

Réflexion de la résidence d'habitation de la
sous-préfecture des Andelys
10 rue de la Sous-Préfecture, 27700 Les Andelys

MAITRE D'OUVRAGE	ARCHITECTES	BUREAU DE CONTROLE	BET Fluides Structure
Préfecture de L'Eure Boulevard Georges Chauvin 27002 - Evreux CEDEX valerie.ludwing@eure.gouv.fr 02 32 78 27 27			
Assistant du Maitre d'ouvrage	Coordonnateur CSPS	BET Structure	BET Structure
CUBIK AMO 36 rue Bernard Chédeville 27100 Le Vaudreuil contact@cubik-amo.fr 02 85 29 17 76	Nord Ouest Coordonnation Ludovic LENDORMY ludovic.lendormy@nordouestcoordination.com 06 70 24 99 16		

Note de calcul Plancher et charpente
Comble

Indice	Date	Observations
A	24/04/2024	
B	14/05/2024	Mise à jour suivant mail M.VAN HULLE du 30 avril 2024
C		
D		
E		
F		

MANDATAIRE	EV CHARPENTE MENUISERIE Chef d'entreprise : Vincent HUE evcc.vhue@gmail.com Bureau d'étude : Yoann GABOUTY evcc.ygabouty@gmail.com // 06 99 00 80 43		REF. AFFAIRE
SERVICE / SOUS-TRAITANT			ECHELLE
			X

AND	EXE	EVCC	unique	014	B	Comble	Plancher	NDC
PROJET	PHASE	EMETTEUR	LOT	N° DOC	INDICE	NIVEAU	ZONE	TYPE

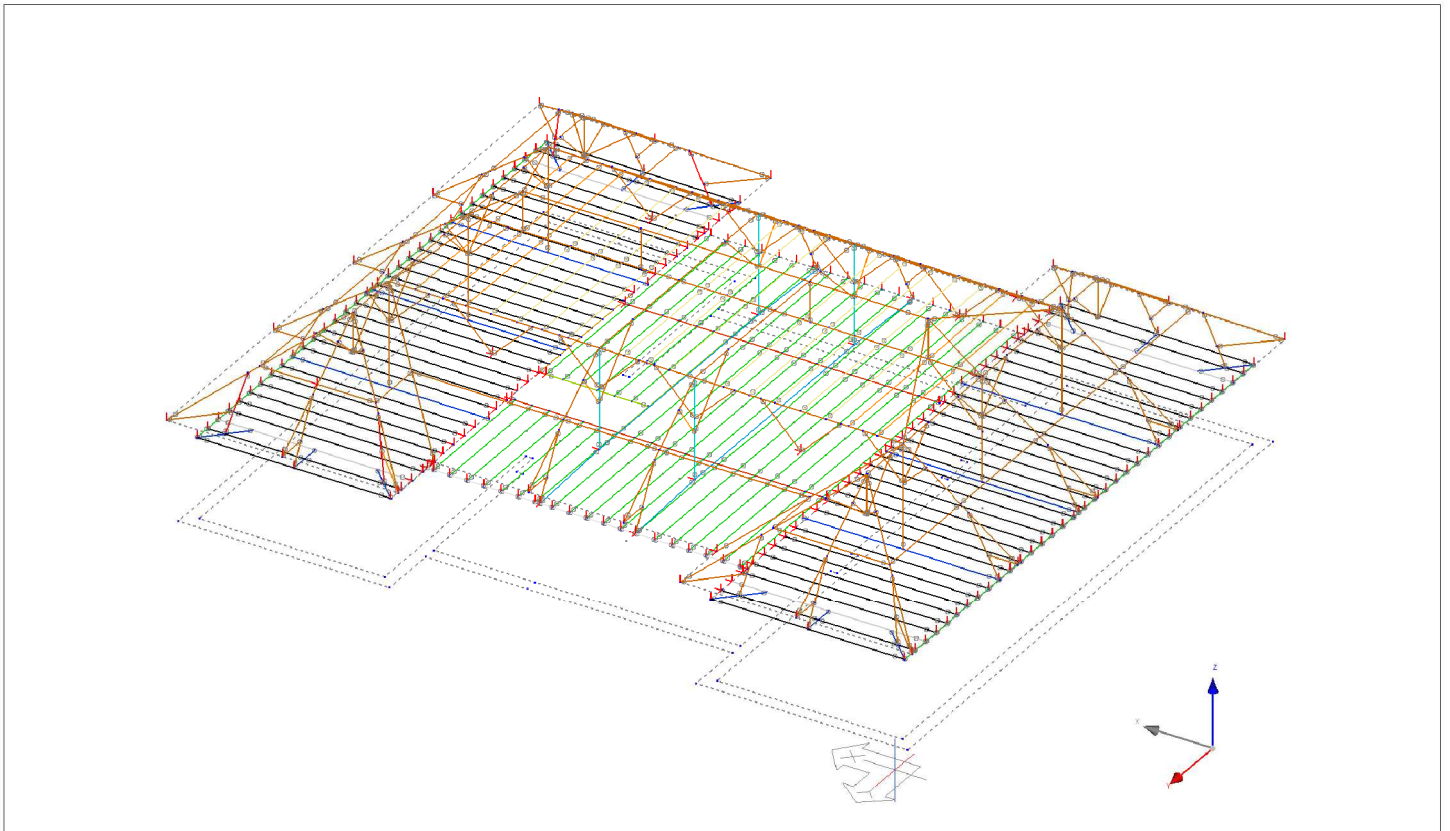
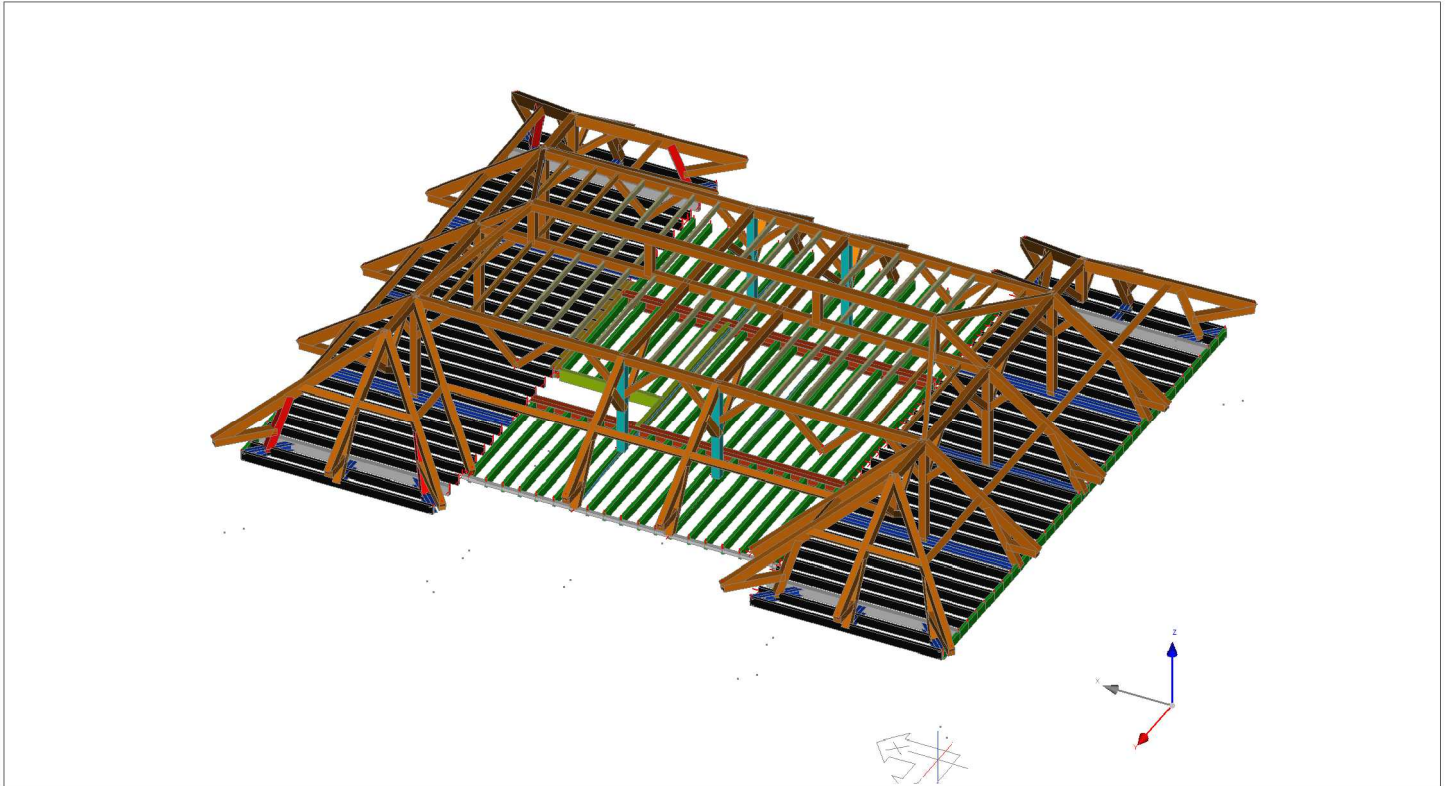
Table des matières

