



Asset Care Counts

August 2016

One- stop service provider for equipment manufacturing verification

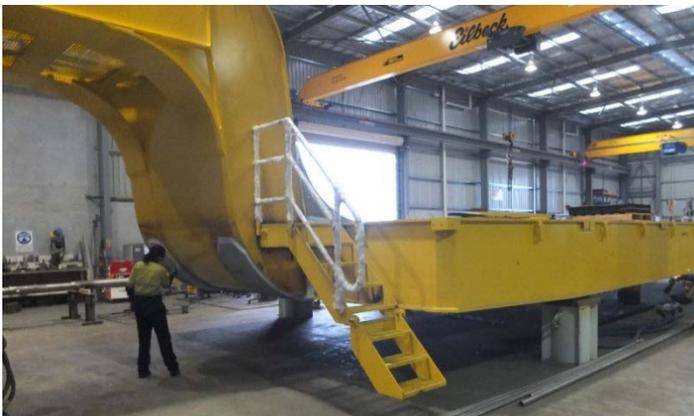
Have You Got What You Paid For?

Outsourced fabrications can be produced at a relatively low cost, providing significant savings. If not properly controlled they can however introduce potential quality issues which may significantly outweigh the benefits.

How can you ensure that the savings realised by outsourcing don't lead to quality issues and heightened risk of costly failure?

The Challenge

ALS was recently approached by a client who was set to take delivery of a piece of mobile heavy equipment that was fabricated offshore before final assembly in Australia.



Mobile equipment during final assembly

Between ALS and the client, a programme of inspections was devised that would provide the client with peace of mind that the equipment met their requirements and would be unlikely to suffer from expensive premature failures. This programme included:

- Positive Materials Identification (PMI)
- NDT of welds in high stress areas (approximately 20% of all welds)
- Manufacturer's data record comprehensive review
- Inspection by a qualified weld inspector
- Project management and compilation of results

ALS had the skills and resources to complete this entire scope and provided the client with a one-stop-shop for the verification that the equipment was manufactured to their specifications.

Positive material identification

How do you know that the correct grade of material was used in the fabrication of your equipment?

A positive material identification (PMI) test using both in-situ chemical analysis and hardness testing allows a metallurgist to determine that the material is consistent with that which was specified. A mobile arc spark spectrometer along with a portable hardness tester were used.



Spectro mobile arc spark spectrometer



Mag particle testing of high stress welds

Manufacturer's data record comprehensive review

A Manufacturer's Data Record (MDR) is a document that includes fabrication drawings, the material certificates, weld procedures, welder qualifications, weld consumables used, the results from any NDT completed and the NDT inspector's qualifications. An ALS inspector completed a comprehensive review of this document ensuring that no omissions had been made and that the physical equipment matched the MDR.

NEWCASTLE

106 Stenhouse Drive
Cameron Park NSW 2285
T: +61 2 4922 2400

PERTH

109 Bannister Road
Canning Vale WA 6155
T: +61 8 9232 0300

BRISBANE

7 Brisbane Rd
Riverview QLD 4303
T: +61 7 3816 5500

SYDNEY

U1a & 2, 171-175 Newton Road
Wetherill Park NSW 2164
T: +61 2 8786 3100

MELBOURNE

450 Dynon Rd
West Melbourne VIC 3003
T: +61 3 8398 5900

NDT of welds in high stress areas

As welds are generally the location of fatigue failure instigation, an ALS engineer identified the areas of high stress and determined the welds to be tested. A large portion of the equipment had been coated before shipping to Australia, for this reason a variety of NDT techniques were used.

The eddy current inspection process was used on coated components and the magnetic particle inspection process was used on uncoated parts.

Inspection by qualified weld inspector

A certified ALS Weld Inspector completed a 100% visual inspection of all accessible welds and heat affected zones to AS1554.1.



Weld profile verification

Project management and compilation of results

Along with the individual inspections, ALS also provided engineering oversight and project management of the inspections. ALS organised all inspections to be conducted concurrently over a two day period and liaised directly with the manufacturer.

All results were compiled into a single volume prefaced by an executive summary for review by the client.

The ALS team

As a multidiscipline engineering services provider, ALS possesses the skills and expertise to verify that equipment has been fabricated to the client's specification.

For further information or to enquire about services please contact: assetcarecontactus@alsglobal.com