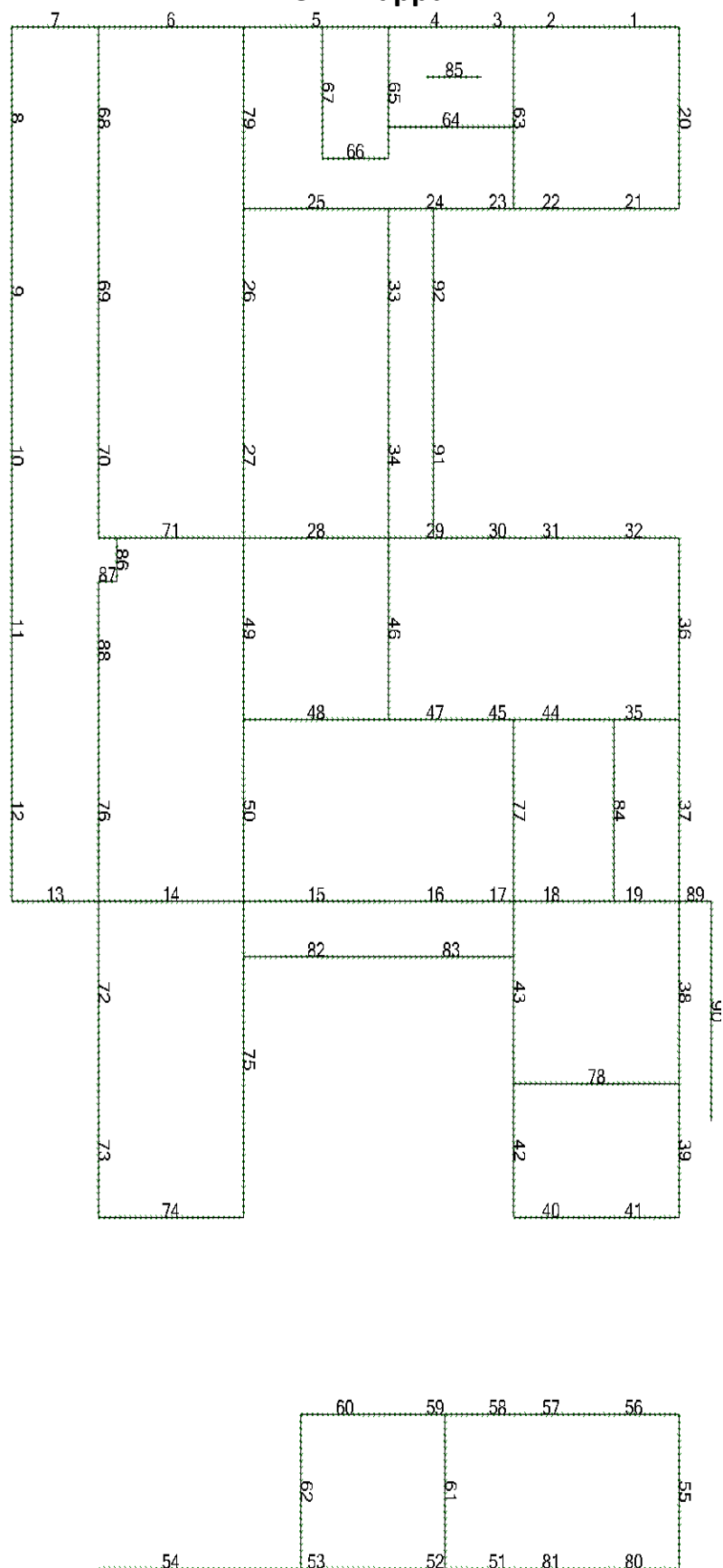




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Indice	Date	Modifications
0	24-08-23	Origine

