

# THE STAINLESS REBAR STANDARD



Kevin Cornell, Editor July 2012

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## ***Stainless steel specified for elements of Edmonton North Light Transit Extension***

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In June 2009, Edmonton City Council adopted a long-term Light Rail Transit (LRT) Network Plan which balances the City's long-term transportation needs with a commitment to grow within the notion of green development, and create a compact, more integrated urban environment where roads move goods, and transit moves people. The LRT will operate on a dedicated right-of-way, although it will not mix with the traffic, and it will have priority at intersections. This form of urban transit is becoming the system of choice by many city planners.

The project consisted of constructing the rail bed, a tunnel, various stations, and special roadway crossings over a 3.3 km right-of-way through the City.



2,000,000 pounds of ASTM A955 UNS S24100 (XM-28) stainless steel supplied to A&H Steel  
Photo: R. Huza, SSR

A total of 2,000,000 pounds of grade ASTM A955 type UNS S24100 (XM-28) stainless steel rebar was used mainly on the rail bed and the three cell tunnel. This grade was chosen because of its economical price point, and resistance to corrosion. Given the low magnetic permeability of type UNS S24100 (XM-28) stainless steel rebar, it significantly reduces the cost associated with managing stray current effects.

The challenge for our customer A&H Steel of Edmonton was to manage the logistics involved in effectively running a 3.3km job site which weaved its way through the downtown City core without interfering with traffic, while maintaining the timelines of a compressed schedule dictated by a short construction season.

## ***Winnipeg Bridge deck rehabilitated with stainless steel***

The Osborne Street Bridge Rehabilitation project is an initiative of the City of Winnipeg who owns and maintains the structure. The rehabilitation was necessary because of severe spalling of the bridge deck.

The City specifies some kind of corrosion resistance reinforcement for bridge superstructures. They make their selection based on life cycle costs and the extent of traffic disruption that a bridge rehabilitation, or replacement project generates.

The Osborne Bridge is an important access point to the downtown part of Winnipeg for vehicles, cyclists, and pedestrians. Traffic volumes are high and the Osborne Street Bridge is a strategically important part of the roadway system. The additional upfront cost of the stainless steel rebar was a good investment because it will increase the durability of the deck and minimize future bridge rehabilitation requirements, which would be an inconvenience to bridge users.

The bridge is a single span with two lanes in opposing directions separated by a median barrier.

The field construction consisted of replacing the abutments, wing walls, road deck and barriers. To maintain traffic flow, the southbound lanes were repaired in 2011 with two-way traffic confined to the two northbound lanes. During the 2012 construction period, the traffic shifted to the two southbound lanes.

The deck required 500,000 pounds of grade ASTM A955 type UNS S24100 (XM-28) stainless steel rebar which was pre-bent and cut, then shipped to the site for assembly by Cowin Steel Co. Ltd.



500,000 pounds of UNS S24100 (XM-28) used for bridge deck rehabilitation. Photo: Cowin Steel Co. Ltd.



Stainless steel rebar products shipped to Cowin Steel Co. Ltd. for assembly. Photo: Cowin Steel Co. Ltd.



## LEED-certified city garage complex goes stainless



Manhattan Districts 1/2/5 Garage and Salt Facility

Source: [http://www.architizer.com/en\\_us/projects/view/manhattan-districts-125-garage-and-salt-facility/12194/](http://www.architizer.com/en_us/projects/view/manhattan-districts-125-garage-and-salt-facility/12194/)

The Manhattan 1, 2 and 5 Garages house three district garages for the New York City Department of Sanitation. The new multi-story building accommodates over 150 sanitation vehicles, separate repair, vehicle wash, and personnel facilities for each district, along with centralized fueling facilities. The site is a key gateway to the SoHo neighborhood and overlooks the Hudson River Park and Hudson River.

The City of New York had to relocate its Sanitation District Garages and Salt Shed located at 2 Bloomfield Street and 427 Gansevoort Street (Pier 52), since the Hudson River Park Act required the removal of these garage operations. The new multi-level, 400,000 square foot facility consolidates the fueling, washing, storage and maintenance operations of three community districts and the semi-trailer storage needs of United Parcel Services into one facility under a shared-use arrangement. The steel framed structure utilizes a widely spaced column grid to facilitate truck maneuvering and parking. The design incorporates energy efficient building systems and materials to achieve a LEED Silver certification.

See the NYC Department of Sanitation Project Web site for details – <http://www.nyc.gov/html/dsny/html/garages/newgarages.shtml>



Photos: Courtesy of Deformed Steel Corp.



### Project Features

- SSR supplying 1,200 ton of 2205 Duplex.
- All bars cut to length but not fabricated. In the 5 boroughs of NYC the ironworkers fabricate everything regardless of the grade or quantity.
- SSR Client: [Deformed Steel Corp of Huntington New York](#).  
Contact David Schwartz [dscreebar@yahoo.com](mailto:dscreebar@yahoo.com).
- Owner: NYC Dept of Design and Construction
- Designer: Dattner Architects
- Construction Management: Turner Construction Corp.
- General Contractor: DeMatteis/Darcon Joint Venture

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## Upcoming Events 2013

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### 2013

**World of Concrete:** Las Vegas Convention Center: 3150 Paradise Road - Las Vegas, NV 89109

February 5-8; Seminars 4-8 <http://www.worldofconcrete.com/attendee/show-information.aspx>

Plan to attend the world's biggest show dedicated to the commercial concrete and masonry construction industries showcasing leading industry suppliers, and featuring innovative products, technologies, tools and equipment – and unlimited networking opportunities.



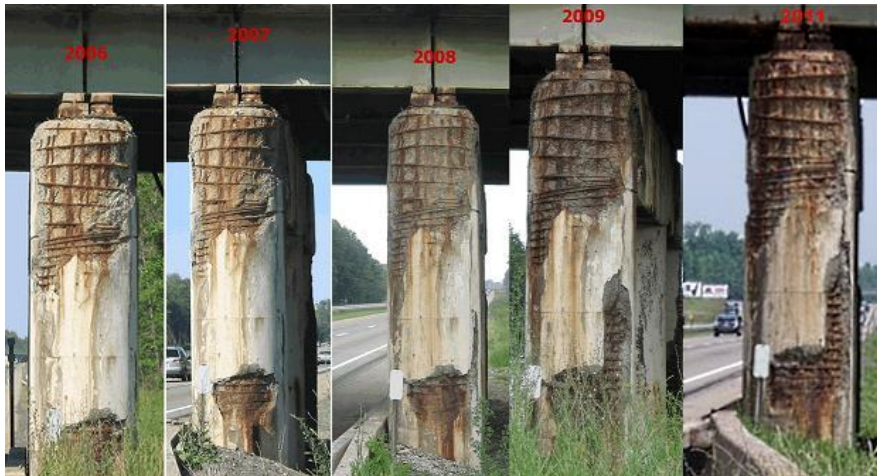
Plan to meet Salit Specialty Rebar technical specialists at World of Concrete 2013, Booth 2921 located in the North Hall.



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## Wall of Shame

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America's infrastructure should not be allowed to "rust in peace." There are options for repairing and replacing structures that include types of stainless steel reinforcement designed to suit any project.

This is the image of one of America's structures showing the affects of corrosion from 2006 to 2011.



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