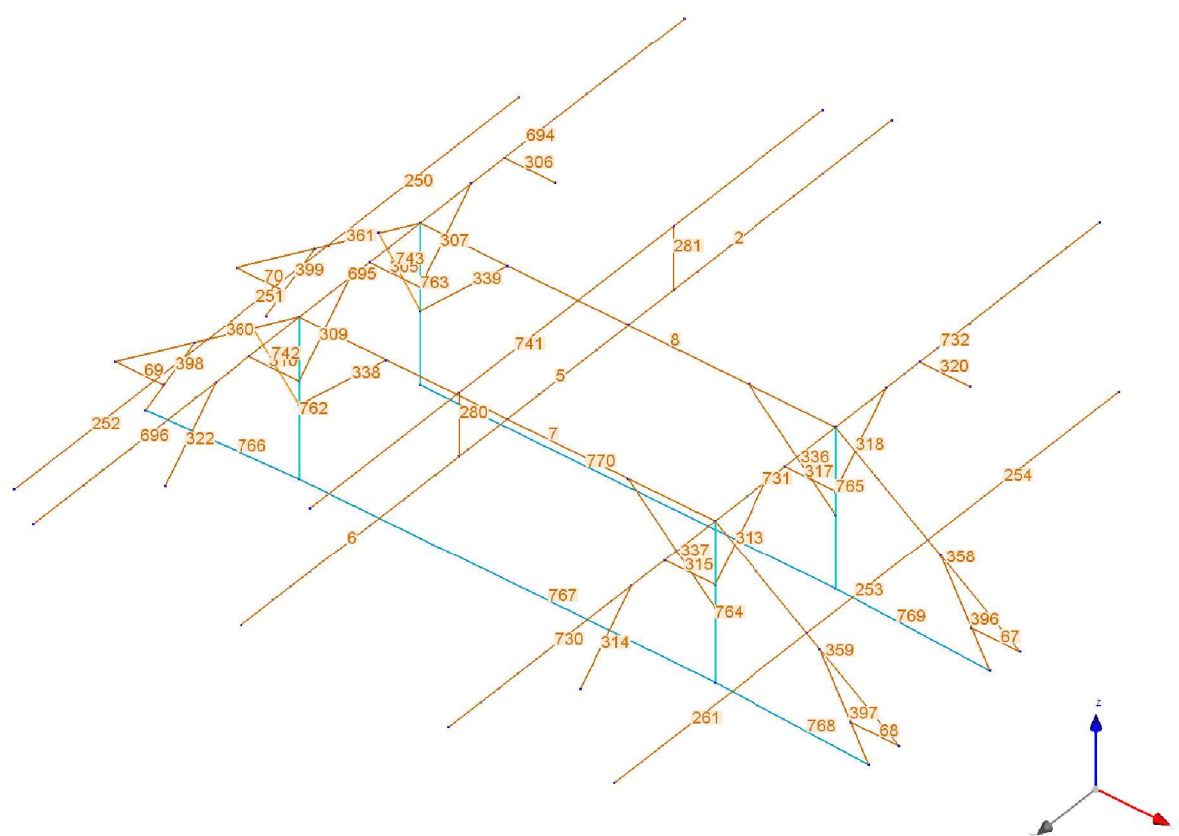
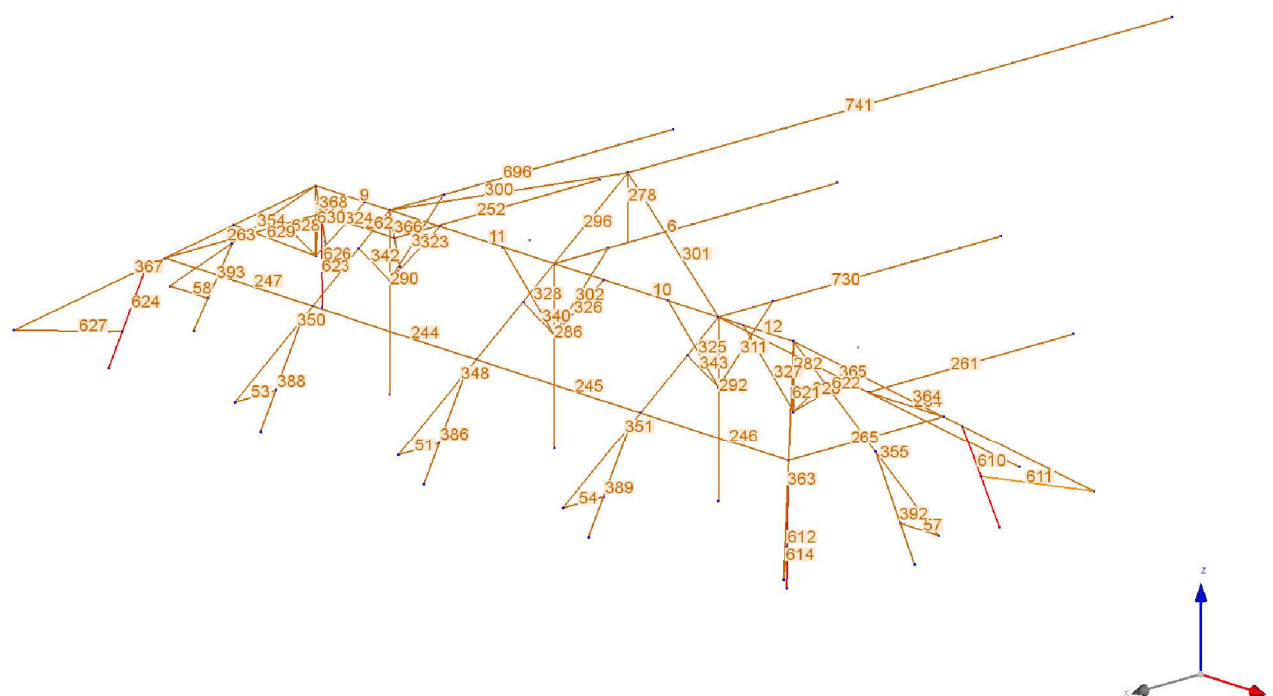
1	Etude comble V2	2
1.1	Visuel	2
1.1.1	Vue générale	2
1.1.2	Charges.....	4
1.1.3	ELU et ELS	7
1.2	Définition du modèle	8
1.2.1	Chargement.....	8
1.2.1.1	Cas de charges élémentaires : Charges Permanentes	8
1.2.1.2	Cas de charges élémentaires : Charges d'Exploit toiture	8
1.2.1.3	Cas de charges élémentaires : Neige.....	8
1.2.1.4	Cas de charges élémentaires : Exploitation plancher	8
1.2.2	Pièces du modèle	8
1.2.3	Déplacement	9
1.2.3.1	Résultats combinaisons linéaires : ELU-STR	9
1.2.3.2	Résultats combinaisons linéaires : ELS-UIINST (Flèches instantanées).....	10
1.2.3.3	Résultats combinaisons linéaires : ELS-UFIN (Flèches finales)	10
1.3	Vérifications réglementaires EC5.....	11

