



RAM® Concrete

RAM Structural System's Drafting Software for Gravity Analysis and Design of Concrete Structures

RAM Concrete is fully integrated concrete analysis, design, and drafting software for structural engineers. Part of the RAM Structural System, RAM Concrete allows you to model the entire concrete structure, while also allowing for the analysis, design, and drafting of lateral and gravity framing systems of both steel and concrete bridges, and their foundations.

Integrated Modeling and Documentation Workflows

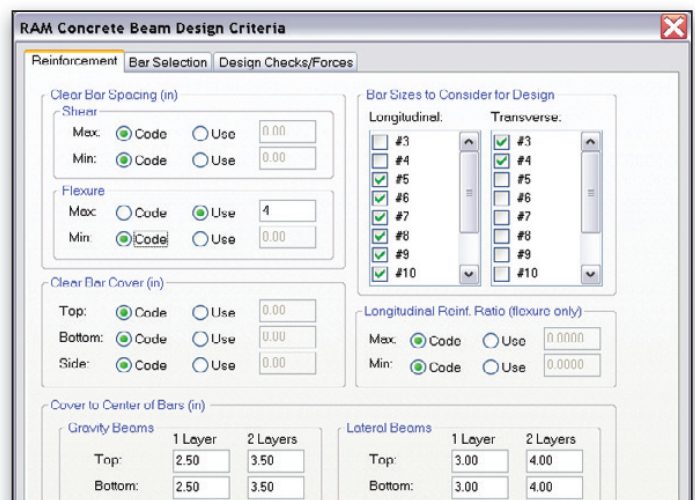
The CONNECT Edition provides a common environment for comprehensive project delivery and connects users, projects, and your enterprise. With the CONNECT Edition, you now have a personal portal to access learning, communities, and project information. You can also share personal files including i-models and PDFs directly from your desktop with other users, or stage them for easy access from a Bentley mobile app, such as Structural Navigator. With the new project portal, your project teams can review project details and status, and gain visibility into project performance. With the CONNECT Edition, your project team may also wish to take advantage of the new ProjectWise® Connection Services including Project Performance Dashboards, Issues Resolution, and Scenario Services.

The learning curve for RAM Concrete is remarkably small and engineers can begin producing designs quickly.

Time Savings

RAM Concrete allows you to perform complete gravity and lateral load generation and distribution, including live load reduction and skip loading per ACI-318 building code. You can design and detail reinforcing requirements for beams, columns, and walls per ACI 318, BS 8110, CP 65, AS 3600, EC 2, and GB 50010 design codes and beams and columns per CSA A23.3, and also produce complete CAD files for floor framing plans, frame elevations, beam schedules, and column schedules.

RAM Concrete is complete production software that automates the most time-consuming design tasks. It significantly reduces design time, which dramatically increases productivity, allowing for more creativity through the quick exploration of design options.



Flexible beam design criteria

Design Versatility

RAM Concrete accommodates a wide range of member types and design options. Rectangular and T-shaped joists, beams, and girders, as well as pan-joist systems, and rectangular and circular columns with tied, circular, or spiral shear reinforcement are all supported. Walls of virtually any plan configuration and cross-section, including unlimited wall openings, can be designed for axial-flexural and shear loads. Members can be designed and detailed for gravity requirements or for code-prescribed seismic requirements. American and British standard reinforcing bars are supported, and you can create customized reinforcing sizes to be used in the design. Beam, column, and wall reinforcement can be automatically sized by the program or specified by the user.

Design Detail

RAM Concrete generates extensive design information and detailed prescriptive code checks. RAM Concrete provides the size, location, and quantity of the required member reinforcing, and also specifies the bar end conditions, bar extents, and stirrup and tie configuration. Spliced and hooked beam bars can be chosen where necessary by the optimization routine or can be specified by the user. An extensive set of design criteria menu options provides flexibility in customizing designs.

