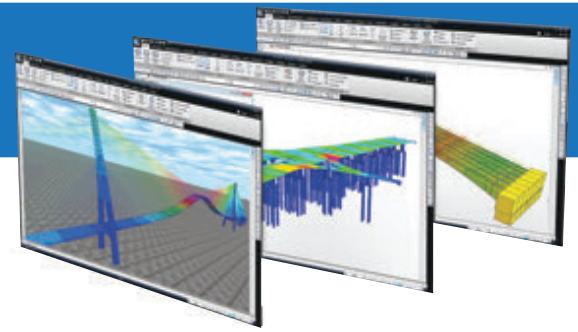




midas Civil 2020

midas Civil is a Finite Element Analysis software developed by MIDASoft, used for bridge analysis and design. midas Civil combines the powerful pre and post processing features with an extremely fast solver which makes bridge modeling and analysis simple, quick and effective. Also, there are several easy parameter modification tools available which can be used for parametric analysis leading to optimized and economical design.



01. Modules



Conventional Version

midas Civil Conventional module carries wizards for quick modeling of conventional bridges in 2D and 3D as well as most user friendly GUI for easy modification and result extraction

For Who?

Engineers handling structural analysis and design of conventional bridges as listed below and general structures.

Advantages

Can handle concrete as well as steel bridges / Super and Sub structure analysis on same platform



Precast Girder Bridge



Steel Plate Girder Bridge



Culvert



Slab Bridge



Steel Arch Bridge



Truss Bridge



Steel Box Girder Bridge



Multi-Cell Box Girder Bridge



Push Over Analysis



Dynamic Analysis



Moving Load



Integral Abutment

- Unlimited Nodes (Elements)
- Static Analysis / Dynamic Analysis
- Vehicle Load Optimization
 - AASHTO LRFD - CAN/CSA-S6S1
 - Super (permit) Load - Influence Line/Surface
 - Moving Load Tracer & Force Envelopes
- P-Delta Analysis
- Wizards (Slab, RC Frame & Culvert auto-generators)
- Integral Bridge Module (Soil-Structure Interaction)
- Grillage Model Auto-Generation (Multi-Cell Box Girders)
- Settlement Analysis / Pushover Analysis
- Section Property Calculator for Irregular Sections
- Buckling Analysis / Thermal Stress Analysis
- Automesh for Planar Area (Wood-Armer moments)
- Composite Bridge Analysis (PC & Steel)
- Construction Stage Analysis (Up to 10 stages)
- Post-tensioned Girder: AASHTO-LRFD (2012) & CSA-S6 (2010)
- CSA-S6S1 : Post-tensioned Girder Bridge Design
- Bridge Rating of Box Sections as per AASHTO LRFR
- Dynamic Report Generation
- Response Spectrum
- Eigenvalue Analysis



Advanced Version

midas Civil Advanced module is a super set of midas Civil conventional version. It carries bridge specific wizards to save the modeling time for engineers dealing with advanced bridge types like segmental, cable stayed and suspension bridges.

For Who?

Engineers dealing with challenging structures requiring complex analysis.

Advantages

Wizards to generate the geometry along with construction stages and tendon placement in 3D. Unique tools for automatic cable force optimization at final stage and construction stages.



Cable Stayed Bridge



PSC Bridge



Suspension Bridge



Long Span Bridge



Concrete Arch Bridge



Extradosed Bridge



Movable Scaffolding Bridge



Nonlinear Dynamic Analysis



Incremental Launching Bridge



Precast Segmental Bridge



Balanced Cantilever Bridge



Full Staging Bridge

- Includes Conventional Version functionality and :
- Construction Stage Analysis (unlimited number of stages) & Nonlinear Static Analysis
- Segmental Post-tensioned Bridge Wizards
 - FCM (Balanced Cantilever Method)
 - ILM (Incremental Launching Method)
 - MSS (Movable Scaffolding System)
 - FSM (Full Staging Method)
 - PSC (Prestressed/Post tensioned Concrete)
- Large Displacement (Forward/Backward) Analysis
 - Suspension Bridge Wizard
 - Cable Stayed Bridge Wizard
 - Cable Tuning
- Boundary Nonlinear Dynamic Analysis
 - Gap
 - Hook
 - Damper
 - Isolator
 - Hysteretic System
 - Etc.

02. Options

Composite Girder Design (CHBDC CSA & AASHTO LRFD)

- PSC wizard with automatic tendon generator for detailed tendon profiler
- 3D Steel curved cross frame modeling for accurate design
- Construction sequencing with composite loads and time dependent material behavior
- Optimization of live loads for super and sub structure design

Higher Analysis

- Inelastic Time History Analysis
- Material Nonlinear Analysis
- Heat of Hydration Analysis
- Fiber modeling
- Tresca, von Mises, Mohr Coulomb, Drucker-Prager and Masonary models

GSD (General Section Designer)

- Draw Arbitrary Cross-sections (RC, Steel, Composite)
- Interaction Curves (P-M, M-M, P-M-M) & Capacity Check Ratio (AASHTO LRFD, CSA, ACI)
- Moment-Curvature Curves for Different Axial Loads
- Stress Contours for Combined Loading

Rail Track Interaction

- Auto-generation of railway analysis models (simplified & complete analysis)
- CWR Thermal, Braking & Accelerating force analysis
- Auto-generation of multi-linear balast links
- Train moving load analysis