

Plastic Buckling of Metallic and Nonmetallic Thin-walled Tubes under Static Axial Compression

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Abstract

Abstract: An experimental study for series of tests were conducted on stainless steel 304 and polyvinylchloride circular tubes loaded statically and axially at room temperature. The specimens tested with same variation of slenderness ratio for both materials with constant axial length. Load-deflection characteristics for stainless steel 304 and polyvinylchloride circular tubes specimens and the influence of plastic properties and collapsing load were illustrated .The experimental results are compared with other experimental published and give good agreement. It is showed that the values of initial peak load ,yield end load and plastic work increase with increasing slenderness ratio at constant length. Also it is observed that the collapse modes are different for both materials.