# **Bridge Modeler**

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Please note that the Bridge Modeler supplements SAP2000 releases through Version 14, and has since extended into CSiBridge. Most material in this space applies to both of these products, therefore the term Bridge Modeler will refer to both SAP2000 and CSiBridge application.

The Bridge Modeler enables parametric definition of girdertype bridge systems. Users initiate high-level parametric modeling by defining span length, layout lines, cross section, and other geometric and structural specifications. The Bridge Modeler then assembles frame, shell, and solid objects, and connects them with link elements, to automatically create bridge objects. The Bridge Modeler expedites design by automatically generating, meshing, and analyzing complex bridge models. Templates are also available for several superstructure and substructure design checks.



# Related Content

### Articles

#### **Tutorials**

- Analysis and design of composite steel-girder bridge
- Applying parametric variation to bridge width and girder spacing for bridge object with skewed abutments (steel I-girder bridge deck section)
- Applying parametric variation to bridge width for bridge object with skewed abutments (flat slab bridge deck section)
- Applying point, line, and area loads to bridge objects
- Concrete box-girder bridge model
- Create and copy frame properties
  Haunched steel-girder bridge
- Import frame properties from shape libraries
- Influence-based moving-load analysis first steps (CSiBridge)
- Influence-based moving-load analysis first steps (SAP2000) •
- Layout-line geometry
- Manual modeling of bridge foundations ٠
- Manual modeling of wall-type bents
- Manual modification of bridge bearings
- ٠ Model from Bridge Seismic Design Request manual
- Pushover analysis first steps •
- ٠ Steel bridge
- Steel-girder bridge with variable flange thickness ٠
- ٠ Step-by-step moving-load analysis first steps (CSiBridge)
- Step-by-step moving-load analysis first steps (SAP2000)
- Variable girder spacing

### **Test Problems**

- Bridge shrinkage example
- Horizontal moving loads
- Hyperstatic forces for bridge-object superstructures
- Staged-construction analysis of two-span precast-girder bridge
- Start and end station for bridge line-load input
- Temperature-gradient loading for bridge objects
- Tendon force vs. frame response

## References

Aviram, A., Mackie, K., Stojadinovic, B. (2008). Guidelines for Nonlinear Analysis of Bridge Structures in California. Berkeley, CA: Pacific Earthquake Engineering Research (PEER) Center.