RAM Structural Systems Checkbot Linking

How to activate the Link

The RAM Structural Systems Checkbot link automatically comes installed with the latest version of IDEA StatiCa v22.

General

- The RAM Structural Systems Checkbot link allows you to import a full RAM Structural Systems database file (.rss) into Checkbot.
- A new import button is provided in Checkbot when opened in the 'standalone' mode. I.E Directly from the IDEA StatiCa application.
- The Import has been developed for the purpose of **Steel Connection and Steel Member Design** in Checkbot.

How to use the Link



Download the attached RAM Structural Systems AISC project.

- 1. **Open the IDEA StatiCa app** from start menu.
 - a. Start \rightarrow Programs \rightarrow IDEA StatiCa 22

2. **Select Checkbot** from the available options on the home screen. This opens checkbot in 'standalone' mode and provides a range of options for model import.

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| Connection Member | Any topology, any loading, in minutes |
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- 3. Create a new project by Selecting 'New' from the available Project Options
 - a. **Select a project folder** by browsing to a desired location. Note: The project folder will be created within this folder.
 - b. Specify a name for the project.
 - c. Select Steel Project Type. Note: Concrete is currently not supported
 - d. Select Code (and Subcode if required)
 - e. **Create Project.** Once a project is created a new folder with project name will be created inside the project folder.

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| | | 5. | |
| | | Create project | |

- 4. Before importing the RAM Database file (*.rss) USER NEEDS TO ENSURE:
 - a. That database is Closed and RAM Structural Systems in not running.
 - b. **Results are stored in the database**. To read results for Members a FRAME analysis is required to of been undertaken with the 'Write Results to Data Extractor database' checked. The model should be saved once results have been completed.



- c. All elements should have a defined size.
- 5. Once the project is created, from the import options select 'RAM'. A dialogue will appear allowing you to select a RAM Database file (*.rss). Select the desired project.

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| Tutorials FAQ Webinars | 27042022 What is new in IDEA StatiCa 22.0 The new version of IDEA StatiCa 22 the new features and improvement your daily tasks. Join our release w know more. | et al. 2020 Hendow writh not allowed for EU argument tends with not allowed for EU argument and Deamong the first to minor issue. But after taking a deeper deter it turns nightnare on ony for situatue angineers but for accoss the globe – except for those in the United tim | 1003 2020 Internet in NASCC 2022 in Denver eth the UK A sharin an NASCC 2022 in Denver For the last two years of Conist enclations, the largest street only. to back like a source in the UK sharin and the enclation of the enclation of the source in the Street only. was great to ste everyone in person at NASCC 2022 in Denverte dom. Colorado, last week. Colorado, last week. | B131302 Get the most out of Connection modeling Table hits, ofter managements from out suderce, set 15.8, 8, 8 marks and 15.8 marks and 15.8 marks and 15.8 marks a modeling process in our tables before and process from tables to concection. Nothing loss than a real-bits verifieve on building well weightigt bit in set contents. | |

 On project import you will get notified of required Conversions of Material and Properties. Select the desired assignments from the IDEA material and section property library. Refer limitations below for more information.

| Conversion | | | > | K |
|------------|---|---|--|---|
| Туре | Steel | | Item | |
| • Steel | Imported Item Steel 50Kips Steel 36Kips | Assigned item Not assigned Not assigned | ▼ Original name Assigned name Code Link Date Source project | |
| | | | OK Cancel | |

7. **The Project should now be imported.** Connections are automatically generated for all connection points. Note: Once the project is imported you are free to open the database again in RAM Structural Systems to validate the import.



8. From here use Checkbot as required to manage loading and connection generation. <u>https://www.ideastatica.com/blog/goodbye-to-the-code-check-manager-hello-to-the-checkbot</u>

Known Limitations

Model:

- The entire RAM SS database will be imported. You cannot currently do partial imports.
- Concrete Members are currently imported as empty sections properties. This means concrete members (only 1D) will be displayed with a token section size as specified in the conversion options.

Material:

- All materials need to be converted as RAM does not provide adequate information to construct IDEA materials.
- Concrete Materials can be imported and will be able to be selected for conversion.

Properties:

- Currently only standard Steel Sections are Imported.
- Steel Joists, C beam and Specialist Brace Systems (Inc Star Seismic and CoreBrace) are not implemented. A conversion of these sizes will need to be completed.

Geometry:

- On import beam member offsets are automatically assigned to ensure the top-of-Steel geometry preview in RAM. If a member's section is a part of the converted sections, the user will have to assign this offset manually.
- Beam web openings are not implemented
- No import of 2D element including wall or slab elements.

Forces:

- It is not possible to retrieve Intermediate Column forces through the RAM API. Therefore, only the forces at the start and end of columns are imported and displayed. In the event there is a brace framing into an intermediate node on a column, the force at this joint will not reach equilibrium as the column result forces cannot be reported accurately. There are two possible workarounds to this:
 - Define a separate level in RAM SS at the level in which the brace is framing in. This allows the column to be broken into two separate elements.
 - When opening the connection at this point. Switch the 'Loads in equilibrium' option to false and set the Column as the bearing member. Forces in the Brace will be used to design the connection.
- Forces on Concrete 1D elements are skipped on the import process.

Typical RAM Database Opening Errors:

If the RAM database is in a faulted state, we will not be able to complete the import. You can find ways to fix it here:

 <u>https://communities.bentley.com/products/ram-</u> <u>staad/w/structural_analysis_and_design_wiki/7959/ram-ss-file-open-troubleshooting-tn</u>