EVALUATION OF THE INFLUENCE OF METAL-COMPOSITE ADHESIVE JOINTS FOR STRUCTURAL REPAIRS OF FPSO-TYPE PLATFORM HULLS (FLOATING PRODUCTION STORAGE AND OFFLOADING)

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Abstract: The use of new technologies for structural repairs in the offshore sector is in constant development allied to the guarantee of quality and operational safety. Composites have been used in the industrial sector as high performance materials since the 60's because they are attractive in various fields, such as adaptability to almost any geometric substrate and easy conformation to complex shapes that fit in small places. They are lightweight, have good mechanical strength and resistance to corrosion and are capable of restoring the capacity of damaged structures. In the last two decades, a large number of tanker conversions have been seen in FPSO's being soon used as a study source since they are designed to remain in lease for 25 years or more. Composite layers reinforced with fibers are also effective in reinforcing structural steel elements in order to extend fatigue life and reduce crack propagation if galvanic corrosion is prevented and adhesion is sufficient provided. For all these reasons, new repair technologies are researched in order to restore the structural integrity of these platforms without oil production being interrupted, so in this work the purpose is to evaluate the influence parameters of the performance of the glue surface preparation in composite-metal bonded joints by analyzing the feasibility of using the aramid reinforced fiber composite in structural repairs on FPSO-type platforms.

Keywords: Metal-Composite, Structural, Repair , FPSO, Aramid, Joints