World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:10, No:03, 2016

Development of 25A-Size Three-Layer Metal Gasket by Using FEM Simulation

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Abstract : Contact width and contact stress are important design parameters for optimizing corrugated metal gasket performance based on elastic and plastic contact stress. In this study, we used a three-layer metal gasket with Al, Cu, Ni as the outer layer, respectively. A finite element method was employed to develop simulation solution. The gasket model was simulated by using two simulation stages which are forming and tightening simulation. The simulation result shows that aluminum with tangent modulus, Ehal = Eal/150 has the highest slope for contact width. The slope of contact width for plastic mode gasket was higher than the elastic mode gasket.

Keywords : contact width, contact stress, layer, metal gasket, corrugated, simulation
Conference Title : ICAMAME 2016 : International Conference on Aerospace, Mechanical, Automotive and Materials Engineering
Conference Location : London, United Kingdom
Conference Dates : March 17-18, 2016