The pipe can pass while the weld fails

Low-temperature steel pipe: toughness, grades and design limits

Control	Why it matters	Expected evidence
WPS	Defines temperature range, preheat, heat input, passes and PWHT.	Approved welding procedure
PQR	Demonstrates actual weld-metal and HAZ properties within tested variables.	Tension, bends and CVN when required
Filler metal	Strength, nickel and toughness must suit base metal and design temperature.	Certificate / batch control
PWHT	Changes stress and hardness; its effect on toughness is not always beneficial.	Recorded cycle and PQR compatibility
Production test	Critical projects may require weld production testing.	Weld/HAZ impact and NDE results

Source / basis: https://niktrd.com/low-temperature-steel