

TO: All Design Section Staff  
FROM: Bijan Khaleghi  
DATE: April 29, 2014  
SUBJECT: Bridge Anchor Types

This design memorandum revises the WSDOT requirements for bridge anchor types.

Conventional resin bonded anchors may be used in many aspects of bridge design, including the permanent sustained tension applications listed below.

- Sign structures mounted to the sides of bridges.
- Light standards.
- Retrofitted corbels for bridge approach slabs.
- Bridge widenings, for both the decks and for pier caps.
- Supporting utilities under bridges, including water pipes, electrical conduit and other utility piping systems.

All resin bonded anchor systems for use under conditions of sustained tensile load shall be tested in accordance with the AASHTO TP 84.

Fast set epoxy anchors shall not be used for resin bonded anchors.

Undercut anchors may be used for all applications including sustained tensile load.

Expansion anchors and mechanical anchors are not allowed for any permanent applications.

### **Background:**

The use of adhesives other than "Fast Set epoxy" for permanent overhead applications shall be considered on a case-by-case basis based on contract documentation that ensures long-term creep performance and that recognizes the effect of overhead installation. For resin bonded anchors used in permanent sustained tension applications, the stress versus time-to-failure test method is required to determine a resin bonded anchor's ability to resist sustained tensile loads.

If you have any questions regarding these issues, please contact Ralph Dornsife at (360) 705-7199 ([DornsR@WSDOT.WA.GOV](mailto:DornsR@WSDOT.WA.GOV)), Mike Bauer at (360) 705-7190 ([BauerM@WSDOT.WA.GOV](mailto:BauerM@WSDOT.WA.GOV)), Tim Moore at (206) 805-5440 ([MooreT@WSDOT.WA.GOV](mailto:MooreT@WSDOT.WA.GOV)), or Bijan Khaleghi at (360) 705-7181 ([Bijan.Khaleghi@WSDOT.WA.GOV](mailto:Bijan.Khaleghi@WSDOT.WA.GOV))

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**BDM Revisions: (Black is current BDM, Red is added revisions)**

## **10.10 Bridge Anchors**

WSDOT allows **conventional** resin bonded anchors in many aspects of bridge design, including the permanent sustained tension applications listed below.

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