

Product Engineering: Automating the Welding Process as per ASME IX standards

Objective

Welding codes are designed for improving the quality and welding efficiency. The most commonly used welding codes are ASME (American Society of Mechanical Engineers) Section IX and AWS (American Welding Society) D1.1. Our end customer is a digital enterprise who wanted to streamline the welding process by leveraging digital technologies and automation. The end goal is to automatically develop WPS from a PQR abiding by the ASME standards. Reference joint diagrams should be following the base metal & filler metal database and simplify the welding process.

Challenges

- › Variation in the process affecting quality
- › High cycle time
- › Manual paperwork
- › Adhering to industry compliance and benchmarking diagrams

Approach

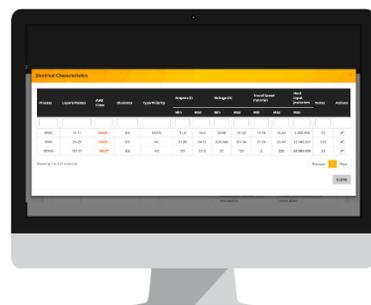
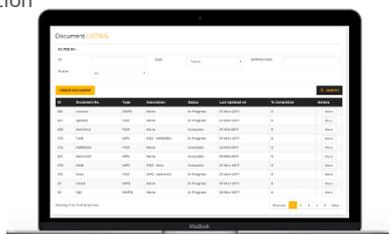
Rishabh Software's team first analyzed the nuances and terminologies used in the welding process. Our team researched and studied the fundamentals of a welding process to understand:

1. WPS (Welding Procedure Specification) a document that provides clarity to the welder. It depicts the joint design and welding materials, parameters, technique and code requirements.
2. PQR (Procedure Qualification Record) a record of test results for the welds made by the WPS. Destructive testing (tensile pulls, bends) is required for PQRs in all codes. AWS D1.1 also requires nondestructive testing for procedure qualification. ASME Section IX does not.
3. WPQ (Welder Performance Qualification) is a test certificate that is required to qualify a welder having the necessary knowledge to perform welding as per the specifications shared by a weld procedure.

We followed the waterfall software development model and analyzed the ASME standards for the welding process. As the solution is a 'first-of-its-kind type,' the customer wanted a proof-of-concept (POC) solution to test its effectiveness. After the success of POC, we developed the cloud-ready solution to automate the welding process.

Business Benefits

- › Complete Quality Assurance & Visibility
- › Eliminates the Communication Gap with automatic updates & backups
- › Automates five specifications for any welding process
- › Increased turnaround time for preparing PQR, WPS, Draft WPS, WPQ and WOPQ specification documents



Transformation helped to reduce the time & efforts spent in preparing PQR, WPS, WPQ and WOPQ specification documents

Industry Segment

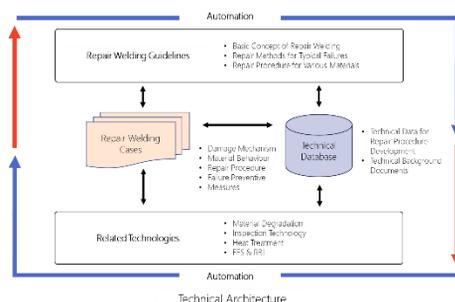
Digital Enterprise

Customer Profile

Asia based digital enterprise offering subscription-based services to manufacturing industry.

Technology and Tools

- › ASP.NET MVC
- › Bootstrap
- › Microsoft SQL Server



About Rishabh Software

Rishabh Software is a CMMI 3, ISO9001, ISO 27001, Microsoft Gold Partner & Oracle Gold Partner providing application development services & solutions to mid-sized enterprises globally through our offices in the US, UK and India. We leverage the latest technology stacks in Cloud, Mobile, Business Intelligence and other Enterprise technologies helping clients to get the best value of their IT budget. With our team of 250+ application developers, we have implemented 1000+ successful projects across 24 countries. We work on .NET, Java, PHP, iOS, Android, Oracle, IBM and Open Source technologies.



www.rishabhsoft.com

sales@rishabhsoft.com

US: +1 877 747 4224

UK: +44 207 993 8162