Bentley®
Advancing Infrastructure

AutoPIPE® CONNECT Edition

AutoPIPE includes a comprehensive and advanced capability for pipe stress analysis. The intuitive modeling environment and the advanced features provide productive and high-quality pipe stress analysis.

Data collaboration is obtained through integration with structural and 3D models providing an environment for increased business growth and design efficiency.

Features	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Analysis sets for multiple static analyses	◆	◆	◆
ASME B31.1, B31.3, B31.4, and B31.8 (multiple code years) [1]	◆	◆	◆
ASME B31.J Flexibilities	◆	◆	◆
Automatic ring main generator	◆	◆	◆
Batch automation (Create ASCII neutral file models and batch run with different analysis and output options)	◆	◆	◆
Beam elements for modeling frames and supports	◆	◆	◆
Environmental loading such as snow, wind, and wave	◆	◆	◆
European piping code EN13480 (multiple years) [1]	◆	◆	◆
Export input and result data to MDB and SQLite database	◆	◆	◆
Flange design (ANSI check)	◆	◆	◆
General piping code (Max Shear [Tresca] and Von-Mises)	◆	◆	◆
Hanger selection	◆	◆	◆
Hot-clash detection (Evaluate interference of pipe stress 3D-rendered insulated models in undeflected and deflected states against any 3D CAD model using Navigator, OpenPlant® Modeler, or MicroStation®)	◆	◆	◆
Integration and interoperability with AutoPLANT®, PlantSpace®, OpenPlant, Plant 3D, PDS, PDMS, E3D, SmartPlant, CATIA, Inventor, SolidWorks, LISEGA, CADWORX, Excel, AutoCAD, Revit	◆	◆	◆
Modal analysis (dynamic properties of structures under vibration)	◆	◆	◆
PipeLink (advanced structural model/piping bidirectional data exchange with STAAD.Pro® and SACS for structural analysis)	◆	◆	◆
Response spectrum generator (IBC-2006, Euro (EC8)-2004, IS-1893-2002, Spanish NCSR-02 2004, user defined)	◆	◆	◆

[1] Multiple code years are available in AutoPIPE Advanced and AutoPIPE Nuclear. AutoPIPE only supports the latest code year.

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Features	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Response spectrum analysis (uniform and multiple support response/independent support)	◆[2]	◆	◆
Reference point to evaluate equipment and vessel nozzle manufacturer limits	◆	◆	◆
Rotating equipment reports (turbines, compressors, pumps, and user) [3]	◆	◆	◆
STAAD® structural section libraries (17 countries)	◆	◆	◆
Static earthquake loadings (ALA/ASCE-2002 / 2010, GB50011-2001, Mexican CFE-2008, user defined)	◆	◆	◆
Static linear and nonlinear analysis	◆	◆	◆
Thermal bowing	◆	◆	◆
Wind loadings (ASCE, ASCE 2002 and 2010, UBC and user profile)	◆	◆	◆
ASME B31.12 hydrogen pipeline and industrial piping		◆	◆
Advanced soil loading and stress seismic wave, building settlement, and soil overburden		◆	◆
AutoPIPE Nozzle (local stresses calculations at nozzle/vessel junctions per WRC 107 / 297 / 368, PD5500, API650, and KHK)		◆	◆
Buried pipe with Automatic Soil Calculator		◆	◆
CSA N289.3 alternative seismic requirements		◆	◆
CSA-Z662 Canadian piping code		◆	◆
European piping codes (Sweden SPC, Norway TBKS 6, Russian SNIP, France SNCT & RCC-M, and United Kingdom BS 806)		◆	◆
Flange design (ASME VIII Div 1 and 2, ASME III Appendix XI)		◆	◆
Fluid transient force time history generation (any valve closure time)		◆	◆
Force spectrum analysis		◆	◆
FRP/GRP piping codes (ISO 14692 and BS 7159)		◆	◆
Harmonic analysis		◆	◆
HDPE Code Case N755 for B31.1 ASME III B31,1 B31.8		◆	◆
KHK Level 1 and 2 piping code (2006) [4]		◆	◆
NUREG combinations and code case 411 spectrum		◆	◆
Offshore codes (B31.4, B31.8, CSA-Z662, DNV OS F101)		◆	◆

[2] Only uniform response spectra and SRSS combination method available in AutoPIPE.

[3] NEMA 23 for turbines, API 617 for compressors, and API 610 for pumps.

[4] KHK 2 add-on option is required to access this feature (available for AutoPIPE Advanced and AutoPIPE Nuclear).

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Features	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Pipeline upheaval analysis		◆	◆
Russian SNIP 2.05.06-85 oil and gas		◆	◆
Seismic anchor movement (SAM)		◆	◆
Static correction – Missing mass correction and zero period acceleration		◆	◆
Steam relief valve load generator		◆	◆
Support Optimizer – Machine learning technology to automatically determine optimal support arrangements [5]		◆	◆
Stress isometrics (automated customization and fully dimensioned stress isometrics with input and result data using OpenPlant Isometrics Manager)		◆	◆
Time history analysis (with Time History Processor by timestep)		◆	◆
Wave loading and buoyancy		◆	◆
Fatigue analysis (ASME III Class 1 piping)			◆
High-energy leakage and crack criteria (ASME Class 1, 2, 3)			◆
Japanese JSME S NC1 – PPC (2005 and 2008) and MITI 501 – Class 3			◆
Nuclear codes ASME III Class 1 (NB), 2 (NC), and 3 (ND) (multiple code years back to 1972)			◆
Thermal transient analysis			◆

[5] Select Entitlement feature requires a valid SELECT® subscription

Loading	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Gravity	1	1	1
Snow load	1	1	1
Hydrotest [6]	2	2	2
Wind	5	10	10
Static earthquake	5	30	30
Response spectrum	5	50	50
Thermal	5	100	100
Pressure	5	100	100
User	5	140	140

[6] For linear and nonlinear hydrotest, a separate analysis set is created that produces the HYD load case from the hydrotest properties settings.

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Loading	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Harmonic	N/A	10	10
Seismic anchor movement	N/A	10	10
Force spectrum	N/A	10	10
Time history	N/A	50	50

Total Static Analysis Cases per Analysis Set [7]		
AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
26	91	91

[7] **Maximum number of load cases that can be analyzed in a single analysis set during a static analysis run in v9.1 or later.**

= Gravity (1) + Thermal (20) + Pressure (20) + Static Earthquake (20) + Wind (10) + User (20)

= 91 cases for Advanced and Nuclear (26 for Basic). However, multiple analysis sets can be run in a single static analysis in v9.1 or later.

Since up to 100 different thermal loadings can be defined and analyzed in a single static analysis, only 20 thermal load cases can be used per analysis set. For example, when running 50 thermal cases, a minimum of three analysis sets are required. Since each analysis set can analyze up to 91 static cases, hundreds of loads can be analyzed with different scenarios, linear, nonlinear, and hot or cold modulus in the same static analysis run.