

*AASHTOWare BrDR 7.6.0*

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*Feature Tutorial*

*Analysis Results Comparison (ARC) Tool 2.0 Tutorial*

## ARC2 – ARC Tool 2.0

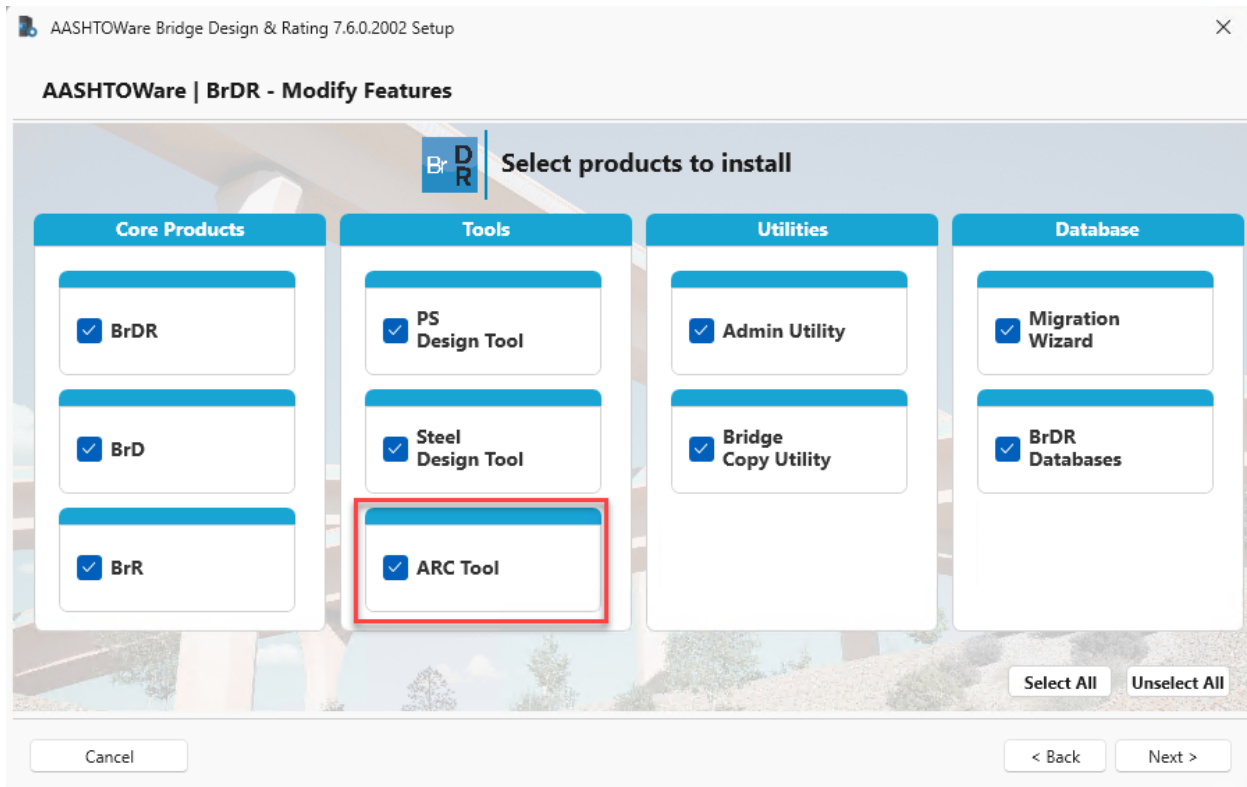
This example describes the use of the Analysis Results Comparison (ARC) 2.0 Tool feature in BrDR. *Note: The ARC Tool 2.0 will be included in BrDR for versions 7.6 and later. For versions 7.1 through 7.5, please refer to the ARC Tool 1.0 tutorial.*

### Topics covered:

- Getting started
- Creating and appending to datasets
- Operation of the ARC Tool comparison feature

### Getting Started

When installing BrDR, ensure that the ARC Tool is selected as a feature (see below). Also please note, a user must login to BrDR at least once before using the ARC Tool to activate the license.



### Export Bridge XML Files

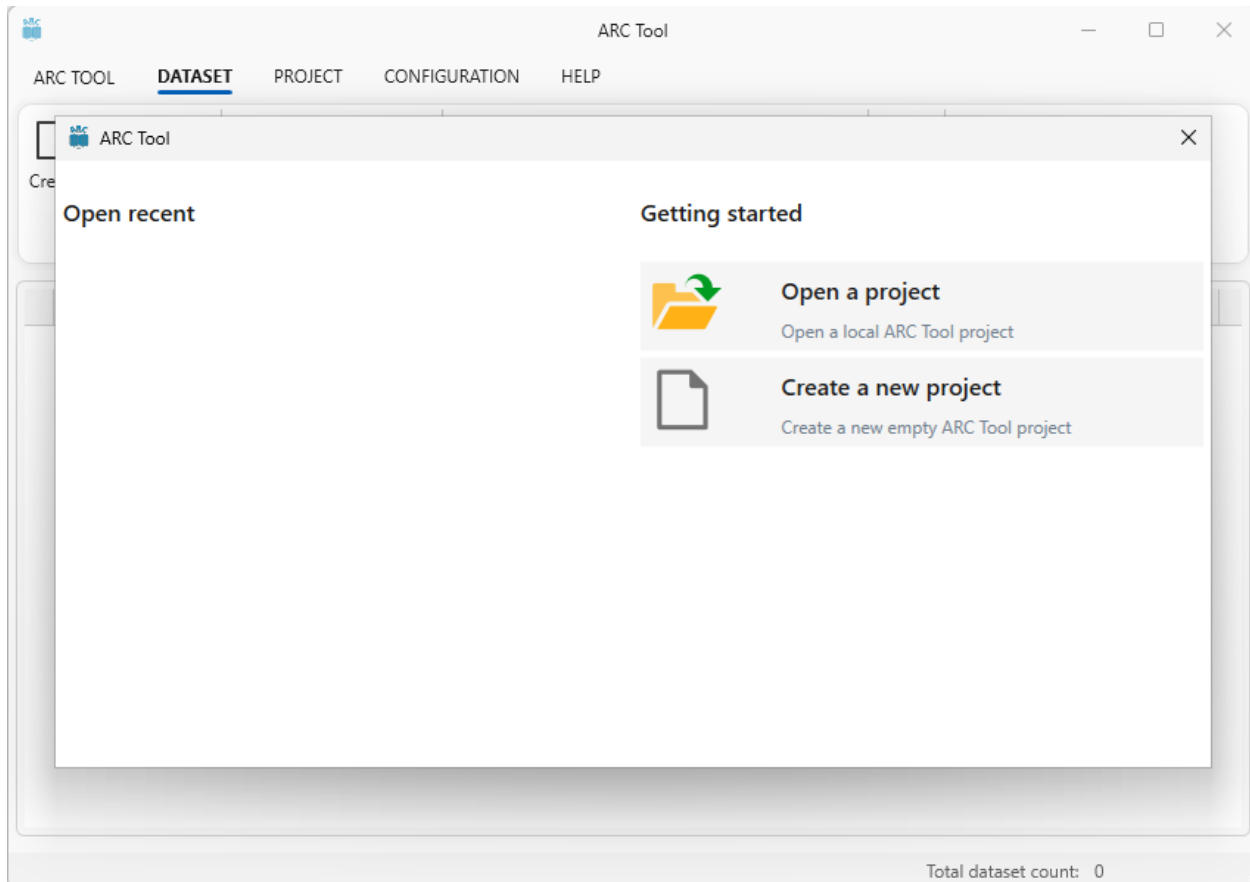
The ARC Tool analyzes bridges directly from AASHTOWare BridgeXML files rather than connecting to a database like BrDR. Bridge XML files can be generated by exporting bridges from a particular version of BrDR. Please note, version conversion is available in the ARC Tool for forward compatibility but not backward compatibility. For

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example, bridges exported from BrDR version 7.0 can be used to generate datasets for versions 7.1 and later, but bridges exported from BrDR version 7.6 cannot be used to generate datasets for BrDR version 7.0.

### Creating a New Project

Run the ARC Tool executable file to begin (this is 'ArcToolUi.exe' located in the folder {BrDR installation folder}\ArcTool ). The window below will open with the option to either “Create a new project” or “Open a project”.



After selecting an option, the **Dataset Explorer** window will open and the grid will be populated if the selected project contained any datasets.

