

## Qnect for Autodesk® Revit® v1.4 Top Issues and Resolutions

October 17, 2024

### Overview

The Early Issues detected in Revit are for various issues related to modeling, engineering and constructability. To better understand their meaning and how to resolve them, see descriptions below.

ID	DESCRIPTION	RESOLUTION
272	Load computed with UDL is too high.	Most likely due to the short span beam as the UDL will be high for this case. See Qnect for Revit documentation for what the UDL default shear capacities are for different spans. Resolve the issue by providing end forces in Revit parameter Qnect Shear 1 and 2. These will override the default UDL settings.
147	Connection length that is required to accommodate minimum number of bolt rows exceeds available space in beam web.	That is due to the level difference between filler beam and supporting beam elevations. This might be a mistake in the model, but if not then you may need to design this as a special connection without using Qnect. A second cause is the shear force is so high that the required connection is deeper than the beam. If so, consider deepening the filler beam or reducing the shear force.
323	Not connected due to missing forces.	The beam end doesn't have end forces. To solve this, select the beam and press Qnect for Revit button 0 to add Revit parameters. Then go to beam parameters and input the end forces. If forces already exist in the Revit analytical model, they can be copied over automatically when pressing button 0.
127	Member rotation and/or slope combination not yet supported by Qnect.	The beam is both sloped and skewed which is not supported by Qnect. If not a modeling mistake and is intended, the connection must be designed manually.

145	Non zero horizontal offset beams not supported.	This is a model mistake that the beam centerline is not aligned with supporting column center line, and to solve this you need to check the beam work points and make sure they are aligned to the column centerline.
229	Qnect does not support this combination of material grade and part profile.	The material grade in the beam properties doesn't match the Qnect material catalog. To solve this, contact Qnect support to add material profile to the material database.
325	Not connected due to having a moment force and the beam is sloped.	Qnect doesn't support sloped moment connections. If not a modeling error and is intentional, the connection will need to be designed manually.
326	Not connected due to having a moment force and an axial force which is not yet implemented in the Qnect product.	Qnect doesn't support moment connections with axial forces. If not a modeling error and is intentional, the connection will need to be designed manually.
331	Not connected due to having torsion force.	Qnect doesn't support connections with torsional forces. If not a modeling error and is intentional, the connection will need to be designed manually.
332	Not connected due to having horizontal shear force.	Qnect doesn't support connections with horizontal shear forces. If not a modeling error and is intentional, the connection will need to be designed manually.
333	Reverse reaction force not yet available in Qnect.	Qnect doesn't support connections with reverse forces (negative values). If not a modeling error and is intentional, the connection will need to be designed manually.
189	Connections with skew less than 30 degrees are not yet supported.	Qnect doesn't support connections with skew angles less than 30 degrees. If not a modeling error and is intentional, the connection will need to be designed manually.
26	Beam to column connection too close to a column splice connection. Verify splice location for erectability.	Locate top of column end at least 3'-0" (ideally 4'-6") above top of steel beam
210	Not connected due to being a beam splice connection.	Beam splice is not supported yet by Qnect. However this issue may occur if the column or girder in between two beams framing into it is not selected or is ignored. It may be ignored if the profile or material is not recognized.

278	Conflicting information in model. No Moment load provided, but Yes selected for moment connection.	Enter moment force (My strong axis) in Revit parameter
274	Conflicting information in model. Moment load provided, but No selected for moment connection.	The beam end has moment forces, but it is not tagged as a moment connection. To resolve, change connection type from beam properties at this end to moment connection.
20	Beam to beam connection too close to a beam splice connection.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.
21	Beam to beam connection too close to a beam to beam connection.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.
22	Beam to beam connection too close to a beam to column connection.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.
23	Beam to beam connection too close to a beam to embed plate connection.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.

24	Beam to beam connection too close to a column to beam connection.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.
25	Beam to beam connection is too close to another beam to beam connection	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site. Detailer should explore locating shear tabs on opposite side of the connection to ensure erectability.
26	Beam to beam is too close to beam to column connection	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site.
65	Connections framing too close to each other.	Beam connections are too close together for field erection. To resolve, check each connection separately by selecting each one at a time (one filler beam, one support member) and check the inserted connections visually for clashes and clearance for erection at site.
17	Less than half of the available space on the filler beam available due to vertical offset.	There is an elevation difference between the filler beam and the support girder and that is more than half of the filler beam depth. Need to design the connection manually due to special reinforcement.
100	Shear plate thickness exceeds maximum allowed by AISC Equation K1-3, Plate Limit States and HSS Punching Shear.	Required shear plate thickness requires HSS column wall thickness to support it. To resolve, relook at lowering member forces or increase HSS column wall thickness.
243	Unsupported spacing preference per AISC J3.5b	Spacing doesn't meet minimum, maximum or edge distance requirements. Please review preferences.
176	Shear Plate Weld Clashes With Bolts At Support Web.	Another connection nearby has bolts clashing, adjust what side shear plate weld is on or change connection type on neighboring connection.