System Requirements

Processor

Intel or AMD processor 2.0 GHz or greater

Operating System

Windows 7, 7 x64, 8.1, and 8.1 x64

RAM

2GB minimum recommended

Hard Disk

500MB free disk space recommended

Display

OpenGL compatibility recommended

Find out about Bentley
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RAM CONCRETE AT-A-GLANCE

Modeling

- Quick modeling of gravity and lateral concrete structures
- Special commands to ease modeling of pan-joint systems
- Automatic calculation of T-shaped beam sections taking into consideration adjacent slab conditions
- Integration with the RAM Structural System reduces learning curve for current users
- Integration with RAM Concept for reinforced and post-tensioned slabs and mats

Analysis

- Automatic calculation of member section properties, including effective flange widths for T-sections and material properties per design code
- Automatic or manual user definition of beam lines for skip loading
- Automatic finite element model creation for gravity-force analysis
- Automatic gravity-load distribution and live-load reduction
- Automatic live-load skip loading for column forces incorporating ACI 318, Section 8.8
- Automatic live-load skip loading for beam forces incorporating ACI 318, Section 8.9
- Comprehensive reports of beam gravity design envelopes and column design forces
- Complete integration with RAM Frame for generation of lateral loads and member forces
- Building codes supported include IBC, UBC, BOCA, SBC, BS 6399, AS/NZS 1170.1, NBC of Canada, China GB 50009, Hong Kong, and Eurocode

Column Design

- Automatic load combination generation
- Slenderness considered per ACI 318 Sections 10.11 through 10.13 including automatic effective length and K-factor calculations
- Automatic column force generation from gravity and lateral analysis
- Consideration of prescriptive and strength specifications for reinforcing design including spacing, bar cover, and reinforcement ratios
- Automatic reinforcing selection for multiple bar layouts for shear, axial, and bending
- Fully interactive design and revision of reinforcing layouts for longitudinal and transverse reinforcement

- Automatic biaxial moment interaction curve generation and display
- Graphical display of all automatically generated load points in interaction curve

Beam Design

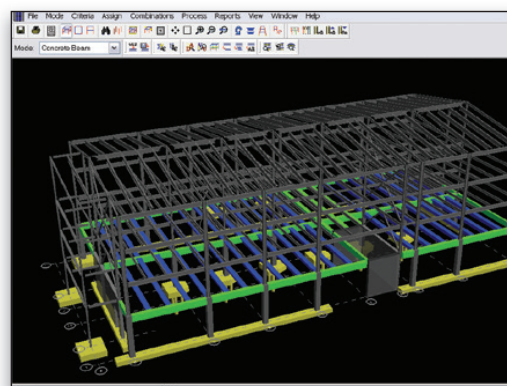
- Automatic load combination generation
- Automatic beam force envelope generation from gravity skip load forces and lateral analysis forces
- Consideration of prescriptive and strength specification for reinforcing design including spacing, bar cover, and reinforcement ratios
- User specification of design and detailing criteria to control automatic design of reinforcing
- Immediate update of capacity curves for user change in reinforcing
- Fully interactive design and revision of reinforcing, including quantity, size, location and end conditions of all bars
- Graphical display of capacity and demand envelope for moments and shear along full length of beam lines
- Graphical display of reinforcement layout along beam length
- Immediate and long-term deflections

Wall Design

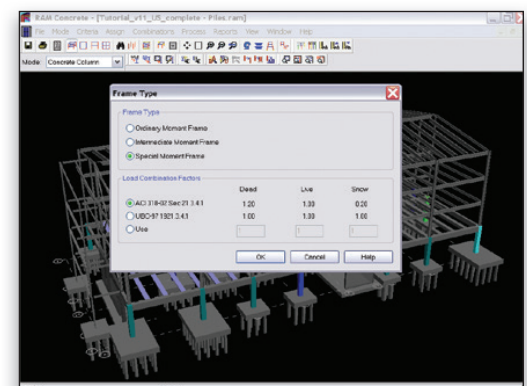
- Full 360-degree axial-flexure interaction surface generation and shear evaluation for horizontal and vertical wall cross-sections
- Checks for prescriptive code requirements including reinforcing spacing, reinforcing ratio, and confinement
- Walls can be designed either as separate individual panels or as grouped wall cores
- Creation of sections in walls for strength evaluation can be done either automatically or directly by the user
- Selection of actual reinforcing bars, including true locations within walls, based on user-specified reinforcing templates and criteria
- Special seismic requirements of ACI 318 are implemented

Output and Drawings

- Base plan and column schedule DXF output
- Detailed and concise summary design output
- Reinforcing and material takeoff reports
- Floor plan and beam schedule DXF output including grouping



Complete 3D model for analysis and design.



The intermediate and special moment frame requirements of ACI 318, chapter 21 are implemented in RAM Concrete.