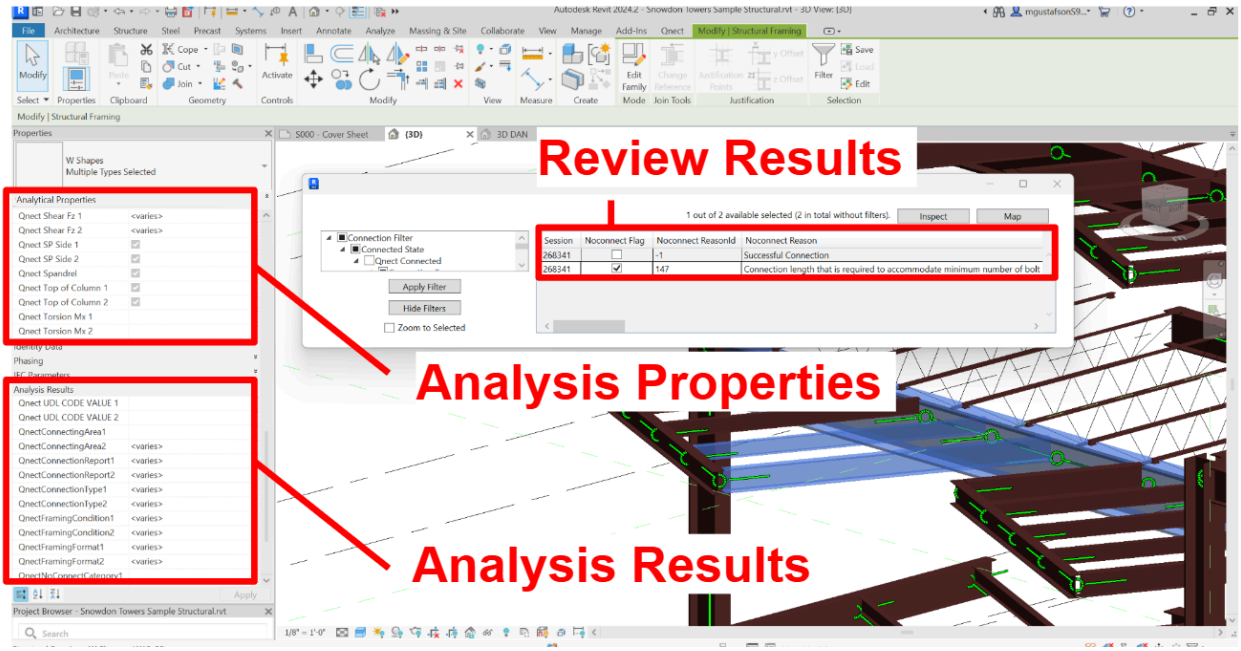
Qnect for Revit® PRE-RELEASE
Parameter Definitions

July 30, 2024

This document defines the Qnect parameters created in Qnect for Revit. This includes Revit family parameter "analysis properties" uploaded for analysis, and "analysis results" returned into Revit family parameters and visualized Qnect parameters in the Review dialog (icon 3).



Analysis Properties can be thought of like the user defined attributes in Tekla software where user can override preferences at the local level. Most users won't use these features and override preferences but some may want to explore them.

ANALYSIS PROPERTIES (1 = start connection, 2 = end connection)

Analysis Properties Field	Description
Qnect Axial Comp Fx 1	Design axial tension force - start connection
Qnect Axial Comp Fx 2	Design axial tension force - end connection
Qnect Axial Tens Fx 1	Design axial compression force - start connection
Qnect Axial Tens Fx 2	Design axial compression force - end connection
Qnect Comp GUID 1	HIDE. GUID of the connection component - start
Qnect Comp Guid 2	HIDE. GUID of the connection component - end
Qnect Conc Top	HIDE. Yes or No. Yes (default) top flange is cont brace.
Qnect Connect End 1	HIDE.Yes or No. User can choose to ignore connection
Qnect Connect End 2	HIDE. Yes or No. User can choose to ignore connection
Qnect Connection Id 1	HIDE.These are read only fields.
Qnect Connection Id 2	HIDE.These are read only fields
Qnect Connection Type 1 Qnect Connection Type 2	BLANK= see Default Preferences 1=shear plate, 2=extended shear plate, 3=full depth shear plate, 4=2Ls bolted-bolted, 5=2Ls (welded-bolted, 6=2Ls knifed bolted-welded, 7=single angle bolted-bolted, 8= single angle welded bolted, 9=single angle bolted-welded, 10=extended full depth shear plate, 11=full depth shear plate with backside stiffener, 12=extended full depth shear plate with backside stiffener 13=shear end plate
Qnect Cope Skew Cut 1	HIDE.
Qnect Cope Skew Cut 2	HIDE.
Qnect Deck Support 1	HIDE.Assume deck support for moment conns. Default:Yes.
Qnect Deck Support 2	HIDE.Assume deck support for moment conns. Default: Yes.

