STAAD.Pro
3D Structural Analysis & Design

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STAAD.Pro is the choice of 47 out of 50 leading Structural Engineering firms, 46 out of 50 state DOTs and 7 out of the top 10 engineering universities.
STAAD-Pro

General purpose software suite for structural engineers involved in analysis and design of structures

- Plants
- Towers
- Bridges
- Buildings
- Airports
STAAD. *Pro* Family

- Steel Designer
- Concrete Designer
- RAM Connection
- Advanced Slab Design
- Piping

**STAAD.*foundation***

Design and produce construction Drawings for any foundation type

**RAM Structural System**

Special purpose in analysis and design of building structures
WHY STAAD.Pro

The world #1 structural analysis and design software.

- STAAD.Pro was developed for practicing engineers.

- For static, pushover, dynamic, P-delta, buckling or cable analysis, STAAD.Pro is the industry standard.

- STAAD.Pro has design codes for most countries including US, BS, Canada, Russia, Aus, France, India, China, Euro, Japan… NO THAI?
**WHY STAAD.Pro**

- **STAAD.Pro** is fully COM (Component Object Model). Any 3rd party applications can be used with STAAD.Pro.

- STAAD.Pro’s User Interface is the industry standard. Complex models can be easily generated.

- **STAAD.Pro** supports multi-material design codes such as timber, steel, cold-formed steel, concrete and aluminum.
Ease-of-Use

- Graphical User Interface with tabbed page layout.

- Structure Wizard
Model Generation

• Create Model using Graphical Environment, Spreadsheet style input, AutoCAD DXF Import etc
• Repeat either translational or circular
• Mirror, Rotate, Copy and Paste
• Remove Duplicate/Orphan Nodes
• Dynamic Zoom Capability
• Create Beams, Plates and Solids
• Offset Members, Semi Rigid Connections, Partial Moment Release
Built-in Command File Editor

- ไฟล์คำสั่งนามสกุล `std`
- รวมคำสั่งที่ใช้ทั้งโครงงานในภาษาอย่างง่ายของ `staad`
- เมื่อก็เกิดปัญหาในการรันคำสั่งจะตรวจสอบและแก้ไขได้อย่างมีประสิทธิภาพ
- Job Information
- Joint Coordinates
- Member Incidences
- Member Property
- Constants
- Supports
- Loadings
- Analysis
- Design
Finite Element Modeling

- Plate Element
- Surface Element
- Solid Element
Load Types and Generation

• Categorized load into group types like dead, live, wind, seismic, user-defined.

• Auto-generate load combinations based on standard codes: ACI, AISC, UBC

• Loading: Concentrated, Uniform, Temp., Strain, Support disp., Prestress

• ASCE 7 Wind load generator

• AASHTO Moving Load Generator

• Seismic Load Generator

• Automatic generation of load envelopes
Model Verification

- Multiple zooming and shadow box windows
- New 3D rendering of structure using shading and lighting
- Isometric or any rotations for full 3D viewing
- Display of Loads, Supports, Orientations, Properties, Hidden line removed, Joint/Member numbering, Dimensions, etc.
- Compatible with spreadsheet software such as Microsoft Excel
- Plots of displacement vs. time, velocity vs. time, acceleration vs. time for dynamic analysis
- Single File Archive to save All STAAD Input / Output Files
Analysis Capabilities

Powerful analysis and design engines with advanced finite element and dynamic analysis capabilities.

- 2D/3D Static Analysis
- Dynamic/Sesmic Analysis
- Secondary Analysis
Analysis Capabilities

New 2007 Features

• Advanced Analysis Engine
• P-Delta analysis including stress stiffening effects
• P-Delta including small delta
• Modal analysis including stress stiffening
• Buckling load analysis

Full buckling analysis to obtain buckling modes and factors for various loading conditions
Result Verification

Post-processing mode:

- Output Text File
- Node Displacement
- Force Diagram
- Plate Stress Contour
- Animation
- Reports
Design Codes

Steel Design:

- Design Codes: AISC (ASD/LRFD), AASHTO, BS, Japanese, Chinese, Indian
- Interactive design and report step-by-step calculations.
- Built-in Steel Tables of several countries including AISC, British, Canadian, Australian
- Code Check, Member Selection consisting of Analysis/Design cycles
Design Codes

Concrete Design:

- Two-way slab design to design irregular-shaped slabs. Full reinforcement contour and reinforcement layout plans are created.
- Rectangular concrete shear wall design (with deep beam design).
- Automatic calculation of cracked moment of inertia for concrete design
- Design of Concrete Beam/Column/Slab per ACI 318.
- Numerical and Graphical Design Outputs with reinforcement details
- Interactive concrete design and detailing with bar scheduling and interactive rebar layout

Timber Design  Aluminum Design
User Customized Report Generation

Take a picture
Topics Covered:

- Introduction
- Model Generation
- Geometry Functions
- Properties, Spec & Support
- Loadings
- Analysis & Postprocessing
- Steel Design
- RC Design