Timber Elements
Timber Truss Elements
Timber Elements of Timber Trusses

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPCH</td>
<td>Timber Truss - Principal/Top Chord/Bottom Chord</td>
<td>Each</td>
</tr>
<tr>
<td></td>
<td>This element defines only timber truss principals/top chords/bottom chords.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note - Count whole principals, top chords and bottom chords, not pieces of timber which are parts of principals, top chords and bottom chords.</td>
<td></td>
</tr>
<tr>
<td>TSTT</td>
<td>Timber Truss - Strut</td>
<td>Each</td>
</tr>
<tr>
<td></td>
<td>This element defines only timber truss struts (compression diagonals, compression verticals and upper lateral struts).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note - Count whole struts, not pieces of timber which are parts of struts.</td>
<td></td>
</tr>
<tr>
<td>TBJB</td>
<td>Timber Truss - Butting Block/Jacking Block</td>
<td>Each</td>
</tr>
<tr>
<td></td>
<td>This element defines only butting blocks/jacking blocks in timber trusses.</td>
<td></td>
</tr>
<tr>
<td>TTCG</td>
<td>Timber Truss - Cross Girder</td>
<td>Each</td>
</tr>
<tr>
<td></td>
<td>This element defines only timber cross girders in timber truss bridges.</td>
<td></td>
</tr>
<tr>
<td>TSTR</td>
<td>Timber Truss - Stringer</td>
<td>Each truss bay length between cross girders</td>
</tr>
<tr>
<td></td>
<td>This element defines only stringers in a timber truss bridge.</td>
<td></td>
</tr>
</tbody>
</table>

For each of condition states 1 to 4, report the estimated quantity of each element in its corresponding unit of measurement.

**Condition state descriptions**

<table>
<thead>
<tr>
<th>Condition state</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability. All connections are in good condition and bolts are tight.</td>
</tr>
<tr>
<td>2</td>
<td>Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability. Joint connections may be slightly loose but does not affect the serviceability.</td>
</tr>
<tr>
<td>3</td>
<td>Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge. Joint connections may be slightly loose but the serviceability of the bridge is not significantly affected.</td>
</tr>
<tr>
<td>4</td>
<td>Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.</td>
</tr>
</tbody>
</table>

**Key Areas to inspect:**

1. Alignment of the whole truss and individual members.
2. Permanent slippage of truss members at the connections and/or at butting blocks with no vehicular load on the bridge.
3. Integrity of all connections and butting blocks with the movement of individual truss members and the overall sag of truss under a movement of a heavy vehicle.
4. Splice plates, keyways or shoes for timber deterioration

**Rating Guidance Notes:**

As the visual appearance of timber elements can be deceptive, assessment of conditions must be made with sounding by hammer and confirmed with the judicious use of test boring if required.

When the four yearly test boring program is being carried out, flashing should be removed to allow inspection underneath the flashing.
Timber Truss Elements  

**TPCH, TSTT, TBJB, TTCG, TSTR**

**Condition State 1**
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability. All connections are in good condition and bolts are tight.

Timber truss in good condition.
Timber Truss Elements

TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 2**

Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Joint connections may be slightly loose but does not affect the serviceability.

Minor splits on the members of the butting block.

Slightly loose vertical splice bolts at top chord.
**Timber Truss Elements**

**Condition State 2**

Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Joint connections may be slightly loose but does not affect the serviceability.

Minor decay on a strut.

Minor rot on a principal.
Timber Truss Elements  

**TPCH, TSTT, TBJB, TTCG, TSTR**

**Condition State 3**
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge. Joint connections may be slightly loose but the serviceability of the bridge is not significantly affected.

Significant piping in one of the members of the butting block.

Medium decay of the bottom chord.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Significant out of alignment of the top chord with major decay.

