PRODUCT DATA SHEET

RAM™ FOUNDATION

THE RAM STRUCTURAL SYSTEM PRODUCTIVITY TOOL FOR ANALYSIS AND DESIGN OF PILE CAPS, SPREAD FOOTINGS AND CONTINUOUS FOOTINGS

RAM Foundation is an integrated module within the RAM Structural System that performs the design, evaluation, and analysis of spread, continuous, and pile cap foundations. The RAM Foundation module will help you quickly produce optimum foundation designs for your entire structure based on a wide range of customizable design criteria and user options. With its interactive tools, you can refine your designs for both foundation dimensions and steel reinforcement.

Once designed, your foundation calculations, details, and foundation plans are produced with just a few clicks of the mouse using the RAM customizable reports and dxf output capabilities. Imagine the impact of that kind of productivity.

Integrated Design Environment

Are you reluctant to move a braced frame because it will change the lateral forces on the supporting footings? The time of revisiting the foundation system repeatedly throughout the design phase can quickly cut into your profit. With the seamless integration of RAM Foundation with RAM Structural System, loading, member, material, and geometric information is current. Changes to gravity and lateral loads and framing members are immediately reflected in the Foundation module. With RAM Foundation there is no need to manually merge foundation loads from multiple analysis programs. This is the power of the integrated design environment.

Ease of Use

One of the primary goals of RAM Foundation is to allow the engineer to achieve foundation designs as quickly and easily as possible. RAM Foundation features an intuitive user interface, drastically reducing the overhead associated with a learning curve.

Foundation Element Types

All three of the most commonly used foundation element types: spread footings, continuous footings, and pile supported caps, are supported by RAM Foundation. Different foundation scenarios can easily be investigated and evaluated with minimal revision time.

Design Optimization

RAM Foundation automatically sizes footing dimensions and reinforcement using the user specific design criteria and all relevant parameters from the RAM Structural System model. The program is NOT limited to performing design checks, which would require the user to iteratively find an optimum footing design.

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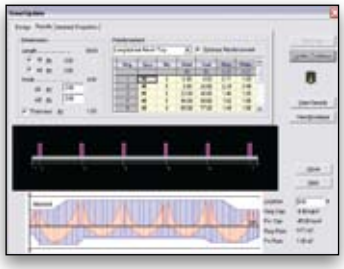
Flexibility

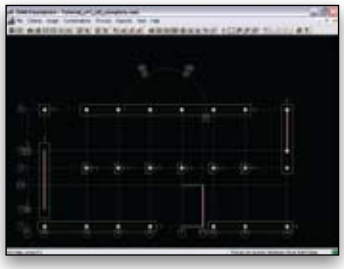
RAM Foundation offers a broad range of user specified criteria. Engineers can customize the RAM Foundation environment to the specific needs of a project and use these settings as the default for future RAM Foundation designs.

Designs Easily Modified

The RAM well known View/Update command exists in RAM Foundation as well. Once an optimized design has been selected by the program the user may change the footing dimensions, reinforcing, or material properties.



Interactive diagram of provided and required moment and shear envelopes for a continuous footing



Plan view depicting designed foundations

SYSTEM REQUIREMENTS

Processor:
Intel Pentium or AMD Athlon

Operating System:
Windows Vista, XP, and 2000

RAM:
128MB minimum

Hard Disk:
100MB recommended

Display:
OpenGL 3D graphics supported

Ram Foundation requires that RAM Modeler and either RAM Steel® or RAM Frame® be installed

ABOUT BENTLEY

Bentley Systems, Incorporated is the global leader dedicated to providing comprehensive software solutions for sustaining infrastructure. Architects, engineers, constructors, and owner-operators are indispensable in improving our world and our quality of life; the company's mission is to improve the performance of their projects and of the assets they design, build, and operate. Bentley sustains the infrastructure professions by helping to leverage information technology, learning, best practices, and global collaboration – and by promoting careers devoted to this crucial work.

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Bentley Sustaining Infrastructure

RAM FOUNDATION AT-A-GLANCE

General

- Fully supports the ACI-318 and BS 8110 design codes and numerous building codes including IBC, UBC, BOCA, SBC, BS 6399, AS/NZS 1170.1, China GB 50009, Hong Kong and Eurocode
- Automatically generates code required load combinations for both soil bearing checks and concrete design, and allows for user-defined custom load combinations
- Flexible user-defined optimization parameters allow you to reach a design based on your standards and preferences
- Design process is fully interactive so changes can be made and the effect reported instantaneously
- Allows for automatic optimization or user controlled design of both foundation dimensions and reinforcing
- Sizes footings for uplift automatically, including user input safety factor
- Reinforcing designs conform to all code standards and limits including reinforcement ratio, spacing, development length, and cover
- Produces complete and attractive design calculations
- Produces foundation plan drawings and foundation details, and schedules for CAD

Spread Footings

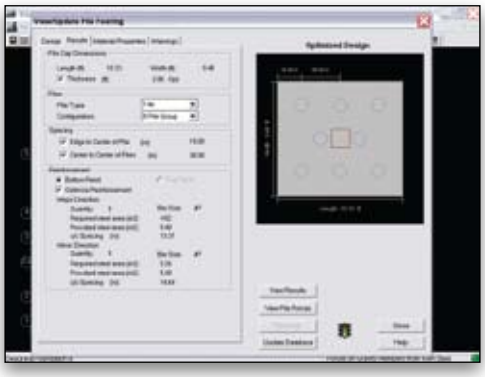
- Fast and accurate solution for spread footings with axial loads and bi-axial moments, taking into account no-tension behavior of soil
- Checks the limit states of one-way beam shear, punching shear accounting for moments in columns or walls, and footing flexural strength
- Flexural reinforcement automatically selected for spread footings, with user-override capabilities
- Spread footings may be designed for either true loading or soil capacity
- Negative flexural reinforcement (top bars) automatically provided when required
- Allows you to reduce the number of unique spread footings with option to use controlling reinforcement on all footings of the same size
- Ability to add spread or pile cap foundations under columns located at the end of shear walls and continuous footings under the shear walls

Continuous Footings

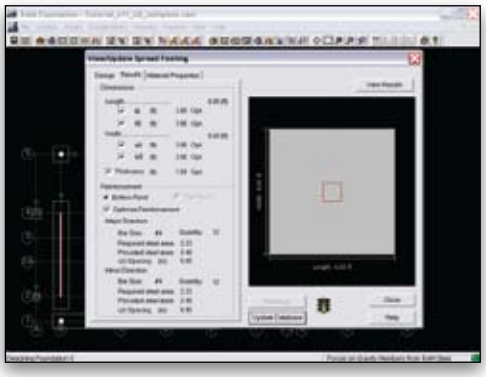
- Allows unlimited number of columns, braces, and walls on a continuous footing
- Fast finite element analysis for continuous footings, taking into account no-tension behavior of soil
- Shear and flexural reinforcement automatically selected for continuous footings
- Options to override reinforcement sizes or quantity along any part of continuous footings
- Interactive diagram of provided and required moment/shear envelopes in continuous footing View/Update dialog

Pile Caps

- Fast and accurate solution for pile caps with axial loads, bi-axial moments, shear, and torsion
- Comprehensive pile cap check including column punching shear, single pile and double pile punching shear, as well as one-way shear
- Pile capacity check for compression, tension, and shear
- Pile caps may be designed for either true pile loads or pile capacity
- Negative flexural reinforcement (top bars) automatically provided when required
- Truss theory considered when required by BS8110-97 code



Pile cap designs are easiliy modified



Spread footing designs are easily viewed and modified