

AASHTOWare BrR 6.8

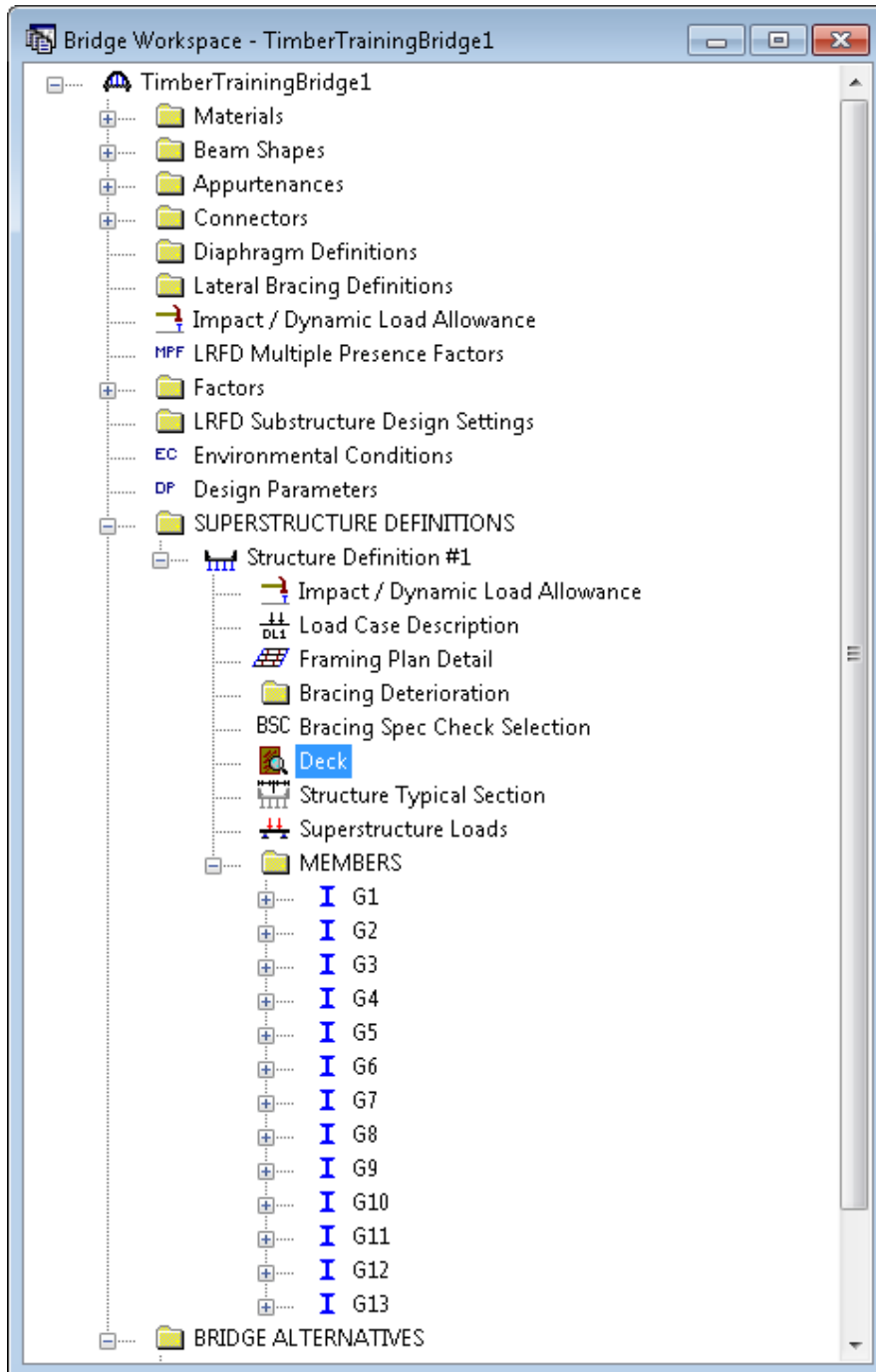
Timber Tutorial

TMBR2 – Timber Deck Rating Example

TMBR2 - Timber Deck Rating Example

This example demonstrates rating a timber deck in BrR. This example rates the deck of the superstructure for bridge BID12 in the sample database delivered with BrR. This example superstructure was also entered in the TMBR1-SingleSpanTimberExample problem. Only timber decks can be rated by BrR Version 5.0 and later.

Open the Bridge Workspace for bridge BID12 in the sample database delivered with BrR. The BWS tree is shown below.



TMBR2 - Timber Deck Rating Example

The timber deck now has its own tree item. The deck window is shown below. Most of the data on the Description tab appeared on the Structure Typical Section: Deck (Cont'd) tab in versions of BrR prior to Version 5.0.

The screenshot shows the 'Deck' dialog box with the following settings:

- Default rating method: ASD
- Analysis Module: ASD: Madero ASD
- Deck Rating Parameters: Deck continuous over more than 2 spans
- Timber deck type: Nail-Laminated Deck
- Timber material: Deck Timber
- Total deck thickness: 3.5000 in
- Nominal thick.: 2.0000 in
- Lamination thickness: 1.5000 in
- Nominal width: 4.0000 in
- Deck LL distribution width: 17.3200 in
- Nail: 20 Pennyweight

The only rating method currently available is an ASD rating.