Badly rotten top chord crushing near the support of steel verticals.
**Timber Truss Elements**

**TPCH, TSTT, TBJB, TTCG, TSTR**

**Condition State 4**

Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Major rot on end of top chord with crushing of timber and tilting of tension rod bearings.

Badly split and rotting top chord.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Heavy decay of the top chord.

Significant crushing of the top chord.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 4**  
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Major rot near the bottom of the principal.

Advanced decay of principals
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Rot on the principal

Failed diagonal strut flitch.
**Timber Truss Elements**

**Condition State 4**

Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Rotting at the bottom chord flitch at the splice.

Rotten section of bottom chord.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 4**

Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Bottom chord crushing and splitting.

Failure of a timber bottom chord in tension.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Badly rotten butting block.

Integrity of the shear key is doubtful with significant separation of the butting block members.
Timber Truss Elements  
TPCH, TSTT, TBJB, TTCG, TSTR

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Timber strut in good condition has partially slipped off the joint. The movement is significant to affect the serviceability of truss.

Unsound connection with slipping strut member and missing bolt.
Timber Truss Elements  

**Condition State 4**  
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge. Connections are very loose causing large movements, bolts are corroded and ineffective or missing, and the serviceability of the bridge is affected.

Badly split and cracked cross girder.
Timber Truss - Steel Bottom Chord
Timber Truss - Steel Bottom Chord

Units: Each

This element defines only steel bottom chords in timber trusses. For each of condition states 1 to 4, report the estimated number of steel bottom chords of timber trusses. (Note - Count whole steel bottom chords, not parts of steel bottom chords.)

Condition state descriptions

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<thead>
<tr>
<th>Condition State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is no evidence of section loss or damage or cracking.</td>
</tr>
<tr>
<td>2</td>
<td>Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.</td>
</tr>
<tr>
<td>3</td>
<td>Heavy pitting may be present. Some measurable section loss is present locally. There are no cracks in the steel or welds. There may be localised failure of connectors.</td>
</tr>
<tr>
<td>4</td>
<td>Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed connectors.</td>
</tr>
</tbody>
</table>

Key Areas to inspect:

1. Connections  
2. End plates  
3. Cross girder saddles  
4. Weep holes  
5. Flood damage  
6. Alignment

Rating Guidance Notes:

Defects are defined as notches, gauges or discontinuities. Deformations are defined as buckled plate, bent members or sections. Section loss is defined as loss of original metal.
Bridge Inspection Procedure Manual - Condition State Photos

**Timber Truss - Steel Bottom Chord**

**Condition State 1**
There is no evidence of section loss or damage or cracking.

Bottom chord in good condition.
**Timber Truss - Steel Bottom Chord**  

**Condition State 2**  
Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.

Surface rust and minor pitting at the bottom.

Bowing of the steel bottom chord in tension.
Timber Truss - Steel Bottom Chord

**Condition State 3**

Heavy pitting may be present. Some measurable section loss is present locally. There are no cracks in the steel or welds. There may be localised failure of connectors.

Number of rivet heads missing
Timber Truss - Steel Bottom Chord

**Condition State 4**
Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed connectors.

Heavy corrosion.

Heavy pitting and the bolt heads corroding away.
Timber Truss – Tie / Kingbolt (Steel)
Timber Truss – Tie / Kingbolt (Steel)  

Units: Each

This element defines only steel or wrought iron ties (suspension rods) in timber trusses. For each of condition states 1 to 4, report the estimated number of ties. (Note - Count whole ties, not rods which are parts of ties.

