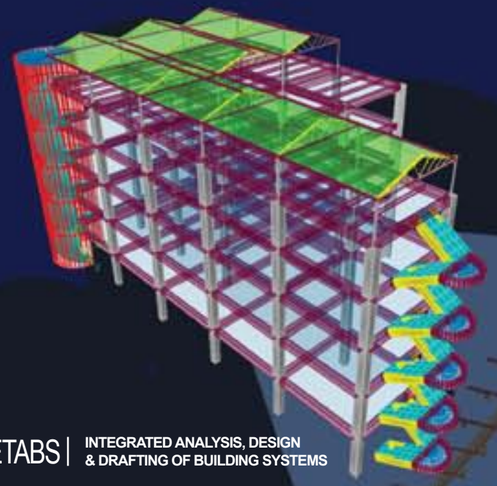


ETABS | INTEGRATED ANALYSIS, DESIGN & DRAFTING OF BUILDING SYSTEMS

For nearly 30 years ETABS has been recognized as the industry standard for Building Analysis and Design Software. ETABS was the first program to take into account the unique properties inherent in a mathematical model of a building. Today, ETABS is a complete Building Analysis and Design Environment, built around a physical object based graphical user interface.

ETABS provides the automation and specialized options needed to make the process of model creation, analysis and design fast and convenient. Working off a single comprehensive database, the concept is that you create only one model that can be used for both the analysis and design of the entire building. Tools for laying out floor framing, columns, frames and walls and for quickly generating gravity and lateral loads offer many advantages over general-purpose programs. Seismic and wind loads are calculated automatically according to the requirements of the selected building code, and all of these modeling and analysis features are completely integrated with a wide range of design options.

The integrated model can include, among others, complex Composite Floor Framing Systems with Openings and Overhangs, Steel Joist Systems, Moment Resisting Frames, Complex Shear Wall Systems, Rigid and Flexible Floors, Sloped Roofs, Ramps and Parking Structures, Mezzanine Floors, Trussed Systems, Multiple Tower Buildings and Stepped Diaphragm Systems. ETABS is the only tool you will need for building analysis and design, whether you are designing a simple 2D frame or performing a dynamic analysis of a complex high-rise.

SAP2000 Advanced Analysis Features

- Staged Construction
- Concrete Creep and Shrinkage
- Multi-Support Excitation
- Large Displacement Analysis
- Buckling Analysis
- Pushover Analysis
- Blast Analysis
- Base Isolaters & Dampers
- Soil Structure Interaction
- Frequency Domain Analysis

Bridge Designers can use SAP2000 Bridge Templates for generating Bridge Models, Automated Bridge Live Load Analysis and Design, Bridge Base Isolation, Bridge Construction Sequence Analysis, Large Deformation Cable Supported Bridge Analysis and Pushover Analysis.

From its powerful 3D object based graphical modeling environment, to the wide variety of integrated analysis and design options, SAP2000 continues to prove that it is the most productive and practical program on the market for civil structures.

SAP2000 | INTEGRATED SOFTWARE FOR STRUCTURAL ANALYSIS & DESIGN

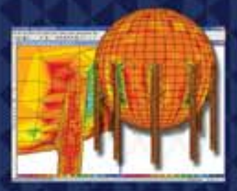
The SAP name has been synonymous with state-of-the-art analytical methods since its introduction over 30 years ago. SAP2000 continues the tradition, featuring a sophisticated user interface, an unmatched analysis engine, and comprehensive design tools for engineers working on transportation, industrial, public works, sports, and other facilities.

The intuitive interface allows you to create structural models rapidly and instinctively without long learning curve delays. You can harness the power of SAP2000 for all of your analysis and design tasks, including small day-to-day problems. Complex models can be generated and meshed using powerful templates built into the interface.

The advanced analytical techniques allow for Step-by-Step Large Deformation Analysis, Multiple P-Delta, Eigen and Ritz Analyses, Cable Analysis, Tension or Compression Only Analysis, Buckling Analysis, Blast Analysis, Fast Nonlinear Analysis for Dampers, Base Isolators and Support Plasticity, Energy Methods for Drift Control and Segmental Construction Analysis. >>

PIPING SYSTEMS

PROGRESSIVE COLLAPSE ANALYSIS



OBJECT BASED FINITE ELEMENTS

BUCKLING ANALYSIS

SLAB REINFORCEMENT PLAN

SAFE | INTEGRATED ANALYSIS, DESIGN AND DRAFTING OF BUILDING SYSTEMS

SAFE is a special purpose program that automates the analysis and design of simple to complex concrete slabs and foundation systems using powerful object based modeling. The program can analyze and design slabs or mats of arbitrary shapes and varying thickness, drop panels, openings, edge beams and discontinuities. Foundations can be combinations of Mats, Strip Footings or Isolated Spread Footings.

SAFE is designed to minimize engineering man-hours and processing time associated with the design of concrete slabs. Creation and modification of the model, execution of the analysis, and checking and optimization of the design are all controlled through a single interface.

The analysis is based upon the Finite Element method. Meshing is automated based upon user specified parameters. Foundations are modeled as thick plates on elastic foundations, with compression only soil springs.

The Software produces reinforcing layouts and evaluates the effects of punching shear around column supports. Options are available for including cracked properties in the finite element model based upon the slab reinforcing that is provided.

Models analyzed and designed in SAFE may easily be sent to CSiDETAILER where detailing drawings can be generated.

