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This paper derived the computational formulae of burst pressure for thin-walled elbows and thin-walled spherical shells with arbitrary curvatures, using the finite deformation theory and the unified strength theory, and considering the intermediate principal stress, the strength disparity effect of materials and the strain-hardening effect. The quantitative analysis of the burst pressure of thin-walled spherical shells with different curvatures and intermediate principal stress was carried out. The results show that the burst pressure of thin-walled spherical shells with different curvatures and intermediate principal stress is significantly affected by the intermediate principal stress and the strain-hardening effect. The burst pressure of thin-walled spherical shells with different curvatures and intermediate principal stress is significantly affected by the intermediate principal stress and the strain-hardening effect.

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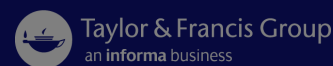
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