Australian Industry WINS!

WTIA National Diffusion Networks Project (NDNP) funded by the Federal and State and Territory Governments and industry

SUCCESS STORY NUMBER RT07: A NEVER ENDING JOB MADE EASIER BY WELDING TECHNOLOGY – *Painting the Sydney Harbour Bridge from a moveable gantry*

The Project

The iconic Sydney Harbour Bridge requires ongoing maintenance including painting and sandblasting.

Sydney Harbour Bridge - repainting southern approach spans

In order to provide access to the underside of the bridge for such painting and sandblasting the NSW Roads and Traffic Authority (RTA), a Member of the WTIA's Road Transport Industry Sectoral Project, required construction of an underslung gantry that could traverse along the underneath of the bridge on tracks. The WTIA was requested to provide technical assistance in the design and construction of the aluminium structure.

A specially constructed, moveable gantry is used by workers for painting underneath the bridge

Photos courtesy RTA

The solution

A design review was conducted and recommendations made to defer from the original design, that required full penetration welds, and amend to allow partial penetration welds augmented with gusset plates. Gusset plates provide an effective way to improve stiffness at the corner and brace locations whilst allowing easy installation through the use of fillet welding.

The fabricator, Sydney Engineering (Sales) Pty Ltd, took up WTIA's recommendation to use the new generation Fronius pulsed GMAW power source supplied by Smenco Pty Ltd, Fronius' agent in Australia and a Technology Support Centre (TSC) in the WTIA's OzWeld TSC Network.

Welder and welding procedure qualification to AS/NZS 1665:2004 *Welding of aluminium structures* was easily accomplished, and the welders quickly adapted to the pulsed welding technique. Pulsed welding provides reliable and repeatable fusion whilst enabling positional welding to be carried out.

Outcome

The project was carried out on schedule and the structure can now be seen in operation underneath the bridge.

This project was particularly successful because Sydney Engineering consulted WTIA and RTA during the design stage, allowing important design modifications and process recommendations to be implemented before the work was commenced.

Access to the latest welding technology from Fronius in Austria was facilitated by WTIA's OzWeld Network that supports the technology needs identified by the NDNP. This Project is supported in NSW by the Department of State and Regional Development.

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