**Condition state descriptions**

<table>
<thead>
<tr>
<th>Condition State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The camber of the bottom chord is correct. There is no evidence of section loss.</td>
</tr>
<tr>
<td>2</td>
<td>The camber of the bottom chord is correct. Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.</td>
</tr>
<tr>
<td>3</td>
<td>Suspension rods may need to be tightened to restore camber of bottom chords. Heavy pitting may be present. Some measurable section loss or necking is present locally. There are no cracks in the steel or welds. There may be missing locknuts but all connectors are in sound condition.</td>
</tr>
<tr>
<td>4</td>
<td>Suspension rods may need to be replaced to restore camber of bottom chord. Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be failed connectors. The bolts may have stretched.</td>
</tr>
</tbody>
</table>

**Key Areas to inspect:**

1. Locknuts
2. Area of tie inside bottom shoe

**Rating Guidance Notes:**
**Timber Truss – Tie / Kingbolt (Steel)**

**Condition State 1**
The camber of the bottom chord is correct. There is no evidence of section loss.

Tie rods in good condition.

Tie rods in good condition.
Timber Truss – Tie / Kingbolt (Steel)

**Condition State 2**
The camber of the bottom chord is correct. Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.

Surface rust is forming.

Corrosion of nuts and surface rust on tie bearings.
Timber Truss – Tie / Kingbolt (Steel)

**Condition State 3**
Suspension rods may need to be tightened to restore camber of bottom chords. Heavy pitting may be present. Some measurable section loss or necking is present locally. There are no cracks in the steel or welds. There may be missing locknuts but all connectors are in sound condition.

![Image of timber truss with corrosion]

Minor to moderate corrosion.
Timber Truss – Tie / Kingbolt (Steel)

**Condition State 4**
Suspension rods may need to be replaced to restore camber of bottom chord. Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be failed connectors. The bolts may have stretched.

Advanced corrosion with significant loss of section.
Timber Truss - Brace/Undertrussing
Timber Truss - Brace/Undertrussing

Units: Each

This element defines only side and wind braces and undertrussing rods and wires in timber trusses. For each of condition states 1 to 4, report the estimated number of braces.

Condition state descriptions

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<thead>
<tr>
<th>Condition State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The bracing/undertrussing is tight. There is no evidence of section loss.</td>
</tr>
<tr>
<td>2</td>
<td>The bracing/undertrussing is tight. Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.</td>
</tr>
<tr>
<td>3</td>
<td>The bracing/undertrussing may need to be tightened. Heavy pitting may be present. Some measurable section loss or necking is present locally. There are no cracks and only minor deformations in the steel or welds. There may be localised failure of or occasional missing connectors.</td>
</tr>
<tr>
<td>4</td>
<td>The bracing/undertrussing may need to be replaced. Corrosion is advanced. Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed or missing connectors.</td>
</tr>
</tbody>
</table>

Key Areas to inspect:

1. End connection to bottom chords
2. Transition between threaded and unthreaded section

Rating Guidance Notes:
**Timber Truss – Brace/undertrussing**

**Condition State 1**
The bracing/undertrussing is tight. There is no evidence of section loss.

Bracing in good condition.
Timber Truss – Brace/undertrussing

**Condition State 2**
The bracing/undertrussing is tight. Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.
Timber Truss – Brace/undertrussing

**Condition State 3**

The bracing/undertrussing may need to be tightened. Heavy pitting may be present. Some measurable section loss or necking is present locally. There are no cracks and only minor deformations in the steel or welds. There may be localised failure of or occasional missing connectors.

Brace tie rods with missing clips on pins.
**Timber Truss – Brace/undertrussing**

**TSBR**

**Condition State 4**

The bracing/undertrussing may need to be replaced. Corrosion is advanced. Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed or missing connectors.
Timber Truss - Metal Shoe
Timber Truss - Metal Shoe

Units: Each

This element defines only metal shoes in timber trusses. For each of condition states 1 to 4, report the estimated number of metal shoes.

Condition state descriptions

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<th>Condition State</th>
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<tbody>
<tr>
<td>1</td>
<td>There is no evidence of section loss or damage or cracks.</td>
</tr>
<tr>
<td>2</td>
<td>Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.</td>
</tr>
<tr>
<td>3</td>
<td>Heavy pitting may be present. Some measurable section loss is present locally. There may be minor cracks and/or deformations in the steel or welds. All connectors are in sound condition.</td>
</tr>
<tr>
<td>4</td>
<td>Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed connectors.</td>
</tr>
</tbody>
</table>

Key Areas to inspect:

1. Cracks in middle of the shoes

Rating Guidance Notes:
Timber Truss – Metal Shoe

Condition State 1
There is no evidence of section loss or damage or cracks.

