

Bending Test Characteristics for Splicing of Thermoplastic Polymer Using Hot Gas Welding

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Abstract : Materials of the thermoplastic polymer when they break is usually thrown away, or is recycled which requires a long process. The purpose of this study is to splice the broken thermoplastic polymer using hot gas welding with different variations of welding wire/electrodes. Materials of thermoplastic polymer used are Polyethylene (PE), Polypropylene (PP), and Polyvinyl chloride (PVC) by using welding wire like the three materials. The method is carried out by using hot gas welding; there are two materials that cannot be connected, namely PE with PVC welding wire, and PP with PVC welding wire. The permeable liquid penetrant test is PP with PE welding wire, and PVC with PE welding wire. The best bending test result with the longest elongation is PE with PE welding wire with a bending test value of 179.03 kgf/mm². The microstructure was all described in Scanning Electron Microscopy (SEM) observations.

Keywords : thermoplastic polymers, bending test, polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), hot gas welding, bending test

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