You can indicate if the deck is continuous over more than 2 spans in this window. If the deck is continuous over more than 2 spans, the maximum bending moment is computed in accordance with the AASHTO Standard Specifications for Highway Bridges, Article 3.25. If the deck is not continuous over more than 2 spans, the maximum bending moment is that obtained for a simple span.

TMBR2 - Timber Deck Rating Example

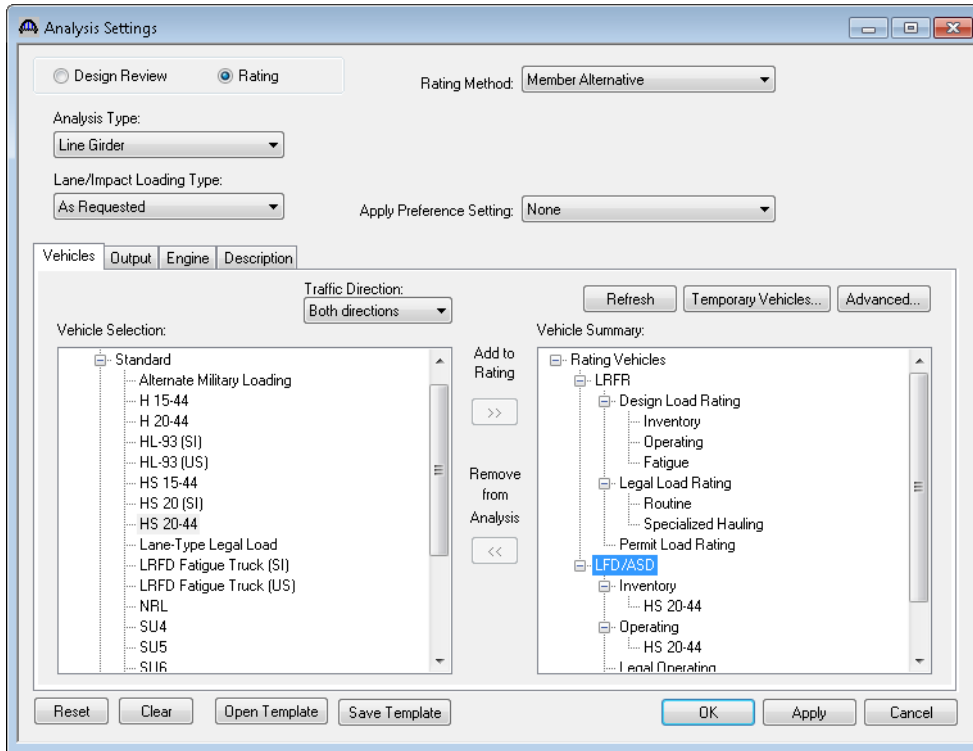
The Factors tab allows you to define the adjustment factors that pertain to the deck.

The screenshot shows the 'Deck' software window with the 'Factors' tab selected. The window contains the following input fields and controls:

- ASD Factors:** A dropdown menu set to 'OPER' and a text input field for 'Timber' with the value '1.33'.
- Timber Adjustment Factors:**
 - Moisture condition for shear/flexure: Wet (dropdown)
 - Moisture condition for bearing: Wet (dropdown)
 - Moisture condition for modulus: Wet (dropdown)
 - Shear factor: (empty text input)
 - Flat use factor: 1.00 (text input)
 - Wet service (flexure): 0.85 (text input)
 - Repetitive use factor: 1.15 (text input)
 - Wet service (shear): 0.97 (text input)
 - Load duration factor: 1.15 (text input)
 - Wet service (bearing): 0.67 (text input)
 - Wet service (modulus): 0.90 (text input)
 - Size factor (flexure): 1.00 (text input)
- Buttons:** A 'Compute' button is located at the bottom right of the input area. At the bottom of the window are 'OK', 'Apply', and 'Cancel' buttons.

TMBR2 - Timber Deck Rating Example

Open the Analysis Settings window and select the vehicles to be used in the rating analysis. Be sure to select the Rating Method as either “ASD” or “Member Alternative” since ASD is the only rating method currently available for timber decks.



Next click the Analyze button on the toolbar while “Deck” is selected in the BWS tree to perform the rating. When the rating is finished you can review the results by clicking the View Analysis Report button on the toolbar. The window shown below will open.

Live Load	Live Load Type	Rating Method	Rating Level	Load Rating	Rating Factor	Location	Limit State	Impact	Lane
HS 20-44	Axle Load	ASD	Inventory	47.55	1.321	Flexure - One-lane	As Requested	As Requested	As Requested
HS 20-44	Axle Load	ASD	Operating	63.30	1.758	Flexure - One-lane	As Requested	As Requested	As Requested

Madero(ASD/LRFD) - Version 1.02.05 - Sep. 11, 2012
 Analysis Preference Setting: None