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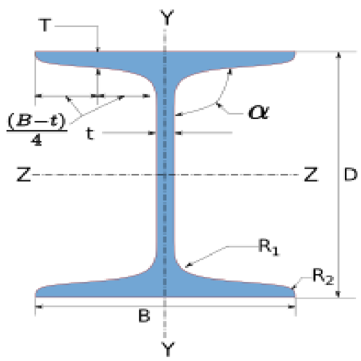
1 Input Parameters

<table>
<tr><td colspan="3">Module</td><td colspan="2">Beam Coverplate Connection</td></tr>
<tr><td colspan="3">MainModule</td><td colspan="2">Moment Connection</td></tr>
<tr><td colspan="3">Moment(kNm)*</td><td colspan="2">1.0</td></tr>
<tr><td colspan="3">Shear (kN)*</td><td colspan="2">46.0</td></tr>
<tr><td colspan="3">Axial (kN) *</td><td colspan="2">45.0</td></tr>
<tr><td colspan="5">Section</td></tr>
<tr><td rowspan="14">
</td><td colspan="2">Beam Section *</td><td colspan="2">LB(P) 300</td></tr>
<tr><td colspan="2">Preferences</td><td colspan="2">Outside + Inside</td></tr>
<tr><td colspan="2">Material *</td><td colspan="2">E 250 (Fe 410 W)A</td></tr>
<tr><td colspan="2">Ultimate strength, fu (MPa)</td><td colspan="2">410</td></tr>
<tr><td>Yield Strength , fy (MPa)</td><td>250</td><td>R1(mm)</td><td>15.0</td></tr>
<tr><td>Mass</td><td>41.5</td><td>R2(mm)</td><td>7.5</td></tr>
<tr><td>Area(mm2) - A</td><td>5290.0</td><td>Iz(mm4)</td><td>81300000.0</td></tr>
<tr><td>D(mm)</td><td>300.0</td><td>Iy(mm4)</td><td>4140000.0</td></tr>
<tr><td>B(mm)</td><td>140.0</td><td>rz(mm)</td><td>124.0</td></tr>
<tr><td>t(mm)</td><td>7.0</td><td>ry(mm)</td><td>28.0</td></tr>
<tr><td>T(mm)</td><td>11.6</td><td>Zz(mm3)</td><td>542000.0</td></tr>
<tr><td>FlangeSlope</td><td>98</td><td>Zy(mm3)</td><td>59200.0</td></tr>
<tr><td colspan="5">Bolt Details</td></tr>
<tr><td colspan="3">Diameter (mm)*</td><td colspan="2">[12.0, 16.0, 20.0, 24.0, 30.0, 36.0]</td></tr>
<tr><td colspan="3">Grade *</td><td colspan="2">[3.6, 4.6, 4.8, 5.6, 5.8, 6.8, 8.8, 9.8, 10.9, 12.9]</td></tr>
<tr><td colspan="3">Type *</td><td colspan="2">Friction Grip Bolt</td></tr>
<tr><td colspan="3">Bolt hole type</td><td colspan="2">Standard</td></tr>
<tr><td colspan="3">Slip factor (µ_f)</td><td colspan="2">0.3</td></tr>
<tr><td colspan="3">Type of edges</td><td colspan="2">a - Sheared or hand flame cut</td></tr>
<tr><td colspan="3">Gap between beam and
support (mm)</td><td colspan="2">10.0</td></tr>
<tr><td colspan="3">Are the members exposed to
corrosive influences</td><td colspan="2">False</td></tr>
</table>

2 Design Checks

2.1 Member Capacity

Check	Required	Provided	Remarks
Axial Capacity Member Ac (kN)		$A_c = \frac{A * f_y}{\gamma_{m0} * 10^3}$ $= \frac{5290.0 * 250}{1.1 * 10^3}$ $= 1202.27$	
Shear Capacity Member Sc (kN)		$S_c = \frac{A_v * f_y}{\sqrt{3} * \gamma_{mo} * 10^3}$ $= \frac{276.8 * 7.0 * 250}{\sqrt{3} * 1.1 * 10^3}$ $= 254.24$	
Plastic Moment Capacity Pmc (kNm)		$Pmc = \frac{\beta_b * Z_p * fy}{\gamma_{mo} * 10^6}$ $= \frac{1 * 134081.92 * 250}{1.1 * 10^6}$ $= 30.47$	
Moment Deformation Criteria Mdc (kNm)		$Mdc = \frac{1.5 * Z_e * fy}{1.1 * 10^6}$ $= \frac{1.5 * 542000.0 * 250}{1.1 * 10^6}$ $= 184.77$	
Moment Capacity Member Mc (kNm)		$M_c = min(Pmc, Mdc)$ $= min(30.47, 184.77)$ $= 30.47$	

