



# Safety Notice

## Failure of 'push-pull' formwork prop

During a formwork lifting operation, a 'push-pull' formwork prop fixing snapped, allowing the prop to fall to the ground. Fortunately no injury or further damage was caused.

### Findings:

On inspection, the failed lug had a pre-existing crack across about 25% – 30% of its cross-sectional area, as shown below.

When other props on the site were inspected, several were found to have lugs that were bent as shown, incipient cracking being visible either with the naked eye or by carrying out dye testing.



It seems likely that the failure was a result of fatigue following repeated bending of the lug, probably during lifting or handling.

### Suggested Actions:

- 1) Inspect all props with connections of this type, and put out of use any which are found to have bent lugs or show signs of cracking.
- 2) An inspection regime must be established with all props inspected before use and at weekly intervals, where practicable.

**Suggested inspection may include the following:**

<b>Item</b>	<b>Aspects to inspect</b>	<b>Damage to look for</b>	<b>Suggested action</b>
Lugs	General condition	<ul style="list-style-type: none"> <li>• Lugs bent</li> <li>• Weld connections not intact or ripped</li> <li>• Incomplete welds</li> <li>• Visible cracking</li> <li>• Chipping or other damage</li> </ul>	Prop taken out of service
Inner tube	Alignment and condition	<ul style="list-style-type: none"> <li>• Tube bent or crumpled</li> <li>• Visible cracking</li> </ul>	Prop taken out of service
Outer tube	Alignment and condition	<ul style="list-style-type: none"> <li>• Tube bent or crumpled</li> <li>• Visible cracking</li> </ul>	Prop taken out of service
Spindle or threaded section	Each spindle should be wound to its extremity in both directions to ensure that free & unimpeded adjustment is possible.  Should stiffness be encountered the threads should be checked for dirt or damage.	<ul style="list-style-type: none"> <li>• Build up of dirt present</li> </ul>	Spindle should be cleaned, grease applied and re-tested
		<ul style="list-style-type: none"> <li>• Thread defective - inability to adjust</li> <li>• Excessive movement (play) of the threaded section</li> <li>• Thread section bent or cracked</li> </ul>	Prop taken out of service
Pin	Correct type	<ul style="list-style-type: none"> <li>• No visible damage</li> <li>• Attachment chain in place</li> </ul>	Prop taken out of service

Damaged equipment should be put out of service and quarantined. Hired equipment with damage should be reported to the hirer for assessment. Manufacturers may have guidance documents available showing acceptable limits of damage (as used to assess their hired equipment) which may be used to assess contractor-owned equipment.