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Experimental Study on the Deformation of Fully Clamped Pipes  
under Lateral Impact

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## Highlights

- A new method is proposed to determine the global deformation and local deformation of clamped steel pipes under lateral impacts.
- The usually ignored lower surface deformation is measured in the tests and experimental phenomena of deformation are illustrated by different characteristics of upper and lower surface deformation.
- Three-segment mode with two critical positions is proposed in this paper to describe the deformation profile of the whole pipe under lateral impact with higher accuracy for considering the section transitions from circle to oval and finally to dented section.

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