

Manufacturing Industry

CASE STUDY

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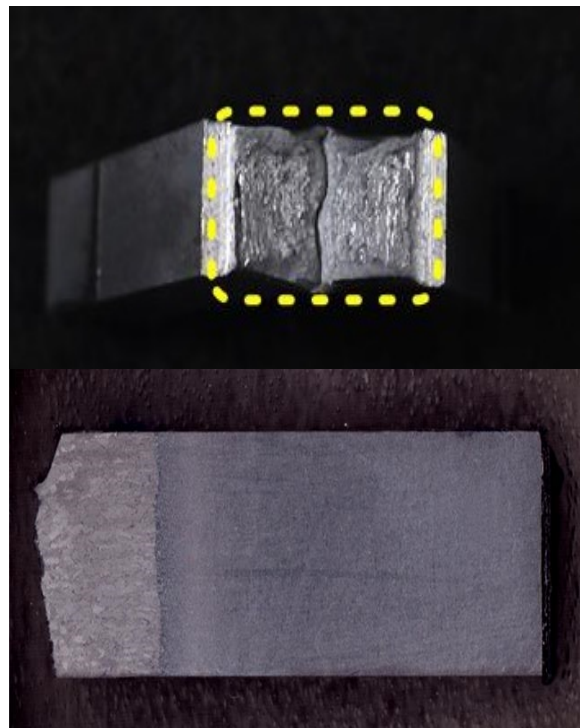
Key Facts

Sector Manufacturing Industry

Category Investigation of Low CVN Test Results at weld of Pipe

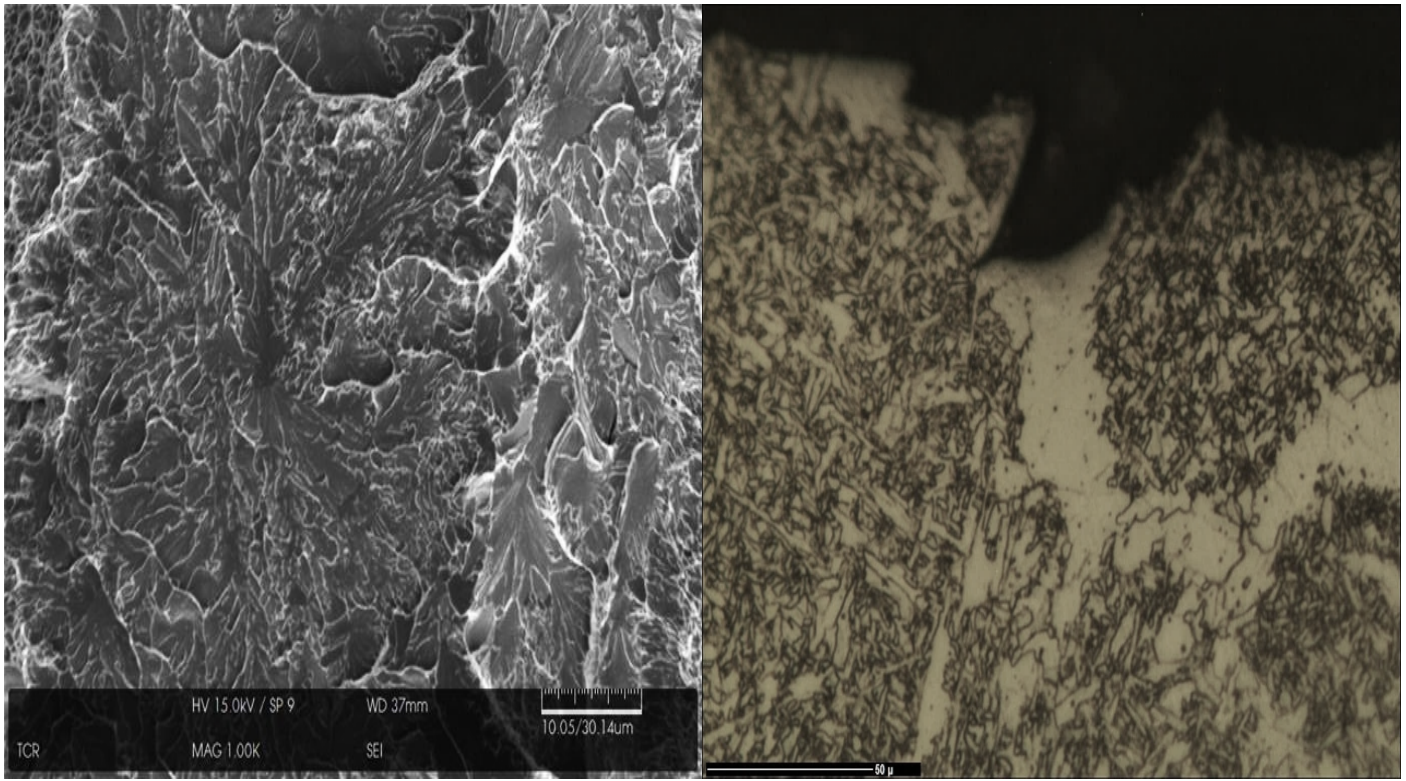
Problem

- The CVN test results at the weld of pipe showed lower test readings.
- The material of construction of pipe is API 5L X60MS



Diagnosis

- The lower CVN values observed in the fail samples are because of presence of continuous coarse network of pro-eutectoid ferrite, large in quantum that has facilitated easy crack movement.



Solution/Recommendations

- The pipe parent metal metallurgy in all the samples with regard to MOC and microstructure is seen to be satisfactory. Even the weld MOC is found to be ok along with proper fusion quality.
- Fracture surface indicates less ductile nature in fail ones by way of larger size flat tearing type fracture surface. The slanted shear type fracture surface is more in the okay sample.
- The failed samples are seen to consist of coarse, continuous network of pro-eutectoid ferrite with a tendency to assume widmanstatten pattern. Moreover, its quantum is also larger than the okay one. Ferrite being soft, favours easy crack propagation as noticed.

Contact Us

If you are interested to learn more about TCR Advanced,
please send an email to: sohel@tcradvanced.com

Mr. Sohel Vaidya

Business Development Manager