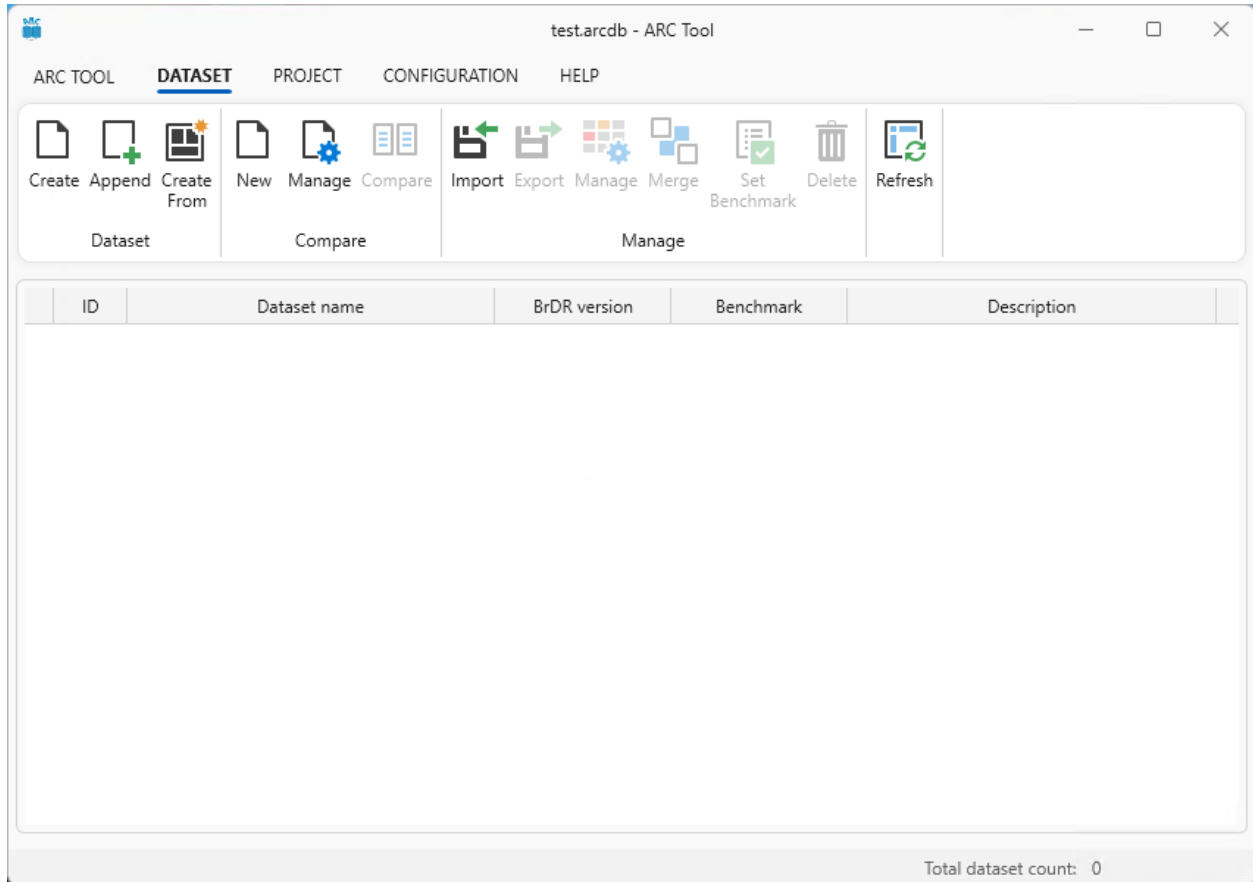
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### Data Explorer Window

This is the ARC Tool main window and can be used to access the features in the ARC Tool. Below is a quick description of the features available for the ARC Tool.

#### Dataset Tab:

The **Dataset Tab** of the ARC Tool ribbon is shown below.



#### Dataset Group

##### Create

Allows the user to generate a new dataset.

##### Append

Allows the user to generate new data and add it to an existing dataset.

##### Create From

Allows the user to generate a new dataset from an existing dataset using a different version of BrDR.

#### Compare Group

##### New

Creates a new comparison template, this template is a set of unique rules used to make custom comparisons between two datasets.

##### Manage

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Allows the user to create, edit, or delete comparison templates.

### **Compare**

Runs a Level 1 comparison on two selected datasets or one selected dataset against the benchmark dataset.

Level 1 is a comparison of controlling rating factors at the bridge level.

### **Manage Group**

#### **Import**

Imports a collection of ARC Tool dataset files stored as an .arcds file.

#### **Export**

Exports a collection of ARC Tool dataset files and stores them in an .arcds file.

#### **Manage**

Allows the user to view, update, and delete the items within the selected dataset.

#### **Merge**

Merges two selected datasets of the same version into one new dataset.

#### **Set benchmark**

Sets the selected the dataset as the benchmark. A benchmark is an accepted dataset that will be used to compare to future datasets.

#### **Delete**

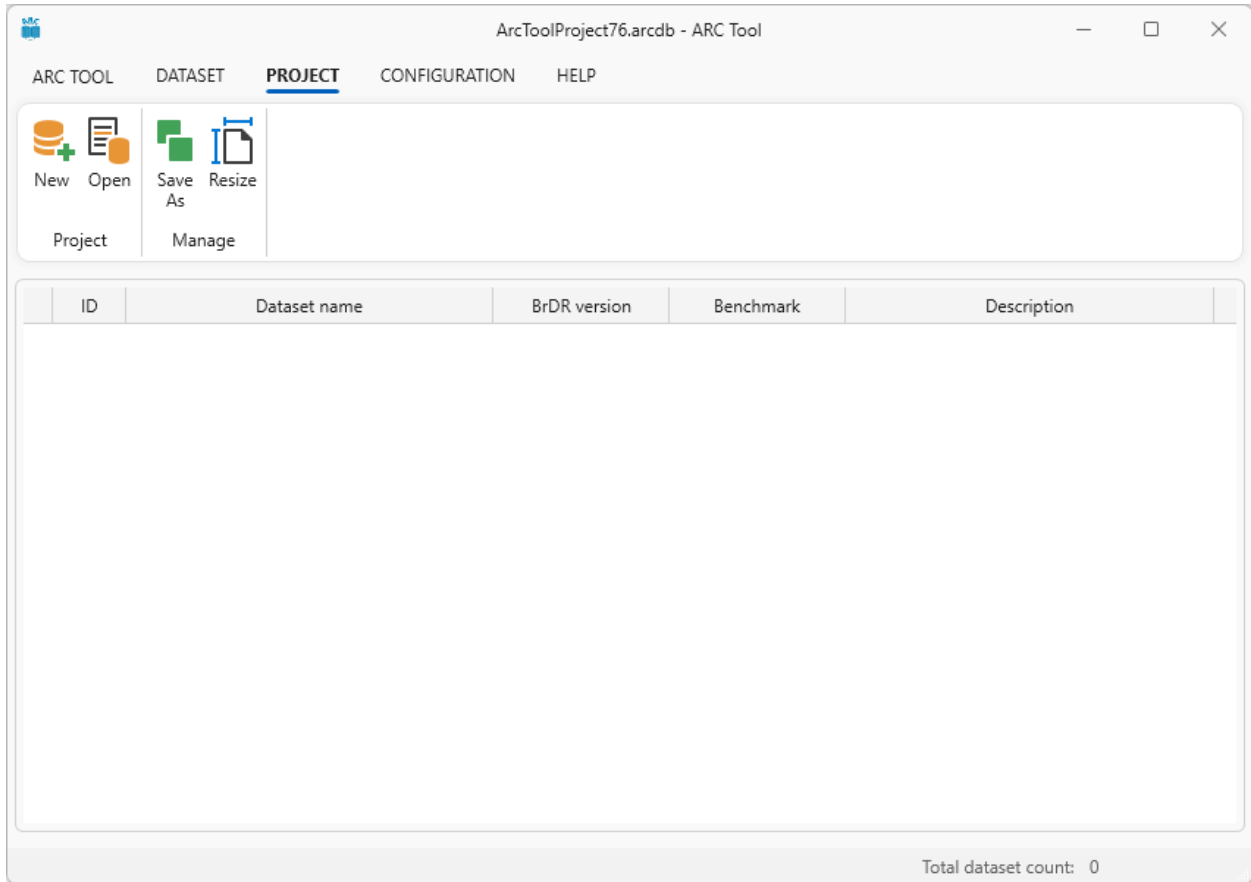
Deletes the selected dataset(s).

