

Type of component	Source of the bending moment		
	Secondary effects	Transverse loading	Eccentricity
Compression chord	Not if 5.1.5(3) is satisfied	Yes	Yes
Tension chord			No
Brace member			No
Joint			Not if 5.1.5(5) is satisfied

This Robot calculate

Connections modeled "flexible" -spring release

This is not taken a count because the model, (continuous chords, pin connected brace members..) So I guess robot should give a warning when you break rules at table 5.1.5(3)

Normal pinned connection

Name	Value	Unit
EN 1993-1-8.2...	1	
Type	Tube	
Name	Tube	
Node	2	
Members	4,44,45,3	
Forces in bars		
N01.Ed	0,00	kN
M01.Ed	0,15	kN*m
N02.Ed	674,23	kN
M02.Ed	18,25	kN*m
N2	804,56	kN
M2	3,34	kN*m
N3	-441,43	kN
M3	14,76	kN*m
Ratio	1,36	
Messages	0	

$a_d =$	12	[mm]	Thickness of welds of diagonals and posts
<b>LOADS</b>			
Case: 32: ULS /373/ 1*1.27 + 2*1.27 + 3*1.65 + 5*1.27 + 6*1.27 + 7*1.15 + 8*1.27 + 14*1.15 + 15*1.15			
<b>CHORD</b>			
$N_{01.Ed}$	0,00	[kN]	Axial force
$M_{01.Ed}$	0,15	[kN*m]	Bending moment
$N_{02.Ed}$	674,23	[kN]	Axial force
$M_{02.Ed}$	18,25	[kN*m]	Bending moment
<b>DIAGONAL 2</b>			
$N_2$	804,56	[kN]	Axial force
$M_2$	3,34	[kN*m]	Bending moment
<b>POST</b>			
$N_3$	-441,43	[kN]	Axial force
$M_3$	14,76	[kN*m]	Bending moment
Shear forces were not included in the connection verification. The connection was designed as a truss node.			
<b>RESULTS</b>			
<b>CONSIDER NON-AXIAL CONNECTION OF MEMBERS IN THE NODE</b>			
$M_0$	-44,23	[kN*m]	Additional moment from eccentric connection of members
$\Sigma E_c J / l_1$	180234415,78	[kN*m]	Overall connection stiffness
$\Delta M_{01}$	-21,51	[kN*m]	Additional moment in the chord
$\Delta M_{02}$	-21,51	[kN*m]	Additional moment in the chord
$\Delta M_2$	-0,56	[kN*m]	Additional moment in the diagonal
$\Delta M_3$	-0,66	[kN*m]	Additional moment in the diagonal

Name	Value	Unit
EN 1993-1-8.2...	1	
Type	Tube	
Name	Tube	
Node	2	
Members	4,44,45,3	
Forces in bars		
N01.Ed	0,00	kN
M01.Ed	0,15	kN*m
N02.Ed	674,23	kN
M02.Ed	18,25	kN*m
N2	804,56	kN
M2	3,34	kN*m
N3	-441,43	kN
M3	14,76	kN*m
Ratio	0,94	
Messages	0	

<b>CONSIDER NON-AXIAL CONNECTION OF MEMBERS IN THE NODE</b>			
$M_0$	-42,98	[kN*m]	Additional moment from eccentric connection of members
$\Sigma E_c J / l_1$	180234415,78	[kN*m]	Overall connection stiffness
$\Delta M_{01}$	-20,90	[kN*m]	Additional moment in the chord
$\Delta M_{02}$	-20,90	[kN*m]	Additional moment in the chord
$\Delta M_2$	-0,54	[kN*m]	Additional moment in the diagonal
$\Delta M_3$	-0,64	[kN*m]	Additional moment in the diagonal
<b>CAPACITY VERIFICATION EUROCODE 3: EN 1993-1-8:2005</b>			
$\gamma_{M5}$	1,00		Partial safety factor
<b>FAILURE MODES FOR JOINTS (RHS CHORD MEMBERS)</b> [Table 7.12] for $N_{1,Rd}$ and [Table 7.14] for $M_{1,Rd}$			
<b>GEOMETRICAL PARAMETERS</b>			
$\beta$	0,75		Coefficient taking account of geometry of connection bars
$\gamma$	12,50		Coefficient taking account of geometry of the chord
$n$	0,25		Coefficient taking account of stresses in the chord
$k_n$	1,00		Coefficient taking account of stresses in the chord
<b>TUBE CHORD FACE FAILURE</b>			
<b>DIAGONAL 2</b>			
$N_{2,Rd}$	894,46	[kN]	Tension capacity
$ N_2  \leq N_{2,Rd}$			$ 818,40  < 894,46$
$M_{2,Rd}$	26,13	[kN*m]	Bending resistance
$ M_2 + \Delta M_2  \leq M_{2,Rd}$			$ -0,54  < 26,13$
$N_2 N_{2,Rd} + (M_2 + \Delta M_2) M_{2,Rd} \leq 1$			$0,94 < 1,00$