Repair of Cracked Aluminum Plate by Composite Patch

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Abstract : In this work, repaired crack in 6061-T6 aluminum plate with composite patches presented, firstly we determine the displacement, strain, and stress, also the first six mode shape of the plate, secondly we took the same model adding central crack initiation, which is located in the center of the plate, its size vary from 20 mm to 60 mm and we compare the first results with second. Thirdly, we repair various cracks with the composite patch (carbon/epoxy) and for (2 layers, 4 layers). Finally, the comparison of stress, strain, displacement and six first natural frequencies between un-cracked specimen, crack propagation and composite patch repair.

Keywords : composite patch repair, crack growth, aluminum alloy plate, stress

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