#### **Refresh**

Refreshes the dataset explorer window so that any changes are reflected in the window.

## Project Tab

The **Project Tab** of the ARC Tool ribbon is shown below.



### Project Group

#### New

Creates a new ARC Tool project and loads it into the Dataset Explorer window.

#### Open

Opens an existing ARC Tool project and loads it into the Dataset Explorer

### Manage Group

#### Save As

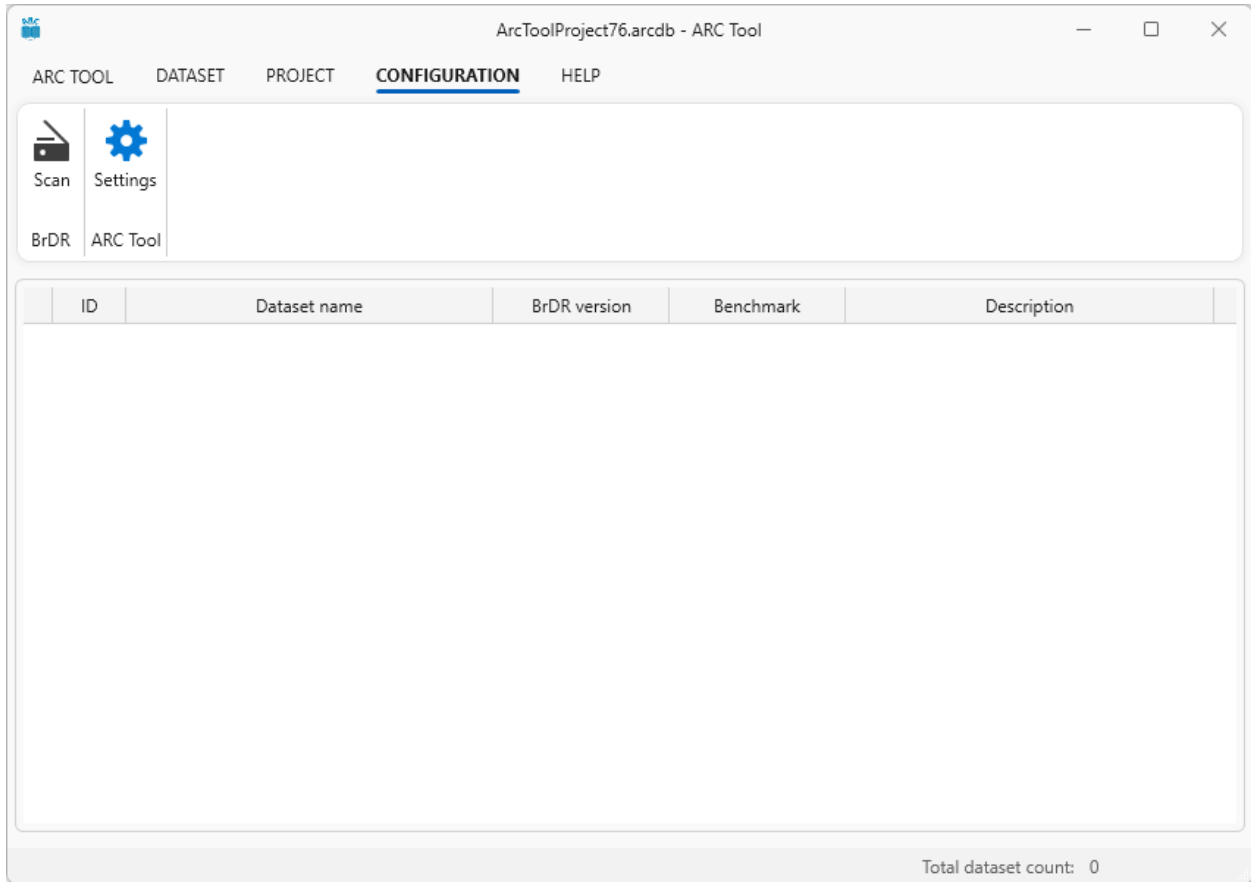
Saves the current ARC Tool Project to the selected location and optionally loads it into the Dataset Explorer.

#### Resize

Compresses the size of the currently opened ARC Tool project file. If several datasets have been deleted from the project, this option can be used to clean up metadata and reduce the size of the file.

## Configuration Tab

The **Configuration Tab** of the ARC Tool Ribbon is shown below.



### BrDR Group

#### Scan

Scans the user's machine for installed instances of the supported BrDR versions. If a supported BrDR version is detected, it will be registered in the ARC Tool project and the BrDR Analysis Templates will be imported into the ARC Tool.

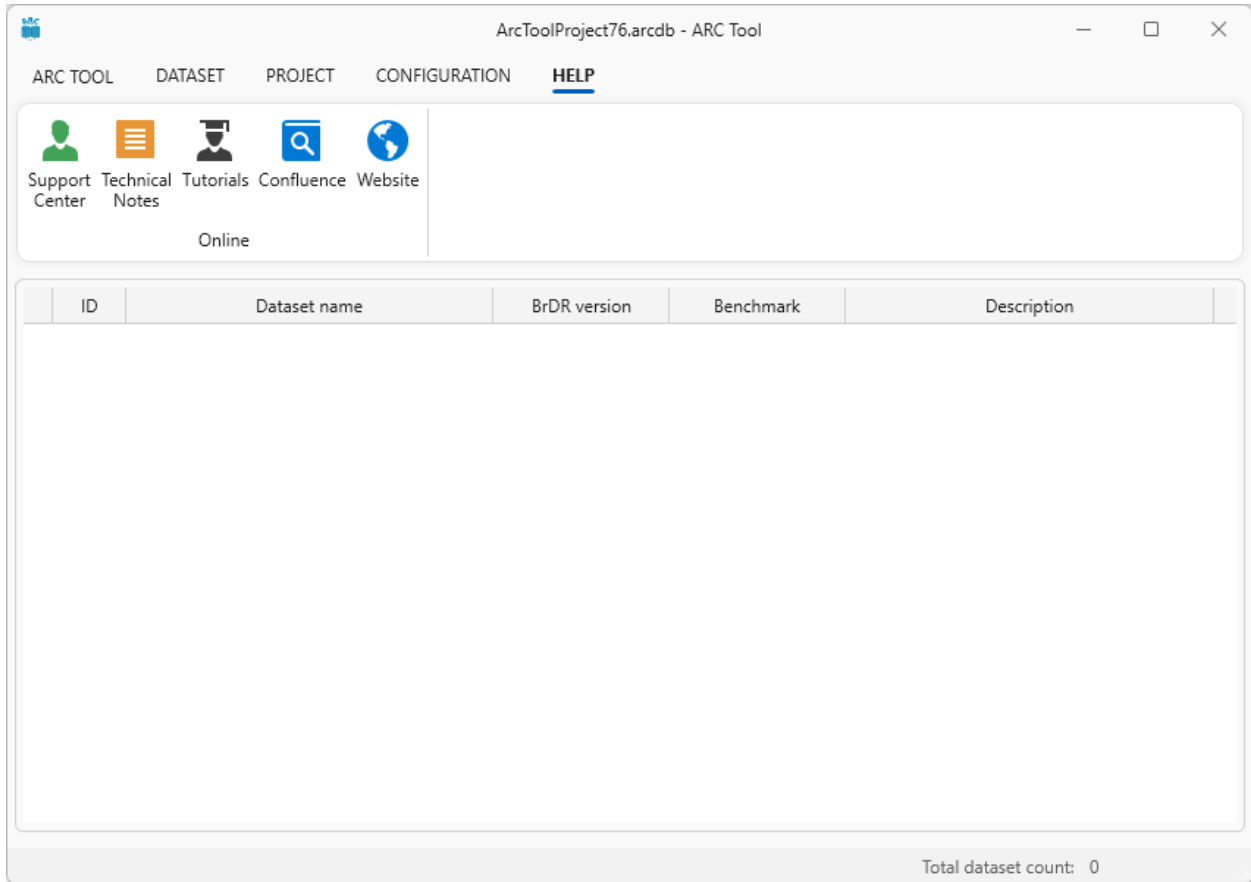
### ARC Tool Group

#### Settings

Allows the user to update the login information to be used to connect to each version of BrDR and update other various ARC Tool settings.

## Help Tab

The **Help Tab** of the ARC Tool ribbon is shown below.



