No. 13-07-DSB Design for Elastomeric Bearing Rotations
Contact: Boyd Denson
Effective: Immediately for all jobs

Instruction:
The rotation check for elastomeric pads and steel reinforced elastomeric bearings being
designed using Method A was eliminated with the 2012 AASHTO LRFD Bridge Design
Specification, Sixth Edition. Therefore rotation need not be considered in the design of
these bearings.

Background:
This bulletin was created out of a question on when the 0.05 radian allowance for
rotational uncertainties specified in AASHTO 14.4.2.1 should be considered. The
following provides guidance on when and when not to use the uncertainty allowance.
Please note the two situations where rotation is considered are not office practice and
would only be considered when Method A designed elastomeric bearings are not feasible
and only with the approval of the Structural Project Manager or Structural Liaison
Engineer.
1. Use with design Method B at non-integral bents when checking combined
   compression, rotation, and shear AASHTO 14.7.5.3.3 and determining the need for
   anchorage for bearings without bonded external plates AASHTO 14.7.5.4.
2. Use with design Method A at non-integral bents when checking rotation of CDP
   AASHTO 14.7.6.3.5b.
3. Don't use when determining the need for shim plates and how much to taper if
   needed. No allowance for uncertainties should be used when sizing an item based on
   theoretical displacements since there is no way to predict the orientation of the
   uncertainty and could therefore induce more stress into the item.
4. Don't use with any type of bearing at integral bents. The rotational limits in AASHTO
   are not applicable when the superstructure is built integral with the substructure. This
   is why the bearing design spreadsheet produces a NA next the rotational design check
   if plain elastomer pads are being considered.
5. Don't use with design Method A with plain and steel reinforced elastomeric pads and
   FGP pads. The design for rotation in Method A is implicit in the geometric and stress
   limits given AASHTO.

Reason for Bulletin:
To quickly update design guidance to match AASHTO and be effective until the
appropriate EPG section can be updated.

EPG and Design Spreadsheet:
The EPG bearing design criteria is in the process of being reviewed for other updates
with the above information being added to these updates. In addition to updating the
EPG, the bearing design spreadsheet located on LRFD Design Website will also be
updated. With both the EPG and spreadsheet revisions, clear instructions and/or
reasoning for the above design criteria will be provided.

Sincerely,
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