

TECH NOTE

Bentley Standard Checker

Overview

The Bentley Standard Checker is used to run checks that compare the information in a DGN file against standards in the WSDOT.dgnlib and output an XML report file.

For projects that may have symbology standards different than the WSDOT.dgnlib contact CAE for assistance to modify the Standard Checker settings to include project specific DGNLIB.

When using the interactive mode, the Standards Checker opens a window that displays the status of the checking process. When the Standards Checker finds a difference from the standard, it displays a message that explains the difference between the values found and the standard values. For each difference, you can choose to fix, ignore, or skip the problem.

When using the non-interactive mode, the utility will fix non-compliant symbology issues automatically. If a non-standard level is encountered, the checker will automatically assign the level name to the first available level in the DGNLIB

Once the Standard Checker finishes its process the Standard Check Complete dialog opens confirming how many problems were found, fixed or ignored. If you select Yes on the Standard Check Complete dialog an XML report file will be created. Open the xml file in Internet Explorer with Active X control enabled and internet access available. Internet Explorer will open the XML file and display the report using the Bentley style sheet.

Standards Checker			
Settings			
Standards DgnLib Settings Name	wsdot.dgnlib WSDOT		♀ Ţ
Checks			
VBA ByLevel Che	ecker		Settings
VBA Reference C	Checker		Settings
Check Levels			Settings
Check Line Styles	3		Settings
Options			
Report File:	report001.xml	9	Create New In Series 🔻
Named Group:	Nonstandard Elements]	
✓ Interactive			
Show Ignored Pro	oblems		
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Workflow

To ensure that the MicroStation file is compliant with the current WSDOT.dgnlib for level and level symbology and prepared for delivery, the following steps need to be considered.

- Back up DGN
- Delete Duplicates
- Update Level
- Attach Color Table
- Compress DGN
- Run the Bentley Standard Checker
- Review Report
- Run the Bentley Standard Checker Batch Process

Back Up DGN

It is always recommended to back up the DGN files prior to effecting global changes that may impact production data.

After the process has been completed and the data reviewed for correctness, the backup should be removed to minimize confusion and free up drive space.

Delete Duplicates

Delete duplicates will remove one element when two elements of the same type share the same location and geometry.

- 1. To run the Design File Cleanup go to Utilities > Data Cleanup
- 2. On General tab in the Cleanup Actions area set Duplicates: to Delete
- 3. Select Apply



4. Select Done

Update Levels

Addressing ByLevel settings and overrides prior to running the Bentley Standard Checker will provide the user knowledge as to what issues may need to be fixed or ignored when running the Standard Checker in the interactive mode.

Level Overrides – Optional Step

When using the Level Manager to update levels the overrides that have previously been set will be cleared. In cases where only simple overrides are in place where few levels are set or all levels set the same, it is best to update levels with Level Manager and then to set the overrides again.

With a complex system of overrides, resetting the overrides may be impractical. In this case, using a keyin to synchronizes the ByLevel color, style, and weight attributes with the WSDOT.dgnlib may be preferred.

- 1. Open Key-in window go to Utility > Key-in
- 2. Enter dgnlib update levels bylevelsymbology

😅 Key-in	×
dgnlib update levels bylevelsymbology	🗸 🔁 🕰 -
	Run Key-in

3. Select the Enter key or select the Run Key-in icon

Level Manager – Update Levels

Update Levels from Library synchronizes the properties of levels in the open DGN file and in DGN files that contain referenced models, with the properties of the corresponding source levels in the attached level library.

Open the <u>Level Manager</u> go to Settings > Levels > Manager

1. Select the **Modify** Column \triangle to sort the modified levels to top of list. A symbol will display in the Modify column if the level has been modified. If no levels were modified skip this section.