## Online Group

### Support Center

Opens the BrDR Support Center webpage in the browser.

### Technical Notes

Opens the BrDR Technical Notes webpage in the browser.

### Tutorials

Opens the BrDR Tutorials webpage in the browser.

### Confluence

Opens the BrDR Confluence webpage in the browser.

### Website

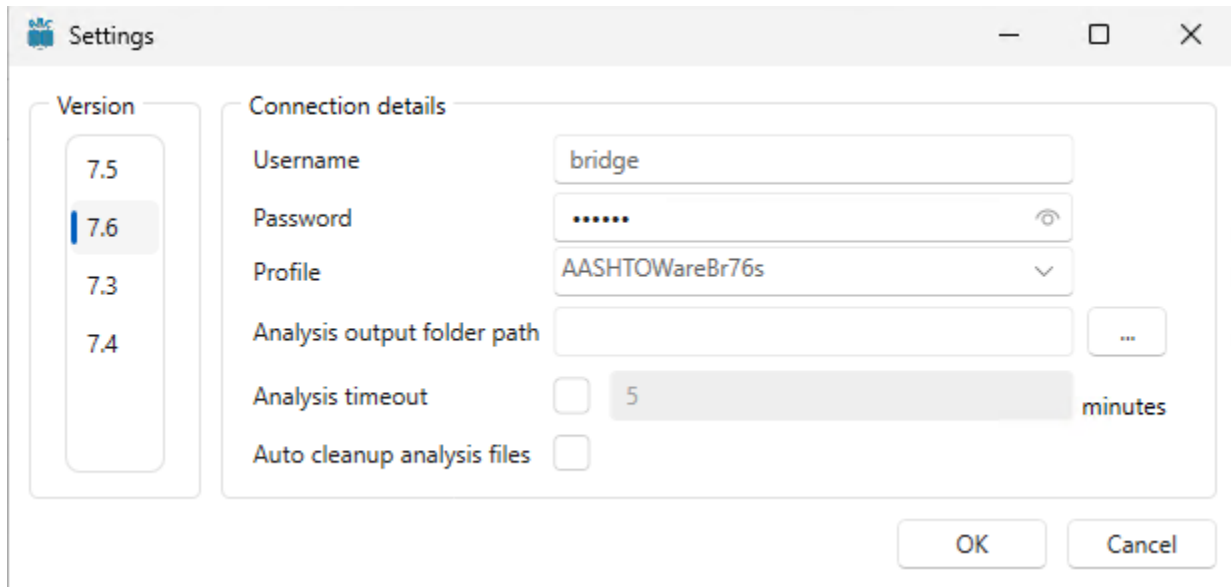
Opens the BrDR webpage in the browser.



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### Setup BrDR Connection Details

The first step in using the ARC Tool is to update the BrDR connection details information. First click on the **Configuration** tab. Then click the **Settings** button, which will open the window below.



The **Version** list shown on the left part of the **Settings** window will populate automatically with all the versions of BrDR installed on the user's machine. Select a BrDR version from the list and update the connection details with the correct information for the database. The user can also update the location of the output files from a BrDR analysis by selecting a new folder path for the **Analysis output folder path** field. If nothing is specified, the **Analysis output folder path** will default to the BrDR settings. Checking the **Analysis timeout** checkbox allows the user to set a maximum number of minutes the ARC Tool will attempt to run an analysis on a bridge before automatically cancelling the operation. Checking the **Auto cleanup analysis files** checkbox will automatically delete any analysis files generated by a BrDR analysis.

The Username, Password, and Profile should be the same login information that is used to access BrDR on the login page. If the **Profile** dropdown is empty in the **ARC Tool Settings** window, first confirm that the profiles exist in BrDR by opening BrDR and clicking '...' on the **Login** window to open the **Manage Connections** window. New connect profiles can be created in this window and will be available in the ARC Tool once the **Settings** window is restarted.

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### Register Installed Versions of BrDR and Import Analysis Settings Templates

To register installed versions of BrDR and import Analysis Settings Templates, first navigate to the **Configuration** tab then click the **Scan** button. This will scan the machine for any installed versions of BrDR and update the ARC Tool project with the necessary information. This step should be repeated if any versions of BrDR are installed or uninstalled or if Analysis Settings Templates are created or removed.

### Creating and Appending to a Dataset

The ARC Tool can be used to generate and store rating and design ratio data for different versions of BrDR in a local ARC Tool project to be used in comparison analyses. This section describes the different ways to create and update datasets.

#### Create a Dataset

The next step in using the ARC Tool is to generate rating or design ratio data from a BrDR version. Click **Create** in the **Dataset Tab** to open the **Create Dataset** window. Type in a name and description for the dataset. The BrDR version and Analysis Settings Template dropdown menus will be automatically populated after running **Scan** as described in the previous section. Select a BrDR version and Analysis Settings Template from the dropdown menus. Click **Browse** and select the folder where the exported bridge XML files are stored. If you would like to generate a separate dataset for each subfolder of the folder selected in the previous step, check the **Generate separate datasets for sub-folders** box. To generate analysis data at the point of interest level, check the **Generate Level 3 Analysis** box. Click **Generate** to connect to the selected version of BrDR and generate the new dataset.

*Note: **Generate Level 3 Analysis** is not selected by default because it will produce large amounts of data. An ARC Tool project has a size limit of 4gb. The tool will not function if the project exceeds this size. It is recommended that for large datasets, users run the tool without generating level 3 data. If a discrepancy is found in the level 1 or level 2 data, a new dataset can be created to generate level 3 data for only the bridges of interest.*

**Create Dataset**

Name: testBridges75

Description: a sample dataset of 7.5.0 bridges

BrDR version: 7.5.0.3001

Analysis settings template: LRFR Design Load Rating

Bridge model xml folder: C:\7\_5\_0\_Bridges

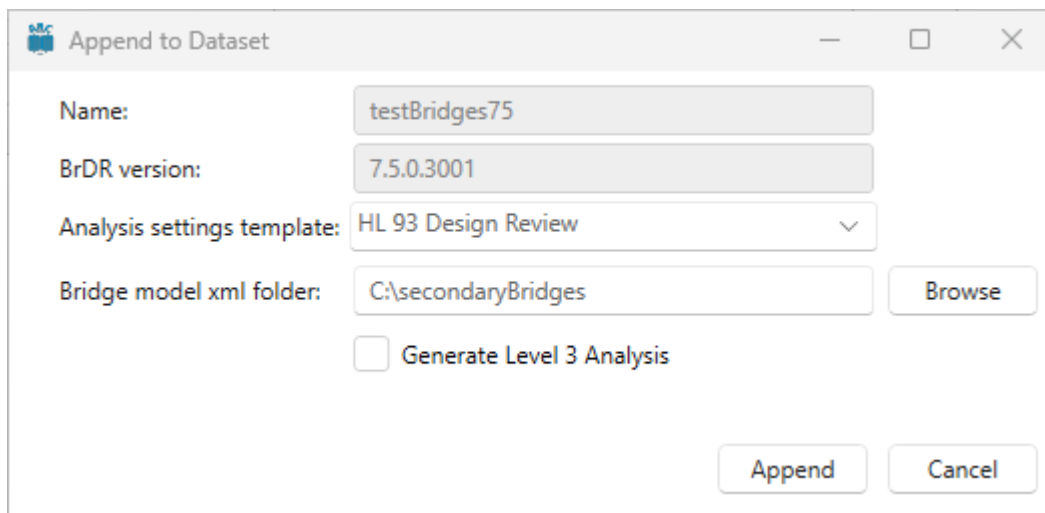
Generate separate datasets for sub-folders

Generate Level 3 Analysis

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### Append to a Dataset

New data can also be added to an existing dataset by using the **Append** option. Select the dataset to be updated and click **Append** in the **Dataset Tab** to open the **Append to Dataset** window. The name and BrDR version will be read-only and are automatically populated with the information from the existing dataset. Select an Analysis Settings Template from the dropdown menu. Click **Browse** and select the folder where the exported bridge XML files are stored. To generate analysis data at the point of interest level, select the **Generate Level 3 Analysis** checkbox. Click **Append** to generate new data for the selected bridge models and append it to the specified dataset. *Note: **Generate Level 3 Analysis** is not selected by default because it will produce large amounts of data. An ARC Tool project has a size limit of 4gb. The tool will not function if the project exceeds this size. It is recommended that for large datasets, users run the tool without generating level 3 data. If a discrepancy is found in the level 1 or level 2 data, a new dataset can be created to generate level 3 data for only the bridges of interest.*



The screenshot shows the 'Append to Dataset' dialog box. It features a title bar with a blue icon and the text 'Append to Dataset'. The dialog contains the following fields and controls:

- Name:** A text input field containing 'testBridges75'.
- BrDR version:** A text input field containing '7.5.0.3001'.
- Analysis settings template:** A dropdown menu with 'HL 93 Design Review' selected.
- Bridge model xml folder:** A text input field containing 'C:\secondaryBridges' and a 'Browse' button to the right.
- Generate Level 3 Analysis:** An unchecked checkbox.
- Buttons:** 'Append' and 'Cancel' buttons at the bottom right.

