

EnginSoft is a premier consulting firm in the field of Simulation Based Engineering Science (SBES) with a global presence. It was founded in 1984, but its founder and initial employees had been working in SBES since the mid '70s. Throughout its long history it has been at the forefront of technological innovation and remains a catalyst for change in the way SBES and CAE technologies in general are applied to solve even the most complex industrial problems with a high degree of reliability.

Today, EnginSoft is comprised of groups of highly qualified engineers, with expertise in a variety of engineering simulation technologies including FEM Analysis and CFD, working in synergic companies across the globe. We are present in Italy, France, Germany, the UK, Turkey and the U.S.A. and have a close partnership with synergic companies located in Greece, Spain, Israel, Portugal, Brazil, Japan and the U.S.A.

EnginSoft works across a broad range of industries that include the automotive, aerospace, defense, energy, civil engineering, consumer goods and biomechanics industries to help them get the most out of existing engineering simulation technologies.



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DATA SHEET



**Start Prof:**  
The world's first Pipe Stress  
Analysis Software

START Prof evaluates the structural responses and stresses of the different-purpose piping systems at static and cyclic loadings and performs seismic analysis. The first edition of the START Prof Software has been introduced in 1969.

Today START Prof is the most widely used pipe stress analysis software in Russia and CIS countries, where it has become a pipe flexibility and stress analysis de facto standard for process and power piping, gas and oil transmission, and district heating piping systems.

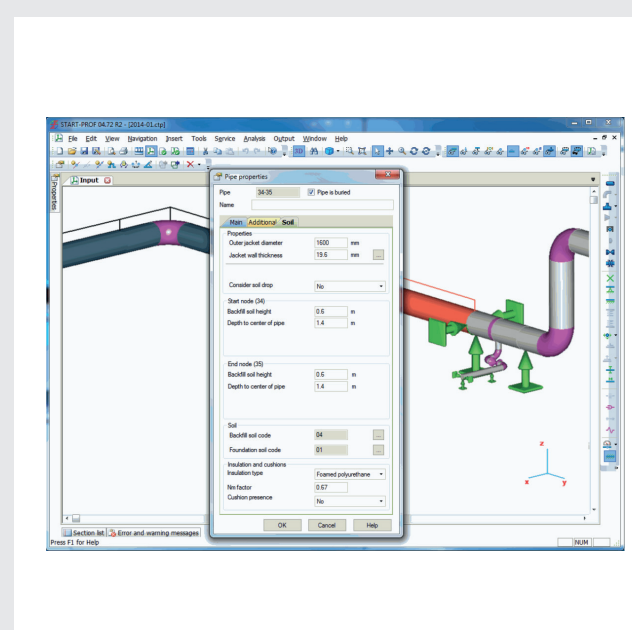
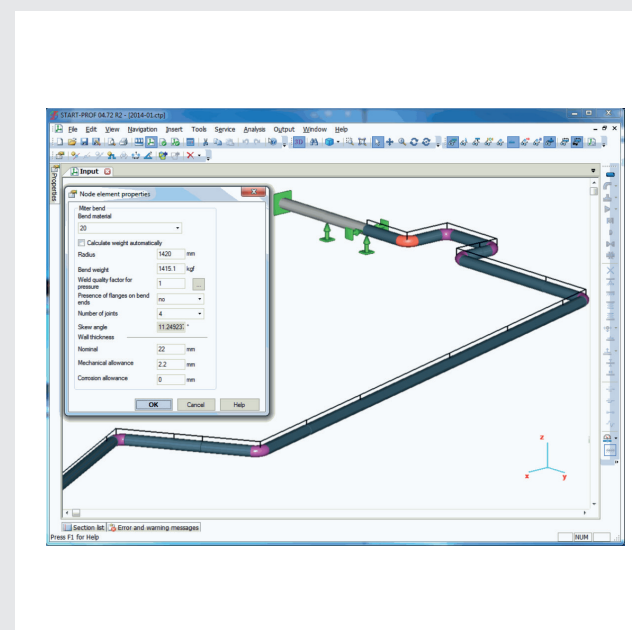
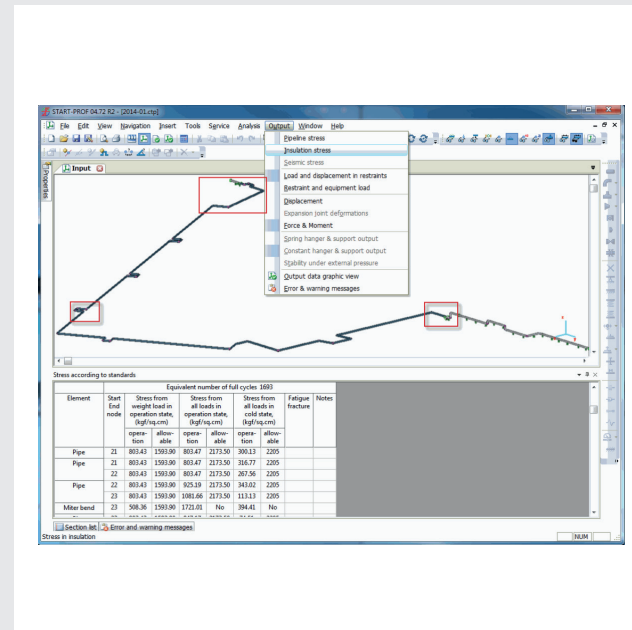
START Prof is used by more than 1500 companies in Russia, Ukraine, Belarus, Kazakhstan, Turkmenistan, Uzbekistan, China, Japan, Lithuania, Czech Republic, Serbia, Finland, Germany, Italy, United Kingdom, and South Korea. The total number of the licenses exceeds 8000. START Prof is widely used by major plants and design companies in chemical, oil & gas, power, metallurgy and other industries.