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<u>L</u> evels <u>Fi</u> lter <u>E</u> dit									
🗐 👷 📑 V Symbology	y: By	Level 🔻 🏳 (none) 🤻	- 🖾 -						
Vour DGN File.dgn	Δ	Name	\$	<u>s</u>				Used	^
- All Levels	•	BL_LN_BankTop	WSDOT	154	0	O		•	
🗄 🔁 Filters	•	DR_ST_CatchBasin	WSDOT	T 🔲 49	O	0		•	
	<u>ا ا</u>	EV_EP_StreamRes	WSDOT	T 🔲 92	0	<u> </u>		•	
	<u>ا ا</u>	EV_WL_Biofiltratio	WSDOT	55 📃 55	EV_WL_BiofiltrationSwale	<u> </u>		•	
	<u>ا ا</u>	EV_WL_StormWat	WSDOT	55 📃 55	3	<u> </u>		•	
	<u>ا ا</u>	TP_MM_Building2D	WSDOT	126	0	<u> </u>		•	
	•	TP_NT_RiverEdge	WSDOT	126	0	<u> </u>		•	

2. Hover the cursor on the modified symbol. A popup window will display the level modification(s).

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Levels <u>F</u> ilter <u>E</u> dit	y: B	yLevel 🔻 🏳 (none) 🤻	- 🖂 -						
-W Your DGN File.dgn	Δ	Name		<u>s</u>				Used	^
- All Levels	•	Override Color	WSDOT	154	<u> </u>	<u> </u>		•	
🗄 🍃 Filters	•	Override Weight	WSDOT	49	O	0		•	
	<u>۱</u> ۰	ByLevel Color	WSDOT	92	O	<u> </u>		•	
	<u>۰</u>	Weight Override On/Of	f WSDOT	55	EV_WL_BiofiltrationSwale	<u> </u>		•	
	<u>۰</u>	EV_WL_StormWat	WSDOT	55	3	<u> </u>		•	
	<u>۰</u>	TP_MM_Building2D	WSDOT	126	0	<u> </u>		•	
	<u>۰</u>	TP_NT_RiverEdge	WSDOT	126	0	<u> </u>		•	
	<u>۰</u>	TP_NT_StreamSca	WSDOT	126	0	<u> </u>		•	
		Default		0	O	0		•	~
Active Level: SH_GI_ClipLimit	s		2410 of 24	10 displayed; 1	selected;				

Select all modified levels and then right click and select Update Levels.

After the level is updated and it still is listed as modify check Global Display, Global Freeze, Lock and Plot.

😭 Level Manager								—		×
<u>L</u> evels <u>Fi</u> lter <u>E</u> dit										
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Vour DGN File.dgn	Δ	Name	\$	ú					Used	^
- All Levels	•	BL_LN_BankTop	WSDOT	154	-	0	0		•	
🗄 🎾 Filters	•	DR_ST_CatchBasin	WSDOT	<u>N</u> ew		0	0		•	
	•	EV_EP_StreamRes	WSDOT	Set Active		0	<u> </u>		•	
	•	EV_WL_Biofiltratio	WSDOT	Jump To Ad	tive Level	BiofiltrationSwale	<u> </u>		•	_
	•	EV_WL_StormWat	WSDOT	Update Lev	els	3	2		•	_
	•	TP_MM_Building2D	WSDOT	Import Leve	ls	0	2		•	_
		TP_NI_RiverEdge	WSDOT	Save Filter		0	3		•	
	•	Default	W2D01	Beman Fler	nente	0	3		-	
	<u> </u>	Derduit			nonta		•		•	×
Active Level: SH_GI_ClipLimit	s		2410 of 24	Select <u>Al</u>						
				Select Non	е					
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				Properties						

Attach Color Table

The DGN file being checked may have an older color table attached and will create problem in the Standard Checker report due to the different RGB values when compared to the current WSDOT color.tbl file. The report will show the Expected and Actual color properties are the same as the below example.

1	[#] Model	Standard	Property	Expected	Actual	Description
	Default	Level TR_SG_ElectServiceCabinet	Color	54	54	Properties do not match

To correct the problem, open the DGN and attach the WSDOT color.tbl file.