Metal shoe in good condition.

No evidence of corrosion.
Timber Truss – Metal Shoe

**Condition State 2**
Surface rust or minor pitting has formed or is forming. There is no measurable loss of section. There may be minor deformations that do not affect the integrity of the element. There are no cracks in the steel or welds. All connectors are in sound condition.

Shoe showing surface rust and minor pitting.
Timber Truss – Metal Shoe

**Condition State 3**
Heavy pitting may be present. Some measurable section loss is present locally. There may be minor cracks and/or deformations in the steel or welds. All connectors are in sound condition.

Crack on the shoe.

Cracked shoe.
Timber Truss – Metal Shoe

**Condition State 4**

Significant section loss may be present. There may be cracks and/or deformations in the steel or welds. There may be numerous failed connectors.

Broken shoe.

Bolt missing.
Timber Protective System
Timber - Protective System

Units: m of bridge

This element defines only the protective system comprising any flashing, paint work, termite and fungicide or other protective treatment on timber bridges. This element does not include protective treatment of timber barriers.

For each of condition states 1 to 4, report the estimated lineal metres of bridge.

**Condition state descriptions**

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<tr>
<th>Condition state</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The protective system is sound and functioning as intended to protect the timber and metal.</td>
</tr>
<tr>
<td>2</td>
<td>The protective system may be chalking, peeling, checking or showing other early evidence of distress but there is no exposure of timber or metal.</td>
</tr>
<tr>
<td>3</td>
<td>The protective system is no longer effective on significant areas. There may be exposed timber or metal or early signs of fungal decay or termite infestation.</td>
</tr>
<tr>
<td>4</td>
<td>The protective system has failed.</td>
</tr>
</tbody>
</table>

**Key Areas to inspect:**

1. Ends of timber members such as cross girders
2. Joints between timber members
3. Members where water can be trapped
4. Hidden parts of members such as behind shoes

**Rating Guidance Notes:**

Flashing is not structural metal.
Timber - Protective System

Condition State 1
The protective system is sound and functioning as intended to protect the timber and metal.

Truss paint in good condition.

Truss paint and flashing in good condition.
Timber - Protective System  

**Condition State 2**
The protective system may be chalking, peeling, checking or showing other early evidence of distress but there is no exposure of timber or metal.
Timber - Protective System

**Condition State 3**
The protective system is no longer effective on significant areas. There may be exposed timber or metal or early signs of fungal decay or termite infestation.

Coating has failed in significant areas.

Coating has failed in significant areas.
Timber - Protective System

Condition State 4
The protective system has failed.

Paint has failed and timber is deteriorating.
Other Timber Elements
Other Timber Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
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</tr>
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<tbody>
<tr>
<td>TGCG</td>
<td>Timber- Girder/Cross Girder (Beam Bridge)</td>
<td>Each</td>
</tr>
<tr>
<td>TCHS</td>
<td>Timber-Capwale/Headstock/Sill</td>
<td>Each</td>
</tr>
<tr>
<td>TPIL</td>
<td>Timber - Pile</td>
<td>Each</td>
</tr>
<tr>
<td>TCOR</td>
<td>Timber-Corbel</td>
<td>Each</td>
</tr>
<tr>
<td>TWBR</td>
<td>Timber Wale/Brace</td>
<td>Each</td>
</tr>
<tr>
<td>TASG</td>
<td>Timber-Abutment Sheeting/Gravel Board</td>
<td>m² of exposed area</td>
</tr>
<tr>
<td>TTDK</td>
<td>Timber - Transverse Deck Plank</td>
<td>m² of plan area</td>
</tr>
<tr>
<td>TLSH</td>
<td>Timber - Longitudinal Sheeting/Decking</td>
<td>m² of plan area</td>
</tr>
</tbody>
</table>

For each of condition states 1 to 4, report the estimated quantity of each element in its corresponding unit of measurement.

