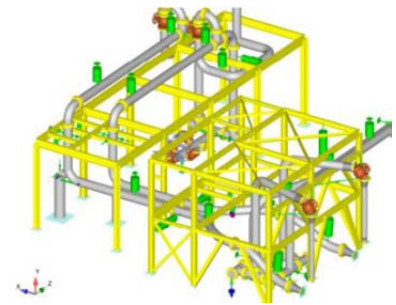




Bentley AutoPIPE V8i

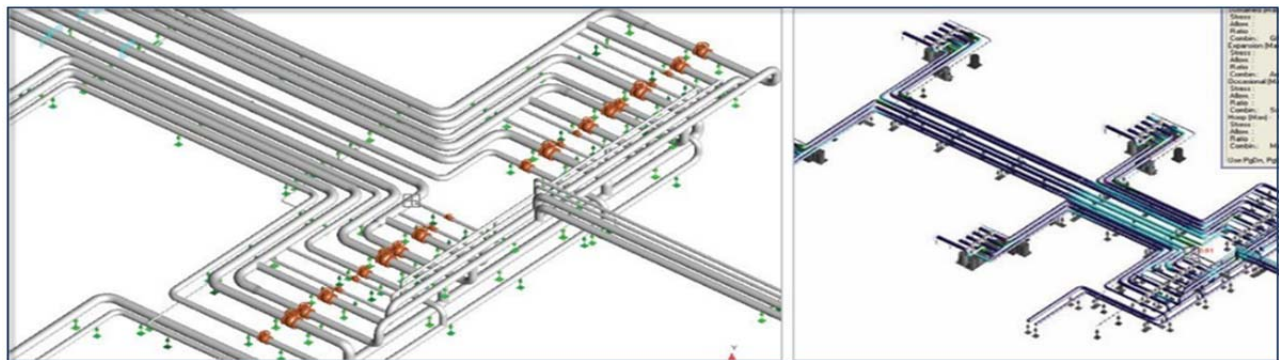
AutoPIPE Basic vs Advanced vs Nuclear Editions Features

AutoPIPE provides a comprehensive and advanced software tool specialized in pipe stress analysis. The intuitive modeling environment and the advanced analysis features provides the most productive and highest quality pipe stress tool for 25+ years. Proven data collaboration can be obtained through the integration with structural and 3D models providing an environment for increased business growth and design efficiency.



Features	AutoPIPE	AutoPIPE Advanced	Nuclear
Static Linear and Non-Linear	■	■	■
Hanger	■	■	■
Modal (dynamic properties of structures under vibration)	■	■	■
Response Spectrum (Uniform & Multiple Support Response (Independent Support Motion))	■ Note 1	■	■
Harmonic Analysis		■	■
Force Spectrum Analysis		■	■
Time History Analysis (with Time History Processor by timestep)		■	■
Buried pipe w/ Automatic Soil Calculator		■	■
Advanced Soil Loading & Stress: Seismic wave, building settlement and overburden traffic and soil pressure loadings		■	■
NUREG combinations and Code case 411 spectrum		■	■
Static Correction - Missing mass correction and Zero Period Acceleration		■	■
Static Earthquake (Sg)	■	■	■
Static Earthquake Load Generator (ALA/ASCE-2002 / 2010, GB50011-2001, Mexican CFE-2008, User Defined)	■	■	■
Response Spectrum Generator (IBC-2006, Euro (EC8)-2004, IS-1893-2002, Spanish NCSR-02 2004, User Defined)	■	■	■
Wind Loadings - (ASCE, ASCE 2002 & 2010, UBC & User Profile)	■	■	■
Thermal Bowing	■	■	■

Wave loading and Buoyancy		■	■
Snow Loading	■	■	■
Fluid Transient Generator (Any Valve closure time)		■	■
Steam Relief Valve Generator		■	■
Thermal Transient Analysis			■
Fatigue Analysis (class 1)			■
High Energy Leakage and Crack Criteria (ASME class 1, 2, 3)			■
Flange Design (ASME VIII Div 1 & 2, ASME III Appendix XI)		■	■
ASME B31.1, B31.3, B31.4, and B31.8 (Years 1967 to 2012)	■ Note 2	■	■
European piping code EN13480 (multiple years)	■ Note 2	■	■
HDPE Code Case N755 (B31.1, ASME III)		■	■
B31.4 Offshore, B31.8 Offshore, CSA_Z662, DNV OS F101 Offshore codes		■	■
ASME III Class 1, 2 and Class 3 (multiple years)			■
JSME S NC1-PPC (2005 & 2008)			■
Canadian piping codes		■	■
Russian SNIP 2.05.06-85 Oil & Gas		■	■
ISO 14692 FRP code		■	■
International piping codes		■	■
KHK Level 1 & 2 piping code (2006)		■ Note 3	■ Note 3
General piping code (Max Shear (Tresca) & Von-Mises)	■	■	■
Automatic Ring Main Generator	■	■	■
Analysis Sets for multiple static analyses	■	■	■
Rotating Equipment reports (Turbines, Compressors, Pumps, & User) Note 4	■	■	■
Large model size (10,000 nodes)	■	■	■
Reference Point to evaluate equipment & Vessel Nozzle manufacturer limits.	■	■	■
Beam elements for modeling frames and supports	■	■	■
STAAD Structural Section Libraries (17 countries)	■	■	■
Material and Component Libraries	■	■	■



