Structural effects on compressive strength enhancement of concrete-like materials in a split Hopkinson pressure bar test

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Highlight

- All possible structural factors that may influence SHPB measurement of dynamic increase factor (DIF) for concrete-like materials are evaluated using reliable numerical modelling.
- Two independent mechanisms (i.e. end friction and radial inertia) that may generate lateral confinement in a SHPB specimen are clearly demonstrated.
- A general understanding about the interactions among various structural factors and corresponding mechanisms for the structurally-produced DIF is presented.
- This study is important for the correct interpretation of SHPB measurements on concrete-like materials.