

Q: Will RISAMasonry check out-of-plane loading for lintels?

A: RISA does not currently check lintels for out-of-plane loading.

Q: Will RISAMasonry allow you to do multiple story masonry walls and/or parapets?

A: RISA-3D, RISAFloor and RISA-2D all allow you to design multiple story walls and walls with parapets. RISAMasonry does not allow you to design multiple story walls but does allow you to design walls with parapets.

Q: In RISAFloor can you enter both un-reducible live loads and reducible live loads (for example, an office with partitions)?

A: You can enter both reducible and non-reducible live loads within RISAFloor. When you're specifying your Area Loads (in the Area Loads spreadsheet) you can specify the Live Load Type by choosing "Reduce" or "Non".

Q: Can you model flexible diaphragms?

A: You can model both flexible and rigid diaphragms within RISAFloor and RISA-3D. You will need to use RISAFloor to specify a flexible diaphragm so that the program knows where your chords/diaphragms are located.

Q: Does RISA have any products to do composite beams with cover plates?

A: RISAFloor has the ability to design composite steel beams with studs and concrete fill. For built-up sections we recommend using RISASection. This program will calculate the section properties and you can use this section in your full 3D model.

Q: For out of plane loading, does RISA-3D design the jamb bars adjacent to openings?

A: For the jambs around the opening, RISA-3D does not do an explicit design of the jambs for out of plane loads. RISA-3D does take into account the wind on the opening and push that loading out to the region. For hand calculations on jamb design, engineers typically use a simplified column analogy for the jamb strip of the wall. RISA-3D is using an FEM analysis; the portion of the wall considered the jamb is also meshed into the rest of the wall. Because of this, this load is shared between these areas. Thus, you could create a thin region to be assumed the jamb for this design, but you will probably not get the same load attribution that you would with a hand calc.

Q: Can we add additional regions (wall design)?

A: You have complete control of the region specification. You can add regions manually or have the program automatically generate them.

Q: Does RISA do the strength design of masonry walls?

A: RISA performs both strength and allowable stress masonry design.

Q: With regard to mesh size, are there recommendations for appropriate mesh size versus wall panel size? How do results vary with mesh size?

A: When you specify a Wall Panel, the mesh is done automatically by RISA, although the program does allow you to reduce or increase the mesh size in the Global Parameters dialogue. Per FEA theory, the finer the mesh the more accurate the results. However, the smaller your mesh the longer the analysis time because of the increase in the number of plates. There are some good rules of thumb in plate modeling to determine the proper mesh size. I'd recommend viewing the Plate Modeling Tips section of the RISA-3D Help file for more detailed information.

Q: Does RISAFloor design semi-rigid floor?

A: At this time, you can model rigid and flexible diaphragms. If you want to model a semi-rigid diaphragm I would recommend using plate elements.

Q: Is there an easy way to 'print all' calculations for use in assembling a calculation package for a submittal?

A: RISA has an option for report printing that allows you to print all input and output. However, you also have the ability to specify just the sections you want to include. This gives you flexibility to control the volume of the output.

Q: Does RISA-3D address development and lap lengths in masonry. Any comments on ASD versus LRFD calculated development lengths?

A: RISA-3D does not currently report the development lengths for masonry walls. However, this is reported for concrete beams and columns.

Q: Is it possible to design masonry pilasters which are multiple wythes, or masonry columns?

A: At this time, RISA does not design pilasters within a wall. We plan to add this feature in a future release.

Q: What's the length limit of the wall length?

A: There is no length limit to the masonry wall.

Q: For masonry pier design, it looks like you can specify different vertical bar sizes for axial vs. in-plane design. Can you explain why that is? Are the in-plane vertical bars specifically for boundary elements?

A: The in-plane bar specifications are specifically for the boundary elements. The axial vertical bars are distributed along the region width.

Q: Can you use RISAFloor to do one single cover plated composite steel beam if you built the section in RISASection?

A: You can import a RISASection shape into both RISA-3D and RISAFloor for analysis.

Q: In RISA-3D, there were options for flexural steel and shear steel. Is there literature available for what RISA considers shear reinforcing in the wall and end regions?