2.2 Load Consideration

Check	Required	Provided	Remarks
Applied Axial Load Au (kN)	$Ac_{min} = 0.3 * A_c$ $= 0.3 * 1202.27$ $= 360.68$ $Ac_{max} = Ac$ $= 1202.27$	$A_u = 360.68$	Pass
Applied Shear Load Vu (kN)	$Vc_{min} = 0.6 * S_c$ $= 0.6 * 254.24$ $= 152.55$ $Vc_{max} = Sc$ $= 254.24$	$V_u = 152.55$	Pass
Applied Moment Load Mu (kNm)	$Mc_{min} = 0.5 * M_c$ $= 0.5 * 30.47$ $= 15.24$ $Mc_{max} = Mc$ $= 30.47$	$M_u = 15.24$	Pass
Forces Carried by Web		$A_w = Axial\ force\ in\ web$ $= \frac{(D - 2 * T) * t * Au}{A}$ $= \frac{(300.0 - 2 * 11.6) * 7.0 * 360.68}{5290.0}$ $= 132.11\ kN$ $M_w = Moment\ in\ web$ $= \frac{Z_w * Mu}{Z}$ $= \frac{134081.92 * 15.24}{593200.0}$ $= 3.44\ kNm$	
Forces Carried by Flange		$A_f = Axial\ force\ in\ flange$ $= \frac{Au * B * T}{A}$ $= \frac{360.68 * 140.0 * 11.6}{5290.0}$ $= 110.73\ kN$ $M_f = Moment\ in\ flange$ $= Mu - M_w$ $= 15.24 - 3.44$ $= 11.79\ kNm$ $F_f = flange\ force$ $= \frac{M_f * 10^3}{D - T} + A_f$ $= \frac{11.79 * 10^3}{300.0 - 11.6} + 110.73$ $= 151.62\ kN$	

2.3 Initial Member Check

Check	Required	Provided	Remarks
Flange Tension Yielding Capacity (kN)	$F_f = 151.62$	$T_{dg} = \frac{l * t * f_y}{\gamma_{mo}}$ $= \frac{1 * 140.0 * 11.6 * 250}{1.1}$ $= 369.09$	Pass
Web Tension Yielding Capacity (kN)	$A_w = 132.11$	$T_{dg} = \frac{l * t * f_y}{\gamma_{mo}}$ $= \frac{1 * 276.8 * 7.0 * 250}{1.1}$ $= 440$	Pass

2.4 Initial flange plate height check

Check	Required	Provided	Remarks
flange_plate.Height	Outer.b >= 50	$Outer.b = 140.0$	Pass
flange_plate.InnerHeight	Inner.b >= 50	$inner.b = \frac{B - t - (2 * r_1)}{2}$ $= \frac{140.0 - 7.0 - (2 * 15.0)}{2}$ $= 51.5$	Pass

2.5 Flange plate thickness

Check	Required	Provided	Remarks
Thickness (mm)*	$T = 5.8$	$t_f = 8.0$	Pass
Plate Area check (mm2)	$pt.area >=$ $connected\ member\ area * 1.05$ $= 1705.2$	$outer.b = B$ $= 140.0$ $inner.b = \frac{B - t - (2 * r_1)}{2}$ $= \frac{140.0 - 7.0 - (2 * 15.0)}{2}$ $= 51.5$ $pt.area = (140.0 + (2 * 51.5)) * 8.0$ $= 1944.0$	Pass

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2.6 Web plate thickness

Check	Required	Provided	Remarks
Thickness (mm)*	$t = 3.5$	$t_w = 20.0$	Pass
Plate Area check (mm2)	$pt.area >=$ $connected\ member\ area * 1.05$ $= 1666.98$	$web\ b = D - (2 * T) - (2 * r_1)$ $= 300.0 - (2 * 11.6) - (2 * 15.0)$ $= 226.8$ $pt.area = 20.0 * 2 * 226.8$ $= 9072.0$	Pass

