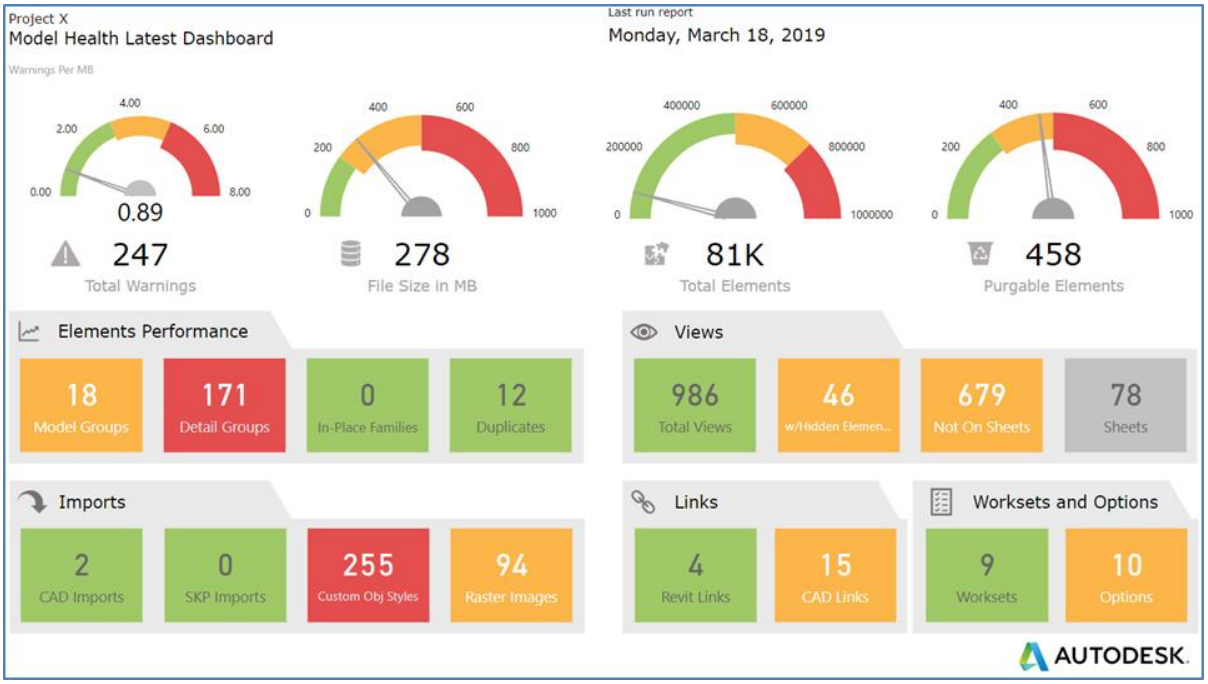
Autodesk Model Checker for Revit: Power BI Dashboard Visualization Thresholds



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Introduction

Autodesk has created a Microsoft Power BI template and corresponding Revit Model Checker checkset file to help users track and monitor Revit model health. These files and instructions to use them can be found at www.biminteroperabilitytools.com.

The Power BI report includes a “Latest Report” page. This collection of visualizations reviews the most recently created checkset Excel report in the data source and offer visual feedback on the information found in there. The visualizations have been created with a default set of targets that are intended to be used as a starting point to monitor a Revit model’s health. These targets work on a simple **GREEN** to **YELLOW** to **RED** continuum:

- **GREEN** is reporting that the specific item is well within expected limits
- **YELLOW** reports that the item may want to be reviewed
- **RED** is reporting an item that is well out of bounds and might start impacting the Revit model’s health

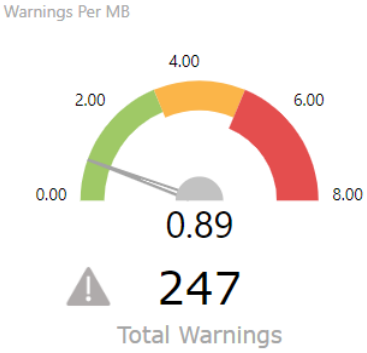
These thresholds are intended as a guideline and can be modified by individual users to more closely match their needs based on hardware performance, project needs, and project types.