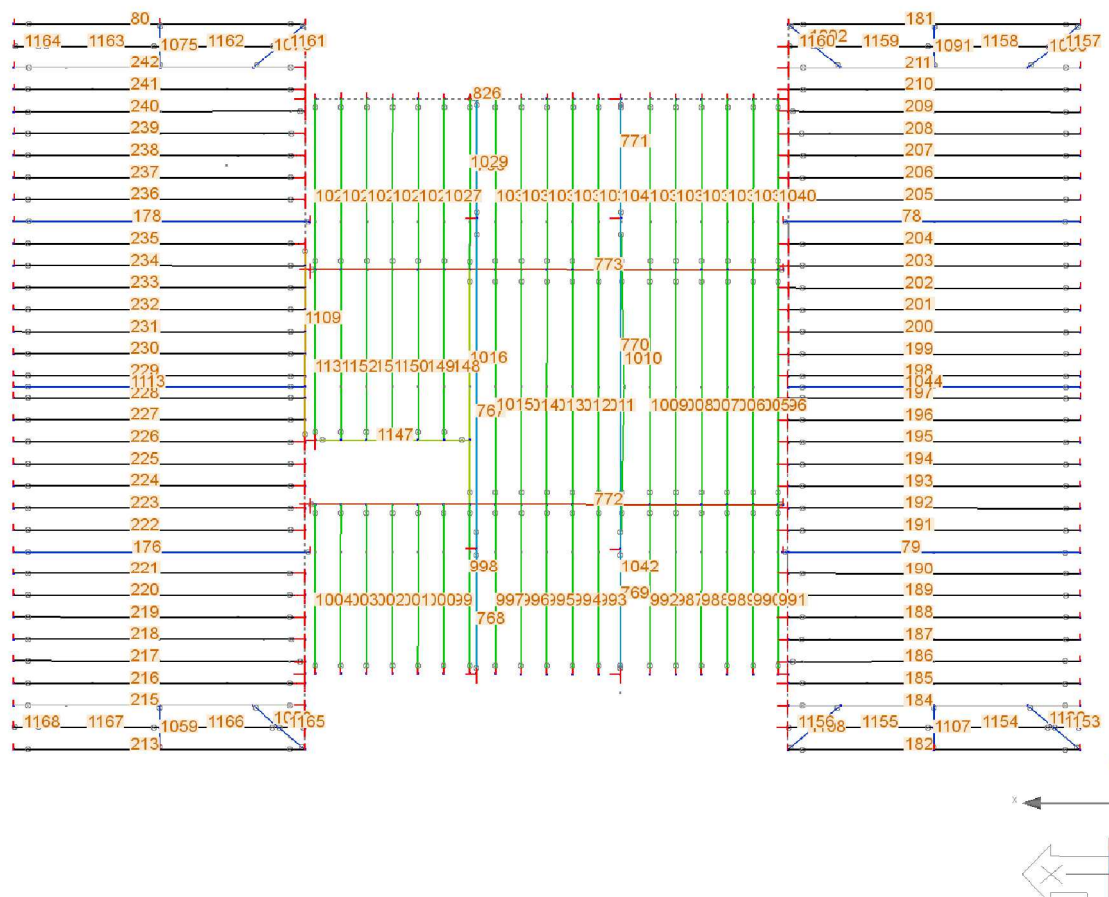
1 Etude comble V2

1.1 Visuel

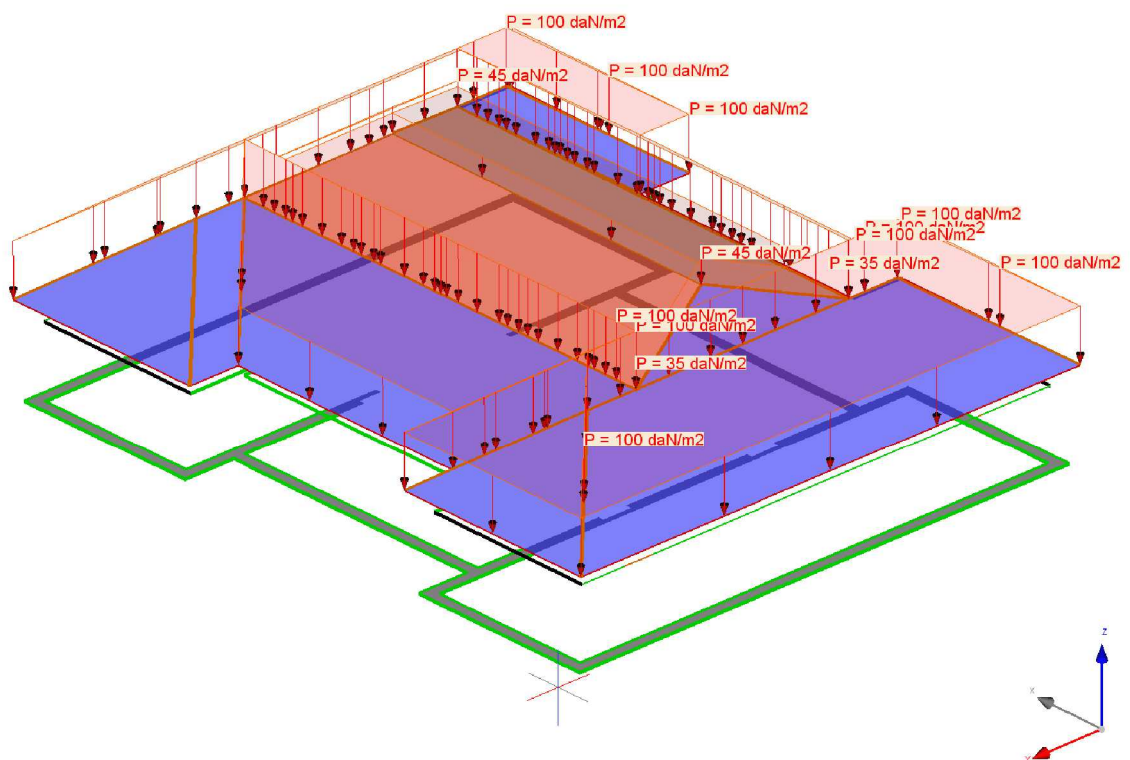
