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Spotlight on *Structures*



Editor's Featured Article

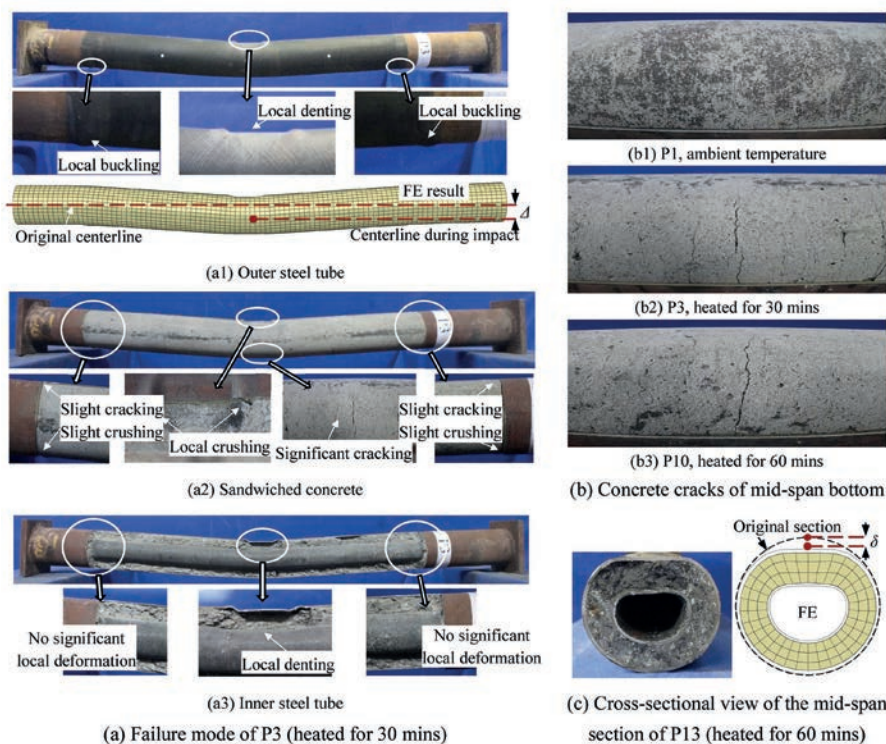
Associate Editor, Lin Hai-Han, has chosen a paper examining the post-fire behaviour following tests on concrete-filled double-skin steel tubular members as the Featured Article for Volume 85 of *Structures*.

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Lateral impact performance of CFDST members after fire exposure

Wei Li, Cong-Ying Chen and Ying-Zhuo Gu
Department of Civil Engineering, Tsinghua University, Beijing, China

This study examines the post-fire impact behaviour of concrete-filled double-skin steel tubular (CFDST) members through combined experimental and numerical methods. Tests on 15 CFDST and 13 concrete-filled steel tubular (CFST) counterparts showed that the inner steel tube in CFDST significantly reduced concrete damage. Fire exposure substantially degraded impact resistance, with 60 minutes of fire leading to a 34.5% reduction in impact force and a 47.0% increase in mid-span deflection compared to unexposed ones. A finite element model incorporating temperature-dependent material degradation, confinement effect, strain rate sensitivity and contact behaviour was developed and validated. The analysis clarified failure mechanisms, stress distribution and energy dissipation mechanisms under impact. The effect of the dominant factor such as fire duration was analysed. The combined effect of axial compression and fire exposure was limited, with variations within 5%, confirming material degradation as the primary cause of performance loss.



→ Read the full paper at <https://doi.org/10.1016/j.istruc.2026.111140>



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