

**ANALYSIS OF LARGE OPENINGS IN CYLINDRICAL VESSELS INCLUDING
NOZZLE FLEXIBILITY.**

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Abstract: Stresses at nozzle-vessel junctions due to external loads applied to the nozzle, or internal pressure, have been investigated. The approach is valid for large nozzle problems, as well as small nozzles. Stiffness coefficients for the opening in the vessel were computed by using the Fourier series solution for the equations of a circular cylinder, in addition to an asymptotic solution of the shell equation. Good agreement with WRC-297, and other experimental and analytical investigations has been obtained for small-nozzle models with different d/t values, and for the limiting cases of a rigid or a soft nozzle. Results for large-nozzle models are also presented.