1.1.1 Vue générale



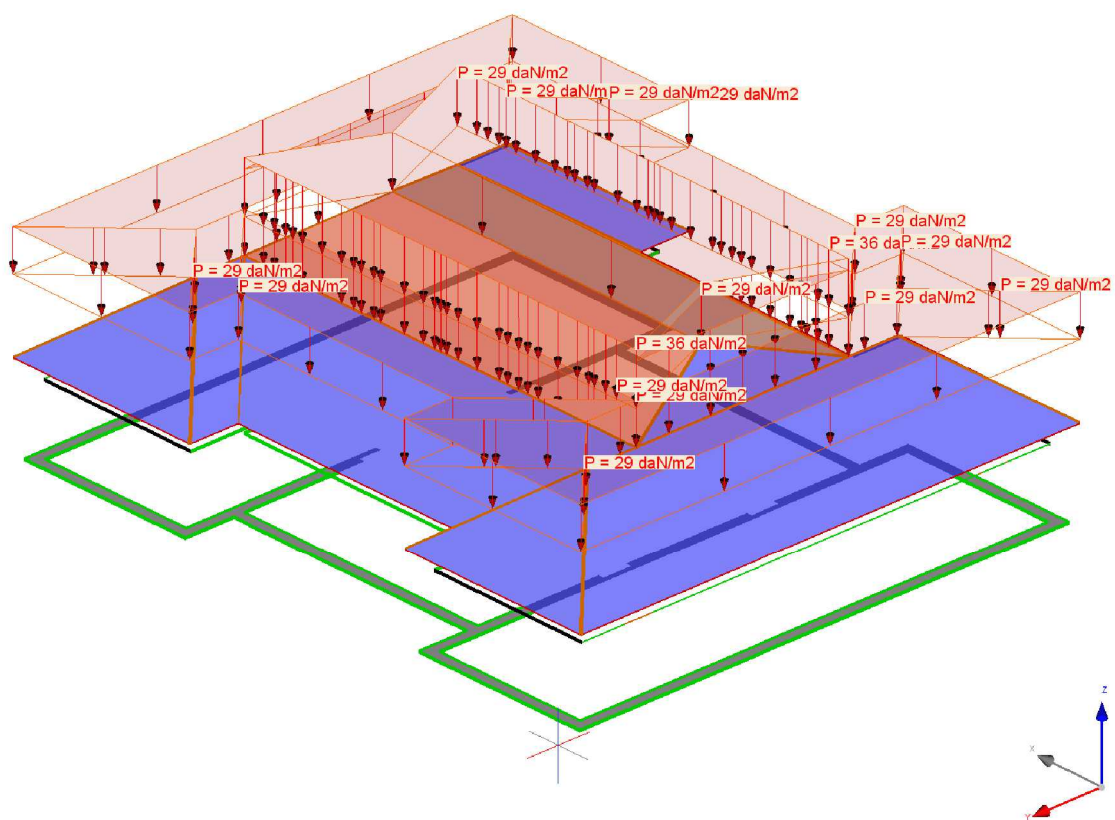
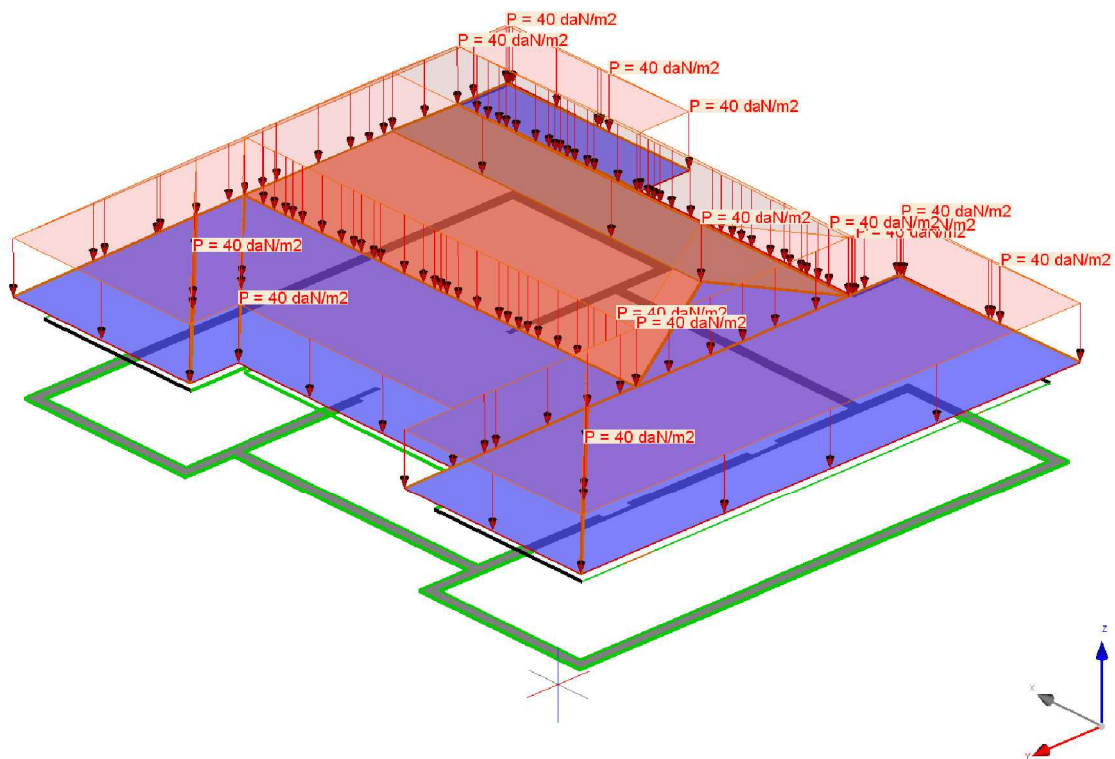


