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Helping you to understand welding qualifications

This fact sheet outlines the importance of welding qualifications and how Zurich Engineering can help those directly or indirectly involved in welding to manage their management of risk.

Whether you are directly welding – for manufacture, repair, or modification – or you are responsible for equipment that performs welding: you need to ensure your compliance with welding regulations and standards, and you need to provide evidence that your work is reliable and equipment safe to use.

You can only achieve these objectives if you are fully conversant with welding qualifications.

Which welding qualification applies?

There are three welding categories, each with its own qualification:

1. The qualified welding procedure

When making a welded joint, any change in the procedure's 'essential variables' could affect the integrity and reliability of the joint i.e. the quality of the weld and its short- and long-term mechanical properties. The welding procedure details these essential variables, together with the non-essential variables.

The welding procedure becomes a qualified welding procedure only when a competent examining body has asserted that the welding conditions in which a specimen piece was produced meet the required standards.

These conditions may then be used as the basis to produce reliable joints, so long as they stay within the specified 'essential variables.' The methodology for qualifying welding procedures is codified in a family of international standards known as BS EN ISO 15614, part 1 of which covers steels.

2. The Welder

A welder gains their qualification when a competent examining body has asserted that the welder is capable of producing reliable joints. The methodology is codified in various international – or internationally applied – standards, such as BS EN 287/BS EN ISO 9606.

3. The Welding Operator

A welding operator is someone who is responsible for the setting-up and adjustment only of fully mechanised and automated welding equipment. A welding operator is qualified when a competent examining body has asserted that the welding operator is capable of producing reliable joints. The methodology is codified in the European standard BS EN 1418. Renewing welding qualifications

Finally, high standards for welders and welding operators' qualifications require that those qualifications are re-validated every two years. This can simply be by re-qualification of the welder and a new certificate is by prolonging the certificate. Prolongation by the examining body is on the basis of satisfactory evidence of continuous and reliable welding.

Why are welding qualifications important?

Welding is used extensively for the fabrication, modification and repair of all manner of fabrications and components. The structural integrity of a very great many types of equipment across all mechanical inspection 'disciplines' is dependent on the mechanical properties of such welds.

Welding qualifications provide a 'level playing field' with respect to welders and welding operators, as well as base-line standards of quality, which provide assurances to the purchasers of welding services that the resultant joints should be reliable: i.e. perform in the way the designer intended and help to ensure safety.

As previous Zurich Engineering technical fact sheets have demonstrated*, to manage your equipment risks, the use of periodic in-service safety inspections is necessary, but it is not a panacea.

Unless the competent person undertaking the periodic in-service safety inspections has been involved throughout the process, to verify that any welds are reliable, then the competent person will assume that they are. If you purchase welding services, perhaps for the repair of defects to your work equipment, you should consider welding qualifications.



A welder working

*See: <http://www.zurich.co.uk/engineering/informationlibrary/informationlibrary/Technicalfactsheets.htm>

What is a competent examining body?

A competent examining body has capabilities that include the following:

- Expertise in welding technology and the metallurgy of welds
- Understanding of the relevant standards and methodologies codified therein
- Competence to witness and assess welding activities on site
- Machining and test specimen preparation facilities
- Mechanical testing facilities (bend, fracture, tensile, impact, hardness)
- Chemical analysis and metallurgical examination facilities

The UK Accreditation Service (UKAS) provides assurances of these competencies, enabling anyone looking for a competent examining body to look one up on their website. Zurich Engineering, for example, has all the above competencies (and more) by virtue of its laboratory in West Bromwich and evidence of this competency can be found on UKAS's web site at the following pages:

Inspection Body: <http://www.ukas.com/About-Accreditation/Accredited-Bodies/inspection-body-schedules.asp>

Testing laboratory: <http://www.ukas.com/about-accreditation/accredited-bodies/Testing-laboratories-schedules.asp>

Zurich Engineering – sharing technical expertise

How can Zurich help?

Zurich's laboratory provides a comprehensive national welding qualification service and a number of allied services, including:

- Welding engineering and consultancy
- Mechanical testing
- Metallurgical examination
- Chemical analyses of metals
- Material identification and certification

In fact, Zurich's laboratory is the largest provider of welding qualifications in the UK.

Summary

Welding qualifications:

- Cover the procedure, the welder and operators
- Improve the reliability of welding
- Demonstrate that the manufacturer is competent to meet requirements
- Can be obtained from Zurich's West Bromwich laboratory, the largest provider of welding qualifications in the UK.

For more information

Should you require any further guidance, please contact:
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