This document will explain the individual thresholds as well as how to update them.

Visualization Thresholds

Overall Model Information

Warnings – Total Warnings and Warnings Per MB

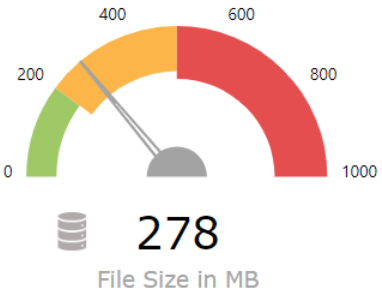


The Warnings dial is a combination of two specific reports. The large number at the bottom is simply the total warnings found in the report.

The dial itself reports the number of warnings divided by the file size. Many organizations use this calculation to monitor the appropriate number of warnings in a model.

GREEN	From 0 to 3 Warnings per MB
YELLOW	From 3 to 5 Warnings per MB
RED	More than 5 Warnings per MB

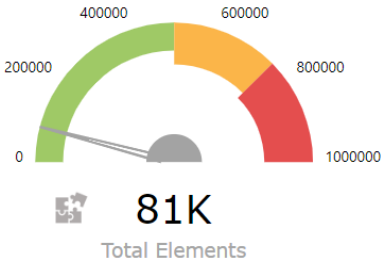
File Size



The File Size dial reports the model size rounded to the nearest MB.

GREEN	From 0 to 200 MB
YELLOW	From 200 to 500 MB
RED	More than 500 MB

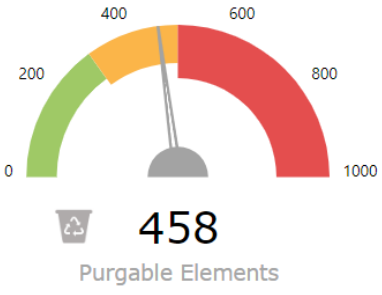
Total Elements



Reports a count of all instances in model and annotation categories.

GREEN	From 0 to 500,000 elements
YELLOW	From 500,000 to 750,000 elements
RED	More than 750,000 elements

Purgable Elements



Purgable Elements is a collected report of unused elements in the model. Note that this is not the same as the Purge Unused count in the Revit UI, due to a limitation with the Revit programming API, but the number is a close representation.

GREEN	From 0 to 300 elements
YELLOW	From 300 to 500 elements
RED	More than 500 elements

Elements Performance

Model Groups

Model Groups reports the number of placed Model Group elements in the model.

GREEN	From 0 to 15 Model Group instances
YELLOW	From 15 to 50 Model Group instances
RED	More than 50 Model Group instances

Detail Groups

Detail Groups reports the number of placed Detail Group elements in the model.

GREEN	From 0 to 15 Detail Group instances
YELLOW	From 15 to 50 Detail Group instances
RED	More than 50 Detail Group instances

In-Place Families

In-Place Families reports the number of In-Place Families instances in the model.

GREEN	From 0 to 15 In-Place Family instances
YELLOW	From 15 to 50 In-Place Family instances
RED	More than 50 In-Place Family instances

Duplicates

Duplicates reports a total number of instances that are the same Family and Type in the same position in the model.

GREEN	From 0 to 15 In-Place Family instances
YELLOW	From 15 to 50 In-Place Family instances
RED	More than 50 In-Place Family instances

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Imports

CAD Imports

CAD Imports reports the number of instances of imported CAD files in the model.

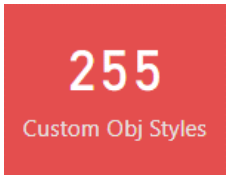
GREEN	From 0 to 3 imported CAD instances
YELLOW	From 3 to 10 imported CAD instances
RED	More than 10 imported CAD instances

SKP Imports

SKP Imports reports the number of instances of imported Sketchup files in the model.

GREEN	From 0 to 3 imported SKP files
YELLOW	From 3 to 10 imported SKP files
RED	More than 10 imported SKP files

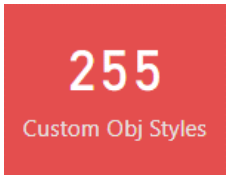
Custom Obj Styles



Custom Object Styles reports the number of Object Styles in the Revit model that are not the “standard” Revit Object Styles. A small number of custom Object Styles may be expected in a standard Revit workflow. A large number may indicate imported and exploded DWG files.