A: The Help file describes in detail the options for both shear and flexural steel. There is also an option to display the rebar individually within the Wall Panel Editor.

Q: Does RISA consider all the different wind pressures around the 'end zones' of a building and model them explicitly to calculate the single resultant point load?

A: The ASCE 7-05 Wind Loads are calculated according to the Analytical Procedure (Method 2). RISA does not automatically consider the wind zones in the building as this is more of a components and cladding type loading. RISA's automated loading considers the "main lateral force resisting system." If other loads are considered important, then the user would have to input these.

Q: How does RISA (finite element) define the stiffness of grouted and un-grouted masonry wall?

A: RISA adjusts the stiffness of the wall based on whether it's fully grouted, partially grouted or has no grout. The Block Nominal Width value is used along with the value of grout/bar spacing to determine the effective thickness of the wall. The effective thickness is based on tables B-3a and B-3b of the **Reinforced Masonry Engineering Handbook, by Amrhein, Copyright 1998.**

Q: Does RISA-3D include the moment induced from eccentric vertical loading?

A: RISA-3D will include any subsequent moment due to eccentric loading on the wall. It will also include any load distributed to a multi-level wall from the diaphragms at each level.

Q: Won't RISA-3D also do vertical loading design? Why do you use RISAFloor to do the vertical loading?

A: Although RISA-3D can design gravity loads, RISAFloor was created to make this process easier and to allow definition of elements that cannot take any lateral load such as open web steel joists and timber I-Joists. RISA-3D doesn't have the ability to separate these types of members from taking gravity versus lateral load. RISAFloor allows you to easily assign area loads and deck loading for buildings by applying the load to the entire floor at once. It then automatically distributes these loads. RISAFloor also automatically reduces the live load.

Q: When sending the results back to Revit Structure, are the sub-mesh elements ignored?

A: When sending the model back to Revit Structure from RISAFloor or RISA-3D the wall panel perimeter is transferred. Revit does not need to read the individual sub-meshed elements.

Q: With regard to existing buildings, can "unreinforced" masonry be modeled with stress checks (modulus of rupture check)?

A: For unreinforced masonry RISA checks against the modulus of rupture. Our code check equation is $(F_b - F_a) / F_{bt}$, where F_{bt} is the modulus of rupture.

Q: The lintel design appears to be governed by both lintel depth and the load attribution rules you covered at the end. Can the load attribution be forced to disregard the 45-degree rule, and / or can lintel depth be input by the user?

A: The user can define the lintel depth in the Wall Panel Dialogue by double clicking on the lintel. By default, the program assumes one block height as the lintel depth but this can be easily changed. It is also possible to modify the defaults to match your design standards Load attribution in RISA-3D approximately uses the 45 degree angle theory, but we are using an FEM solution, so the load is following the stiffness of the wall. Looking at the axial stress contours in a wall with an opening and gravity loads will show this. This FEM load attribution can not be modified by the user.

- Q:** Can a P-M curve be output for masonry wall or column sections? This would be great for concrete too!
- A:** RISA-3D and RISAFloor display P-M diagrams for all concrete column members. These programs do not currently design masonry columns so the P-M diagram is not provided. When we add masonry pilaster design we will include the P-M diagram.
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- Q:** Can you “round trip” between RISA-3D and RISASection?
- A:** RISASection and RISA-3D have a direct link. This means any section you create in RISASection can automatically be read and used in your RISA-3D model.
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- Q:** Does RISA-3D output a “calc-track” for the masonry design calculations? i.e. equations, results, code references, etc. (This would be nice for concrete, too.)
- A:** The Detail Report option is where all of the detailed code check information is available for each member or wall. This report shows the governing code equation, the code check and all design parameter information. This is a great tool for accessing all of the input and output information for any member or wall. This is available for all material types within both RISA-3D and RISAFloor.
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- Q:** We’ve had internet problem during the presentation. Are there any ways we can download the presentation?
- A:** This presentation is available for download on our website below. If you registered for the event please send an email with a request for a coupon to view this at no cost. For non-registered guests there is a \$20 fee for viewing the webinar.
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