



How is a truss element and a cable element considered in midas Civil?



Truss element can resist both tension and compression, while a cable element can resist only tension.

Main differences in these elements are as tabulated below:

Feature	Truss Element	Cable Element
Sag Effect	<p>No Sag</p> <p>Truss element, is linear in general and has constant stiffness.</p>	<p>Sag is predominant</p> <p>Cable elements are inherently non linear and the stiffness changes with the load applied. Hence consideration of sag becomes important.</p>
Load Combinations	<p>Superimposition possible</p> <p>Linear combinations of load cases can be made to compare truss force results.</p>	<p>Non linear behaviour, no superimposition</p> <p>When non linear behaviour of cable is considered, superimposition of load cases are ruled out and combined effect of loads has to be considered.</p>
General Usage	<p>Used for both cable bridges as well as for modelling struts and ties of general bridges.</p>	<p>It's effective in case of cable bridges i.e. suspension and cable-stayed bridges, where in large deformation effects can not be neglected.</p>
Usage in Cable Bridges	<p>For preliminary design of the cable bridges we go for modelling of cables as equivalent truss elements. The model is checked if the stiffness of the truss is sufficient to resist the initial Dead load.</p>	<p>More detailed analysis may require cable elements be modelled. In this case geometric non linear analysis has to be carried and an elastic catenary behaviour of the cable is considered.</p>