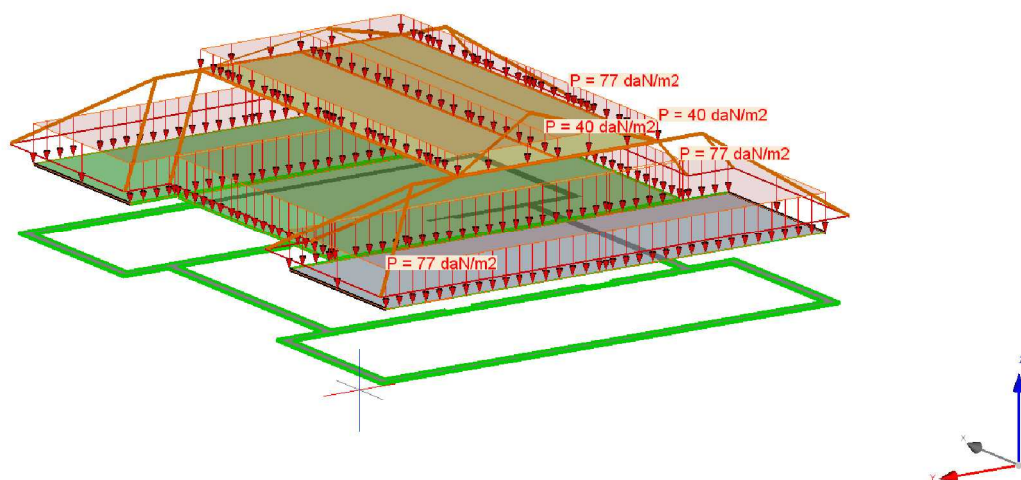


1.1.2 Charges

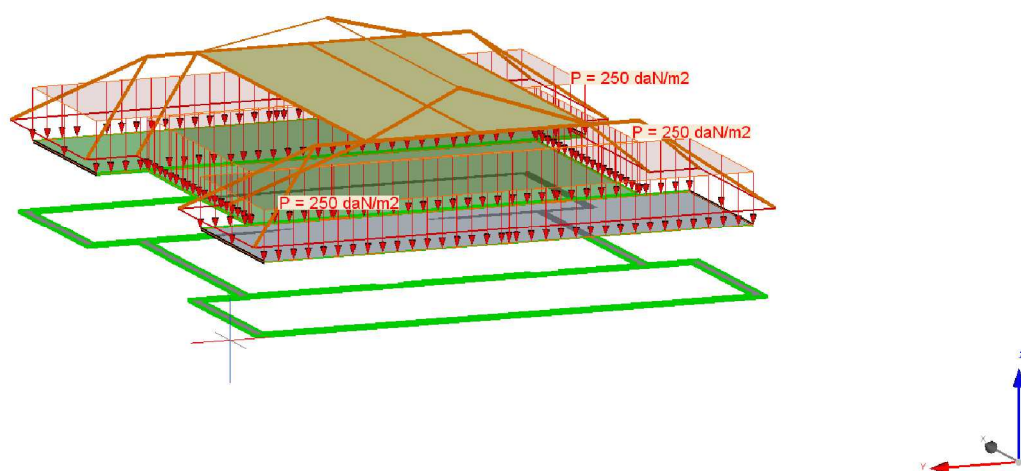


Charges volumiques prises en compte

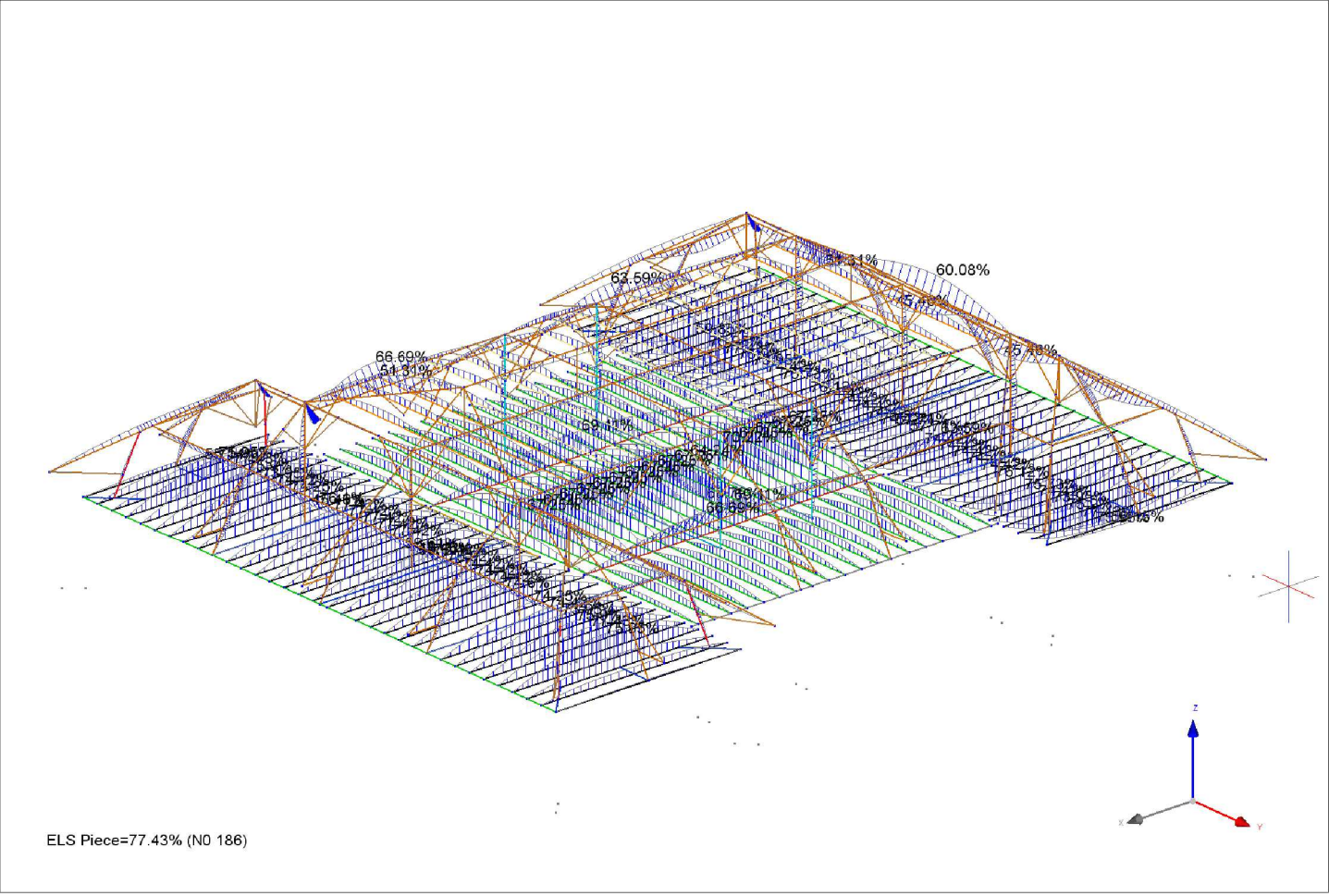
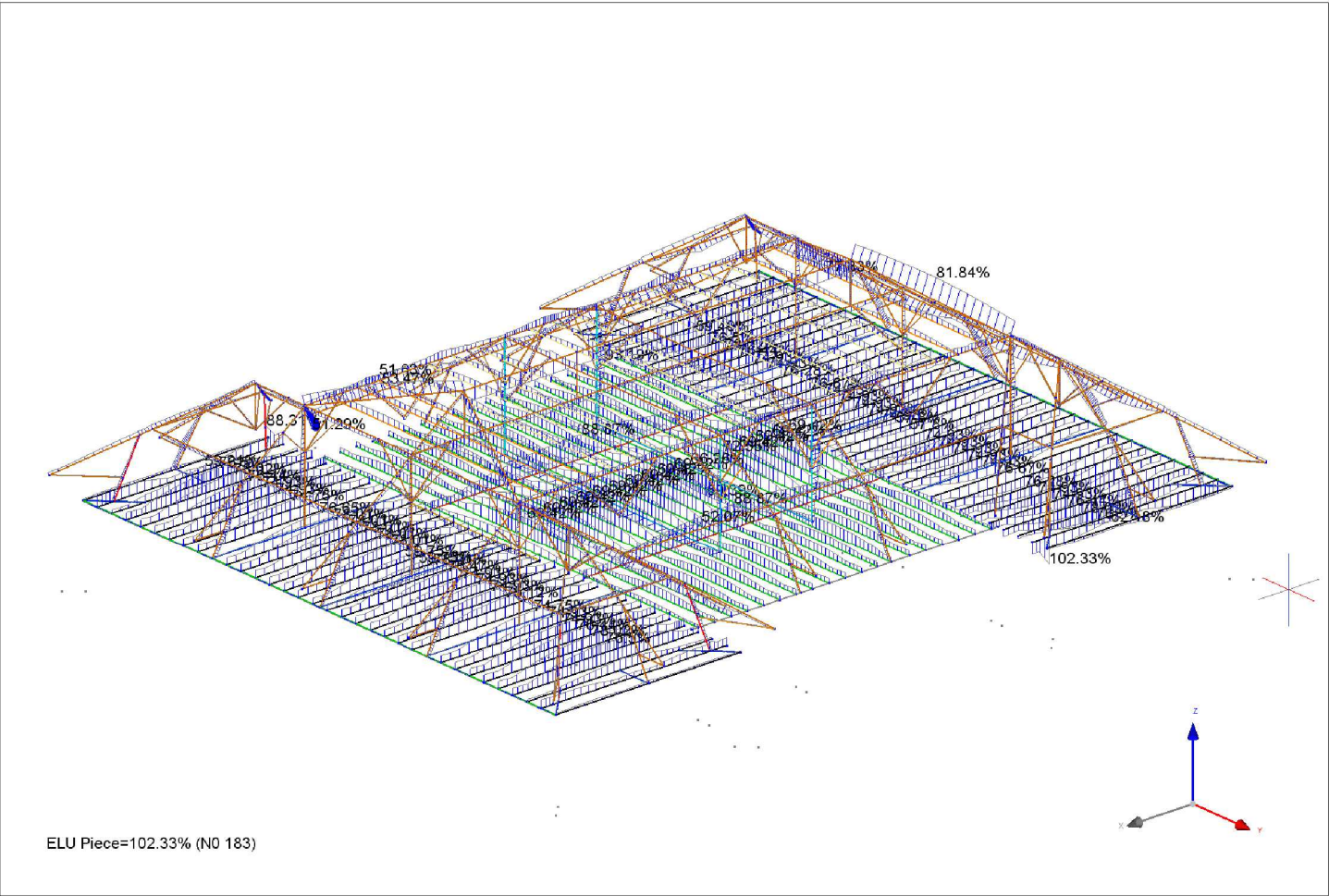