### Create Dataset From

A new dataset can also be created for another version of BrDR using the same input as an existing dataset. Select a dataset in the **Dataset Explorer** grid and click **Create From** in the **Dataset Tab** to open the **Create Dataset From** window. Enter the name and description of the new dataset and select the version of BrDR to use. To generate analysis data at the Point of Interest level, check the **Generate Level 3 Analysis** box. Click **Generate** to create the new dataset.

*Note: **Generate Level 3 Analysis** is not selected by default because it will produce large amounts of data. An ARC Tool project has a size limit of 4gb. The tool will not function if the project exceeds this size. It is recommended that for large datasets, users run the tool without generating level 3 data. If a discrepancy is found in the level 1 or level 2 data, a new dataset can be created to generate level 3 data for only the bridges of interest.*

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**Create Dataset From**

Name: testBridges75LevelThreeAnalysis

Description:

From dataset name: testBridges75

BrDR version: 7.5.0.3001

Analysis settings template: LRFR Design Load Rating

Bridge IDs: TrainingBridge1  
TrainingBridge2

Bridge model XML folder(s): C:\7\_5\_0\_Bridges

Generate level 3 analysis

Generate Cancel

### Import

The user can import a batch of previously generated ARC Tool datasets by clicking **Import** in the **Dataset Tab** and selecting one or more .arcds files. This feature can be used to share datasets between multiple different projects.

### Export

Similarly, the user can also export a batch of ARC Tool datasets by selecting one or more dataset rows in the **Dataset Explorer** grid and clicking **Export** in the **Dataset Tab**. The files will be saved to the selected folder location.

### Manage Datasets

To view the bridge data within a dataset, select a row and click **Manage** in the **Manage** section of the **Dataset Tab**. This will open the **Manage Dataset** window which displays a list of all the data items within a dataset by Bridge ID, BrDR version, and Analysis setting. The name and description of a dataset can be updated using this window and bridge analysis data can be deleted from a dataset by selecting grid rows and clicking **Delete**.

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ID	Bridge ID	Analysis settings template	Level 3 analysis generated	Bridge model file path
> 1	Example7	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00010 - Example7.xml
2	PCITrainingBridge1	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00004 - PCITrainingBridge1.xml
3	PCITrainingBridge2	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00005 - PCITrainingBridge2.xml
4	PCITrainingBridge3	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00006 - PCITrainingBridge3.xml
5	PCITrainingBridge4	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00007 - PCITrainingBridge4.xml
6	TrainingBridge1	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00001 - TrainingBridge1.xml
7	TrainingBridge2	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00002 - TrainingBridge2.xml
8	TrainingBridge3	LRFR Design Load Rating	<input type="checkbox"/>	C:\7_5_0_Bridges\00003 - TrainingBridge3.xml

### Merge

The user can also merge two datasets into a new combined dataset. First select two dataset rows in the **Dataset Explorer** grid then click **Merge** in the **Dataset Tab** to open the Merge Datasets window. Enter a name and description for the new dataset and check the **Include** box for each bridge item from Dataset 1 and Dataset 2 to be included in the dataset. Click merge to create the new merged dataset. Please note, the ARC Tool currently only supports merging datasets created with the same version of BrDR. Also, duplicate Bridge IDs are not supported in merged datasets.

### Set Benchmark

To set or change the existing Benchmark dataset, select a row, and click **Set Benchmark** in the **Dataset Tab**. The Benchmark will be the default comparison dataset when only one dataset is selected in the **Dataset Explorer** grid.

### Delete

The user can delete entire datasets from the ARC Tool by selecting rows in the **Dataset Explorer** window and clicking **Delete** in the **Dataset Tab**.

## Operation of the ARC Tool Comparison Feature

Once at least 2 rating datasets have been generated in the ARC tool, the user can run dataset comparison analyses. The following section describes how to generate comparison data in the ARC tool.

### Compare Datasets

To compare two datasets, select two dataset rows in the **Dataset Explorer** grid or to compare one dataset against the benchmark, select one dataset row in the **Dataset Explorer** grid. Click **Compare** in the **Dataset Tab** to open the **Dataset Comparison Setting** window. The **Dataset Comparison Setting** window will display the name, BrDR version, Analysis settings template, and Bridge IDs for the datasets to be compared. The option to **Override default comparison settings** is also provided and will be described later in this tutorial. The display tolerances and exclude

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comparison ratios can also be updated in this window. Please note, only the RF or DR tolerance is used for level 1 and level 2 comparisons. The capacity, dead load, and live load percent changes are only shown for level 3 comparisons.

**Dataset Comparison Setting**

**Dataset 1**

Name: testBridges75

BrDR version: 7.5.0.3001

Analysis settings templates: LRFR Design Load Rating

Bridge IDs: TrainingBridge1, TrainingBridge2, TrainingBridge3, PCITrainingBridge1

Benchmark

**Dataset 2**

Name: testBridges76

BrDR version: 7.6.0.2002

Analysis settings templates: LRFR Design Load Rating

Bridge IDs: TrainingBridge1, TrainingBridge2, TrainingBridge3, PCITrainingBridge1

Benchmark

Override default comparison settings?

Capacity tolerance (%): 1.0

DL tolerance (%): 1.0

LL tolerance (%): 1.0

RF or DR tolerance (%): 1.0

Exclude comparison for ratio of

Capacity/DL > 99.0

RF > 99.0

Run level 1 compare    Cancel

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## Level 1 Comparison

Click **Run level 1 compare** in the **Dataset Comparison Setting** window to run a level 1 comparison on the selected datasets. This will open the **Level 1 Comparison** window which displays the results of the comparison by the controlling rating factor for each bridge. If the location or limit state is different between the two datasets, the value for that column will be shown in red. If the rating/design factor percent change between the two datasets is greater than the RF or DR tolerance specified in the **Dataset Comparison Setting** window, the value for that column will be shown in red.

The **Level 1 Comparison** window also includes the Dataset 1 and Dataset 2 runtimes and a percent change between the two values. The runtimes are the total time in seconds it takes to run the analysis in BrDR.

To view the settings for this comparison, click **View comparison setting** in the top right corner of the window. This will open the **Dataset Comparison Setting** window in read-only mode.

To export the results to a CSV file, click **Export to CSV** and select a location to save the file.

The **Comparison Summary** shown at the bottom left of the window provides a summary of the level 1 results. If either dataset 1 or dataset 2 does not have a rating/design factor, the comparison will be counted as a failure. If the limit state or controlling location are different between dataset 1 and dataset 2 or the rating/design factor percent change is not within the specified tolerance, the comparison will be counted as unacceptable. If the limit state and location are both the same and the rating/design factor percent change is within the specified tolerance, the comparison will be counted as acceptable.

The **Show all within tolerance**, **Show all outside tolerance**, **Show comparison failure**, and **Show all** buttons at the bottom of the **Level 1 Comparison** window can be used to filter the data grid by rating/design factor percent change tolerance.

