



STAAD Advanced Concrete Design

Robust Concrete Design

STAAD Advanced Concrete Design takes concrete analysis to a new level. Designed by practicing engineers for practicing engineers, STAAD Advanced Concrete Design adds onto the power of Bentley's STAAD.Pro analytical engine with robust concrete design.

Advanced Concrete Design

With STAAD Advanced Concrete Design, you can design a variety of concrete elements, such as beams, columns, and walls in an automated and interactive workflow. There are options to optimize or analyze beams, columns, and walls for gravity and lateral loads to quickly obtain safe and economical designs. You will gain full control of your designs by setting a collection of carefully considered parameters, from minimum and maximum reinforcing ratios, bar spacings, bar sizes, shear bar or link preference and many more. Designs can be driven by arrangements created by the application or prescribed by the designer. Check for code compliance using an envelope of beam and column design forces or automatically create load combinations. The application is also intelligent enough to understand geometric continuity between levels and across supports for column and beam design consideration respectively, making a smooth transition of bar patterns and sizes as you move between floors or across supports.

Using STAAD Advanced Concrete Design you can design non-traditional and custom shapes. The application allows you to control concrete beam, wall, and column designs including L, T, and C shapes. Create and check irregular bar layouts including stirrups and links using a broad range of material and design properties. Account for continuity in column stacks and beam lines when determining appropriate reinforcing layout.

Design to International Standards

You can extend the reach of your business practice and take advantage of global design opportunities by using a wide range of international standards and specifications. With STAAD Advanced Concrete Design it's easy to design and produce drawings according to global design standards in compliance publications from India (IS), United Kingdom (GB), United States (ACI), and Europe (EC), which can include Malaysia or Singapore National Annexes.

Comply with Seismic Requirements

When constructing in seismically active regions, additional provisions might need to be made for the effects of such events. With STAAD Advanced Concrete Design, you can ensure that your designs account for these provisions by generating seismic loads according to the relevant building code and include the details for seismic force-resisting systems. You can consider these forces

Bar Mark	Bar Size	Bar Dia	Bar Shape	Cutting Length	A	B	C	D	E	F	Bar Qty	Bar S. A	Bar S. V
B1	#	12		1070	300	1954	70	10	1010	40	107	102	70
B2	A	12		1080	300	1964	70	10	1020	40	107	102	70
B3	A	12		2218	300	1204	70	10	482	40			
B4	#	12		1065	300	1754	70	10	482	40			
B5	#	8		1794	400	400							
B6	#	8		1280	140	400							
B7	#	8		1280	400	140							
B8	#	8		1794	400	400							
B9	#	8		1280	140	400							

Produce detailed bar bending schedules.

in the design of elements and, where applicable, the design of frames and the larger structural system. Also, you can enforce the ductility requirements of the selected design code in element proportioning and detailing.

Produce Comprehensive Quantity Takeoffs

With your designs complete, it is easy to gain critical insight into concrete design alternatives with comprehensive material takeoffs and cost estimation organized by material, size, and shape. Additionally, you can gain a better understanding of the overall construction by obtaining formwork area and cost estimates up front.

Produce Concrete Drawings and Schedules

The main requirement from the design process is the production of project documents. With STAAD Advanced Concrete Design you can produce comprehensive reinforcing drawings including automated reinforcing labels, dimensions, and notes, as well as reinforcing placing drawings, including sections, plans, and details from the 3D model. You can customize all drawings to adhere to your company's standards and automatically update your drawings based on changes to the 3D model.

With the design checks complete, you can quickly produce detailed design drawings for beam line elevations, column line elevations, automatic cross section details, and bar termination geometry. You can create individual beam bar bending schedules, column schedule tables and beam schedule tables.

System Requirements

Processor:

Intel® Pentium or equivalent

Operating system:

Windows 8 or later

System memory:

Minimum of 1GB of RAM,
2 GB recommended

Disk space:

Requirements will vary depending on the modules you are installing. A typical minimum is 500 MB free space.

Display:

Graphics card and monitor with 1280x1024 resolution, 256 color display (16-bit high color recommended)

Find out about Bentley at: www.bentley.com

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STAAD Advanced Concrete Design At-A-Glance

Design

- Automatically determine beam member continuity to provide continuous, practical reinforcement
- Automatically determine columns and walls (defined as wide columns) and the continuity over multiple levels to ensure reinforcing continuity
- Control automatic designs through simple dialogues
- Control detailing requirements through simple dialogues
- Validate designs with summary graphics, which allow user modifications to prescribe alternative solutions
- Quickly design various elements within the context of an overall design
- Lock and unlock designs to prevent accidental editing
- Produce calculations, general arrangements, elevations, bar bending schedules, and material takeoffs for entire floors
- Column design for standard or more complex shapes
- Determine slab design without having to specify a finite element mesh
- Determine wall design from members specified as wide columns
- Design pile cap arrangements for three to six piles
- Footing design for pad foundations

Codes

- ACI 318M-11
- IS 456, and IS 13920-2106
- EN1993 (can include UK, Malaysia or Singapore National Annexes)
- BS 8110-97

Analysis

- Automatically calculate combinations taking the forces from the analytical model (static and dynamic) and use either the defined combination defined in the analytical model or from a template
- Define cross combinations for irregular buildings

Deliverables

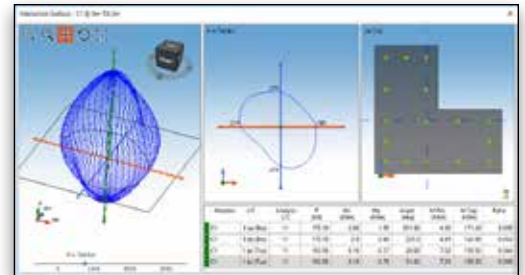
- Produce drawings in the universal standard DXF format
- Produce general arrangement drawings and reinforcing layouts, elevations with cross sections at key locations

Interoperability

- Produce reinforcement designs for structural objects to complement the analysis performed in STAAD.Pro
- Import STAAD.Pro models with analysis results and filter by floors to design beams, slabs, pad footings, or columns/walls
- Improve interoperability between STAAD Advanced Concrete Design and STAAD.Pro by adding STAAD Planwin to STAAD.Pro
 - » Rapidly model concrete floor based structures including slabs, openings, beams, and columns with this optional floor planner
 - » Graphically define or import floor arrangements from CAD layouts
 - » Quickly define environmental loading (currently to the IS code)



Redesign reinforcement quickly and simply.



Produce column capacity graphs.