PipeStress Ancillary Products, Integration & Automation	AutoPIPE	AutoPIPE Advanced	Nuclear
AutoPIPE Nozzle (local stresses calculations at nozzle/vessel junctions per WRC 107 / 297 / 368, PD5500, API650, & KHK)	■	■	■
Integration & Interoperability: AutoPLANT, PlantSpace, OpenPlant, Plant 3D, PDS, PDMS, SmartPlant, CATIA,	■	■	■

<i>Inventor, SolidWorks, LISEGA, CADWORX, Excel, AutoCAD, & Micro station</i> (Note 6)			
PipeLink (Advanced structural model/piping bi-directional data exchange with STAAD.Pro for structural analysis)	■	■	■
Hot Clash Detection (Evaluate Interference of 3D rendered insulated models in undeflected and deflected states against any 3D CAD using Bentley Navigator)	■	■	■
Export Input and Result Data to MDB	■	■	■
Batch Automation (Create ASCII neutral file models and batch run with different analyses & output options)	■	■	■
StressISO (Automated customizable and fully dimensioned stress isometric with input & result data)	Add License	Add License	Add License
PlantFlow (Steady State Network Flow Analysis with Advanced Heat transfer effects)	Add License	Add License	Add License
PULS (Acoustic & Pulsation Simulations per API 618)	Add License	Add License	Add License

Maximum Number of Static and Dynamic Load Cases:	AutoPIPE	AutoPIPE Advanced	AutoPIPE Nuclear
Gravity	1	1	1
Hydrotest	1	1	1
Thermal	5	100	100
Pressure	5	100	100
Static Earthquake	5	10	10
Wind	5	10	10
User	5	140	140
Response Spectrum	5	50	50
Harmonic	Not Available	10	10
Seismic Anchor Movement	Not Available	10	10
Force Spectrum	Not Available	10	10
Time History	Not Available	50	50
Static Analysis Cases (Total)	27 [Note 5]	82 [Note 5]	82 [Note 5]

Notes

1: SRSS combination method only available in AutoPIPE version. Multiple support response spectrum analysis only available in Advanced & Nuclear editions.

2: Multiple code years are available in AutoPIPE Advanced & Nuclear editions. AutoPIPE edition supports latest code year only.

3: KHK 2 Add-On option is required to access this feature (Available for Advanced & Nuclear editions)

4: NEMA 23 for Turbines, API 617 for Compressors, & API 610 for Pumps

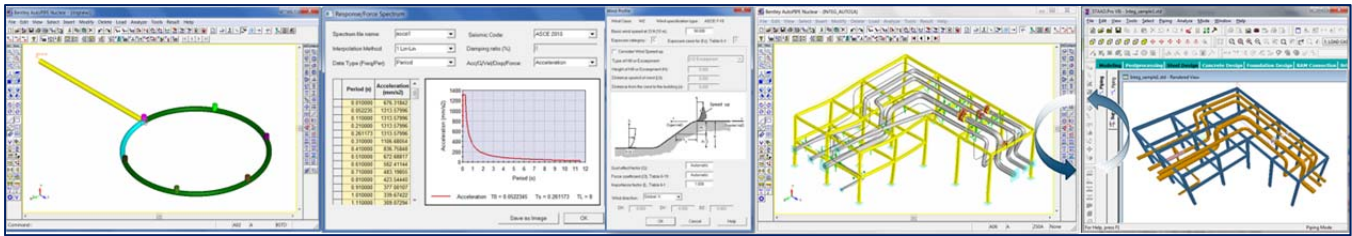
5: Maximum number of load cases that can be analyzed in a single analysis set during a static analysis run in v9.1 or later. However an unlimited number of analysis sets can be run in a single static analysis in v9.1 or later.

$$= \text{Gravity (1) + Hydrotest (1) + Thermal (20) + Pressure (20) + Static Earthquake (10) + Wind (10) + User (20)}$$

$$= 82 \text{ cases for Advanced \& Nuclear (27 for Basic)}$$

Up to 100 different thermal loadings can be defined and analyzed in a single static analysis. Only 20 thermal load cases per analysis set e.g. if want to run 50 thermal cases then define across 3 analysis sets. Since each analysis set can have analyze up to 82 static cases, so literally 100's of loads can be analyzed in different scenarios with different options, linear, non-linear, hot or cold modulus etc in the same static analysis run.

6: Enhancement to import centerline coordinates data from Excel, AutoCAD and MicroStation to Auto PIPE.



AutoPIPE... Interoperability Matrix

Integration w/Bentley Products

Bentley AutoPIPE V8i	ProjectWise	STAAD	Auto PLANT	Plant Space	Open Plant	ADLPipe	NOZZLE	PlantFlow	PULS

Interoperability w/3rd Party Products

Plant 3D	Caesar	SP3D	PDS	PDMS	CADWorx	SolidWorks	Inventor	CATIA	ME101

CAD Products