

STRUCTURE BULLETIN

NCDOT Construction Unit

[Website email](#)



1. Current Issues
2. Updates
3. Specification Questions
4. Training



Current Issues: Testing of Direct Tension Indicators (DTI's)

Section 440-8 of the Standard Specifications addresses structural connections using high strength bolts. Generally, bolted connections on structures are designed as friction connections. In order for this type of connection to function properly, the bolts must be sufficiently tensioned to prevent slippage between any of the members in the connection. Specified bolt tension is essential! Unless otherwise noted in the plans or special provisions, all structural steel fasteners shall be installed using DTI's. DTI's are washers with raised protrusions that are flattened when tension is applied to the bolt. When used properly, DTI's allow us to confirm that proper bolt tension has been achieved.



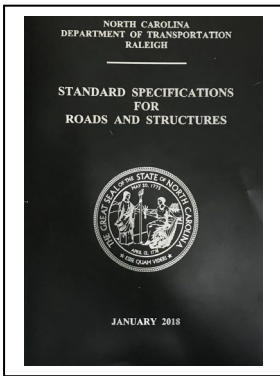
Prior to any bolting installation, a tension indicating device (Skidmore-Wilhelm) shall be provided to confirm the acceptability of the DTIs. The purpose of this device is to confirm that the protrusions on the DTI do not compress prematurely, prior to achieving the required bolt tension. Step by step instructions for performing this test, along with additional important information regarding high strength bolts can be found at [this link](#) as well as this short [video](#).

Updates:

This may be the first issue of this newsletter you have received. We have added the attendees of the winter structure inspector training to the recipient list for the structure bulletin. There is a link on the next page where you can find a library of the previous Structure Bulletins for reference, just click the link to go there.

All recipients of the Structure Bulletin will also be receiving an email asking you to take a survey by SurveyMonkey. We are asking for your feedback on what training you have found valuable and what you would like to see in the future. It should take less than ten minutes and will be very helpful in planning future training. Thanks in advance.

Special Provision Questions:



Question: Can the contractor use a vibratory screed on approach slabs?

Answer: Only on small slabs, and maybe not then. Section 422 of the Standard Specifications states *“Finish and groove the reinforced concrete bridge approach slabs in accordance with Article 420-14; however, for approach slabs with a length of 15 feet or less, the contractor may submit an alternate screed type for approval.”*, and Section 420-14(B) states *“Unless otherwise specified or permitted, use self-propelled mechanically operated longitudinal or transverse screeds for finishing bridge deck. Do not use vibratory screeds unless specifically approved.”*

So what does this mean? If your slab is 15' or less in length the contractor may be allowed to use a vibratory screed. This is at the discretion of the engineer. If the slab is longer than 15' the contractor must use the same type screed as he used on the deck, whether it be a Bidwell, Gomaco, Allen or other brand. Both the 2012 and 2018 Standard Specifications have the same requirements, though the 2018 language has been modified to clarify this and to specifically allow vibratory screeds on short slabs.

Area Construction Engineers:

Div	Contact	Phone
1&2	Randy Hall	282-402-9957
3&4	David Candela	910-524-4931
5	Troy Brooks	996-972-4627
6&8	John Partin	336-847-1226
7	Aaron Griffith	336-215-9170
9	Vickie Davis	704-202-0945
10	Darin Waller	980-521-5176
11&12	Brian Skeens	828-803-1461
13&14	Aaron Powell	828-694-7971

New Video:

There is a new video on the [Construction Unit YouTube playlist](#) discussing the proper procedure for [Setting Disc Bearings](#).

Training:

PDF copies of the Winter Inspector Training presentations can be found at the following link:

[2018 Structure Inspector Training](#)

Structure Bulletins are now archived on the Construction Unit website under [Construction Resources](#).

If you have a topic you would like to see addressed in a future edition of the Structure Bulletin please [email](#) us at either acochran@ncdot.gov or aeerwood@ncdot.gov