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Mechanical Properties of different structural adhesives types

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The use of adhesives has many advantages over other methods of fastening. Presenting a smooth exterior, spreading of the load and ease of joining thin or dissimilar materials are all reasons why the use of adhesives for bonding structures is steadily growing and finding new applications [1]. This work qualifies three different structural adhesives used in repair of pipelines and bonding of metal structures. The adhesives were qualified in according to PETROBRAS RT TMEC Nº 003/08 test method and by using Manual "Qualification Procedures for Adhesives used in the repair of pipelines and bonding of metallic structures" developed by the Laboratório de Adesão e Aderência (LAA). The results showed that most of the bonded joints minimum resistance value is higher than 5 MPa in according to ISO/PDTS 24817:2006 test method. The application of adhesives is not indicated when a UV resistance is required.

[1] R. D. Adams, J. Comyn, W. C. Wake, Structural Adhesive Joints in Engineering, Springer, 2nd edition (October 31, 1997).
[2] PETROBRAS RT TMEC N-003, Comissão de Normas Técnicas (CONTEC), Qualificação de Adesivos para Reparo Estrutural, (2008).
[3] ISO /PDTS 24817, Petroleum, petrochemical and natural gas industries - Composite repairs for pipework - Qualification and design, installation, testing and inspection, (2006).