2.7 Web Spacing Checks

Check	Required	Provided	Remarks
Min.Diameter (mm)		$d = 12.0$	
Min. Gauge (mm)	$p/g_{min} = 2.5\ d$ $=2.5 * 12.0 \quad = 30.0$	$g = 30\ (Row\ Limit\ (r_l) = 2)$	
Min. Edge Distance (mm)	$e/e`_{min} = [1.5\ or\ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25	
Spacing Check	$depth = 2 * e + (r_l - 1) * g$ $= 2 * 25 + (2.0 - 1) * 30$ $= 80.0$	226.8	Pass

2.8 Flange Spacing Checks

Check	Required	Provided	Remarks
Min.Diameter (mm)		$d = 12.0$	
Min. Gauge (mm)	$p/g_{min} = 2.5\ d$ $=2.5 * 12.0 \quad = 30.0$	$g = 0.0$ $(Row\ Limit\ (r_l) = 1)$	
Min. Edge Distance (mm)	$e/e`_{min} = [1.5\ or\ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25	
Spacing Check	$depth = 2 * e + (r_l - 1) * g$ $= 2 * 25 + (1.0 - 1) * 30$ $= 50.0$	51.5	Pass

2.9 Flange Bolt Checks

Check	Required	Provided	Remarks
Diameter (mm)	Bolt Quantity Optimisation	$d = 12.0$	
Grade	Bolt Grade Optimisation	9.8	
Bolt.fu		900.0	
Bolt.fy		720.0	
Hole Diameter (mm)		$d_0 = 13.0$	
Slip Resistance		$V_{dsf} = \frac{\mu_f\ n_e\ K_h\ F_o}{\gamma_{mf}}$ $Where, F_o = 0.7 * f_{ub} A_{nb}$ $V_{dsf} = \frac{0.3 * 1 * 1.0 * 0.7 * 900.0 * 0.0}{1.25}$ $= 25.49$	
No of Bolts	$R_u = \sqrt{V_u^2 + A_u^2}$ $n_{trial} = R_u / V_{bolt}$ $R_u = \frac{\sqrt{0.0^2 + 151.62^2}}{25.49}$ $= 12$	12	
No of Columns		$n_c = 6$	
No of Rows		$n_r = 2$	
Min. Pitch (mm)	$p/g_{min} = 2.5\ d$ $= 2.5 * 12.0 \quad = 30.0$	30	Pass
Max. Pitch (mm)	$p/g_{max} = \min(32\ t,\ 300\ mm)$ $= \min(32 *\ 8.0,\ 300\ mm)$ $= 256.0$	30	Pass
Min. Gauge (mm)	$p/g_{min} = 2.5\ d$ $= 2.5 * 12.0 \quad = 30.0$	0.0	N/A
Max. Gauge (mm)	$p/g_{max} = \min(32\ t,\ 300\ mm)$ $= \min(32 *\ 8.0,\ 300\ mm)$ $= 256.0$	0.0	N/A
Min. End Distance (mm)	$e/e`_{min} = [1.5\ or\ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25	Pass
Max. End Distance (mm)	$e/e`_{max} = 12\ t\ \varepsilon$ $\varepsilon = \sqrt{\frac{250}{f_y}}$ $e/e`_{max} = 12\ * 8.0 * \sqrt{\frac{250}{250}}$ $= 96.0$	25	Pass
Min. Edge Distance (mm)	$e/e`_{min} = [1.5\ or\ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25.75	Pass

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Check	Required	Provided	Remarks
Max. Edge Distance (mm)	$e/e`_{max} = 12\ t\ \varepsilon$   $\varepsilon = \sqrt{\frac{250}{f_y}}$   $e/e`_{max} = 12\ * 8.0 * \sqrt{\frac{250}{250}}$ $= 96.0$	25.75	Pass
Bolt Capacity post Long Joint (kN)	$if\ l \geq 15 * d\ then\ V_{rd} = \beta_{ij} * V_{db}$ $if\ l < 15 * d\ then\ V_{rd} = V_{db}$ $where,$ $l = ((nc\ or\ nr) - 1) * (p\ or\ g)$ $\beta_{ij} = 1.075 - l/(200 * d)$ $but\ 0.75 \leq \beta_{ij} \leq 1.0$	$l\ = ((nc\ or\ nr) - 1) * (p\ or\ g)$ $lc = 2 * ((\frac{6}{2} - 1) * 30 + 25) + 10.0$ $= 180.0$ $lr = 2 * ((\frac{2}{2} - 1) * 0.0 + 25.75$ $+ 15.0) + 7.0 = 88.5$ $l\ = 180.0$ $15 * d = 15 * 12.0 = 180.0$ $since,\ l \geq 15 * d$ $then\ V_{rd} = \beta_{ij} * V_{db}$ $\beta_{ij} = 1.075 - 180.0/(200 * 12.0)$ $= 1.0$ $V_{rd} = 1 * 25.49 = 25.49$	
Capacity (kN)	25.27	25.49	Pass