COMPUTERS & STRUCTURES INC.

Founded in 1975, CSI is recognized worldwide as an innovative leader in the development of software tools for the analysis and design of civil structures. CSI products: SAP2000; ETABS; SAFE; CSiCOL and CSiDETAILER, are licensed to thousands of structural engineering firms throughout the USA and in more than 100 other countries.

The development of CSI software spans four decades, starting with the release of the revolutionary SAP program by Dr. Edward L. Wilson at the University of California at Berkeley in 1970.

Each of CSI's programs is tailored to specific classes of structures, allowing the engineering community to work at more productive and efficient levels than are possible with "general purpose" type programs. SAP2000 is intended for use on civil structures such as bridges, dams, stadiums, industrial structures and buildings. ETABS has been developed specifically for multi-story building structures, such as office buildings, apartments and hospitals. The SAFE System provides an efficient and powerful program for the analysis and design of concrete slabs and foundations. CSiCOL offers comprehensive analysis and design of reinforced concrete and composite columns. CSiDETAILER prepares detailing drawings for slabs and beams from the designs created by SAFE.

Products from CSI continue to set the standard for the industry, and when licensing CSI software you can be confident that you are using the finest structural software available, backed by a company with an unmatched record of innovation, and an unrivaled commitment to meet the ever-evolving needs of the profession.

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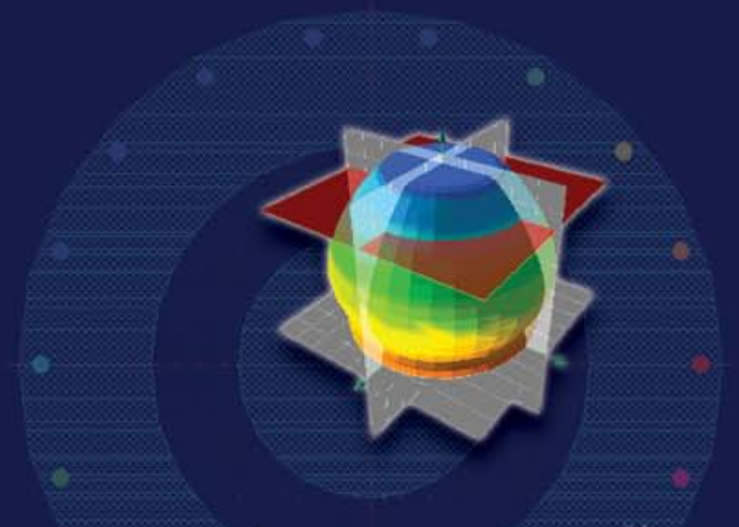


CSICOL | DESIGN OF SIMPLE AND COMPLEX REINFORCED CONCRETE COLUMNS

CSiCOL is a comprehensive software package used for the analysis and design of columns. The program can carry out the design of columns of any concrete, reinforced concrete, or composite cross-section. CSiCOL provides a 'Quick Design Wizard' tool that guides the users step-by-step, through the whole process of column design. This makes the design process simple, organized and efficient.

CSiCOL provides numerous predefined parametric shapes, including a variety of solids, hollow, and flanged shapes, in addition to a large collection of steel shapes, which can be used in composite columns. It is easy to merge, edit and draw shapes to suit geometry requirements and create complex cross-sections. Rebar can be placed anywhere (corner, perimeter, sides, circle, irregular, etc.) in the cross-section using several addition and placement tools.

CSiCOL is capable of handling an unlimited number of load combinations both for sway and non-sway conditions. The design and analysis take into account the slenderness effects. Moreover, CSiCOL is capable of determining the Effective Length Factor based on the framing and end conditions of the column.

CSiCOL output includes the capacity interaction surface, load-moment curves, combined axial-flexural elastic stress contours, rebar stresses, and cracked section stresses. Reports may be created as part of the output for the analysis and design process.

CSIDETAILER | DETAILING REINFORCED STRUCTURES

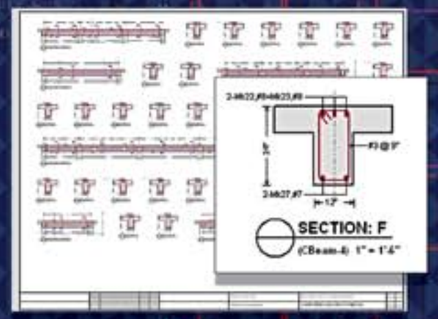
CSiDETAILER is a software package for automatically producing drawings of reinforcing details for slabs that have been analyzed and designed using SAFE.

CSiDETAILER is fully capable of preparing detailed Engineering Drawings according to the requirements of ACI-315-95 and other detailing codes. The software performs the entire detailing operation using the preferences set by the user. These preferences may be the defaults as set by building codes or customized to fulfill other requirements.

The Detailing Model used in CSiDETAILER has input consisting of two parts; namely, data from the analysis and design of the user's model in SAFE, and the Detailing Options and Preferences set by the user. Similarly, its output can consist of four parts; namely, Detailed Beam Objects, Detailed Slab Objects, Detailed Footing Objects and Detailed Mat Objects.

Various views can be generated for these detailed objects. The views may include Plans, Sections, Elevations, Rebar Tables and Bills of Quantities. These views are placed on the drawings and may be copied, pasted, moved, deleted or edited, and then printed directly or exported in DXF and DWG formats.

BEAM SECTIONS & ELEVATIONS



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