

ERRATA for *AASHTO LRFD Bridge Construction Specifications, 4th Edition* (LRFDCONS-4)

November 2021

Dear Customer:

Recently, we were made aware of some technical revisions that need to be applied to the *AASHTO LRFD Bridge Construction Specifications, 4th Edition*. This file contains both previous errata from March 2018 as well as newer corrections. Changes are listed first, followed by all necessary replacement pages. Please scroll down to see the full erratum.

As this publication has two errata and an interim, changes should be applied in the following order:

- 2018 Errata
- 2020 Interim
- 2021 Errata

In the event that you need to download this file again, please download from AASHTO's online bookstore at:

<http://downloads.transportation.org/LRFDCONS-4-Errata.pdf>

Please replace the existing pages with the corrected pages to ensure that your edition is both accurate and current.

AASHTO staff sincerely apologizes for any inconvenience to our readers.

Summary of Errata for LRFDCONS-4, March 2018

<i>Page</i>	<i>Existing Text</i>	<i>Corrected Text</i>
11-27	<i>11.5.5.4.1—General</i> ... Rotation, as used in Table 11.5.5.4.1-2, shall be taken as rotation of the nut relative to the bolt, regardless of the element (nut or bolt) being turned. The tolerances is minus 30, plus 60°. The values, given in Table 11.5.5.4.1-2, shall be	<i>11.5.5.4.1—General</i> ... Rotation, as used in Table 11.5.5.4.1-2, shall be taken as rotation of the nut relative to the bolt, regardless of the element (nut or bolt) being turned. The tolerances is minus 30, plus 60°. The values, given in Table 11.5.5.4.1-2, shall be <u>applicable only to connections in which all material within grip of the bolt is steel.</u> <u>For situations in which the bolt length measured from the underside of the head to the end of the bolt exceeds 12 diameters, the required rotation shall be determined by actual tests in a suitable tension device simulating the actual conditions.</u> <u>The bolt length used shall be such that the end of the bolt is flush with or extends beyond the outer face of the nut when properly installed.</u>

Second Errata for LRFD CONS-4, November 2021

<i>Page</i>	<i>Existing Text</i>	<i>Corrected Text</i>
10-5		10.3.2.1—Added the following paragraph to the end of the section: <u>Dynamic tests, in accordance with Article 10.3.2.2, shall be required on bonded tendons where the anchorage is located or used in such manner that repeated load applications can be expected on the anchorage; otherwise dynamic tests shall be required only if specified in the contract documents.</u>
26-8	26.4.3—When required by structural design, reinforcing ribs shall be attached to the structural plate corrugation crown prior to backfilling, using a bolt spacing of not more than 12.0 in. Legible identifying letters or numbers shall be placed on each rib to designate its proper position in the finished structure.	26.4.3—When required by structural design, reinforcing ribs shall be attached to the structural plate corrugation ~~crown~~ crest at the necessary locations around <u>the circumference of the structure</u> prior to backfilling, using a bolt spacing of not more than 12.0 in. <u>or 16.0 in. for deep corrugated structural plate structures.</u> Legible identifying letters or numbers shall be placed on each rib to designate its proper position in the finished structure.
26-8		C26.4.3—Added the following: <u>It is acceptable to measure bolt spacing either at the centroid or crest of the structural plate corrugation.</u> <u>Where reinforcing ribs are only used as an installation tool during backfill, they may be clamped or bolted as necessary to provide shape control.</u>

Second Errata for LRFDCONS-4, November 2021

<i>Page</i>	<i>Existing Text</i>	<i>Corrected Text</i>
26-14		Added new Article: <u>26.5.4.5—Deep Corrugated Structural Plate Structures</u> <u>Prior to construction, the Manufacturer shall conduct a preconstruction conference to advise the Contractor(s) and Engineer of the more critical functions to be performed during backfilling and to present the intended quality control steps to be used to control loads, shape, and movements.</u> <u>Equipment and construction procedures used to backfill deep corrugated structural plate structures shall be such that excessive structure distortion will not occur. A Manufacturer's representative shall be on site during initial sidefill placement and compaction, and shall review data on the shape when backfill reaches the minimum cover level over the top of the structure as set forth in the <i>AASHTO LRFD Bridge Design Specifications</i>. Structure backfill material shall be placed in horizontal uniform layers not exceeding an 8.0 in. loose lift thickness and shall be brought up uniformly on both sides of the structure. Each layer shall be compacted per the contract documents, but not less than 90 percent maximum density per AASHTO T 180 (modified Proctor test). The structure backfill shall be constructed to the lines and grades shown on the contract documents, keeping it at or below the level of adjacent soil.</u>

strength rather than the guaranteed ultimate tensile strength. The reason for this is to make sure the hardware used for gripping does not reduce the capacity of the tendons more than 5 percent. This can only be measured in reference to the actual strength of the particular prestressing steel used in the test. The recommendation of using 95 percent of the actual ultimate tensile strength for the anchorage efficiency test was made in NCHRP Report 356.