2.10 Web Bolt Checks

Check	Required	Provided	Remarks
Slip Resistance		$V_{dsf} = \frac{\mu_f \ n_e \ K_h \ F_o}{\gamma_{mf}}$ $Where, F_o = 0.7 * f_{ub} A_{nb}$ $V_{dsf} = \frac{0.3 * 1 * 1.0 * 0.7 * 900.0 * 84.3}{1.25}$ $= 25.49$	
No of Bolts	$R_u = \sqrt{V_u^2 + A_u^2}$ $n_{trial} = R_u / V_{bolt}$ $R_u = \frac{\sqrt{152.55^2 + 132.11^2}}{25.49}$ $= 16$	60	
No of Columns		$n_c = 10$	
No of Rows		$n_r = 6$	
Min. Pitch (mm)	$p/g_{min} = 2.5 \ d$ $= 2.5 * 12.0 \quad = 30.0$	30	Pass
Max. Pitch (mm)	$p/g_{max} = \min(32 \ t, \ 300 \ mm)$ $= \min(32 * \ 7.0, \ 300 \ mm)$ $= 224.0$	30	Pass
Min. Gauge (mm)	$p/g_{min} = 2.5 \ d$ $= 2.5 * 12.0 \quad = 30.0$	30	Pass
Max. Gauge (mm)	$p/g_{max} = \min(32 \ t, \ 300 \ mm)$ $= \min(32 * \ 7.0, \ 300 \ mm)$ $= 224.0$	30	Pass
Min. End Distance (mm)	$e/e`_{min} = [1.5 \ or \ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25	Pass
Max. End Distance (mm)	$e/e`_{max} = 12 \ t \ \varepsilon$ $\varepsilon = \sqrt{\frac{250}{f_y}}$ $e/e`_{max} = 12 \ * 20.0 * \sqrt{\frac{250}{250}}$ $= 240.0$	25	Pass
Min. Edge Distance (mm)	$e/e`_{min} = [1.5 \ or \ 1.7] * d_0$ $= 1.7 * 13.0 = 22.1$	25	Pass
Max. Edge Distance (mm)	$e/e`_{max} = 12 \ t \ \varepsilon$ $\varepsilon = \sqrt{\frac{250}{f_y}}$ $e/e`_{max} = 12 \ * 20.0 * \sqrt{\frac{250}{250}}$ $= 240.0$	25	Pass

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Check	Required	Provided	Remarks
Parameters required for bolt force (mm)		$l_n = length\ available$ $l_n = (n_r - 1) * g$ $= (6 - 1) * 30$ $= 150$ $y_{max} = l_n/2$ $= 150/2$ $= 75.0$ $x_{max} = p * (\frac{n_c}{2} - 1)/2$ $= 30 * (\frac{10}{2} + -1)/2$ $= 60.0$	
Moment Demand (kNm		$M_d = (V_u * ecc + M_w)$ $= \frac{(152.55 * 10^3 * 135.0 + 3.44 * 10^6)}{10^6}$ $= 24.04$	
Bolt.Force		$vbv = V_u/(n_r * n_c)$ $= \frac{152.55}{(6 * 10)}$ $= 5.08$ $tmh = \frac{M_d * y_{max}}{\Sigma r_i^2}$ $= \frac{24.04 * 75.0}{132.75}$ $= 13.58$ $tmv = \frac{M_d * x_{max}}{\Sigma r_i^2}$ $= \frac{24.04 * 60.0}{132.75}$ $= 10.86$ $abh = \frac{A_u}{(n_r * n_c)}$ $= \frac{132.11}{(6 * 10)}$ $= 4.4$ $vres = \sqrt{(vbv + tmv)^2 + (tmh + abh)^2}$ $= \sqrt{(5.08 + 10.86)^2 + (13.58 + 4.4)^2}$ $= 24.04$	