Charges volumiques prises en compte



1.1.3 ELU et ELS



1.2 Définition du modèle

1.2.1 Chargement

1.2.1.1 Cas de charges élémentaires : Charges Permanentes

Propriétés générales du cas de calcul										
Cas	Nom	Ensembles de propriétés	Ensemble de conditions aux appuis	Nature	Catégorie	Durée	Psi0	Psi1	Psi2	PsiE
1 - G	Charges Permanentes	P - 1	BC - 1	Permanent	-	Permanent	1	1	1	1

1.2.1.2 Cas de charges élémentaires : Charges d'Exploit toiture

Propriétés générales du cas de calcul										
Cas	Nom	Ensembles de propriétés	Ensemble de conditions aux appuis	Nature	Catégorie	Durée	Psi0	Psi1	Psi2	PsiE
2 - Q	Charges d'Exploit toiture	P - 1	BC - 1	Exploitation	Catégorie H	Court terme	0	0	0	0

1.2.1.3 Cas de charges élémentaires : Neige

Propriétés générales du cas de calcul										
Cas	Nom	Ensembles de propriétés	Ensemble de conditions aux appuis	Nature	Catégorie	Durée	Psi0	Psi1	Psi2	PsiE
3 - S	Neige	P - 1	BC - 1	Neige	H inf 1000m	Court terme	0.5	0.2	0	0

1.2.1.4 Cas de charges élémentaires : Exploitation plancher

Propriétés générales du cas de calcul										
Cas	Nom	Ensembles de propriétés	Ensemble de conditions aux appuis	Nature	Catégorie	Durée	Psi0	Psi1	Psi2	PsiE
11 - Q2	Exploitation plancher	P - 1	BC - 1	Exploitation	B: Bureaux	Moyen terme	0.7	0.5	0.3	0.3

1.2.2 Pièces du modèle

Propriétés des pièces									
Groupe : Pièces hors groupes typés									
Pièce identifiant	Nom	Points	Longueur	Vy	Ensemble de propriétés	Section	Matériau	Liaison origine	Liaison fin
78	Entrait	166-167-168-169	4680	0 ; 1 ; 0	P - 1	(60) HE 180 A	(21) S 235	(27) ----OO	(28) ----OO
184	Solive	367-284-204-297-368	4600	0 ; -1 ; 0	P - 1	(67) R10x24	(66) GL24H	(27) ----OO	(28) ----OO
191	Solive	381-382	4600	0 ; -1 ; 0	P - 1	(11) R7x21.5	(59) C24	(27) ----OO	(28) ----OO
772	Porteur	639-646-647-648-649-650-651-668-669-670-671-672-673-674-675-676-677-678-679-680-638	7460	0 ; -1 ; 0	P - 1	(53) HE 260 A	(21) S 235	(27) ----OO	(28) ----OO
773	Porteur	637-643-644-645-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-636	7460	0 ; -1 ; 0	P - 1	(53) HE 260 A	(21) S 235	(27) ----OO	(28) ----OO

-	-	-	-	mm	mm	mm	deg	deg	deg	mm
U max	364	-	3	3.99	-1.4	0	-0.01	-0.15	0.04	4.22
V max	181	-	3	1.73	10.74	0	0.1	0.03	-0.15	10.88
W max	163	-	1	-6.35	0.53	0	-0.02	0.05	-0.02	6.38
Tx max	297	-	3	0.04	7.61	-8.06	1.49	-0.47	-0.35	11.08
Ty max	431	-	6	0	0	0	0	0.72	-0.02	0
Tz max	640	-	3	0	-0.22	0	-0.05	-0.04	1.39	0.22
UNorm max	193	-	7	0	-0.79	-18.68	0	0	-0.02	18.7
U min	163	-	3	-9.08	0.83	0	-0.03	0.1	-0.03	9.11
V min	169	-	2	-6.35	-9	0	-0.09	-0.11	-0.12	11.01
W min	185	-	6	0	-0.66	-18.68	0	0	-0.02	18.69
Tx min	292	-	3	0.04	-6.76	-8.48	-1.5	-0.49	0.28	10.84
Ty min	372	-	6	0	0	0	0	-0.72	-0.01	0
Tz min	366	-	3	0	0	0	0.84	-0.56	-1.07	0
UNorm min	233	-	1	0	0	0	0.04	-0.01	-0.01	0

1.2.3.2 Résultats combinaisons linéaires : ELS-UINST (Flèches instantanées)

Synthèse : Déplacements points										
Groupe : Points hors groupes typés										
Type	Point	Nom point	Cas	U	V	W	Tx	Ty	Tz	UNorm
-	-	-	-	mm	mm	mm	deg	deg	deg	mm
U max	364	-	2	0.9	-0.33	0	0	-0.06	0	0.96
V max	206	-	2	-0.07	1.79	0	0.27	0	0.01	1.79
W max	633	-	5	0	0	0.05	0	0	0	0.05
Tx max	297	-	2	0.01	1.67	-2.09	0.4	-0.12	-0.08	2.67
Ty max	431	-	5	0	0	0	0	0.36	0	0
Tz max	640	-	2	0	-0.03	0	-0.01	0	0.21	0.03
UNorm max	193	-	6	0	-0.21	-9.34	0	0	-0.01	9.34
U min	163	-	2	-1.82	0.2	0	-0.01	0.04	-0.01	1.83
V min	169	-	1	-1.12	-1.98	0	-0.02	-0.02	-0.03	2.28
W min	185	-	5	0	-0.19	-9.34	0	0	0	9.34
Tx min	292	-	2	0.01	-1.47	-2.18	-0.4	-0.13	0.06	2.63
Ty min	372	-	5	0	0	0	0	-0.36	0	0
Tz min	366	-	2	0	0	0	0.22	-0.14	-0.23	0
UNorm min	233	-	1	0	0	0	0	0	-0.01	0