290	Failed to find beam shape in profile catalog. Please make sure that correct profile catalog is selected.	The profile shape doesn't match the Qnect profile catalog. To solve this, contact Qnect support to add the steel profile mapping to the profile database.
7	Not Connected due to Gage and Angle Size Issue	The beam framing into a column web won't fit due to the width of the web or flange. Solution is to use a larger column size or use extended shear tabs
344	Not connected due to gage or end plate size issue.	The beam framing into a column web won't fit due to the width of the web or flange. Solution is to use a larger column size or use extended shear tabs
423	Could not identify the support member to connect to or the support member is not supported by Qnect.	Support profile could be an unsupported steel profile or non-steel profile like concrete or timber. Solution is ignore in future selection or model in embed plates into the concrete and use the embed as the supporting element.
227	Framing condition is not yet supported by Qnect	Several possible reasons for this include beam/bracing profile Name not recognized, Material Grade not recognized, sloping or skewed beyond design limits or profile type not supported. See Help for more details.
291	Failed to find material grade specification for profile. Please make sure that material grade specification exists for selected profile.	Materials are mislabeled per AISC Table 2-4. For example, HSS members are mislabeled A992 or HSS round are labeled HSS rect material grades. Solve by fixing Revit material grade
270	Filler beam workpoint is not between support end points	The filler beam is too close to the end of the support beam (typically at a cantilever condition). Solution is to extend the support beam end 1" past the flange toe of the filler beam. Optionally the user can leave as is and make sure a shear tab connection will fit.
149	Not enough welding space at bolted flange plate at top of column.	Column flange isn't wide enough to develop the full capacity of the beam flange. Select column with wider flange or evaluate beam size or forces.
372	Connection type preference is not supported with framing condition.	Certain connection types are not allowed like using extended shear plates for beam to column flanges. Review connection types within preferences.
8	Axial Load At Column Web Exceeds Yield Line Capacity.	1. If using Extended Shear Plate connections then consider adding Stabilizer Plates (review related preferences). 2. Increase Connection depth or width - or increase

		depth of the secondary beam. 3. Review Axial T/C force. 4. Upsize column.
10	Beam bending calculations have failed.	Change member size or review connection design preferences and calculations impacting member capacity.
11	Beam block shear axial calculations failed.	Change member size or review connection design preferences and calculations impacting member capacity.
12	Beam Calculations failed	Change member size or review connection design preferences and calculations impacting member capacity.
13	Beam compression calculations have failed	Change member size or review connection design preferences and calculations impacting member capacity.
18	Beam strength calculations failed, please review beam end reaction.	Change member size or review connection design preferences and calculations impacting member capacity.
19	Beam tension yield calculations have failed.	Change member size or review connection design preferences and calculations impacting member capacity.
29	Beam vertical shear calculations failed.	Change member size or review connection design preferences and calculations impacting member capacity.
30	Beam yield rupture calculations have failed	Change member size or review connection design preferences and calculations impacting member capacity.
60	Support Column calculations failed due to concentrated support forces at gusset plate to column flange connection.	Change member size or review connection design preferences and calculations impacting member capacity.
62	Combined Load Interactions calculations have failed.	This is related to calculations for Coped Beams with Combined Shear and Axial T/C Loads. 1. Check Reaction 2. Review Double Plate preferences (allowances) 3. Upsize secondary beam profile
69	Directly welded beam flange weld strength calculations failed due to support material thickness.	Change member size or review connection design preferences and calculations impacting member capacity.

98	Shear Plate at HSS Limits of Applicability Failed.	This is related to Chapter K of the AISC Manual. The HSS profile and material grade combination must meet the criteria from Chapter K. Typical criteria are: Slenderness ratio $H/t$ or $B/t \leq 30$ $0.25 < \text{Connection Depth} / \text{HSS Depth} < 1.0$ Material Strength HSS $F_y \leq 52$ ksi Ductility HSS $F_y/F_u \leq 0.8$
99	Shear Plate at HSS Local Yielding Failed.	Change member size or review connection design preferences and calculations impacting member capacity.
101	Shear Plate at HSS Shear Yielding (Punching) Failed.	Change member size or review connection design preferences and calculations impacting member capacity.
102	Shear Plate at HSS Wall Plastification Failed.	Change member size or review connection design preferences and calculations impacting member capacity.
103	Shear Plate at HSS Wall Shear failed.	Change member size or review connection design preferences and calculations impacting member capacity.
104	IBC Integrity Load At Column Web Exceeds Yield Line Capacity.	Change member size or review connection design preferences and calculations impacting member capacity.
131	Middle beam calculations failed due to concentrated support forces at gusset plate to beam flange connection.	This is related to AISC J10 "Flanges and Webs with Concentrated Forces". 1. Review Vertical Bracing preferences A) Vertical Bracing Design Preferences When Braces occur at top and bottom of middle beam, what % of Maximum Web Compression Buckling force (when top and bottom braces both act in compression) should be used to check beam web compression
261	Weld Strength Calculations failed	Review if weld strength in specifications requires higher strength weld material. Update preferences.
395	Support Column calculations failed due to Axial T/C forces at beam to column flange connection.	This is related to AISC J10 "Flanges and Webs with Concentrated Forces". 1. Review Axial T/C loads 2. Increase depth of the connection or increase secondary beam profile depth 3. Upsize column profile