Combined lower and upper bound plastic analysis: better than the sum of its parts

International Bridge Forum

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Andrew Jackson / Dr Campbell Middleton
Bridge Slab
Bridge Slab: Load Test

Collapse load

- Model test
Bridge Slab: Elastic Analysis

Collapse load

Elastic grillage analysis
Bridge Slab: Yield Line Analysis

Collapse load

- Plastic upper bound analysis

- Hog
- Sag
Bridge Slab: Lower Bound Analysis

Collapse load

Plastic lower bound analysis
Bridge Slab: Independent Lower and Upper Bound Plastic Analysis

Collapse load

Combined lower and upper bound plastic analysis
Tyne Tunnel: Lower Bound Analysis
Tyne Tunnel: Upper Bound Analysis

Results agree to within 1%