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Dynamic response of stiffened plates under repeated impacts

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Highlights

- The dynamic response of stiffened rectangular plates repeatedly impacted by a rigid knife-edged striker, has been investigated experimentally, numerically and theoretically.
- The sensitivity of the Cowper-Symonds material constant is assessed in the numerical simulations.
- Based on the rigid-perfectly plastic analysis, new analytical formulae are developed to predict the permanent deflections of stiffened plates.
- The strain hardening, strain rate effects and the elastic rebound effects are considered in the theoretical method.
- Good correlations are obtained between the theoretical, experimental and numerical results.

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