- 1. Go to Settings > Color Table.
- 2. In the <u>Color Table</u> dialog select *File > Open*
- 3. Navigate to C:\Users\Public\CAE\Standards\WSDOT\symb folder and select the color.tbl.



4. Select Attach

Compress File

Compressing a DGN file reduces its size and clears the undo buffer. DGN files should be compressed regularly to enhance file performance.

- 1. Go to File > Compress > Options
- 2. Select All Actions
- 3. Select Compress

Select	Action	Alias
	Delete Empty Cell Headers	EMPTY_CELL
KKKKKKKKKKK	Delete Empty Text Elements Delete Text Elements Containing Only Spaces Delete Pre 8.11 Render Setup Entries Delete Unused Named Shared Cells Delete Unused Anonymous Shared Cells Delete Unused Line Styles Delete Unused Dimension Styles Delete Unused Text Styles Delete Unused Text Styles Delete Unused Levels Delete Unused Nested Attachment Levels Delete Unused Multi-line Styles Delete Unused Element Templates	EMPTY_TEXT SPACE_TEXT RENDER_SETUP SC_NAMED SC_ANON LINESTYLES DIMSTYLES TEXTSTYLES LEVELS LEVELTABLES MLINESTYLES ELEMENTTEMPLATES
Include Defe		
include Refe	rences	

Run Standard Checker

The Bentley Standard Checker can be run interactively or non-interactively, it can also be used with Bentley Batch Process command.

For more information on the Standard Checker see <u>Getting Started With The Standards Checker -</u> <u>Bentley Communities</u> Part 2.

1. To open <u>Standards Checker</u> go to Utilities > Standard Checker > Check

Standards Checker			
Settings			
Standards DgnLib	wsdot.dgnlib		٩
Checks	WSDOT		· · ·
VBA ByLevel Che	ecker		Settings
VBA Reference C	hecker		Settings
Check Levels			Settings
Check Line Styles	3		Settings
Options			
Report File:	report001.xml	٩	Create New In Series 🔻
Named Group:	Nonstandard Elements		
Interactive			
Show Ignored Pro	oblems		
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- 2. Enable Report File:
- 3. Select Solution and define file name for the xml output file
- 4. Use the drop down to set if document is Created New In Series, Overwrite or Append
- 5. Enable or Disable Interactive?

Note: For Interactive enabled, once you click OK on the Standards Checker dialog, the interactive checking window opens. When the Standards Checker finds a difference from the standard, it displays a message that explains the difference between the values found and the standard values. For each difference, you can choose to fix, ignore, or skip the problem. If you choose to ignore a problem, the Standards Checker records the fact that the problem is ignored.

For Interactive disabled, the Standard Checker will fix problems with no user interaction.

6. Select OK

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Once completed the Standards Check Complete dialog opens, showing the number of problems found, fixed, and ignored.

Standard	s Check Complete		
?	Standards Check Comple 0 Problems Found 0 Problems Fixed 0 Ignored Problem	te	^
	<u>Y</u> es	No	

7. Select Yes to open the XML report.

Note: If prompted to select an application to open the XML file select Internet Explorer. Once Internet Explorer opens the report, you may have to select Allow blocked content to use the ActiveX control that are used in the report for the drop-down controls.

Internet Explorer restric	ted this webpag	e from ru	nning scripts or ActiveX controls.			<u>A</u> llow b	locked conte	nt ×
C\Users\Public\Vour XML Report Bentley Systems, Inc. Stand ×	txml				▼ C Search		م	- • × • • * ¤ •
			Bentley Sy	stems, Inc. Standards Version 8.11.9.614	s Checker			Î
Files Processed	: 🗆 Expa	and All	Hide Ignored Problems	Hide Fixed Problems				
File Name C:\Users\Public\\ Totals - 1Files Proces	Your DGN File sed:	e.dgn	Size Format Author DGNV8 Your User ID	Last Modified Date Ch	ecked Problem	s Remaining 0 0	lgnored 0 0	Fixed 0 0
StandardsCheck	ed:							
Application VBA ByLevel Ch	ecker		Description Verifies that ele	ments use ByLevel symbolo	ogy	Vers	sion sion 1.0.0.0	
✓ Library: c:\u ✓ Element Property Color	users\public\c CellHeader / Value ByLevel	ae\stanc	lards\wsdot\dgnlib\WSDOT.dg	ynlib		1		
Weight	ByLevel	Internet Expl	orer restricted this webpage from running scripts or ActiveX cont	rols.	Allow blocked content ×			~

