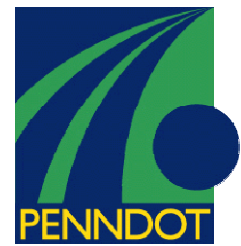


PENNDOT e-Notification

Bureau of Information Systems
Application Development Division



BXLRFD
No. 005
Feb 16, 2006

Erroneous Value Reported for Temperature and Shrinkage Spacing in the Serviceability Spacing Check Table for Analysis Runs

A problem has been identified with the BXLRFD program analysis runs. The program is reporting the Temperature and Shrinkage Spacing incorrectly for the second location (Bottom Slab / Right Wall) on the Serviceability Spacing Check table. It was found that the spacing for the first location (Top Slab/ Left Wall) is being displayed for the second location. Below are excerpts from the program output which documents the issue.

Wall No. 1

Dist (ft)	Loc	Bar Size	Input Spacing (in)	Minimum Primary Spacing (in)	Maximum Primary Spacing (in)	Temp/Shrink Spacing (in)	Crack Control Stress (ksi)	Tens Reinf Stress (ksi)	Codes
0.00	L	7	18.00	2.50	18.00	18.00	16.39	13.44	1
	R	4	9.00	2.50	12.00	18.00			
0.80	L	7	18.00	2.50	18.00	18.00	16.39	2.93	1
	R	4	9.00	2.50	12.00	18.00			
1.12	L	7	18.00	2.50	18.00	18.00			
	R	4	9.00	2.50	12.00	18.00	21.78	0.58	1

The temperature and shrinkage allowable maximum spacing value for a #4 bar is shown incorrectly as 18 in. when it should be 12 in.

The program displays the maximum value for the #7 bar at the second location.

Wall No. 2

Dist (ft)	Loc	Bar Size	Input Spacing (in)	Minimum Primary Spacing (in)	Maximum Primary Spacing (in)	Temp/Shrink Spacing (in)	Crack Control Stress (ksi)	Tens Reinf Stress (ksi)	Codes
0.00	L	4	9.00	2.50	12.00	12.00			
	R	7	18.00	2.50	18.00	12.00 *	16.39	13.81	1
0.81	L	4	9.00	2.50	12.00	12.00			
	R	7	18.00	2.50	18.00	12.00 *	16.39	3.04	1
1.12	L	4	9.00	2.50	12.00	12.00	21.78	0.49	1
	R	7	18.00	2.50	18.00	12.00 *			

The temperature and shrinkage allowable maximum spacing value for a #7 bar is shown incorrectly as 12 in. when it should be 18 in.

The program displays the maximum value for the #4 bar at the second location. And since the input spacing is 18 for the #7 bar, the program incorrectly flags the bar as failing.

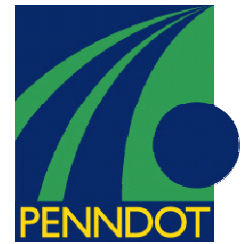
Top Slab No. 1

Dist (ft)	Loc	Bar Size	Input Spacing (in)	Minimum Primary Spacing (in)	Maximum Primary Spacing (in)	Temp/Shrink Spacing (in)	Crack Control Stress (ksi)	Tens Reinf Stress (ksi)	Codes
0.75	T	7	9.00	2.50	18.00	18.00	20.65	16.64	1
	B	4	9.00	2.50	12.00	18.00			
1.40	T	7	9.00	2.50	18.00	18.00	20.65	9.60	1
	B	4	9.00	2.50	12.00	18.00			
1.56	T	7	9.00	2.50	18.00	18.00	20.65	8.17	1
	B	4	9.00	2.50	12.00	18.00			

This excerpt shows the same behavior occurs in the slab portion of the Serviceability Spacing Check table.

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Currently there is no workaround for this condition. Therefore effective immediately the maximum temperature and shrinkage spacing for the second location must be verified by the user. Below is an excerpt from the BXLRFD User's Manual Section 3.5.2.3 which documents the requirements.

The maximum temperature and shrinkage spacing is:

- 12 in for a # 4 bar (300mm for a 13M bar)
- 18 in for a # 5 bar or greater (450 mm for a 16M bar or greater)

The spacing is specified as per D5.10.8.2 and A5.10.8.2.

Direct any questions concerning the above issue to:

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