

Inspection of Additive manufacturing parts for O&G market

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As manufacturer of tubular solutions for Oil & Gas market, Vallourec is investigating opportunities offered by additive manufacturing. This production mode may come on top of conventional processes of the group to overcome a certain amount of customer challenges. The targeted products being large parts, developments are mainly focused on WAAM technology. In the production routes definition, NDT inspection of the parts is considered as key to ensure quality of the products to our customers. Vallourec Research Center France is then working on potential solutions to cope with challenges of additive manufacturing parts inspection. Indeed, parts manufactured are most of the time with complex shapes, can present heterogeneities in their volume or surface that can require specific NDT solutions. On top of this, NDT techniques developed need to be compatible with an industrial use. The paper will present a used case of WAAM part for O&G market that has been produced by Vallourec and NDT inspected. It will show the ultrasonic inspection that has been put in place for volumetric inspection and MPI that has been performed for surface one. Then, the presentation will conclude on answers to additive manufacturing parts challenges and open on the ones remaining. Finally, the inspection solutions proposed will be evaluated regarding conformity to product, process constraints and potential industrial implementation.