1.2.3.3 Résultats combinaisons linéaires : ELS-UFIN (Flèches finales)

Synthèse : Déplacements points										
Groupe : Points hors groupes typés										
Type	Point	Nom point	Cas	U	V	W	Tx	Ty	Tz	UNorm
-	-	-	-	mm	mm	mm	deg	deg	deg	mm
U max	364	-	3	4.27	-1.6	0	-0.01	-0.15	0.03	4.56
V max	181	-	3	2.13	10.8	0	0.11	0.04	-0.15	11.01
W max	163	-	1	-7.16	0.65	0	-0.02	0.04	-0.02	7.19
Tx max	297	-	3	0.05	8.48	-9.02	1.68	-0.52	-0.39	12.39
Ty max	431	-	6	0	0	0	0	0.69	-0.02	0
Tz max	640	-	3	0	-0.24	0	-0.02	-0.03	1.15	0.24
UNorm max	204	-	3	0.08	8.53	-16.67	1.63	-0.02	0.25	18.73
U min	163	-	3	-9.04	0.87	0	-0.03	0.09	-0.03	9.08
V min	169	-	2	-6.56	-8.07	0	-0.09	-0.11	-0.11	10.4
W min	185	-	6	0	-0.73	-17.81	0	0	-0.02	17.82
Tx min	292	-	3	0.04	-7.59	-9.48	-1.68	-0.55	0.32	12.14
Ty min	372	-	6	0	0	0	0	-0.69	-0.01	0
Tz min	366	-	3	0	0	0	0.92	-0.63	-1.19	0
UNorm min	233	-	1	0	0	0	0.03	0	-0.01	0

1.3 Vérifications réglementaires EC5

Pièces de bois standard / Groupe : Pièces hors groupes typés												
Propriétés de la pièce				Résultats ELU (Résistances)						Résultats ELS (Flèches)		
Pièce	Nom	Section	Matériau	Axial-Flexion	Cisaillement	Traction perpendiculaire au fil	Traction perpendiculaire au fil et cisaillement	Flambement	Déversement	Flèches instantanées	Flèches finales	Flèches second oeuvre
80	Solive	R7x21.5	C24	20,77%	15,25%	-	-	(0%)	17,09%	5,03% (0,77mm)	15,01% (3,45mm)	-
181	Solive	R7x21.5	C24	20,15%	15,21%	-	-	(0%)	16,88%	3,87% (0,59mm)	11,12% (2,56mm)	-
182	Solive	R7x21.5	C24	21,72%	15,24%	-	-	(0%)	17,07%	5,34% (0,82mm)	16,05% (3,69mm)	-
184	Solive	R10x24	GL24H	58,58%	32,25%	-	-	74,86%	(0%)	25,9% (3,97mm)	72,49% (16,67m)	-
185	Solive	R7x21.5	C24	64,38%	26,95%	-	-	64,38%	76,5%	59,66% (9,15mm)	75,95% (17,47m)	-
186	Solive	R7x21.5	C24	65,65%	27,48%	-	-	(0%)	78,02%	60,89% (9,34mm)	77,43% (17,81m)	-
187	Solive	R7x21.5	C24	64,33%	26,93%	-	-	64,33%	76,44%	59,61% (9,14mm)	75,9% (17,46m)	-
188	Solive	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,01% (8,89mm)	73,95% (17,01m)	-
189	Solive	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
190	Solive	R7x21.5	C24	64,19%	26,87%	-	-	(0%)	76,28%	59,47% (9,12mm)	75,73% (17,42m)	-
191	Solive	R7x21.5	C24	64,52%	27,01%	-	-	(0%)	76,67%	59,8% (9,17mm)	76,12% (17,51m)	-
192	Solive	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
193	Solive	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
194	Solive	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
195	Solive	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
196	Solive	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-
197	Solive	R7x21.5	C24	48,64%	20,36%	-	-	(0%)	57,8%	44,41% (6,81mm)	57,71% (13,27m)	-
198	Solive	R7x21.5	C24	48,64%	20,36%	-	-	(0%)	57,8%	44,41% (6,81mm)	57,71% (13,27m)	-
199	Solive	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m)	-

200	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
201	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
202	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
203	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
204	Solve	R7x21.5	C24	64,52%	27,01%	-	-	(0%)	76,67%	59,8% (9,17mm)	76,12% (17,51m m)	-
205	Solve	R7x21.5	C24	64,19%	26,87%	-	-	(0%)	76,28%	59,47% (9,12mm)	75,73% (17,42m m)	-
206	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
207	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,01% (8,89mm)	73,95% (17,01m m)	-
208	Solve	R7x21.5	C24	64,33%	26,93%	-	-	64,33%	76,44%	59,61% (9,14mm)	75,9% (17,46m m)	-
209	Solve	R7x21.5	C24	65,65%	27,48%	-	-	(0%)	78,02%	60,89% (9,34mm)	77,43% (17,81m m)	-
210	Solve	R7x21.5	C24	64,38%	26,95%	-	-	64,38%	76,5%	59,66% (9,15mm)	75,95% (17,47m m)	-
211	Solve	R10x24	GL24H	58,31%	33,78%	-	-	77,13%	(0%)	26,9% (4,12mm)	75,78% (17,43m m)	-
213	Solve	R7x21.5	C24	16,59%	15,17%	-	-	(0%)	16,68%	1,83% (0,28mm)	2,35% (0,54mm)	-
215	Solve	R10x24	GL24H	33,41%	17,81%	-	-	34,16%	(0%)	19,2% (2,94mm)	40,71% (9,36mm)	-
216	Solve	R7x21.5	C24	64,38%	26,95%	-	-	64,38%	76,5%	59,66% (9,15mm)	75,95% (17,47m m)	-
217	Solve	R7x21.5	C24	65,65%	27,48%	-	-	(0%)	78,02%	60,89% (9,34mm)	77,43% (17,81m m)	-
218	Solve	R7x21.5	C24	64,33%	26,93%	-	-	64,33%	76,44%	59,61% (9,14mm)	75,9% (17,46m m)	-
219	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,01% (8,89mm)	73,95% (17,01m m)	-
220	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
221	Solve	R7x21.5	C24	62,91%	26,33%	-	-	(0%)	74,75%	58,23% (8,93mm)	74,25% (17,08m m)	-
222	Solve	R7x21.5	C24	63,21%	26,46%	-	-	(0%)	75,12%	58,53% (8,97mm)	74,6% (17,16m m)	-
223	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-