Level 1 Comparison
View comparison setting
Export to CSV

RF or DR Tolerance(%): 1.0

ID	Bridge ID	Vehicle	Analysis method	Category	Dataset 1 RF or DR	Dataset 2 RF or DR	Percent change (%)	Location same?	Limit state same?	Dataset 1 run time (s)	Dataset 2 run time (s)	Run time percent change (%)
> 1	Example7	HL-93 (US)	LRFR	Inventory	1.005	1.005	0.000	Yes	Yes	3.6	2.2	-39.542
2	Example7	HL-93 (US)	LRFR	Operating	1.444	1.444	0.000	Yes	Yes	3.6	2.2	-39.542
3	PCITrainingBridge1	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes	1.9	3.3	70.439
4	PCITrainingBridge1	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes	1.9	3.3	70.439
5	PCITrainingBridge2	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes	1.8	1.3	-25.759
6	PCITrainingBridge2	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes	1.8	1.3	-25.759
7	PCITrainingBridge3	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes	1.9	2.0	9.118
8	PCITrainingBridge3	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes	1.9	2.0	9.118
9	PCITrainingBridge4	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes	1.9	1.7	-13.690
10	PCITrainingBridge4	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes	1.9	1.7	-13.690
11	TrainingBridge1	HL-93 (US)	LRFR	Inventory	0.477	0.477	0.000	Yes	Yes	12.1	17.6	44.831
12	TrainingBridge1	HL-93 (US)	LRFR	Operating	0.618	0.618	0.000	Yes	Yes	12.1	17.6	44.831
13	TrainingBridge2	HL-93 (US)	LRFR	Inventory	0.548	0.548	0.000	Yes	Yes	5.2	6.3	21.835
14	TrainingBridge2	HL-93 (US)	LRFR	Operating	0.710	0.710	0.000	Yes	Yes	5.2	6.3	21.835
15	TrainingBridge3	HL-93 (US)	LRFR	Inventory	0.388	0.388	0.000	Yes	Yes	7.0	5.7	-19.297
16	TrainingBridge3	HL-93 (US)	LRFR	Operating	0.504	0.504	0.000	Yes	Yes	7.0	5.7	-19.297

Comparison summary:

Acceptable row data = 16 of 16 (100%)  
 Unacceptable row data = 0 of 16 (0%)  
 Comparison failures = 0 of 16 (0%)

Show all within tolerance
Show all outside tolerance
Show comparison failure
Show all

Run level 2 compare
Close

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### Level 2 Comparison

Click **Run level 2 compare** in the **Level 1 Comparison** window to run a level 2 comparison on the selected bridges. This will open the **Level 2 Comparison** window which displays the results of the comparison at the controlling location of each member in a bridge. If the controlling location or limit state is different between the two datasets, the value for that column will be shown in red. If the rating/design factor percent change between the two datasets is greater than the RF/DR tolerance specified in the **Dataset Comparison Setting** window, the value for that column will be shown in red.

To view the settings for this comparison, click the **View comparison setting** button in the top right corner of the window. This will open the **Dataset Comparison Setting** window in read-only mode.

To export the results to a CSV file, click the **Export to CSV** button and select a location to save the file.

The **Comparison Summary** located at in the bottom left of the window shows a summary of the level 2 results. If either dataset 1 or dataset 2 does not have a rating/design factor, the comparison will be counted as a failure. If the limit state or controlling location are different between dataset 1 and dataset 2 or the rating/design factor percent change is not within the specified tolerance, the comparison will be counted as unacceptable. If the limit state and location are both the same and the rating/design factor percent change is within the specified tolerance, the comparison will be counted as acceptable.

The **Show all within tolerance**, **Show all outside tolerance**, **Show comparison failure**, and **Show all** buttons at the bottom of the **Level 2 Comparison** window can be used to filter the data grid by rating/design factor percent change tolerance.

The screenshot shows the 'Level 2 Comparison' window. At the top right, there are buttons for 'View comparison setting' and 'Export to CSV'. Below the title bar, it indicates 'RF or DR Tolerance(%)': 1.0. The main area contains a data grid with the following columns: ID, Bridge ID, Super structure definition, Member, Vehicle, Analysis method, Category, Dataset 1 RF or DR, Dataset 2 RF or DR, Percent change (%), Location same?, and Limit state same?. The grid contains 10 rows of data. Below the grid is a 'Comparison summary' section with the following text: 'Acceptable row data = 24 of 24 (100%)', 'Unacceptable row data = 0 of 24 (0%)', and 'Comparison failures = 0 of 24 (0%)'. At the bottom, there are four buttons: 'Show all within tolerance', 'Show all outside tolerance', 'Show comparison failure', and 'Show all'. On the far right, there are buttons for 'Run level 3 compare' and 'Close'.

ID	Bridge ID	Super structure definition	Member	Vehicle	Analysis method	Category	Dataset 1 RF or DR	Dataset 2 RF or DR	Percent change (%)	Location same?	Limit state same?
1	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1.122	1.122	0.000	Yes	Yes
2	Example7	6-girder system	G1	HL-93 (US)	LRFR	Operating	1.669	1.669	0.000	Yes	Yes
3	Example7	6-girder system	G2	HL-93 (US)	LRFR	Inventory	1.005	1.005	0.000	Yes	Yes
4	Example7	6-girder system	G2	HL-93 (US)	LRFR	Operating	1.444	1.444	0.000	Yes	Yes
5	PCITrainingBridge1	Structure Definitio...	Typical Interior Be...	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes
6	PCITrainingBridge1	Structure Definitio...	Typical Interior Be...	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes
7	PCITrainingBridge2	Structure Definitio...	Typical Interior Be...	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes
8	PCITrainingBridge2	Structure Definitio...	Typical Interior Be...	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes
9	PCITrainingBridge3	Structure Definitio...	Typical Interior Me...	HL-93 (US)	LRFR	Inventory	0.000	0.000	0.000	Yes	Yes
10	PCITrainingBridge3	Structure Definitio...	Typical Interior Me...	HL-93 (US)	LRFR	Operating	0.000	0.000	0.000	Yes	Yes

Comparison summary:

Acceptable row data = 24 of 24 (100%)  
 Unacceptable row data = 0 of 24 (0%)  
 Comparison failures = 0 of 24 (0%)

Buttons: Show all within tolerance, Show all outside tolerance, Show comparison failure, Show all, Run level 3 compare, Close



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### Level 3 Comparison

If the **Generate Level 3 Analysis** checkbox was selected for both dataset 1 and dataset 2, a level 3 comparison can be generated. Click **Run level 3 compare** in the **Level 2 Comparison** window to run a level 3 comparison on the selected members. This will open the **Level 3 Comparison** window which displays the results of the comparison at the point of interest level. If the capacity, dead load, live load, or rating/design factor percent change between dataset 1 and dataset 2 are greater than the respective tolerances specified in the **Dataset Comparison Setting** window, the value for that column will be shown in red.

To view the settings for this comparison, click the **View comparison setting** button in the top right corner of the window. This will open the **Dataset Comparison Setting** window in read-only mode.

To export the results to a CSV file, click the **Export to CSV** button and select a location to save the file.

The **Show data at** radio buttons can be used to toggle the level 3 data to show comparisons of the controlling rating/design factor of the bridge, superstructure def. or member.

The **Comparison Summary** located at the bottom left of the window shows a summary of the level 3 results. If either dataset 1 or dataset 2 does not have a rating/design factor, the comparison will be counted as a failure. If the rating/design factor percent change is not within the specified tolerance, the comparison will be counted as unacceptable. If the rating/design factor percent change is within the specified tolerance, the comparison will be counted as acceptable.

The **Show all within tolerance**, **Show comparison failure**, and **Show all** buttons at the bottom of the Level 3 Comparison window can be used to filter the data grid by rating/design factor percent change tolerance.

The screenshot shows the 'Level 3 Comparison' window. At the top, there are buttons for 'View comparison setting' and 'Export to CSV'. Below these, the tolerance settings are listed: Capacity Tolerance(%): 1.0, DL Tolerance(%): 1.0, LL Tolerance(%): 1.0, RF or DR Tolerance(%): 1.0. The 'Show data at' section has three radio buttons: 'Bridge level', 'Superstructure def. level', and 'Member level', with 'Member level' selected. The main data grid has 14 columns: ID, Bridge ID, Super structure definition, Member, Vehicle, Analysis method, Category, Span - % of span/element, Action - unit, Unfact. DL change (%), Unfact. LL change (%), Unfact. capacity change (%), and RF or DR change (%). The grid contains 7 rows of data, all with values in black text. Below the grid is a 'Comparison summary' section with the following text: 'Acceptable row data = 974 of 974 (100%)', 'Unacceptable row data = 0 of 974 (0%)', and 'Unmatched row data = 0 of 974 (0%)'. At the bottom, there are four buttons: 'Show all within tolerance', 'Show all outside tolerance', 'Show all unmatched', and 'Show all', along with a 'Close' button.