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.</td>
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<tr>
<td>2</td>
<td>Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.</td>
</tr>
<tr>
<td>3</td>
<td>Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.</td>
</tr>
<tr>
<td>4</td>
<td>Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.</td>
</tr>
</tbody>
</table>

Key Areas to inspect:

1. At and near interfaces of two timber members joined together or transfer load through bearing, especially where exposed to water or moisture.

Rating Guidance Notes:
As the visual appearance of timber elements can be deceptive, assessment of conditions must be made with sounding by hammer and confirmed with the judicious use of test boring if required.

When the four yearly test boring program is being carried out, flashing should be removed to allow inspection underneath the flashing.
Timber- Girder/Cross Girder

Condition State 1
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Timber girders in good condition.

Girders and corbels in good condition.
Timber- Girder/Cross Girder

Condition State 2
Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Minor split on the girder.
Timber- Girder/Cross Girder  

**Condition State 3**  
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Vertically split girder with other horizontal splits at the snipe.

Split and checks
Timber- Girder/Cross Girder

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Girders in poor condition with heavy splits and checks.

Broken girder.
Timber-Capwale/Headstock/Sill  

TCHS  

Condition State 1  
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.
Timber-Capwale/Headstock/Sill

Condition State 2
Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Headstock with minor check.
**Timber-Capwale/Headstock/Sill**

**Condition State 3**

Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Medium rot and splitting of the headstock.
Timber-Capwale/Headstock/Sill TCHS

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Badly rotten sill beam.

Badly rotten timber headstock.
Timber-Capwale/Headstock/Sill  TCHS

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Timber headstock with significant crack under the girder.
Timber- Piles

Condition State 1
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Timber piles in good condition.
### Timber- Piles

#### Condition State 2

Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

![Minor split in the pile.](image)

Minor split in the pile.
Timber- Piles

Condition State 3
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Timber pile split and with indications of damage below ground.
Timber- Piles

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Significant rot and major loss of section just below the ground surface.

Failed timber piles.
Timber- Piles

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Major split on the pile.

Badly rotten pile.
Timber- Corbel

Condition State 1
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Timber corbels in good condition.
Timber- Corbel

Condition State 2
Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Minor end splits, mainly vertical.

Fungal growth on a corbel.
Timber- Corbel

**Condition State 3**
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Piping with moderate horizontal split.
Timber - Corbel

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Cracked corbel

Severely split and splintering corbel
**Timber - Wale/Brace**

**Condition State 1**

The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Timber elements in good condition.
Timber- Wale/Brace

**Condition State 2**

Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability

Minor decay of the wale.
Timber- Wale/Brace

**Condition State 3**
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Wale showing end rot.
Timber- Wale/Brace

**Condition State 4**
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Rotten ends of wale.
Timber - Abutment Sheeting/Gravel Board

**Condition State 1**
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Abutment sheeting in good condition.
Timber- Abutment Sheeting/Gravel Board

**Condition State 2**

Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Abutment sheeting with some termite infestation.

Timber abutment sheeting showing differential settlement.
Timber - Abutment Sheeting/Gravel Board

**Condition State 3**
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Abutment sheeting with termite infestation and some rotten boards.
Timber - Abutment Sheeting/Gravel Board

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Broken abutment sheeting.

Missing sheeting with erosion problems.
Timber- Transverse Deck Plank

Condition State 1
The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.

Transverse Deck planks in good condition.
Timber- Transverse Deck Plank

**Condition State 2**
Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.
Timber- Transverse Deck Plank

Condition State 3
Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Medium decay of cross decking.
Timber- Transverse Deck Plank

Condition State 4
Advanced deterioration. Heavy decay, insect infestation, splits, cracks or crushing has produced loss of strength that affects the serviceability of the bridge.

