

عنوان مقاله:

Numerical Investigation on Effect of Thermal Expansion Joint in a Tube Holder Insulating Section in Shell and Tube Heat Exchanger

محل انتشار:

مجله مهندسی مکانیک و صنایع میپتا، دوره 4، شماره 2 (سال: 1399)

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خلاصه مقاله:

As shell and tube heat exchangers become more widely used, their challenges are becoming more and more important. In some of these heat exchangers, an insulating section is used to reduce thermal stresses on the tube holder section. In this study, the effect of the presence and absence of expansion joints in this insulation section has been investigated. For this purpose, the desired section with and without expansion joint has been analyzed using the finite element method (FEM) in ANSYS software. Based on the results, it was found that the thermal expansion joint reduces thermal deformation and significantly reduces the rate of stresses in the mentioned section, which increases the life of the tube holder section. Also, the presence of expansion joints reduces the applied pressure to the insulation tape around the tube holder section, which increases the life of the insulation tape around the insulation section.

کلمات کلیدی:

Thermal expansion joint, Finite element method, Thermal expansion, Shell and tube heat exchanger, Insulating section, Thermal stress

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