midas **Civil** Packages, Technical Specifications

Nodes (Elements)	Plus	Advanced	Full
Unlimited Nodes and Elements	√	√	√
Automated Modeling Wizard	**Plus**	**Advanced**	**Full**
Beam / Column / Plate / Shell	√	√	√
Culverts (Slab and Box)	√	√	√
RC Slab Bridge	√	√	√
RC Frame Bridge	√	√	√
Balanced Cantilever Construction		√	√
Incrementlly Launched Bridge		√	√
Span by Span Construction		√	√
Movable Scaffolding System		√	√
Cable Stayed Bridge		√	√
Suspension Bridge		√	√
Grillage Model	√	√	√
Transverse Analysis Model	√	√	√
Post-tension Wizards (FCM, ILM, MSS, FSM & PSC bridge)		√	√
Analysis Types	**Plus**	**Advanced**	**Full**
Static Analysis	√	√	√
Dynamic Analysis	√	√	√
- Eigen (Lanczos) and Ritz vector Analyses	√	√	√
- Response Spectrum Analysis	√	√	√
- Time History Analysis	√	√	√
- Inelastic Time History Analysis (Option)			√
· Beam Element			√
· Lumped hinge & Distributed hinge			√
· Automatic calculation of yield strength			√
· Axial load – biaxial moment interaction			√
· Fiber model Analysis			√
- Boundary Nonlinear Dynamic Analysis using Gap, Hook, Damper, Isolator, Hysteretic System		√	√
- Pushover Analysis	√	√	√
· Auto Plastic Hinge Definition	√	√	√
· Auto PM Interaction curve for hinge formation	√	√	√
· Obtain Performance point as per FEMA	√	√	√
Moving Load Analysis	√	√	√
- Eurocode 1	√	√	√
- AASHTO LRFD & Standard Spec. Load auto-generation	√	√	√
- CAN/CSA-S6	√	√	√
- BS5400 Spec. & BD37/01	√	√	√
- SP 35.13330.2011	√	√	√
- Abnormal Indivisible Load	√	√	√
- Influence Line / Surface	√	√	√
- Moving Load Tracer & Force Envelopes	√	√	√
Soil Structure Interaction Analysis	√	√	√
- Settlement Analysis	√	√	√

Analysis Types (Continued)	Plus	Advanced	Full
Detailed Section Analysis	√	√	√
- Section Property Calculator for irregular sections	√	√	√
· Import section drawing from AutoCAD	√	√	√
· Create composite section with more than 2 parts	√	√	√
Buckling Analysis	√	√	√
Heat of Hyration Analysis for mass concrete (Option)			√
- Heat of Hydration Analysis for mass concrete			√
- Convection, Heat Source, Pipe cooling, etc.			√
Thermal Stress Analysis	√	√	√
Material Nonlinear Analysis (Option)			√
- Truss, Plate, Plane stress, Plane strain, Axisymmetric and Solid			√
- Tresca, von Mises, Mohr-Coulomb and Drucker-Prager			√
- Isotropic, kinematic and mixed hardening			√
Composite Bridge Analysis	√	√	√
Construction Stage Analysis	√	√	√
- Unlimited Stages	Up to 10 stages	√	√
- Creep, Shrinkage & Modulus of Elasticity	√	√	√
- Tension losses in tendons	√	√	√
Higher Order Analysis	√	√	√
-P Delta Analysis	√	√	√
-Geometric Nonlinear Analysis		√	√
- Large Displacement (Forward / Backward) Analysis		√	√
· Suspension Bridge		√	√
· Cable Stayed Bridge		√	√
· Cable Tuning		√	√
Rail Track Analysis			√
- Auto-generation wizard of rail track analysis model			√
-Temperature, acceleration and braking loads			√
- Rail track structure interaction			√
Design & Load Rating	**Plus**	**Advanced**	**Full**
Steel Frame (AASHTO, India, AISC, Taiwan)	√	√	√
Concrete Frame (AASHTO, Eurocode, BS, Taiwan)	√	√	√
Plate Girder (Eurocode)	√	√	√
PSC Design (AASHTO, Eurocode)	√	√	√
Irregular Section Design (Eurocode, AASHTO)	√	√	√
Moving Load (ASHTO LRFD, Standard, PENDOT, Canada, BS, Eurocode, India, Taiwan, China)	√	√	√
Response Spectrum (UBC, Eurocode, IBC, NBC)	√	√	√
Creep / Shrinkage (CEG-FIP, ACI, PCA, AASHTO, IRC, Eurocode)	√	√	√
Bridge Load Rating (AASHTO)	√	√	√
Finite Element Library	**Plus**	**Advanced**	**Full**
General Beam	√	√	√
Tapered Beam	√	√	√
Truss	√	√	√
Compression Only	√	√	√
Gap	√	√	√
Hook	√	√	√

Finite Element Library (Continued)	Plus	Advanced	Full
Mass / Spring / Damper	√	√	√
Plane Stress	√	√	√
Plane Strain	√	√	√
Plate (Thick / Thin, In-plane / Out of plane Thickness & Orthotropic materials)	√	√	√
Stiffened Plate	√	√	√
Solid (Hexahedron, Pentahedron, Tetrahedron)	√	√	√
Rigid Link	√	√	√
Cable (Equivalent Truss Type)	√	√	√
Calbe (Elastic Catenary Type)		√	√
Report	**Plus**	**Advanced**	**Full**
Dynamic Report Generation	√	√	√
Others	**Plus**	**Advanced**	**Full**
GSD (General Section Design) (Option)			√
- Draw Arbitrary Cross-sections (RC, Steel, Composite)			√
- Capacity Curves (P-M, M-M, 3D) & Capacity Check Ratio (Eurocode)			√
- Moment-Curvature Curves for Different Axial Loads			√
- Stress Contours for Combined Loading			√
FX+ Modeler (Option)			√
- Finite Element Modeler & Auto-Mesh Generator			√
- Export model to Civil			√