START has a Russian, English and Chinese user interface, user guide, and help system.

Due to ongoing feedback from a lot of users, cross-testing with other software, quality assurance system, it is well verified. Every new version passes quality assurance testing with more than 200 special verification models.

The START Prof Software is fully certified according to Russian standards.

Start Prof is a product



# Start Prof: The world's first Pipe Stress Analysis Software

## Codes

START Prof performs stress computations according to various Russian, Chinese and American piping codes:

- ✓ Power piping: ASME B31.1, DL/T 5366-2014, RD 10-249-98
- ✓ District heating: CJJ/T 81-2013, GOST R 55596-2013
- ✓ Process piping: GOST 32388-2013
- ✓ Gas & oil transmission pipelines: SNiP 2.05.06-85, SP 36.13330.2012
- ✓ FRP/GRP/GRE piping: ISO 14692-3:2002

## Types of Pipelines

The following types of pipelines are covered:

- ✓ Above-ground, underground and buried pipelines
- ✓ Branched and closed contour pipelines
- ✓ With different types of expansion joints
- ✓ With various types of restraints and boundary conditions
- ✓ With different external loads (thermal expansion, dead weight, pressure, concentrated and distributed forces, supports displacement, hanger, settlement, pre-stretch, etc.)
- ✓ Operating at low and high temperatures. For high temperature pipelines the creep and stress relaxation effects are analyzed
- ✓ With internal and external pressure (vacuum). For vacuum pipelines a local stability analysis of walls is performed
- ✓ Simultaneous analysis of several not connected pipeline segments
- ✓ Seismic analysis
- ✓ Plastic piping analysis

## Databases

The software includes six databases:

- ✓ "Materials": includes physical properties of pipeline elements and materials
- ✓ "Springs": includes properties of spring hanger tables per OST 108.764.01-80, MVN 049-63, OST 24.125.109-01, MN 3958-62, LISEGA, WITZENMANN, NBT 47039-2013, China Power
- ✓ "Constant load hangers": includes properties of constant load hangers WITZENMANN, NB/T 47038-2013
- ✓ "Soils": includes mechanical and physical properties of soils for buried pipelines modelling
- ✓ "Flexible joints": includes properties of axial, gimbal, lateral flexible joints
- ✓ "Insulation": includes insulation weight values depending on the insulation structure, temperature and pipe diameter