



AASHTOWARE BRIDGE RATING

WHO WE ARE

AASHTOWare Bridge Rating (BrR) is a bridge rating tool, developed by AASHTO, for rating bridge superstructures in accordance with the AASHTO Manual for Bridge Evaluation, AASHTO Standard Specifications for Highway Bridges and AASHTO LRFD Bridge Design Specifications. AASHTOWare BrR integrates seamlessly with the AASHTOWare Bridge Design (BrD) software to effortlessly transition models from the design directly to rating without having to re-enter data, saving significant time and effort.

GOALS/BENEFITS

- Pooled multiple state resources to provide a software solution at a significant cost savings
- DOT-Driven software
- Best practices approach
- Focus on Federal requirements
- Built-in Flexibility – allows software configurations to meet unique needs
- Timely updates
- Long-term data preservation of bridge input
- Robust and active user community

**COMMON NEEDS****CUSTOMER SATISFACTION****FLEXIBILITY**

WHO USES AASHTOWARE BRIDGE DESIGN SOFTWARE?

State DOTs, Local Agencies, plus District of Columbia, Puerto Rico, FHWA, and educational institutions within the jurisdiction of AASHTO Members and Associate Member Departments

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ABOUT THE SOFTWARE

AASHTOWare Bridge Rating utilizes a common database with AASHTOWare Bridge Design to allow an organization to store a detailed model of each bridge, that is independent of the analytical engine, method of analysis, and rating method.

BENEFITS INCLUDE

- Rating a bridge using multiple analysis engines and specifications from a single bridge model.
- Software is designed modularly to allow for upgrades/modifications to components of the software, including the structural analysis engine, specification checking software, and user interface while preserving the basic bridge data.
- Data integration support is provided between BrDR and the AASHTOWare Bridge Management (BrM) software to synchronize bridge data.

STANDALONE TOOLS

- Load Rating Tool
- Analysis Results Comparison Tool
- Bridge Copy Utility

PRODUCT INFORMATION

[Technical Support](#)

[AASHTOWare FY2024 Catalog](#)

[AASHTOWare](#)

[Rating & Design Bridge User Group \(RADBUG\)](#)



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CURRENT FEATURES

BRIDGE LOAD RATING SYSTEM

- AASHTO analytical engine for load and resistance factor rating (LRFR), load factor rating (LFR), and allowable stress rating (ASR).
- Integrated database where bridge models and rating results can readily be stored, reviewed, and re-used.
- A 3-D description of a bridge superstructure can also be used by a variety of line-girder, 2-D or 3-D analysis packages, permit/routing systems, and other third-party produced applications.

BRIDGE CONFIGURATIONS AND CAPABILITIES

- Reinforced concrete tee beams, slabs, I-beams, and multi-cell box beams
- Reinforced concrete box culverts
- Metal box culverts
- Prestressed concrete box, I, tee, and U-beams (precast, pretensioned, continuity for live load, harped strands, and de-bonded strands)
- Post-tensioned cast-in-place multi-cell box girders
- Steel rolled beams (including cover plates)
- Steel built-up plate I-girders
- Steel welded plate I-girders (including hybrid)
- Steel trusses and floor systems
- Timber beams and decks
- Corrugated metal decks
- Simple spans, continuous spans, hinges (steel and reinforced concrete)
- Parallel and flared girder configurations
- Parallel, tapered, parabolic, and circular webs
- Transverse and longitudinal stiffened steel girders
- Frame structure simplified definition
- Girder-line and 3D-FEM analyses
- 3-D analysis of steel and concrete multi-girder superstructures
- 3-D analysis of curved steel multi-girder superstructures
- U.S. customary and S.I. units

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LOAD RATING FEATURES

- Load rate girder-floor beam-stringer configurations
- Load rate truss-floor beam-stringer and floor-truss configurations
- Load rate timber and corrugated metal decks
- Load rate gusset-plate connections and splice connections
- Load rate various structure units within a bridge
- Load rate various members, diaphragms and lateral bracing within a structural unit
- Input definition and rating of deteriorated sections
- Rate a user-defined group of bridges
- Review of rating history for groups of bridges and routing applications
- Permit rating with routine traffic in adjacent lane
- Rating of non-standard gage vehicles by loading a 3-D influence surface
- A vehicle library capable of defining any number of wheels on any number of axles
- AASHTO Engine for LRFR/LFR/ASR rating
- Supports flexure and shear ratings, computes dead loads and distribution factors if they are not manually input, and analyzes deteriorated sections

BRIDGE LOAD RATING AND PERMIT VEHICLE ANALYSIS DATABASE

Bridges along a route can be placed into folders, so that an entire route can be rated for a permitted vehicle in a single step.

Permit analysis includes sophisticated 3-D analysis to consider load effects due to a specific vehicle traveling along a user-defined path on a structure. Complies with corporate database management standards by supporting the widely used Oracle and Microsoft SQL Server databases, including their data sharing and security features.



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GRAPHICAL FEATURES AND CUSTOMIZABLE LIBRARIES

- Libraries of standard and user-defined vehicles, loads, steel and prestressed shapes, load and resistance factors, materials, parapets, and other bridge components allow bridge models to be built quickly in a drag-and-drop manner.
- All or part of a bridge can quickly be copied to another bridge model to reduce input time and minimize errors.
- As a bridge model is constructed, a framing plan, elevation view, cross-section view, and other schematics provide feedback and validate data entry.

ARCHITECTURAL SUPPORT FOR THIRD-PARTY CUSTOMIZATION AND ADD-ONS

Since a bridge structural model can be complex, AASHTOWare Bridge Design provides a simplified object model that ties the modules of the system together and makes the software open to expansion by experienced users and third-party developers. The AASHTOWare Bridge Design and Rating .NET Application Program Interface makes it possible to access the system's data from many commercial software packages, including Visual Basic®, Excel®, AutoCAD®, and even Microsoft Word®. AASHTO encourages third-party developers to market add-on features, which enhance the core capabilities of the system.



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