If all issues are fixed a green drop-down arrow will appear with the file name and the Problems Remaining, Ignored and Fixed will be zero.

If there are still standard problems with the DGN after running the Standard Checker, the file drop down will be pink and the Problems Remaining, Ignored and Fixed may show a number of issues remaining.

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← → Ø C\Users\Public\Your XML Report.xml Ø Bentley Systems, Inc. Stand ×					≁ Ĉ Search		- • م	□ × ↑★¤9
			Bentley S	Systems, Inc. S Version 8.11	tandards Checke .9.614	r		
Files Processed:	Expand All	✓ Hide Igno	ored Problems	Hide Fixed Pro	blems			
File Name C:\Users\Public\Your E Totals - 1Files Processed: StandardsChecked:)GN File.dgn	Size Format 315kb DGNV8	Author Your User ID	Last Modified 2022/12/29 14:35:42	Date Checked 2 2022/12/29 14:55:07	Problems Remaining 8 8	lgnored 0 0	Fixed 0 0
Application			Description			Vers	ion	
VBA ByLevel Checker	or		Verifies that	elements use ByLev	el symbology	Versi	on 1.0.0.0	
Bentlev Systems. Inc.	ei Level Checkei	r	Checks level	l properties against	standard levels	Versi	on 8.11.9.6	514
Bentley Systems, Inc.	Line Style Che	ecker	Checks Line	Style properties aga	ainst standard Line Sty	vles Versi	on 8.11.9.6	514

8. Select the **t** to expand the remaining problems

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			Bentley	Systems, Ir Version	nc. Sta 8.11.	andards Checker 9.614			
Files Processed:	Expand All	Hide Ignore	d Problems	Hide Fixed F	Problems	3			
File Name	Size	Format	Author	Last Modifie	d	Date Checked	Problems Remaining	Ignored	Fixed
C:\Users\Public\You	r DGN File.dgn 315k	b DGNV8	Your User ID	2022/12/29 14	:35:42	2022/12/29 14:55:07	8	0	0
# Model Standar	d		Property	Expected	Actual	Description			
1 Default Level	Level 1					Level name does not ma	atch any standard level		
2 Default Level	Level 15 - added					Level name does not ma	atch any standard level		
3 Default Level	TPA Fee Acquisition					Level name does not ma	atch any standard level		
4 Default Level	TPA Drainage Easem	ents				Level name does not ma	atch any standard level		
5 Default Level	TPA Subterranean Ea	sements				Level name does not ma	atch any standard level		
6 Default Level	Level 25					Level name does not ma	atch any standard level		
7 Default Level	Working_WVD					Level name does not ma	atch any standard level		
8 Default Line Styl	e CENTER					Line Style name does n	ot match any standard Line S	Style	
Totals - 1Files Processed	:						8	0	0
StandardsChecked	:								

Application	Description	Version
VBA ByLevel Checker	Verifies that elements use ByLevel symbology	Version 1.0.0.0
VBA Reference Checker	Verifies that all reference files are found	Version 1.0.0.0
Bentley Systems, Inc. Level Checker	Checks level properties against standard levels	Version 8.11.9.614
Bentley Systems, Inc. Line Style Checker	Checks Line Style properties against standard Line Styles	Version 8.11.9.614

Run Standard Checker – Batch Process

To run the Standard Checker on multiple files, use the Batch Process, WSDOT CAE has provided two command files that will run the Standard Checker Interactively and Non- Interactively.