Advanced deterioration of transverse decking.

Missing sections of cross decking.
Timber- Longitudinal Sheeting/Decking  

**Condition State 1**

The timber is in good condition with no evidence of decay. There may be cracks, splits and checks having no effect on strength or serviceability.
Timber- Longitudinal Sheeting/Decking

Condition State 2
Minor decay, insect infestation, splitting, cracking, checking or crushing may exist but none is sufficiently advanced to affect serviceability.

Longitudinal sheeting with minor splitting. Large gap near the kerb and a missing plank.
Timber- Longitudinal Sheeting/Decking  

**Condition State 3**

Medium decay, insect infestation, splitting, cracking or crushing has produced loss of strength of the element but not of a sufficient magnitude to affect the serviceability of the bridge.

Damaged ends of longitudinal sheeting on rotten cross decking.

Deck in poor condition with loose bolts and damaged sheetings.
Unsafe longitudinal sheeting with holes, rot and splits.
Timber Stress Laminated Deck
Timber - Stress Laminated Deck

Units: m² of plan area

This element defines only stress laminated timber deck. Protective treatment of the prestressing system of this element is covered under the element 'Timber - Protective System' (TPRS).

For each of condition states 1 to 4, report the estimated square meters of deck area.

### Condition state descriptions

<table>
<thead>
<tr>
<th>Condition state</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The timber laminates are in good condition with no evidence of decay. The prestressing system and the tie downs are in good condition.</td>
</tr>
<tr>
<td>2</td>
<td>Minor reflective cracking on the wearing surface and/or minor decay of timber laminates may exist. No relative movement of laminates may be observed under traffic. The prestressing system is in good condition but the tie down bolts may be slightly loose.</td>
</tr>
<tr>
<td>3</td>
<td>Local decay, insect infestation, or crushing of some timber laminates may exist. Some relative movement between laminates may be observed under traffic. There may be local loss of prestress and the tie down bolts may be loose. The defects are only affecting the deck locally.</td>
</tr>
<tr>
<td>4</td>
<td>Advanced deterioration. Significant decay, insect infestation, or crushing of timber laminates may exist. The tie down bolts are sufficiently loose to enable significant movement of the deck. The prestressing system is sufficiently ineffective to cause loss of strength that affects the serviceability of the bridge. The defects are globally affecting the deck.</td>
</tr>
</tbody>
</table>

### Key Areas to inspect:

1. Surface seal
2. Flashing on side of laminates
3. Anchorages and bars
4. Noise from laminate movement under traffic
5. Joint cover plates

### Rating Guidance Notes:
Timber - Stress Laminated Deck

**Condition State 1**
The timber laminates are in good condition with no evidence of decay. The prestressing system and the tie downs are in good condition.

Stress laminated deck in good condition.
Timber - Stress Laminated Deck

**Condition State 2**
Minor reflective cracking on the wearing surface and/or minor decay of timber laminates may exist. No relative movement of laminates may be observed under traffic. The prestressing system is in good condition but the tie down bolts may be slightly loose.
Timber - Stress Laminated Deck

**Condition State 3**

Local decay, insect infestation, or crushing of some timber laminates may exist. Some relative movement between laminates may be observed under traffic. There may be local loss of prestress and the tie down bolts may be loose. The defects are only affecting the deck locally.

Edge laminates breaking away from the deck.

Water seeping through laminates.
Timber - Stress Laminated Deck

Condition State 4
Advanced deterioration. Significant decay, insect infestation, or crushing of timber laminates may exist. The tie down bolts are sufficiently loose to enable significant movement of the deck. The prestressing system is sufficiently ineffective to cause loss of strength that affects the serviceability of the bridge. The defects are globally affecting the deck.

Stress laminated deck in poor condition.