

LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF

PEDESTRIAN BRIDGES



DECEMBER 2009



**AMERICAN ASSOCIATION OF STATE HIGHWAY
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LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES

Table of Contents

1—GENERAL	1
1.1—Scope	1
1.2—Manufacturer-Designed Systems.....	1
1.3—Collision Mitigation	1
2—PHILOSOPHY	2
3—LOADS.....	2
3.1—Pedestrian Loading (PL).....	2
3.2—Vehicle Load (LL).....	4
3.3—Equestrian Load (LL)	5
3.4—Wind Load (WS)	5
3.5—Fatigue Load (LL)	6
3.6—Application of Loads.....	6
3.7—Combination of Loads.....	6
4—FATIGUE.....	7
4.1—Resistance.....	7
4.2—Fracture.....	7
5—DEFLECTIONS	7
6—VIBRATIONS.....	7
7—STABILITY	8
7.1—Half-Through Trusses.....	8
7.1.1—Lateral Frame Design Force.....	8
7.1.2—Top Chord Stability.....	9
7.1.3—Alternative Analysis Procedures	11
7.2—Steel Twin I-Girder and Single Tub Girder Systems.....	12
7.2.1—General.....	12
7.2.2—Lateral-Torsional Buckling Resistance—Twin I-Girder	12
7.2.3—Lateral-Torsional Buckling Resistance—Singly Symmetric Sections	13
8—TYPE SPECIFIC PROVISIONS.....	13
8.1—Arches	13
8.2—Steel HSS Members.....	13
8.2.1—General	13
8.2.2—Detailing.....	14
8.2.3—Tubular Fracture Critical Members.....	14
8.3—Fiber Reinforced Polymer (FRP) Members.....	15
9—DESIGN EXAMPLE.....	16
Illustrative Example of Key Provisions of Guide Specifications	16
General Information	16

Truss Members: All Rectangular HSS	17
Floorbeams	17
Dead Load	18
Pedestrian Live Load	18
Vehicle Load	18
Wind Load	19
Total Vertical Loads per Truss	21
Truss Member Design Loads	21
Truss Top Chord Lateral Support	21
Top Chord Compressive Resistance	23
Lateral Force to Be Resisted by Verticals	24
End Posts	25
Deflection	25
Vibrations	25
Vertical Direction	25
Lateral Direction	26
Fatigue	27
REFERENCES	29

LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES

1—GENERAL

1.1—SCOPE

These Guide Specifications address the design and construction of typical pedestrian bridges which are designed for and intended to carry primarily pedestrians, bicyclists, equestrian riders, and light maintenance vehicles, but not designed for and intended to carry typical highway traffic. Pedestrian bridges with cable supports or atypical structural systems are not specifically addressed.

These Guide Specifications provide additional guidance on the design and construction of pedestrian bridges in supplement to that available in the *AASHTO LRFD Bridge Design Specifications (AASHTO LRFD)*. Only those issues requiring additional or different treatment due to the nature of pedestrian bridges and their loadings are addressed. In Article 3 of this document, the load definitions and abbreviations are taken from *AASHTO LRFD*. Aluminum and wood structures are adequately covered in *AASHTO LRFD*, and as such are not specifically addressed herein.

Implementation of the wind loading and fatigue loading provisions require reference to the *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (AASHTO Signs)*.

1.2—MANUFACTURER-DESIGNED SYSTEMS

Where manufacturer-designed systems are used for a pedestrian bridge crossing, the engineer responsible for the design of the system shall submit sealed calculations prepared by a licensed Professional Engineer for that system.

1.3—COLLISION MITIGATION

AASHTO LRFD Article 2.3.3.2 specifies an increased vertical clearance for pedestrian bridges 1.0 ft higher than for highway bridges, in order to

C1.1

This edition of the Guide Specifications was developed from the previous Allowable Stress Design (ASD)- and Load Factor Design (LFD)-based first edition (AASHTO 1997). An evaluation of available foreign specifications covering pedestrian bridges, and failure investigation reports, as well as research results related to the behavior and performance of pedestrian bridges was performed during the development of the LRFD Guide Specifications.

C1.2

It is important to clearly delineate the responsibilities of each party when proprietary bridge systems are used. All portions of the design must be supported by sealed calculations, whether from the bridge manufacturer, or the specifying engineer. The interface between the manufacturer-designed system and the project-specific substructures and foundations needs careful attention.

C1.3

In most cases, increasing vertical clearance is the most cost-effective method of risk mitigation.