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Check	Required	Provided	Remarks
Bolt Capacity post Long Joint (kN)	$if\ l \geq 15*d\ then\ V_{rd} = \beta_{ij} * V_{db}$ $if\ l < 15*d\ then\ V_{rd} = V_{db}$ $where,$ $l = ((nc\ or\ nr) - 1) * (p\ or\ g)$ $\beta_{ij} = 1.075 - l/(200*d)$ $but\ 0.75 \leq \beta_{ij} \leq 1.0$	$l = ((nc\ or\ nr) - 1) * (p\ or\ g)$ $lc = 2 * ((\frac{10}{2} - 1) * 30 + 25) + 10.0$ $= 300.0$ $lr = (6-1) * 30 = 150$ $l = 300.0$ $15 * d = 15 * 12.0 = 180.0$ $since,\ l \geq 15*d$ $then\ V_{rd} = \beta_{ij} * V_{db}$ $\beta_{ij} = 1.075 - 300.0/(200*12.0)$ $= 0.95$ $V_{rd} = 0.95 * 25.49 = 24.22$	
Capacity (kN)	24.04	24.22	Pass

2.11 Inner and Outer flange plate Checks

Check	Required	Provided	Remarks
Min. Plate Height (mm)	$min\ flange\ plate\ ht = beam\ width$ $= 140.0$	140.0	Pass
Min. Plate Length (mm)	$2[2 * e_{min} + (\frac{bolt\ lines}{2} - 1) * p_{min})]$ $+ \frac{gap}{2}]$ $= 2 * [(2 * 22.1 + (\frac{6}{2} - 1) * 30.0$ $= + \frac{10.0}{2}]$ $= 218.4$	230.0	Pass
Min. Inner Plate Height (mm)	$= \frac{B - t - (2 * R1)}{2}$ $= \frac{140.0 - 7.0 - 2 * 15.0}{2}$ $= 51.5$	51.5	Pass
Max. Inner Plate Height (mm)	$= \frac{B - t - (2 * R1)}{2}$ $= \frac{140.0 - 7.0 - 2 * 15.0}{2}$ $= 51.5$	51.5	Pass
Min. Inner Plate Length (mm)	$2[2 * e_{min} + (\frac{bolt\ lines}{2} - 1) * p_{min})]$ $+ \frac{gap}{2}]$ $= 2 * [(2 * 22.1 + (\frac{6}{2} - 1) * 30.0$ $= + \frac{10.0}{2}]$ $= 218.4$	230.0	Pass
Min.Plate Thickness (mm)	$t_w = 5.8$	8.0	Pass

2.12 Member Checks

Check	Required	Provided	Remarks
Flange Tension Yielding Capacity (kN)		$T_{dg} = \frac{l * t * f_y}{\gamma_{mo}}$ $= \frac{1 * 140.0 * 11.6 * 250}{1.1}$ $= 369.09$	
Flange Tension Rupture Capacity (kN)		$T_{dn} = \frac{0.9 * A_n * f_u}{\gamma_{m1}}$ $= \frac{0.9 * (140.0 - 2 * 13.0) * 11.6 * 410}{1.25}$ $= 390.37$	
Flange Block Shear Capacity (kN)		$T_{db1} = \frac{A_{vg} f_y}{\sqrt{3}\gamma_{m0}} + \frac{0.9 A_{tn} f_u}{\gamma_{m1}}$ $T_{db2} = \frac{0.9 * A_{vn} f_u}{\sqrt{3}\gamma_{m1}} + \frac{A_{tg} f_y}{\gamma_{m0}}$ $T_{db} = min(T_{db1}, T_{db2}) = 343.36$	
Flange Tension Capacity (kN)	$f_f = 151.62$	$T_d = min(T_{dg}, T_{dn}, T_{db})$ $= min(369.09, 390.37, 343.36)$ $= 343.36$	Pass
Web Tension Yielding Capacity (kN)		$T_{dg} = \frac{l * t * f_y}{\gamma_{mo}}$ $= \frac{1 * 276.8 * 7.0 * 250}{1.1}$ $= 440.36$	
Web Tension Rupture Capacity (kN)		$T_{dn} = \frac{0.9 * A_n * f_u}{\gamma_{m1}}$ $= \frac{0.9 * (276.8 - 6 * 13.0) * 7.0 * 410}{1.25}$ $= 410.8$	
Web Block Shear Capacity (kN)		$T_{db1} = \frac{A_{vg} f_y}{\sqrt{3}\gamma_{m0}} + \frac{0.9 A_{tn} f_u}{\gamma_{m1}}$ $T_{db2} = \frac{0.9 * A_{vn} f_u}{\sqrt{3}\gamma_{m1}} + \frac{A_{tg} f_y}{\gamma_{m0}}$ $T_{db} = min(T_{db1}, T_{db2}) = 493.67$	
Web Tension Capacity (kN)	$A_w = 132.11$	$T_d = min(T_{dg}, T_{dn}, T_{db})$ $= min(440.36, 410.8, 493.67)$ $= 410.8$	Pass