GREEN	From 0 to 10 imported SKP files
YELLOW	From 10 to 50 imported SKP files
RED	More than 50 imported SKP files

Raster Images



Raster Images reports the number of placed image instances in the model. This does not include Decals.

GREEN	From 0 to 20 placed images
YELLOW	From 20 to 100 placed images
RED	More than 100 placed images

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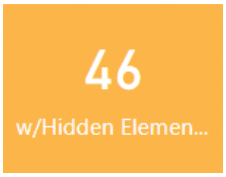
Views

Total Views

A report of every view in the model. A high number of views does not typically impact model performance but referencing this metric with the rest in the Views section can help teams understand if model views are being used efficiently.

GREEN	From 0 to 15,000 views
YELLOW	From 15,000 to 20,000 views
RED	More than 20 000 views

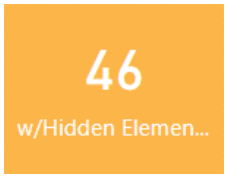
w/Hidden Elements



A report of views with individually hidden elements, meaning not hidden via category control, filters, or phase filters.

GREEN	From 0 to 25 views
YELLOW	From 25 to 250 views
RED	More than 250 views

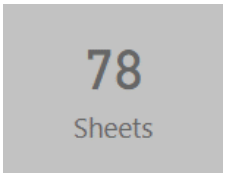
Not On Sheets



A report of views that are currently not placed on sheets. A certain number of “working” views are expected for a Revit workflow, but a high number can indicate a poorly managed model file.

GREEN	From 0 to 250 views
YELLOW	From 250 to 1,000 views
RED	More than 1,000 views

Sheets



A report of the total number of Sheets in the Revit model. No thresholds are set for this metric. It is intended to be used as reference with the other metrics in this category.

Links

Revit Links

Reports the number of instances of Revit models linked into the reported model.

GREEN	From 0 to 10 linked RVT files
YELLOW	From 10 to 30 linked RVT files
RED	More than 30 linked RVT files

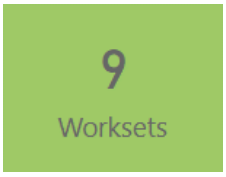
CAD Links

Reports the number of instances of CAD files linked into the reported model.

GREEN	From 0 to 10 linked DWG files
YELLOW	From 10 to 30 linked DWG files
RED	More than 30 linked DWG files

Worksets and Options

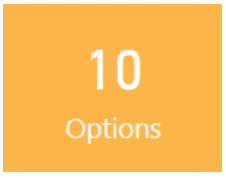
Worksets



Reports the number of Worksets in the model.

GREEN	From 0 to 10 Worksets
YELLOW	From 10 to 20 Worksets
RED	More than 20 Worksets

Options



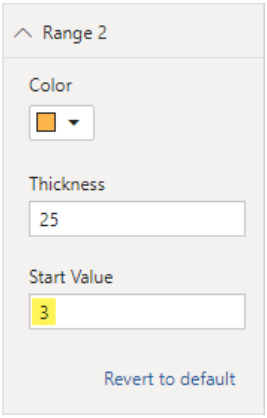
Reports the number of Design Options in the model, not Option Sets.

GREEN	From 0 to 10 Options
YELLOW	From 10 to 20 Options
RED	More than 25 Options

Updating Metric Thresholds

Dials

1. In Power BI Desktop, select the specific dial you wish to modify.
2. On the Visualizations panel, select the Format tab.
3. Expand *Range 2*. Modify *Start Value* to the new setting for the start of the YELLOW section of the dial.



4. Expand *Range 3*. Update *Start Value* to the new setting for the beginning of the RED section of the dial.

Cards

1. In Power BI Desktop, select the specific dial you wish to modify.
2. On the Visualizations panel, select the Format tab.
3. Expand *Conditions*. Each has 2 set for *No. of Conditions*.
    a. The first *Value* field sets the topmost value for the card to be GREEN. Change this number to adjust when the card changes from GREEN to YELLOW.
    b. The second *Value* field sets the topmost value for the card to be YELLOW. Change this number to adjust when the card changes from YELLOW to RED.