

Project: Houghton Highway
Bridge Duplication

Products: ONEMESH®
500PLUS® REBAR

REBAR bridges the construction gap for Houghton Highway project



When Brisbane based prestressed precast concrete company Con-Tec secured the contract to supply reinforced concrete girders for the new Houghton Highway Bridge, OneSteel Reinforcing provided solutions to help reduce labour and meet project demands.

Funded by the Queensland Government, the 2.7 kilometre, \$315 million bridge duplication is located 35 metres east of the existing Houghton Highway Bridge, features three traffic lanes, a shared pedestrian/cycle path and a dedicated fishing platform. Connecting Brisbane to the Redcliffe Peninsula across Bramble Bay, construction commenced in February 2008 and is scheduled for completion mid 2011.

Eric Capelli, Manager of Con-Tec Precast said, "In our 25 year history this is the single largest supply contract ever undertaken by Con-Tec. We have not had a project of this magnitude, longevity or quality demands.

Left: 500PLUS® REBAR placed in casting mold ready for concreting.

Above: A total of 14000 LENTON® A2 couplers were used in the project. Each girder weighs approximately 82 tonnes and contain three tonnes of high tolerance N16 500PLUS® REBAR.





Eric Capelli, Manager of Con-Tec Precast.

“Up to 30 per cent of the steel reinforcing used in each girder is engineered mesh bent into a particular shape.”

Eric Capelli, Manager of Con-Tec Precast.

“OneSteel Reinforcing also provided support and planning of innovative techniques for the construction of the girders that hasn’t been done in Queensland before. This provided us with the confidence that we could achieve construction schedules.”

Eric Capelli, Manager of Con-Tec Precast.

“Since commencing the project, Con-Tec has received great support from OneSteel Reinforcing. During the initial planning stage, OneSteel Reinforcing were able to pre-commit to the project and provide security with regard to steel supply,” said Eric.

“OneSteel Reinforcing also provided support and planning of innovative techniques for the construction of the girders that hasn’t been done in Queensland before. This provided us with the confidence that we could achieve construction schedules.”

The Houghton Highway bridge duplication is the first major infrastructure project in Queensland to use pre-stressed girders 1800mm high. The bridge consists of 78 spans with the majority being 35.3 metres in length. Each weigh approximately 82 tonnes and contain three tonnes of high tolerance N16 500PLUS® REBAR.

Due to the large multi-bend profile of the main ligature it was not possible to fold a mesh to suit, however the flange steel was suited to being converted from loose 500PLUS® REBAR to a mesh. “Up to 30 per cent of the steel reinforcing used in each girder is engineered mesh bent into a particular shape,” explained Eric.

“This had the potential to cause issues as some fabrication machines were not capable of bending steel to the required tolerances without extra control measures put in place.”

To overcome this, OneSteel Reinforcing invested in a new MEP Mini Syntax machine to provide additional capacity and improve manufacturing safety for the larger size ligatures.

Con-Tec incorporated OneSteel Reinforcing’s LENTON® A2 coupler system. They offered the full range of diameters required, provided greater flexibility in use and ensured a continuous supply chain as all threading was undertaken in-house by OneSteel Reinforcing. The main ligature shape required 165 ligatures per girder, equating to a project total of approximately 103, 000 ligatures.

By the completion of the project, OneSteel Reinforcing will have supplied approximately 7,300 sheets of flange mesh. The use of this engineered mesh eliminated the requirement to handle, tie and weld over 140, 000 loose bars.

OneSteel Reinforcing is one of Con-Tec’s preferred steel suppliers. “OneSteel Reinforcing supply reinforcing steel, accessories and are an Australian company. At Con-Tec, we have a definite affinity to use Australian made,” said Eric.

Contacts

New South Wales

Tel: 02 9794 1000
Fax: 02 9772 1689

Western Australia

Tel: 08 6332 3111
Fax: 08 6332 3179

Victoria

Tel: 03 9207 2200
Fax: 03 9207 2270

Northern Territory

Tel: 08 8947 0330
Fax: 08 8947 0358

Queensland

Tel: 07 3845 5655
Fax: 07 3845 5697

Tasmania

Tel: 03 6273 0300
Fax: 03 6273 0315

South Australia

Tel: 08 8349 8666
Fax: 08 8349 7555

ACT

Tel: 02 6260 1244
Fax: 02 6260 1286

To view full length video visit www.reinforcing.tv
For further details, case studies and customer interviews, register for updates at www.reinforcing.com or email: 500PLUS@reinforcing.com

'Branches in every state and territory for customer and technical support!'

OneSteel Reinforcing Pty Limited ABN 22 004 148 289 Locked Bag 3050, Artarmon NSW 1570. OSR1066

