



## **What's is New in Pipeline Toolbox 2010**

(Version 12.0)

New Pipeline Toolbox 2010, version 12.0, comes with additional software applications for polyethylene (PE) pipe, for most scenarios that involve HDPE or MDPE buried pipeline design, stress analysis, or operational assessment.

### **1. Dead/Earth Load**

Software module provides three options to determine dead/earth load by using:

- Prism Load
- Marston Load, or
- Combined Prism and Marston Load

### **2. Surcharge Static Load on Buried PE Pipe**

There are two software modules:

- Pipe Directly beneath a Surcharge Load
- Pipe on the Distance of a Surcharge Load

Both modules are based on of Boussinesq equation for soil pressure for distributed load. Influence coefficients are automatically determined by the program based on the given conditions.

### **3. Surcharge Live Load on Buried PE Pipe & PE Pipeline Crossings**

A set of software applications for design and stress analysis including:

- AASHTO Standard H20 Vehicular Loading for Paved Roads
- AASHTO Standard H20 Vehicular Loading for Flexible Pavement or Unpaved Surface
- Aircraft Loading on Underground PE Pipe
- Off-Road Crossings – Timoshenko Equation
- Off-Road Crossings – Concentrated Live Load: Load Along the Pipe
- (Program automatically selects load factor based on given conditions using Holl's integration of Boussinesq equation and Lagrange interpolation.)
- Off-Road Crossings – Concentrated Live Load: Load at the Distance of the Pipe
- (Program automatically select load factor based on given conditions using Holl's integration of Boussinesq equation and Lagrange interpolation.)

#### **4. Design/Stress Analysis Check - Pass/Fail Criteria**

Any of design/stress analysis results are subject to Pass/Fail check for:

- Maximum Allowable Deflection (Modified Spangler's Iowa Formula for PE Pipes)
- Maximum Allowable Compressive Stress (Pipe Wall Crushing)

All necessary data such as Modulus of Soil Reaction, Impact Factor...are provided on the screen or in the online Help system in tabular form for easy reference.

#### **5. Installation of PE pipe by Horizontal Directional Drilling (HDD)**

- Software module is based on and complies with ASTM F 1962 – 05 Standard Guide, related ASTM and other standards, including industry accepted practice for: design, selection considerations and installation procedure for placement of PE pipe below ground using maxi-horizontal directional drilling.

#### **6. ATL Allowable Tensile Load for PE Pipe installed by HDD**

- Software module is based on and complies with ASTM F 1804 “Standard Practice for Determining Allowable Tensile Load for PE Gas Pipe during Pull-In Installation”.

#### **7. Updated DOT/CFR Pipeline Regulations**

- New Pipeline Toolbox 2010 comes with the up-to-date DOT/CFR Pipeline Regulations and forms in electronic searchable format.

#### **8. Extensive On-Line Help System**

- Updated context sensitive Help System provides all background calculation procedures, tables, individual applications limitations, recommended use and navigation, references, and much more.