2.13 Flange Plate Capacity Checks in axial-Outside/Inside

Check	Required	Provided	Remarks
Tension Yielding Capacity (kN)		$T_{dg} = \frac{l * t * f_y}{\gamma_{mo}}$ $= \frac{1 * 243.0 * 8.0 * 250}{1.1}$ $= 441.82$	
Tension Rupture Capacity (kN)		$T_{dn} = \frac{0.9 * A_n * f_u}{\gamma_{m1}}$ $= \frac{0.9 * (243.0 - 2 * 13.0) * 8.0 * 410}{1.25}$ $= 512.47$	
Block Shear Capacity (kN)		$T_{db1} = \frac{A_{vg} f_y}{\sqrt{3}\gamma_{m0}} + \frac{0.9 A_{tn} f_u}{\gamma_{m1}}$ $T_{db2} = \frac{0.9 * A_{vn} f_u}{\sqrt{3}\gamma_{m1}} + \frac{A_{tg} f_y}{\gamma_{m0}}$ $T_{db} = min(T_{db1}, T_{db2}) = 540.87$	
Plate Tension Capacity (kN)	$f_f = 151.62$	$T_d = min(T_{dg}, T_{dn}, T_{db})$ $= min(441.82, 512.47, 540.87)$ $= 441.82$	Pass

2.14 Web Plate Capacity Checks in Axial

Check	Required	Provided	Remarks
Tension Yielding Capacity (kN)		$T_{dg} = \frac{l*t*f_y}{\gamma_{mo}}$ $= \frac{1*200*20.0*250}{1.1}$ $= 1049.73$	
Tension Rupture Capacity (kN)		$T_{dn} = \frac{0.9*A_n*f_u}{\gamma_{m1}}$ $= \frac{0.9*(200-6*13.0)*20.0*900.0}{1.25}$ $= 1440.58$	
Block Shear Capacity (kN)		$T_{db1} = \frac{A_{vg}f_y}{\sqrt{3}\gamma_{m0}} + \frac{0.9A_{tn}f_u}{\gamma_{m1}}$ $T_{db2} = \frac{0.9*A_{vn}f_u}{\sqrt{3}\gamma_{m1}} + \frac{A_{tg}f_y}{\gamma_{m0}}$ $T_{db} = min(T_{db1}, T_{db2}) = 2820.99$	
Plate Tension Capacity (kN)	$A_w = 132.11$	$T_d = min(T_{dg}, T_{dn}, T_{db})$ $= min(1818.18, 1440.58, 2820.99)$ $= 1440.58$	Pass

2.15 Web Plate Capacity Checks in Shear

Check	Required	Provided	Remarks
Shear yielding Capacity (V_dy) (kN)		$V_{dy} = \frac{A_v * f_y}{\sqrt{3} * \gamma_{mo}}$ $= \frac{1 * 200 * 20.0 * 250}{\sqrt{3} * 1.1}$ $= 1049.73$	
Shear Rupture Capacity (V_dn) (kN)		$V_{dn} = \frac{0.9 * A_{vn} * f_u}{\sqrt{3} * \gamma_{m1}}$ $= \frac{0.9 * (200 - (5.0 * 13.0)) * 20.0 * 410}{\sqrt{3} * 1.25}$ $= 831.72$	
Block Shear Capacity in Shear (V_db) (kN)		$T_{db1} = \frac{A_{vg} f_y}{\sqrt{3}\gamma_{m0}} + \frac{0.9 A_{tn} f_u}{\gamma_{m1}}$ $T_{db2} = \frac{0.9 * A_{vn} f_u}{\sqrt{3}\gamma_{m1}} + \frac{A_{tg} f_y}{\gamma_{m0}}$ $T_{db} = min(T_{db1}, T_{db2}) = 2023.78$	
Plate Shear Capacity (kN)	$V_u = 152.55$	$V_d = min(V_{dy}, V_{dn}, V_{db})$ $= min(1049.73, 831.72, 2820.99)$ $= 831.72$	Pass

