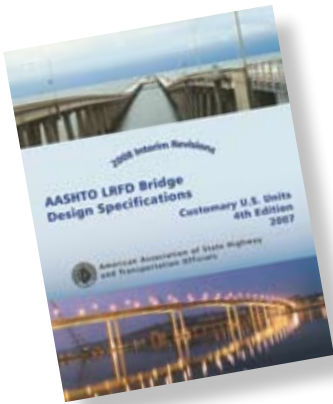


# 2009 Interim Changes Part 1



by Dr. Dennis R. Mertz

**T**he American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Bridges and Structures (SCOBs) considered and adopted five agenda items specifically related to concrete structures at their annual meeting in Omaha, Neb., in May 2008. Over the past several years, Technical Committee T-10, Concrete Design, developed Agenda Items 58 through 62 and moved them to the subcommittee ballot last year. The agenda items represent revisions and additions to the AASHTO LRFD Specifications. These agenda items along with the complete agenda for the recent SCOBs meeting can be found on the AASHTO website at <http://cms.transportation.org/?siteid=34&pageid=1484>. The 2008 concrete structures agenda items, which will become the 2009 interim changes, are reviewed in this and the next issue.

**Agenda Item 58** revises existing articles of the AASHTO LRFD Specifications to conform to companion Agenda Item 66, developed by Technical Committees T-5, Loads and Load Distribution and T-14, Structural Steel Design. Agenda Item 66 clarifies the fatigue and fracture limit state by adding a second load combination, Fatigue I, which explicitly provides infinite fatigue life for steel and concrete members. The previous fatigue load combination becomes Fatigue II and is used for finite life design of steel members only. Infinite life design was included in the existing fatigue provisions in a more implicit manner. With the 2009 interim changes, it becomes explicit with the addition of this new fatigue load combination.

In Agenda Item 58, Article 5.5.3 is rewritten into the format of the fatigue-related provisions of other articles of the AASHTO LRFD Specifications with reference to the new fatigue load combination. All of the fatigue provisions for concrete members are based on designing for infinite life by applying the new explicit Fatigue I load combination and constant-amplitude fatigue thresholds.

Further, the compression stress check of Table 5.9.4.2.1-1, which relates to fatigue resistance, is removed from the table and placed within Article 5.5.3 to clarify that this compression stress limit is a fatigue consideration and that the Fatigue I load combination should be used with this check.

Finally, the exemption of concrete deck slabs in multi-girder applications from fatigue considerations is extended to reinforced concrete box culverts.

**Agenda Item 59** revises various articles of the AASHTO LRFD Specifications clarifying the limited application of reinforcement conforming to ASTM A1035/A1035M, Standard Specification for Deformed and Plain, Low-carbon, Chromium, Steel Bars for Concrete Reinforcement. Most importantly, the agenda item clarifies that reinforcement conforming to ASTM A1035/A1035M may only be used as top and bottom flexural reinforcement in the longitudinal and transverse directions of bridge decks in Seismic Zones 1 and 2, as one of many options. Also, while the specified yield strength of reinforcing bars used in design must not exceed 75.0 ksi, the splice length of the ASTM A1035/A1035M reinforcement should be determined using its specified minimum yield strength of 100 ksi.

**Agenda Item 60** limits the use of concrete with compressive strengths above 10.0 ksi to normal weight concrete only when allowed by specific articles. This agenda item clarifies a recent change, which permitted the use of concrete with compressive strengths above 10.0 ksi where appropriate but did not limit it to normal weight concrete. The application of concrete with compressive strengths above 10.0 ksi is based upon recent National Cooperative Highway Research Program (NCHRP) projects on high-strength concrete that did not include lightweight concrete.

The additions and revisions represented by Agenda Items 61 and 62 will be reviewed and discussed in the next issue.