ANALYSIS PROPERTIES (CONT…)

Qnect DL Moment 1	Used to calculate a more accurate lateral moment. See notes
Qnect DL Moment 2	Used to calculate a more accurate lateral moment. See notes
Qnect End Skew Cut 1	HIDE.
Qnect End Skew Cut 2	HIDE.
Qnect Galvanized	HIDE. Yes or No
Qnect GUID	HIDE.HIDE
Qnect Job Id 1	HIDE.Read only.
Qnect Job Id 2	HIDE. Read only.
Qnect LL Moment 1	Used to calculate a more accurate lateral moment. See notes
Qnect LL Moment 2	Used to calculate a more accurate lateral moment. See notes
Qnect Moment My 1	Design moment (strong axis) - start connection
Qnect Moment My 2	Design moment (strong axis) - end connection
Qnect Moment Mz 1	Design moment (weak axis) - start connection
Qnect Moment Mz 2	Design moment (weak axis) - end connection
Qnect Phase	
Qnect Shear Fy 1	Design shear force (weak axis) - start connection
Qnect Shear Fy 2	Design shear force (weak axis) - end connection
Qnect Shear Fz 1	Design shear force (strong axis) - start connection
Qnect Shear Fz 2	Design shear force (strong axis) - end connection
Qnect SP Side 1	HIDE."near" or "far". User can change to solve NoConnect.
Qnect SP Side 2	HIDE."near" or "far".User can change to solve NoConnect.
Qnect Spandrel	Yes or No. Impacts conn design. See default preferences.
Qnect Top of Column 1	HIDE. Default: No
Qnect Top of Column 2	HIDE. Default: No
Qnect Torsion Mx 1	Design torsional moment - start connection
Qnect Torsion Mx 2	Design torsional moment - end connection

ANALYSIS RESULTS (1 = start connection, 2 = end connection)

Analysis Property Field	Description
Qnect UDL CODE VALUE 1	HIDE.
Qnect UDL CODE VALUE 2	HIDE.
QnectConnectingArea1	HIDE.
QnectConnectingArea2	HIDE.
QnectConnectionReport1	Hyperlink to successful connection design report - start conn
QnectConnectionReport2	Hyperlink to successful connection design report - end conn
QnectConnectionType1	Beam to beam, beam to column flange, beam to column web
QnectConnectionType2	Beam to beam, beam to column flange, beam to column web
QnectFramingCondition1	Beam to beam, Beam to Column etc. - start conn
QnectFramingCondition2	Beam to beam, Beam to Column etc. - end conn
QnectFramingFormat1	Shear, Shear + Axial, etc
QnectFramingFormat2	Shear, Shear + Axial, etc
QnectNoConnectCategory1	Connection Engineer, Modeler, Erector, EOR - start conn
QnectNoConnectCategory2	Connection Engineer, Modeler, Erector, EOR - end conn
QnectNoConnectFlag1	Check box Yes or No if NoConnect issue exists - start conn
QnectNoConnectFlag2	Check box Yes or No if NoConnect issue exists - end conn
QnectNoConnectReason1	Description of No Connect issue. Start conn.
QnectNoConnectReason2	Description of No Connect issue. End conn.
QnectNoConnectReasonId1	(-1) means Successful Connection. All others positive integers
QnectNoConnectReasonId2	Same as above but end conn.
QnectSessionId1	Each run export creates its own session ID (ex. 268341)
QnectSessionId2	Same as above but end conn.