ID	Bridge ID	Super structure definition	Member	Vehicle	Analysis method	Category	Span - % of span/element	Action - unit	Unfact. DL change (%)	Unfact. LL change (%)	Unfact. capacity change (%)	RF or DR change (%)
1	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-0.0%	Concrete Stresses	0.000	0.000	0.000	0.000
2	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-0.7%	Concrete Stresses	0.000	0.000	0.000	0.000
3	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-1.3%	Concrete Stresses	0.000	0.000	0.000	0.000
4	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-2.8%	Concrete Stresses	0.000	0.000	0.000	0.000
5	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-10.0%	Concrete Stresses	0.000	0.000	0.000	0.000
6	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-20.0%	Concrete Stresses	0.000	0.000	0.000	0.000
7	Example7	6-girder system	G1	HL-93 (US)	LRFR	Inventory	1-30.0%	Concrete Stresses	0.000	0.000	0.000	0.000

### Custom Dataset Comparison

Comparison templates can be used to compare two datasets based on customized keys. For example, a user could create a custom template to compare results between an LRFR and LFR analysis for a particular structure.

#### Create a New Comparison Template

To create a new Comparison Template, click **New** in the **Dataset** tab to open the **New Comparison Template** window. Enter and name and description for the template. To add a comparison rule, click **New** at the bottom of the

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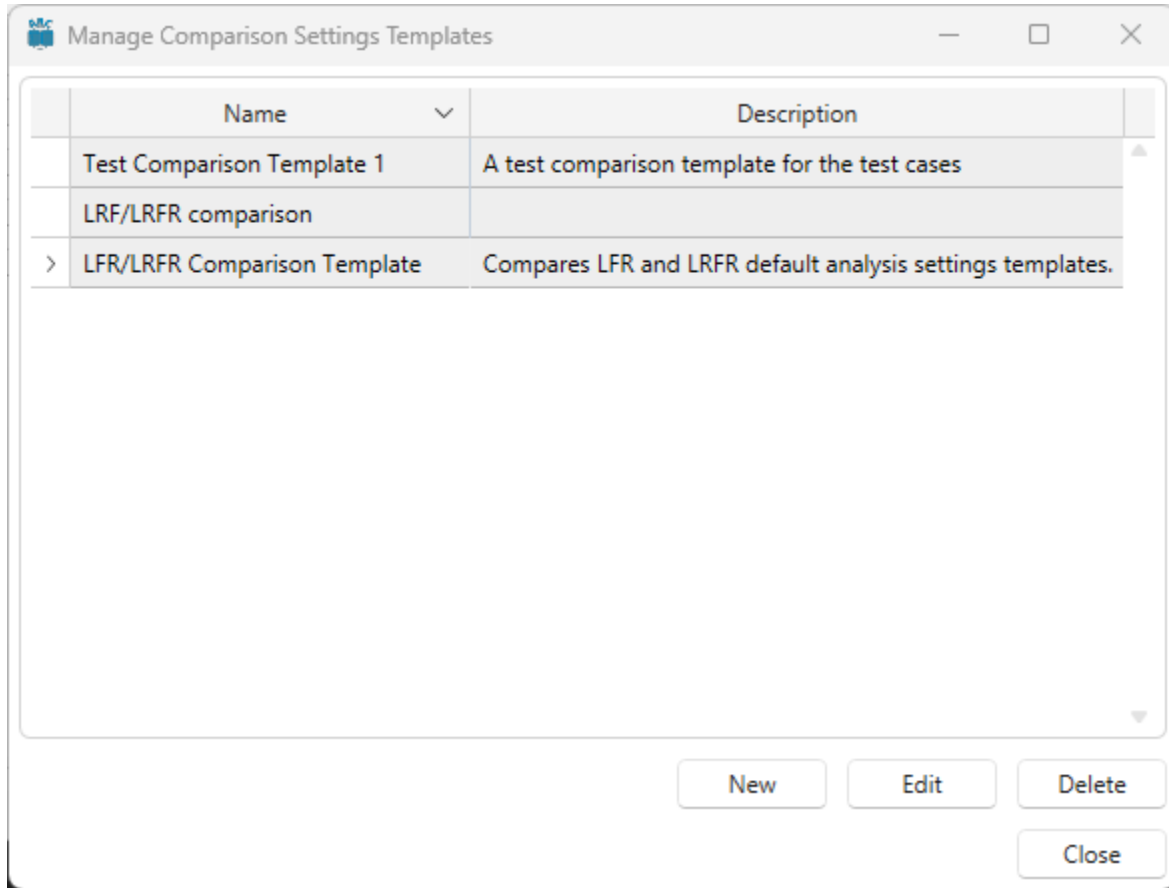
grid and select a Vehicle, Analysis method, and Category to be matched while comparing Dataset 1 and Dataset 2. The **Duplicate** button at the bottom of the grid can be used to duplicate the select grid row and the **Delete** button can be used to delete the selected grid row. Click **OK** to save the template and continue.

	Dataset 1			Dataset 2			
	Rule	Vehicle	Analysis method	Category	Vehicle	Analysis method	Category
>	1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory
	2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating

### [Manage Comparison Templates](#)

The **Manage Comparison Settings Templates** window can be used to create, update, and delete Comparison Templates.

Click **Manage** in the **Comparison** section of the **Dataset** tab to view a list of all Comparison Templates. The **New** button in this window can also be used to create a new Comparison Template. To update an existing template, select the row in the grid and click **Edit** to open the **Edit Comparison Template** window. To delete an existing template, select the row in the grid and click **Delete**.



#### Compare Datasets – Custom Template

To use the custom Comparison Template in a dataset Comparison, select the two datasets of interest and click **Compare** in the **Dataset tab**. The order that items are selected in the Dataset Explorer grid is used to determine which dataset will be classified as Dataset 1 and Dataset 2 so be sure to select the item that aligns with the Dataset 1 criteria first.

In the **Dataset Comparison Setting** window, check the **Override default comparison settings** box and select the Comparison Template created in the previous section from the dropdown menu.

**Dataset 1**

Name: test75\_LFR

BrDR version: 7.5.0.3001

Analysis settings templates: HS 20 LFR Rating

Bridge IDs: M0001-RCSS-0001-RCIB, M0002-RCMS-0002-RCIB, M0003-RCSS-0003-RCIB, M0004-RCMS-0004-RCIB

Benchmark

**Dataset 2**

Name: test75

BrDR version: 7.5.0.3001

Analysis settings templates: LRFR Design Load Rating

Bridge IDs: M0001-RCSS-0001-RCIB, M0002-RCMS-0002-RCIB, M0003-RCSS-0003-RCIB, M0004-RCMS-0004-RCIB

Benchmark

Override default comparison settings?

Capacity tolerance (%): 1.0

DL tolerance (%): 1.0

LL tolerance (%): 1.0

RF or DR tolerance (%): 1.0

LFR/LRFR Comparison Template

Exclude comparison for ratio of

Capacity/DL > 99.0

RF > 99.0

Run level 1 compare Cancel

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Click **Run level 1 compare** to open the **Level 1 Comparison** window. The data displayed in the window will show a comparison of the two datasets using the custom Comparison Template. Separate columns will now be displayed for Dataset 1 vehicle, analysis method, and category, and Dataset 2 vehicle, analysis method, and category since these values can now be different between the two dataset.

ID	Bridge ID	Dataset 1 vehicle	Dataset 1 analysis method	Dataset 1 category	Dataset 2 vehicle	Dataset 2 analysis method	Dataset 2 category	Dataset 1 RF or DR	Dataset 2 RF or DR	Percent change (%)	Location same?	Limit state same?	Dataset 1 run time (s)	Dataset 2 run time (s)	Run time percent change (%)
1	M0001-RCSS-0001...	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.787	0.572	-27.368	No	No	3.7	5.2	41.015
2	M0001-RCSS-0001...	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.314	0.741	-43.622	No	No	3.7	5.2	41.015
3	M0002-RCMS-000...	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.711	0.717	0.760	No	No	31.6	43.5	37.433
4	M0002-RCMS-000...	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.153	0.929	-19.439	No	No	31.6	43.5	37.433
5	M0003-RCSS-0003...	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.843	0.984	16.692	No	No	1.0	0.9	-12.471
6	M0003-RCSS-0003...	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.401	1.275	-8.979	No	No	1.0	0.9	-12.471
7	M0004-RCMS-000...	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.853	0.699	-18.026	No	No	25.5	36.2	41.890
8	M0004-RCMS-000...	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.494	0.906	-39.344	No	No	25.5	36.2	41.890
9	M0005-RCMS-000...	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.098	0.538	434.242	No	No	15.8	22.2	40.468
10	M0005-RCMS-000...	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	0.125	0.682	443.964	No	No	15.8	22.2	40.468

Comparison summary:  
 Acceptable row data = 0 of 10 (0%)  
 Unacceptable row data = 10 of 10 (100%)  
 Comparison failures = 0 of 10 (0%)

Buttons: Show all within tolerance, Show all outside tolerance, Show comparison failure, Show all, Run level 2 compare, Close

Click **Run level 2 compare** to open the **Level 2 Comparison** window. The custom Comparison Template will be used to compare the Level 2 datasets.