1. To open the Batch Process, go to Utilities > Batch Process



- 2. Select \bigcirc for the *Command File*
- 3. Navigate to C:\Users\Public\CAE\Standards\WSDOT\data
- 4. Select the Batch_WSDOTStdsChecker_Interactive.txt or
 - Batch_WSDOTStdsChecker_Non-Interactive.txt



6. Navigate to a directory with the DGN to Process and select the DGN files to be processed.



- 7. Select the to Save Batch Process Job File
- 8. Navigate to the folder and save the batch process job file *.bprc

Note: If you plan to reuse the job setup in future jobs, you should save it to a batch process job file. This text file is similar to a Windows initialization file. It contains the log file name, the list of files to process, and the command file name. You can edit it in a text editor if desired.

9. Select the **b** to process Batch Process Job and open the Files to Process

M,	Files to Process			—		×
#	File	Model		Status	Time	
1	C:\Users\Pu\XL5464_BP_AL.dgn	NE132-BASE		Pending		
2	C:\Users\Pu\XL5464_BP_FP.dgn	Default		Pending		
3	C:\Users\Pu\XL5464_BP_IL.dgn	Existing		Pending		
4	C:\Users\Pu\XL5464_BP_IL.dgn	Proposed		Pending		
5	C:\Users\Pu\XL5464_BP_IL.dgn	Temporary		Pending		
6	C:\Users\Pu\XL5464_BP_MK.dgn	NE132-BASE		Pending		
7	C:\Users\Pu\XL5464_BP_PV.dgn	NE132-BASE		Pending		
1	Process		Cancel			

10. Select Process

After files are processed the Standards Check Complete dialog will open.

Standard	s Check Complete		
?	Standards Check Complete 5 Files Examined 127 Problems Found 0 Problems Fixed 0 Ignored Problems		•
	Yes	No	

- 11. Select **Yes** to open the XML report.
- 12. Open the report in Internet Explorer and Allow blocked content.

In MicroStation the Files to Process dialog provide status and time for each file to be processed.

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<u>M</u> F	Files to Process			—		×
# ′	File	Model		Status	Time	
1 2 3 4 5 6 7	C:\Users\Pu\XL5464_BP_AL.dgn C:\Users\Pu\XL5464_BP_FP.dgn C:\Users\Pu\XL5464_BP_IL.dgn C:\Users\Pu\XL5464_BP_IL.dgn C:\Users\Pu\XL5464_BP_IL.dgn C:\Users\Pu\XL5464_BP_MK.dgn C:\Users\Pu\XL5464_BP_MK.dgn	NE132-BASE Default Existing Proposed Temporary NE132-BASE NE132-BASE		Processed Processed Processed Processed Processed Processed Processed	0.9 0.8 0.8 5.7 0.8 0.8 0.8	
,	Done		Cancel			

13. Select **Done** to close the File Process dialog

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<u>Fi</u> le <u>E</u> dit				
🎦 📂 🔛 🏠 🗙 🛃 🗌 Process Selection Only				
Command File Batch_WSDOTStdsChecker_Non-Interactive.txt 🛛 🔍 🧪 🗂				
Initial Model All Models Apply to Selection				
Process Tasks				
# ^ File Model				
4 C:\Users\Public\CAD\XL5464_BP_AL.dgn All Models				
5 C:\Users\Public\CAD\XL5464_BP_FP.dgn All Models				
6 C:\Users\Public\CAD\XL5464_BP_IL.dgn All Models				
7 C:\Users\Public\CAD\XL5464_BP_MK.dgn All Models				
8 C:\Users\Public\CAD\XL5464_BP_PV.dgn All Models				
J.	_			

14. **Close** the Batch Process dialog

For questions or comments on this tech note, contact your regional CAE Support Coordinator or the <u>WSDOT CAE Help Desk</u>.