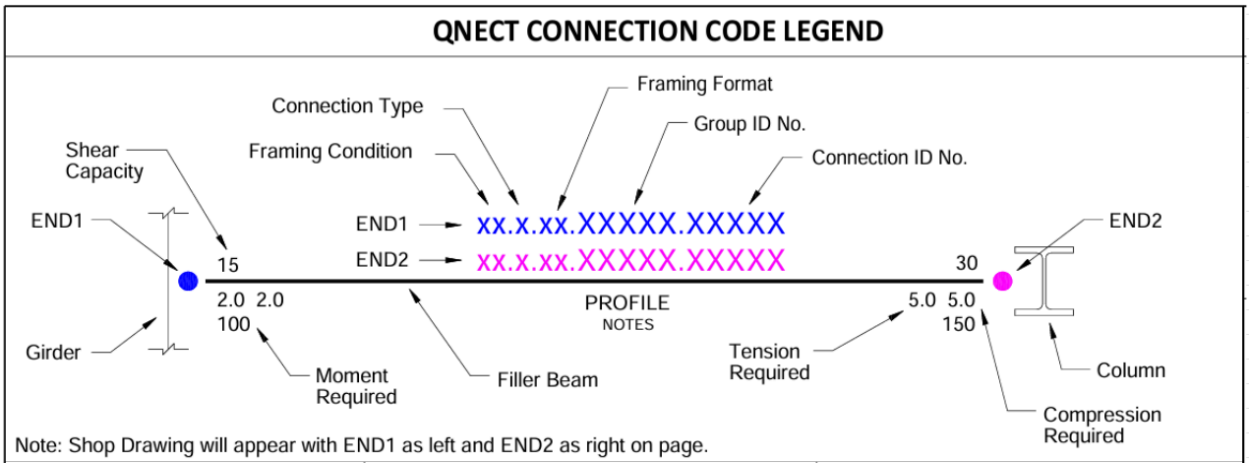
REVIEW RESULTS

Review Result Field	Description
Session	Each run export creates its own session ID (ex. 268341)
✓ Noconnect Flag	(check box on/off) - checked on means issue is a NoConnect
✓ Noconnect ReasonId	(-1) means Successful Connection. All others positive integers
✓ Noconnect Reason	Description of No Connect issue.
Noconnect Category	Connection Engineer, Modeler, Erector, EOR
End	(CONN_CODE_END1). Connection End Code
Connection Code	(bb.ss.00003.00188) Qnect successful connection code
✓ Framing Condition	Beam to beam, Beam to Column etc.
✓ Vertical Shear	Design shear force from UDL or Qnect Shear Fz1 or Fz2
✓ Vertical Shear Utility Ratio	Design shear force / Shear Capacity
Vertical Shear UDL Ratio	Portion of UDL associated to end condition. Typically 0.5
✓ Horizontal Shear	Design shear force (strong axis) from Qnect Shear Fy1 or 2
✓ Axial Compression	Design axial force from Axial Compression FX1 or 2
✓ AxialTension	Design axial force from Axial Tension FX1 or 2
✓ Moment ZZ	Design moment (weak axis) from Moment Z1 or 2. Not utilized.
✓ Moment YY	Design moment (strong axis) from Moment Y1 or 2.
Torsion	Design torsional moment. Not utilized
Connection Type	Beam to beam, beam to column flange, beam to column web
Secondary Doubler	Secondary beam (filler) that requires web reinforcement
Main Doubler	Main support (beam or column) that requires web reinforcement
Stiffeners	Main support (beam or column) that requires stiffeners

REVIEW PARAMETERS (CONT…)

Review Parameters	Description
Direct Weld	Direct weld of beam to column (moment connection). Y/N
Main GUID	Global Unique Identifier of primary (support) member
Secondary GUID	Global Unique Identifier of secondary (filler) member
Shear FZ1	Design shear force (strong axis) - start connection
Shear FZ2	Design shear force (strong axis) - end connection
Shear FY1	Design shear force (weak axis) - start connection
Shear FY2	Design shear force (weak axis) - end connection
Moment Y1	Design moment (strong axis) - start connection
Moment Y2	Design moment (strong axis) - end connection
Moment Z1	Design moment (weak axis) - start connection
Moment Z2	Design moment (weak axis) - end connection
Axial Tension FX1	Design axial tension force - start connection
Axial Tension FX2	Design axial tension force - end connection
Axial Compression FX1	Design axial compression force - start connection
Axial Compression FX2	Design axial compression force - end connection
Torsion MX1	Design torsional moment - start connection
Torsion MX2	Design torsional moment - end connection

CONNECTION CODE:



Framing Condition:

bb: Beam to Beam
bcf: Beam to Column Flange
bcw: Beam to Column Web
bepl: Beam to Embed Plate
bhsb: Beam to HSS Beam
bhss: Beam to HSS Column
bup: Beam to Built-Up Column
e: end plate shear

Connection Type:

1bb: Single Angle Bolted Bolted
1bw: Single Angle Bolted Welded
1wb: Single Angle Welded Bolted
2bb: Double Angles Bolted Bolted
2bw: Double Angles Bolted Welded
2wb: Double Angles Welded Bolted
bcsp: Bolted Bolted Column Splice Plate
bfmp: Bolted Flange Plates with Shear Plate
bfmp: Bolted Flange Plates with Extended Shear Plate
bfmp: Bolted Flange Plates with Double Angles Bolted Bolted
bfmp: Bolted Flange Plates with Double Angles Welded Bolted
dw: Directly Welded Flanges with Shear Plate
dw: Directly Welded Flanges with Extended Shear Plate

dw: Directly Welded Flanges with Double Angles Bolted Bolted
dw: Directly Welded Flanges with Double Angles Welded Bolted
e: End Plate
s: Shear Plate
se: Extended Shear Plate
sef: Extended Full Depth Shear Plate
sefs: Extended Full Depth Shear Plate with Backside Stiffener
sf: Full Depth Shear Plate
sfs: Full Depth Shear Plate with Backside Stiffener

Framing Format:

s: Vertical Shear
sa: Vertical SHear and Axial T/C
sat: Vertical Shear and Axial Tension
sac: Vertical Shear and Axial Compression
sm: moment connection
sml: lateral moment connection