ID	Bridge ID	Super structure definition	Member	Dataset 1 vehicle	Dataset 1 analysis method	Dataset 1 category	Dataset 2 vehicle	Dataset 2 analysis method	Dataset 2 category	Dataset 1 RF or DR	Dataset 2 RF or DR	Percent change (%)	Location same?	Limit state same?
1	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.820	0.588	-28.280	No	No
2	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.370	0.763	-44.329	No	No
3	M0001-RCSS-0001...	Simple 5 Span CPS...	G3 - Interior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.787	0.572	-27.368	No	No
4	M0001-RCSS-0001...	Simple 5 Span CPS...	G3 - Interior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.314	0.741	-43.622	No	No
5	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1.180	0.849	-27.998	No	No
6	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.970	1.101	-44.110	No	No
7	M0001-RCSS-0001...	Simple 5 Span CPS...	G3 - Interior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1.057	0.750	-29.058	No	No
8	M0001-RCSS-0001...	Simple 5 Span CPS...	G3 - Interior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.764	0.972	-44.933	No	No
9	M0002-RCMS-000...	Spans 1, 2 & 6	G1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.810	0.768	-5.207	No	No
10	M0002-RCMS-000...	Spans 1, 2 & 6	G1	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.351	0.996	-26.265	No	No
11	M0002-RCMS-000...	Spans 1, 2 & 6	G2	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.818	0.792	-3.179	No	No
12	M0002-RCMS-000...	Spans 1, 2 & 6	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.364	1.027	-24.680	No	No
13	M0002-RCMS-000...	Spans 3-4-5 (Box)	G1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.711	0.812	14.183	No	No
14	M0002-RCMS-000...	Spans 3-4-5 (Web)	G1	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.153	1.053	-8.708	No	No
15	M0002-RCMS-000...	Spans 3-4-5 (Web)	G1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.802	0.717	-10.582	No	No
16	M0002-RCMS-000...	Spans 3-4-5 (Web)	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.280	0.929	-27.414	No	No
17	M0002-RCMS-000...	Spans 3-4-5 (Web)	G2	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.746	0.776	4.042	No	No
18	M0002-RCMS-000...	Spans 3-4-5 (Web)	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.238	1.006	-18.781	No	No
19	M0003-RCSS-0003...	50' Simple Span	G2	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.843	0.984	16.692	No	No
20	M0003-RCSS-0003...	50' Simple Span	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.401	1.275	-8.979	No	No
21	M0004-RCMS-000...	Spans 1-4	G1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.853	0.699	-18.026	No	No
22	M0004-RCMS-000...	Spans 1-4	G1	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.494	0.906	-39.344	No	No
23	M0004-RCMS-000...	Spans 1-4	G2	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.920	0.728	-20.861	No	No
24	M0004-RCMS-000...	Spans 1-4	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1.529	0.944	-38.285	No	No
25	M0005-RCMS-000...	8007765	G1	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.159	0.526	231.672	No	No
26	M0005-RCMS-000...	8007765	G1	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	0.225	0.682	203.353	No	No
27	M0005-RCMS-000...	8007765	G2	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	0.098	0.779	691.081	No	No
28	M0005-RCMS-000...	8007765	G2	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	0.125	1.010	705.476	No	No

Comparison summary:  
 Acceptable row data = 0 of 28 (0%)  
 Unacceptable row data = 28 of 28 (100%)  
 Comparison failures = 0 of 28 (0%)

Buttons: Show all within tolerance, Show all outside tolerance, Show comparison failure, Show all, Run level 3 compare, Close

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Click **Run level 3 compare** to open the **Level 3 Comparison** window. Similarly, the Comparison Template will be used to compare the Level 3 datasets.

Level 3 Comparison
View comparison setting    Export to CSV

Capacity Tolerance(%) 1.0 DL Tolerance(%) 1.0 LL Tolerance(%) 1.0 RF or DR Tolerance(%) 1.0

Show data at  
 Bridge level     Superstructure def. level     Member level

ID	Bridge ID	Super structure definition	Member	Dataset 1 vehicle	Dataset 1 analysis method	Dataset 1 category	Dataset 2 vehicle	Dataset 2 analysis method	Dataset 2 category	Span - % of span/ element	Action - unit	Unfact. DL change (%)	Unfact. LL change (%)	Unfact. capacity change (%)	RF or DR change (%)
1	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-0.0%	Flexure	0.000	0.000	0.011	0.000
2	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-10.0%	Flexure	-0.000	71.432	0.011	-27.251
3	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-20.0%	Flexure	-0.000	74.109	0.011	-27.983
4	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-21.1%	Flexure	-0.000	74.931	0.011	-28.280
5	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-30.0%	Flexure	-0.000	82.915	0.031	-31.674
6	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-40.0%	Flexure	-0.000	96.525	0.031	-36.324
7	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-50.0%	Flexure	-0.000	116.952	0.031	-42.293
8	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-60.0%	Flexure	-0.000	96.525	0.031	-36.324
9	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-70.0%	Flexure	-0.000	82.915	0.031	-31.674
10	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-78.9%	Flexure	-0.000	74.931	0.011	-28.280
11	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-80.0%	Flexure	-0.000	74.109	0.011	-27.983
12	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-90.0%	Flexure	-0.000	71.432	0.011	-27.251
13	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-100.0%	Flexure	-0.000	0.000	0.011	0.000
14	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-20.0%	Shear	-0.000	39.761	23.219	13.815
15	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-21.1%	Shear	0.000	40.198	20.816	10.766
16	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-30.0%	Shear	-0.000	44.707	54.246	40.406
17	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-40.0%	Shear	-0.000	53.105	28.997	6.566
18	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-50.0%	Shear	-0.000	68.840	32.563	-2.598
19	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-60.0%	Shear	0.000	53.105	28.997	6.566
20	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-70.0%	Shear	0.000	44.707	54.246	40.406
21	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-78.9%	Shear	-0.000	40.198	20.816	10.766
22	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Inventory	HL-93 (US)	LRFR	Inventory	1-80.0%	Shear	-0.000	39.761	23.219	13.815
23	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-0.0%	Flexure	-0.000	0.000	0.011	0.000
24	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-10.0%	Flexure	-0.000	71.432	0.011	-43.530
25	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-20.0%	Flexure	-0.000	74.109	0.011	-44.099
26	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-21.1%	Flexure	-0.000	74.931	0.011	-44.329
27	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-30.0%	Flexure	-0.000	82.915	0.031	-46.963
28	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-40.0%	Flexure	-0.000	96.525	0.031	-50.573
29	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-50.0%	Flexure	-0.000	116.952	0.031	-55.207
30	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-60.0%	Flexure	-0.000	96.525	0.031	-50.573
31	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-70.0%	Flexure	-0.000	82.915	0.031	-46.963
32	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-78.9%	Flexure	-0.000	74.931	0.011	-44.329
33	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-80.0%	Flexure	-0.000	74.109	0.011	-44.099
34	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-90.0%	Flexure	-0.000	71.432	0.011	-43.530
35	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-100.0%	Flexure	-0.000	0.000	0.011	0.000
36	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-20.0%	Shear	-0.000	39.761	23.219	-3.316
37	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-21.1%	Shear	0.000	40.198	20.816	-5.686
38	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-30.0%	Shear	-0.000	44.707	54.246	17.037
39	M0001-RCSS-0001...	Simple 5 Span CPS...	G1 - Exterior	HS 20-44	LFR	Operating	HL-93 (US)	LRFR	Operating	1-40.0%	Shear	-0.000	53.105	28.997	-10.758

Comparison summary:  
 Acceptable row data = 74 of 1226 (6%)  
 Unacceptable row data = 1152 of 1226 (94%)  
 Unmatched row data = 0 of 1226 (0%)

Show all within tolerance
Show all outside tolerance
Show all unmatched
Show all

Close