224	Solve	R7x21.5	C24	63,06%	26,39%	-	-	(0%)	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
225	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
226	Solve	R7x21.5	C24	64,35%	26,94%	-	-	(0%)	76,47%	59,63% (9,14mm)	75,92% (17,46m m)	-
227	Solve	R7x21.5	C24	65,65%	27,48%	-	-	65,65%	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
228	Solve	R7x21.5	C24	50,28%	21,04%	-	-	(0%)	59,75%	46% (7,05mm)	59,61% (13,71m m)	-
229	Solve	R7x21.5	C24	50,28%	21,04%	-	-	50,28%	59,75%	46% (7,05mm)	59,61% (13,71m m)	-
230	Solve	R7x21.5	C24	65,65%	27,48%	-	-	(0%)	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
231	Solve	R7x21.5	C24	65,65%	27,48%	-	-	65,65%	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
232	Solve	R7x21.5	C24	65,65%	27,48%	-	-	65,65%	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
233	Solve	R7x21.5	C24	65,65%	27,48%	-	-	65,65%	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
234	Solve	R7x21.5	C24	65,65%	27,48%	-	-	65,65%	78,01%	60,89% (9,34mm)	77,42% (17,81m m)	-
235	Solve	R7x21.5	C24	64,51%	27%	-	-	(0%)	76,65%	59,78% (9,17mm)	76,1% (17,5mm)	-
236	Solve	R7x21.5	C24	62,91%	26,33%	-	-	(0%)	74,75%	58,23% (8,93mm)	74,25% (17,08m m)	-
237	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,38% (8,95mm)	74,42% (17,12m m)	-
238	Solve	R7x21.5	C24	63,06%	26,39%	-	-	63,06%	74,93%	58,01% (8,89mm)	73,95% (17,01m m)	-
239	Solve	R7x21.5	C24	64,33%	26,93%	-	-	64,33%	76,44%	59,61% (9,14mm)	75,9% (17,46m m)	-
240	Solve	R7x21.5	C24	65,65%	27,48%	-	-	(0%)	78,02%	60,89% (9,34mm)	77,43% (17,81m m)	-
241	Solve	R7x21.5	C24	64,38%	26,95%	-	-	64,38%	76,5%	59,66% (9,15mm)	75,95% (17,47m m)	-
242	Solve	R10x24	GL24H	55,51%	30,31%	-	-	61,02%	(0%)	24,55% (3,76mm)	68,95% (15,86m m)	-
826	-	R7x21.5	C24	0%	0,04%	-	-	(0%)	(0%)	0% (0mm)	0% (0mm)	-
896	-	R7x21.5	C24	3,39%	1,48%	-	-	4,27%	3,96%	0% (0mm)	4,02% (0,89mm)	-
987	-	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
988	-	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-

989	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
990	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
991	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
992	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
993	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
994	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
995	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
996	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
997	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
998	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
999	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1000	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
1001	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
1002	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
1003	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
1004	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1005	–	R7x21.5	C24	3,39%	1,48%	-	-	4,6%	3,96%	0% (0mm)	4,02% (0,89mm)	-
1006	–	R7x21.5	C24	3,39%	1,48%	-	-	3,58%	3,96%	0% (0mm)	4,02% (0,89mm)	-
1007	–	R7x21.5	C24	3,78%	1,48%	-	-	(0%)	3,96%	0% (0mm)	4,02% (0,89mm)	-
1008	–	R7x21.5	C24	5,01%	1,48%	-	-	(0%)	3,96%	0% (0mm)	4,02% (0,89mm)	-
1009	–	R7x21.5	C24	7%	1,48%	-	-	(0%)	3,96%	0% (0mm)	4,02% (0,89mm)	-
1010	–	R7x21.5	C24	8,79%	1,48%	-	-	(0%)	3,96%	2,89% (0,42mm)	12,03% (2,65mm)	-

1011	–	R7x21.5	C24	7,29%	1,48%	-	-	(0%)	3,96%	0% (0mm)	4,02% (0,89mm)	-
1012	–	R7x21.5	C24	5,24%	1,48%	-	-	(0%)	3,96%	0% (0mm)	4,02% (0,89mm)	-
1013	–	R7x21.5	C24	3.9%	1.48%	-	-	(0%)	3.96%	0% (0mm)	4.02% (0.89mm)	-
1014	–	R7x21.5	C24	3,39%	1,48%	-	-	3,48%	3,96%	0% (0mm)	4,02% (0,89mm)	-
1015	–	R7x21.5	C24	3,39%	1,48%	-	-	4,23%	3,96%	0% (0mm)	4,02% (0,89mm)	-
1016	–	R10x28	GL24H	4,64%	3,43%	-	-	4,74%	(0%)	0% (0mm)	4,44% (0,98mm)	-
1022	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1023	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1024	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1025	–	R7x21.5	C24	1.79%	1.08%	-	-	1.79%	1.89%	0% (0mm)	1.58% (0.25mm)	-
1026	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1027	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1029	–	R7x21.5	C24	1,79%	1,08%	-	-	(0%)	1,89%	0% (0mm)	1,58% (0,25mm)	-
1030	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1031	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1032	–	R7x21.5	C24	1.79%	1.08%	-	-	1.79%	1.89%	0% (0mm)	1.58% (0.25mm)	-
1033	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1034	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1035	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1036	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1037	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1038	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-

1039	–	R7x21.5	C24	1,79%	1,08%	-	-	1,79%	1,89%	0% (0mm)	1,58% (0,25mm)	-
1040	–	R7x21.5	C24	1.79%	1.08%	-	-	1.79%	1.89%	0% (0mm)	1.58% (0.25mm)	-
1041	–	R7x21.5	C24	21,01%	1,4%	-	-	(0%)	1,89%	3,33% (0,36mm)	16,28% (2,61mm)	-
1042	–	R7x21.5	C24	21%	1,4%	-	-	(0%)	1,89%	3,33% (0,36mm)	16,27% (2,6mm)	-
1130	–	R7x21.5	C24	2,15%	1,08%	-	-	(0%)	1,91%	0,07% (0,01mm)	1,64% (0,26mm)	-
1147	–	R10x28	GL24H	2,23%	2,51%	-	-	1,27%	(0%)	0,01% (0mm)	1,4% (0,17mm)	-
1148	–	R7x21.5	C24	1,83%	1,09%	-	-	1,84%	1,85%	0,08% (0,01mm)	1,54% (0,25mm)	-
1149	–	R7x21.5	C24	1.87%	1.08%	-	-	(0%)	1.89%	0.08% (0.01mm)	1.57% (0.25mm)	-
1150	–	R7x21.5	C24	1,87%	1,08%	-	-	1,87%	1,89%	0,08% (0,01mm)	1,58% (0,25mm)	-
1151	–	R7x21.5	C24	1,87%	1,08%	-	-	1,87%	1,89%	0,08% (0,01mm)	1,58% (0,25mm)	-
1152	–	R7x21.5	C24	1,89%	1,08%	-	-	(0%)	1,89%	0,08% (0,01mm)	1,58% (0,25mm)	-
1153	–	R7x21.5	C24	0,03%	0,14%	-	-	0,03%	(0%)	0% (0mm)	0,02% (0mm)	-
1154	–	R7x21.5	C24	2,28%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1155	–	R7x21.5	C24	4,4%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1156	–	R7x21.5	C24	9.01%	0.14%	-	-	(0%)	(0%)	0% (0mm)	0.02% (0mm)	-
1157	–	R7x21.5	C24	0,03%	0,14%	-	-	0,03%	(0%)	0% (0mm)	0,02% (0mm)	-
1158	–	R7x21.5	C24	2,28%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1159	–	R7x21.5	C24	4,37%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1160	–	R7x21.5	C24	8,85%	0,14%	-	-	(0%)	(0%)	0% (0mm)	0,02% (0mm)	-
1161	–	R7x21.5	C24	7.07%	0.14%	-	-	(0%)	(0%)	0% (0mm)	0.02% (0mm)	-
1162	–	R7x21.5	C24	3,57%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1163	–	R7x21.5	C24	1,91%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-
1164	–	R7x21.5	C24	0,03%	0,14%	-	-	0,03%	(0%)	0% (0mm)	0,02% (0mm)	-
1165	–	R7x21.5	C24	5,8%	0,14%	-	-	(0%)	(0%)	0% (0mm)	0,02% (0mm)	-
1166	–	R7x21.5	C24	3,14%	0,64%	-	-	(0%)	(0%)	0% (0mm)	0,37% (0,03mm)	-

1167	-	R7x21.5	C24	2.73%	0.78%	-	-	(0%)	(0%)	0.73% (0.05mm)	1.26% (0.12mm)	-
1168	-	R7x21.5	C24	0,03%	0,14%	-	-	0,02%	(0%)	0% (0mm)	0,02% (0mm)	-