

CAE 해석에 기반 한 DOE를 이용한 자동차 부품의 점 용접점 개수 최적화

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Optimization on the number of spot weld point of vehicle components using DOE with CAE analysis

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Key Words: DOE, optimization, spot weld, vehicle component, CAE

Abstract : A vehicle body usually has more than 4,000 spot weld point and reducing the number of those points greatly reduces production cost of a vehicle. We choose spot weld points that can be removed without decreasing of frequency of a component of vehicle body using DOE(Design of Experiment). Initial candidate points were chosen by sensitivity analysis and 2-level DOE with respect to frequency analysis was used to determine points that would be removed. We applied proposed methodology to the LCA (lower control arm) of a vehicle.

스파이럴 강관 제작의 유한요소해석

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Finite element analysis for manufacturing spiral pipes

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Key Words: spiral pipes(스파이럴 강관), large deformation,(대변형), plasticity(소성)

Abstract : Spiral seam welding pipes are manufactured in two consecutive processes: forming and welding. These processes are analyzed via finite element method to calculate the deformation and stress occurring from the two steps of manufacturing process. The ultimate goal is to find the effect of the plastic deformation resulting from the pipe forming on the residual stress.