The dynamic strand-wedge performance test for unbonded tendons is specified in Article 10.3.2.2.

10.3.2.1—Bonded Systems

Bond transfer lengths between anchorages and the zone where full prestressing force is required under service and ultimate loads shall normally be sufficient to develop the minimum specified ultimate strength of the prestressing steel. When anchorages or couplers are located at critical sections under ultimate load, the ultimate strength required of the bonded tendons shall not exceed the ultimate capacity of the tendon assembly, including the anchorage or coupler, tested in an unbonded state.

Housings shall be designed so that complete grouting of all of the coupler components will be accomplished during grouting of tendons.

Dynamic tests, in accordance with Article 10.3.2.2, shall be required on bonded tendons where the anchorage is located or used in such manner that repeated load applications can be expected on the anchorage; otherwise dynamic tests shall be required only if specified in the contract documents.

10.3.2.2—Unbonded Systems

For unbonded tendons, two dynamic tests shall be performed on a representative anchorage and coupler specimen and the tendon shall withstand, without failure, 500,000 cycles from 60 percent to 66 percent of its minimum specified ultimate strength, and 50 cycles from 40 percent to 80 percent of its minimum specified ultimate strength. Each cycle shall be taken as the change from the lower stress level to the upper stress level and back to the lower. Different specimens may be used for each of the two tests. Systems utilizing multiple strands, wires, or bars may be tested utilizing a test tendon of smaller capacity than the full-size tendon.

Anchorages for unbonded tendons shall not cause a reduction in the total elongation under ultimate load of the tendon to less than two percent measured in a minimum gage length of 10.0 ft.

All the coupling components shall be completely protected with a coating material prior to final encasement in concrete.



10.3.2.3—Special Anchorage Device Acceptance Test*10.3.2.3.1—Test Block Requirements*

The test block shall be a rectangular prism. It shall contain those anchorage components which will also be embedded in the structure's concrete. Their arrangement shall comply with the practical application and the suppliers' specifications. The test block shall contain an empty duct of size appropriate for the maximum tendon size which can be accommodated by the anchorage device.

C10.3.2.3.1

Figure C10.3.2.3.1-1 shows a local zone specimen with the local zone confining reinforcement in the upper portion of the specimen and the optional supplementary reinforcement of Article 10.3.2.3.4, "Skin Reinforcement," over the full-length of the specimen. However, an anchorage device supplier could also choose to eliminate such reinforcement in either or both portions of the block.

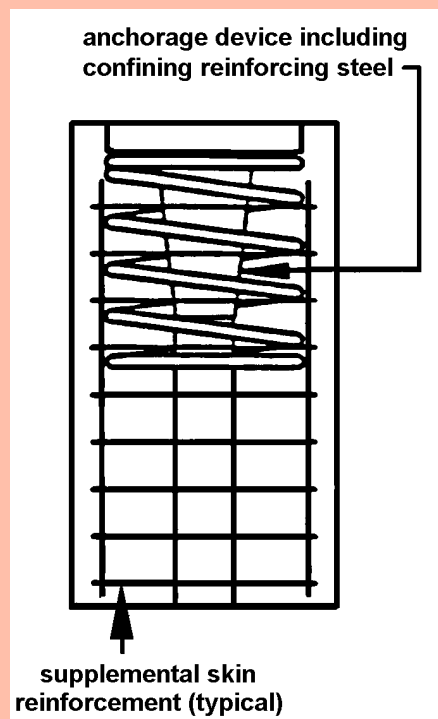


Figure C10.3.2.3.1-1—Special Anchorage Device Acceptance Test Specimen

*10.3.2.3.2—Test Block Dimensions**C10.3.2.3.2*

The dimensions of the test block perpendicular to the tendon in each direction shall be the smaller of the minimum edge distance or the minimum spacing specified by the anchorage device supplier, with the stipulation that the cover over any confining reinforcing steel or supplementary skin reinforcement be appropriate for the particular application and environment. The length of the block along the axis of the tendon shall be at least two times the larger of the cross-section dimensions.