3 3D View

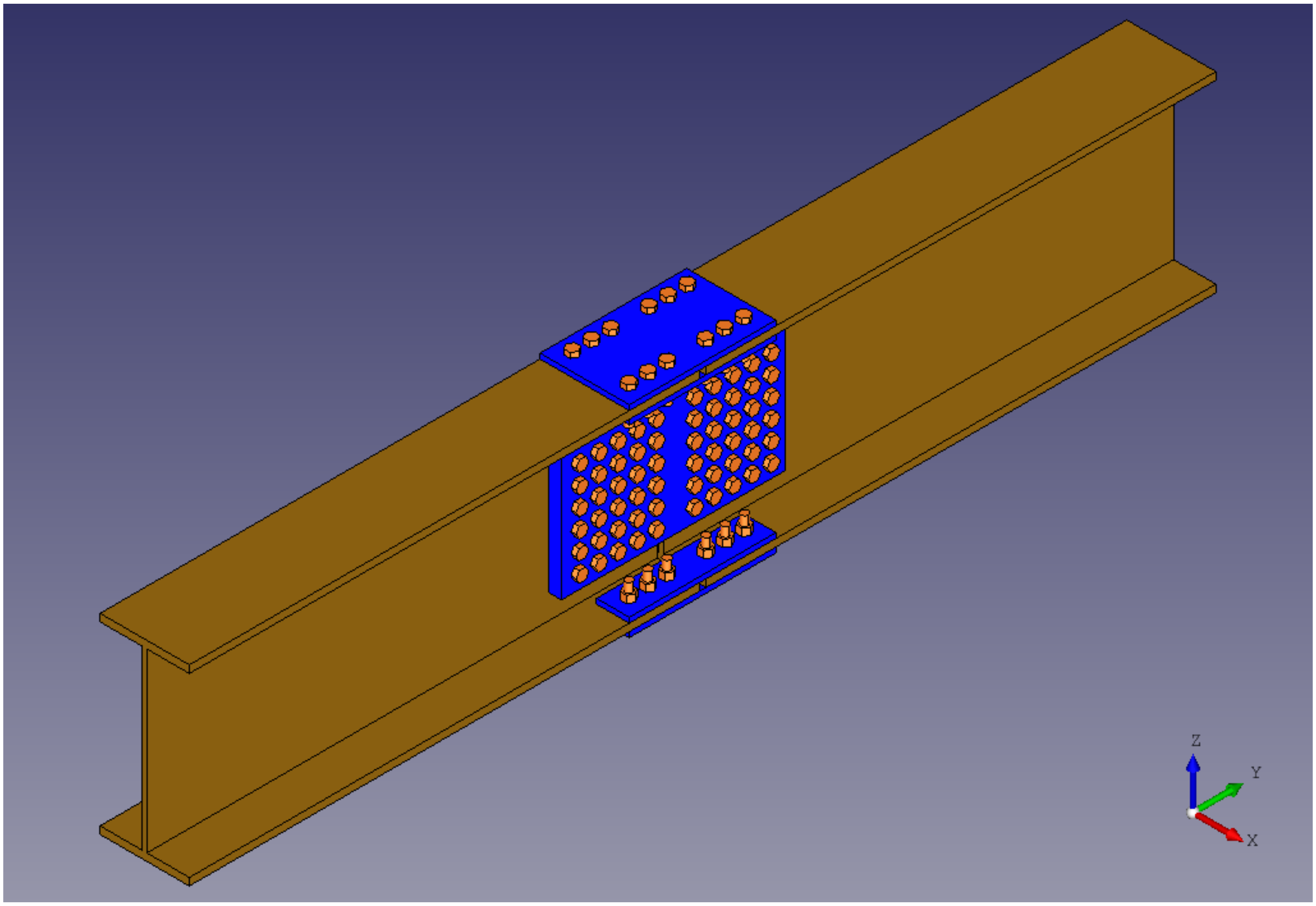

Figure 1: 3D View