforcement assemblies contributed to meeting both the production schedule of the pre-caster and the installation schedule of the contractor. Combining precast products with outsourced reinforcement assemblies has proved the efficiency and economy of this form of production and business practice.



Look for StelCrete information at Construct Canada



Salit Specialty Rebar will be showcasing its products and services at Construct Canada, Canada's largest annual exposition for the design and construction of all types of buildings. The show takes place December 1 to 3 at Toronto's Metro Convention Centre.

This year, the show includes the 1st edition of **Concrete Canada**, an exposition of concrete and masonry related products, technologies, services and equipment that includes a comprehensive seminar program for architects, specifiers, engineers and contractors.

The show, sponsored by the Ready Mixed Concrete Association of Ontario and supported by 13 associations takes place with Construct Canada, HomeBuilder & Renovator Expo, DesignTrends and PM Expo with a total over 950 exhibits, 20,569 attendees, and 200 seminars and presentations.

StelCrete will have product and services information at the Salit Specialty Rebar booth # 54 in the Concrete Canada section. If you plan to be at the show, look for booth # 54 and learn more about pre-welded reinforcing assemblies.

Follow up your visit with a tour of StelCrete's facilities. Contact Robert Nichols at rnichols@stelcrete.com.

StelCrete joins National Precast Concrete Association and Precast Concrete Association of New York

StelCrete is expressing its intention to be an active participant in shaping industry standards and advancing common interests by joining industry associations in Canada and the United States. Recently, StelCrete joined the National Precast Concrete Association and Precast Concrete Association of New York as an Associate Member. In 1994, StelCrete joined the Ontario Concrete Pipe Association as an Associate Supplier.

StelCrete serves precast concrete and civil engineering clients in Southern Ontario, Québec, and North Eastern Unites States. Its core clients are precasters who outsource high volume repetitive sub assemblies. Some of its pre-welded reinforcing assemblies include manhole bases and lids, concrete bridge girders, agricultural livestock beam-column and floor slabs, precast stair and bracket systems, and modular basement wall systems.

In addition to its assemblies composed of rebar, StelCrete also supplies I-Lock connection hardware for median barrier precasters in Ontario and Québec.

StelCrete has been supplying pre-welded reinforcing for precasters since 1989. The company is part of the Salit Steel Group of Companies. Its extensive trucking network covers most of Southern Ontario on a daily basis.

Issues that StelCrete wishes to keep on the radar of leading companies

and industry associations are the vital importance of purchasing reinforcing products that are fabricated by companies certified by The Canadian Welding Bureau, the efficiencies and cost savings of applying pre-welded reinforcing assemblies for a wide range of precast products, continuous development and review of standards to keep pace with changing technology and science, using life cycle costing when planning the design life of structures and service life of materials, and the promotion of concrete as the leading material to meet the common goal of sustainable development.

Part of the requirements of certification to CSA Standard W186M, "Welding of Reinforcing Bars in Reinforced Concrete Construction," and to CSA Standard W47.1, "Fusion Welding of Steel Structures, requires that StelCrete retain a certified professional welding engineer to establish its procedures, and to periodically audit its operations and records. All of StelCrete's employees who are welders are certified, including its supervisors in the Niagara Falls and Fort Erie plants.

StelCrete will be publishing articles on the application of pre-welded reinforcing assemblies on unique projects to keep the precast concrete industry aware of options and new technology for reducing energy and overhead costs. Staff actively participates on technical committees of its industry associations and shares new knowledge.

www.stelcrete.com being built into a better technical marketing tool

When it's after hours and you need information fast, or you are in need of technical information for your project, www.stelcrete.com will soon become one of your favorite sites. In a few months, you may even wish to bookmark the site.

Many Web sites like StelCrete's, which have been around for a while, were built at a time when most technical and marketing people were not quite sure of how to build an effective Web site and how to use it.

We now know that Web sites are most important for information sharing and communications. It is unlikely that substantial commerce will ever take place over an industrial Web site. The trick is to make sites easy for visitors to get what they want quickly, and leave—bookmarking the site to return again. For the owner of a site, it is important to know who is accessing the site and what information is most useful. The new site will have interactive features, populated with a wealth of knowledge.

Some of the new features will include specific categories of steel applications and the reinforcing products that are available for various precasters and poured-in-place structures. There will be a form to request quotations, information about StelCrete's organizational structure, contacts and links to sites that have common interests to precasters and the business interests of StelCrete. Coming soon—a new www.stelcrete.com



StelCrete partners with global abrasives producer

On July 23 2004, Saint-Gobain Abrasives of Hamilton, Ontario started their annual two-week shut down for maintenance. This date also marked the last time they would produce the reinforcing cages for their concrete grinding stones.



First cage component produced

Saint-Gobain Abrasives Canada is a part of the Saint-Gobain Group headquartered in France. The company is the world leader in the development and production of abrasives.

After a period of discussions, Stelcrete was contracted and will now supply all of Saint-Gobain's rein-

forcing needs. Stelcrete uses unique forming and welding equipment to produce the highly specialized reinforcing cages found in the massive concrete grinding stones.

There were many challenges at the initial stages of production. These have been overcome, and cages for grinding stones are now a routine product line for Stelcrete employees.

Prefabricated footing reinforcing assembled for overhead cranes

Newman Brothers limited of St Catharines, Ontario was contracted to install the foundations for a new interior overhead crane system for Armet Metal Works in Burlington. Armet is setting up a steel coil splitting line which involves cutting sheet metal coils into strips.

The project included retrofitting an existing pre-engineered steel building with a new crane system. The new crane runway would support two 35-ton overhead cranes and two 10-ton cranes. The runway

structure is supported by 48 columns on poured concrete footings. The contractor had to saw cut the floor and excavate to competent material, then backfill with lean concrete (800 mm to 1,000 mm thick) to the under side of the footing founding elevation. All footings are 51/2-foot x 8-foot. Rebar design of the bottom mat consisted of 25 M bars, and the upper (smaller) mat consisted of 15 M bars.



Prefabricated footing mats

Assemblies ready for installation



The contractor had 3 weeks to complete the demolition and construction of the 48 new footings, complete with anchor bolts. Prefabricated footing reinforcing saved the contractor time and labour.

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StelCrete's core business is to supply precasters with fully pre-assembled, pre-welded reinforcing cages for all types of products