



Welding Technical Services

TCR Engineering Services offers a comprehensive welding technological solutions as per client's specific requirements covering vast range of ferrous and non-ferrous materials (carbon and low alloy steels, stainless steel family, Ni alloys, Ti & Al alloys etc.).

Welding Procedure Qualification

- Preparation of Welding Procedure Specification (WPS) based on applicable code/ standards (ASME, ANSI, AWS, API) and project design conditions. TCR expert will advise on selection of welding process, technique, and consumables to meet test requirements.
- Review of post weld heat treatment (PWHT) criteria and its parameters.
- Welding and testing of coupon, visual, nondestructive & metallographic examinations, PWHT, mechanical and corrosion testing.
- Documentation of Procedure Qualification Records (PQR) and final qualified WPS.

Welder Performance Qualification

- Welders/ welding operators training, coupon welding, examination and testing as per code/ standard. TCR will advise on qualification material and process variables to meet client's production welding.
- Documentation of Welder/ Welding Operator Qualification (WPO) records.

Welding Consumables Testing

- Classification/ brand testing of all types of welding consumables including of solid, flux/ metal cored wires & electrodes as per ASME Section II Part C, IS 814.
- Batch testing as per client's specific requirements including of PWHT simulation and any special corrosion, mechanical test.

TCR welding inspector deployed on site will be responsible for monitoring and verifying below aspects conforming to the specific requirements of the relevant code/ standard/ specifications.

- ✓ Check correct weld procedure (s) employed.
- ✓ Inspect weld profile preparation & joint fit-up
- ✓ Verify welding consumable identification and certificates.
- ✓ Check safety of set up and operation in vicinity, particular in respect of ultraviolet radiation from arc during welding.
- ✓ Monitor welding parameters, pre and post weld heat treatment (if any) and perform weld visual examination
- ✓ Monitor the physical examination and all testing. Coupons can be tested at TCR material testing laboratory.
- ✓ Ensure all necessary inspection stages are completed and verify that examinations and testing are executed as per procedure by qualified personnel.
- ✓ As required the inspector shall employ the necessary inspection tools and instruments (eg. mirrors, measuring gauges, rule, vernier, instruments for measuring electrical & temperature parameters etc.).

TCR welding inspectors are certified in accordance with requirements of at least one of the schemes; Certification Scheme for Weld Inspection Personnel (CSWIP), American Welding Society (AWS), BGAS (previously British Gas ERS), and/or ASNT Level II VT. All inspectors are competent to interpret various standards including ASME B&PV Code, Section IX, API Std. 1104 and ANSI / AWS D1.1.

TCR's materials destructive testing laboratory in Navi Mumbai and Vadodara have expertise in conducting chemical analysis, metallographic examination, mechanical and corrosion testing as recommended in ASME Section II, Section IX, Section VIII Division-1/2, AWS Division 1.1, API 1104, IS 814 etc. & Customer Specifications. The laboratory is fully compliant to NABL, ISO 17025 as well as approved by BIS and IBR.

To know more about TCR's welding technical services or only third-party inspection services, please communicate with Mr. Shailendra Singh, Co-Ordinator - at +91-7977114738 or send an email to inspection@tc reng.com

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ISO/IEC 17025 : 2017
Accredited Testing Laboratory by

NABL

TC-6905

Vide Certificate No. TC - 6905