# DDC Niv. appui



### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
1(R)	G	-396.0	4.5	-88.0
	Q	-112.5	4.5	-25.0
	G+Q	-508.5	4.5	-113.0
2(R)	G	-359.5	3.7	-97.2
	Q	-95.1	3.7	-25.7
	G+Q	-454.6	3.7	-122.9
3(R)	G	-155.9	1.6	-97.4
	Q	-18.5	1.6	-11.6
	G+Q	-174.4	1.6	-109.0
4(R)	G	-395.0	4.6	-85.9
	Q	-37.2	4.6	-8.1
	G+Q	-432.2	4.6	-94.0
5(R)	G	-632.9	7.2	-87.9
	Q	-51.7	7.2	-7.2
	G+Q	-684.6	7.2	-95.1
6(R)	G	-901.1	7.2	-125.2
	Q	-100.6	7.2	-14.0
	G+Q	-1001.7	7.2	-139.1
7(R)	G	-201.0	4.3	-46.7
	Q	-18.7	4.3	-4.3
	G+Q	-219.7	4.3	-51.1
8(R)	G	-358.9	7.2	-49.8
	Q	-39.5	7.2	-5.5
	G+Q	-398.4	7.2	-55.3
9(R)	G	-420.1	6.5	-64.6
	Q	-47.2	6.5	-7.3
	G+Q	-467.3	6.5	-71.9
10(R)	G	-422.2	6.5	-65.0
	Q	-47.1	6.5	-7.2
	G+Q	-469.2	6.5	-72.2
11(R)	G	-443.8	7.2	-61.6
	Q	-51.4	7.2	-7.1
	G+Q	-495.2	7.2	-68.8
12(R)	G	-361.9	7.2	-50.3
	Q	-40.8	7.2	-5.7
	G+Q	-402.7	7.2	-55.9
13(R)	G	-188.4	4.3	-43.8
	Q	-16.4	4.3	-3.8
	G+Q	-204.8	4.3	-47.6
14(R)	G	-938.9	7.2	-130.4
	Q	-202.9	7.2	-28.2
	G+Q	-1141.8	7.2	-158.6
15(R)	G	-1011.5	7.2	-140.5
	Q	-209.6	7.2	-29.1
	G+Q	-1221.1	7.2	-169.6
16(R)	G	-533.5	4.6	-116.0
	Q	-91.4	4.6	-19.9
	G+Q	-624.9	4.6	-135.8

### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
17(R)	G	-137.1	1.6	-85.7
	Q	-22.2	1.6	-13.9
	G+Q	-159.3	1.6	-99.6
18(R)	G	-372.9	3.7	-100.8
	Q	-48.0	3.7	-13.0
	G+Q	-420.9	3.7	-113.8
19(R)	G	-227.1	4.5	-50.5
	Q	-30.5	4.5	-6.8
	G+Q	-257.6	4.5	-57.2
20(R)	G	-612.0	7.2	-85.0
	Q	-166.3	7.2	-23.1
	G+Q	-778.3	7.2	-108.1
21(R)	G	-387.8	4.5	-86.2
	Q	-112.0	4.5	-24.9
	G+Q	-499.8	4.5	-111.1
22(R)	G	-337.8	3.7	-91.3
	Q	-102.0	3.7	-27.6
	G+Q	-439.8	3.7	-118.9
23(R)	G	-147.5	1.6	-92.2
	Q	-17.2	1.6	-10.8
	G+Q	-164.7	1.6	-102.9
24(R)	G	-318.5	4.6	-69.2
	Q	-41.1	4.6	-8.9
	G+Q	-359.6	4.6	-78.2
25(R)	G	-896.1	7.2	-124.5
	Q	-142.5	7.2	-19.8
	G+Q	-1038.7	7.2	-144.3
26(R)	G	-940.8	6.5	-144.7
	Q	-187.0	6.5	-28.8
	G+Q	-1127.8	6.5	-173.5
27(R)	G	-950.7	6.5	-146.3
	Q	-193.7	6.5	-29.8
	G+Q	-1144.4	6.5	-176.1
28(R)	G	-845.7	7.2	-117.5
	Q	-156.4	7.2	-21.7
	G+Q	-1002.1	7.2	-139.2
29(R)	G	-293.1	4.6	-63.7
	Q	-103.4	4.6	-22.5
	G+Q	-396.6	4.6	-86.2
30(R)	G	-199.7	1.6	-124.8
	Q	-86.1	1.6	-53.8
	G+Q	-285.7	1.6	-178.6
31(R)	G	-421.9	3.7	-114.0
	Q	-178.1	3.7	-48.1
	G+Q	-599.9	3.7	-162.1
32(R)	G	-442.9	4.5	-98.4
	Q	-132.5	4.5	-29.4
	G+Q	-575.4	4.5	-127.9

### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
33(R)	G	-700.1	6.5	-107.7
	Q	-160.8	6.5	-24.7
	G+Q	-860.9	6.5	-132.4
34(R)	G	-701.0	6.5	-107.8
	Q	-176.9	6.5	-27.2
	G+Q	-878.0	6.5	-135.1
35(R)	G	-308.5	4.5	-68.6
	Q	-104.4	4.5	-23.2
	G+Q	-412.8	4.5	-91.7
36(R)	G	-509.5	7.2	-70.8
	Q	-130.5	7.2	-18.1
	G+Q	-640.1	7.2	-88.9
37(R)	G	-447.5	7.2	-62.2
	Q	-57.0	7.2	-7.9
	G+Q	-504.6	7.2	-70.1
38(R)	G	-498.2	7.2	-69.2
	Q	-61.1	7.2	-8.5
	G+Q	-559.3	7.2	-77.7
39(R)	G	-389.5	5.3	-73.5
	Q	-84.4	5.3	-15.9
	G+Q	-473.9	5.3	-89.4
40(R)	G	-259.6	3.7	-70.2
	Q	-67.6	3.7	-18.3
	G+Q	-327.1	3.7	-88.4
41(R)	G	-297.9	4.5	-66.2
	Q	-91.7	4.5	-20.4
	G+Q	-389.6	4.5	-86.6
42(R)	G	-370.1	5.3	-69.8
	Q	-83.2	5.3	-15.7
	G+Q	-453.3	5.3	-85.5
43(R)	G	-535.8	7.2	-74.4
	Q	-136.7	7.2	-19.0
	G+Q	-672.5	7.2	-93.4
44(R)	G	-444.4	3.7	-120.1
	Q	-205.1	3.7	-55.4
	G+Q	-649.5	3.7	-175.5
45(R)	G	-219.8	1.6	-137.4
	Q	-98.0	1.6	-61.3
	G+Q	-317.7	1.6	-198.6
46(R)	G	-301.3	7.2	-41.8
	Q	-134.6	7.2	-18.7
	G+Q	-435.8	7.2	-60.5
47(R)	G	-526.2	4.6	-114.4
	Q	-186.3	4.6	-40.5
	G+Q	-712.5	4.6	-154.9
48(R)	G	-866.8	7.2	-120.4
	Q	-145.5	7.2	-20.2
	G+Q	-1012.4	7.2	-140.6

### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
49(R)	G	-954.8	7.2	-132.6
	Q	-95.0	7.2	-13.2
	G+Q	-1049.8	7.2	-145.8
50(R)	G	-341.2	7.2	-47.4
	Q	-97.0	7.2	-13.5
	G+Q	-438.2	7.2	-60.9
51(R)	G	-112.9	1.6	-70.6
	Q	-12.0	1.6	-7.5
	G+Q	-124.9	1.6	-78.1
52(R)	G	-208.8	4.6	-45.4
	Q	-20.9	4.6	-4.5
	G+Q	-229.7	4.6	-49.9
53(R)	G	-335.9	7.2	-46.7
	Q	-25.4	7.2	-3.5
	G+Q	-361.3	7.2	-50.2
54(R)	G	-191.3	7.2	-26.6
	Q	0.4	7.2	0.1
	G+Q	-191.0	7.2	-26.5
55(R)	G	-294.2	6.1	-48.2
	Q	-26.1	6.1	-4.3
	G+Q	-320.3	6.1	-52.5
56(R)	G	-285.3	4.5	-63.4
	Q	-28.5	4.5	-6.3
	G+Q	-313.8	4.5	-69.7
57(R)	G	-271.5	3.7	-73.4
	Q	-28.1	3.7	-7.6
	G+Q	-299.6	3.7	-81.0
58(R)	G	-66.3	1.6	-41.4
	Q	-6.5	1.6	-4.1
	G+Q	-72.8	1.6	-45.5
59(R)	G	-201.7	4.6	-43.8
	Q	-22.7	4.6	-4.9
	G+Q	-224.4	4.6	-48.8
60(R)	G	-259.5	4.4	-59.0
	Q	-27.5	4.4	-6.3
	G+Q	-287.0	4.4	-65.2
61(R)	G	-488.6	6.1	-80.1
	Q	-57.9	6.1	-9.5
	G+Q	-546.4	6.1	-89.6
62(R)	G	-289.3	6.1	-47.4
	Q	-24.3	6.1	-4.0
	G+Q	-313.6	6.1	-51.4
63(R)	G	-612.2	7.2	-85.0
	Q	-160.2	7.2	-22.3
	G+Q	-772.4	7.2	-107.3
64(R)	G	-783.7	6.2	-126.4
	Q	-117.0	6.2	-18.9
	G+Q	-900.6	6.2	-145.3

### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
65(R)	G	-649.0	5.2	-124.8
	Q	-57.2	5.2	-11.0
	G+Q	-706.2	5.2	-135.8
66(R)	G	-357.7	3.3	-108.4
	Q	-26.0	3.3	-7.9
	G+Q	-383.7	3.3	-116.3
67(R)	G	-602.5	5.2	-115.9
	Q	-53.2	5.2	-10.2
	G+Q	-655.6	5.2	-126.1
68(R)	G	-1077.2	7.2	-149.6
	Q	-161.1	7.2	-22.4
	G+Q	-1238.4	7.2	-172.0
69(R)	G	-1000.4	6.5	-153.9
	Q	-152.5	6.5	-23.5
	G+Q	-1152.9	6.5	-177.4
70(R)	G	-1038.2	6.5	-159.7
	Q	-139.7	6.5	-21.5
	G+Q	-1178.0	6.5	-181.2
71(R)	G	-933.9	7.2	-129.7
	Q	-147.7	7.2	-20.5
	G+Q	-1081.7	7.2	-150.2
72(R)	G	-659.7	7.2	-91.6
	Q	-223.1	7.2	-31.0
	G+Q	-882.8	7.2	-122.6
73(R)	G	-426.2	5.3	-80.4
	Q	-133.0	5.3	-25.1
	G+Q	-559.1	5.3	-105.5
74(R)	G	-510.9	7.2	-71.0
	Q	-134.2	7.2	-18.6
	G+Q	-645.1	7.2	-89.6
75(R)	G	-902.7	12.5	-72.2
	Q	-338.8	12.5	-27.1
	G+Q	-1241.5	12.5	-99.3
76(R)	G	-1032.4	7.2	-143.4
	Q	-123.1	7.2	-17.1
	G+Q	-1155.5	7.2	-160.5
77(R)	G	-851.6	7.2	-118.3
	Q	-106.3	7.2	-14.8
	G+Q	-957.9	7.2	-133.0
78(R)	G	-715.8	8.2	-87.3
	Q	-306.7	8.2	-37.4
	G+Q	-1022.6	8.2	-124.7
79(R)	G	-469.1	7.2	-65.2
	Q	-79.5	7.2	-11.0
	G+Q	-548.6	7.2	-76.2
80(R)	G	-280.6	4.5	-62.4
	Q	-27.3	4.5	-6.1
	G+Q	-307.9	4.5	-68.4

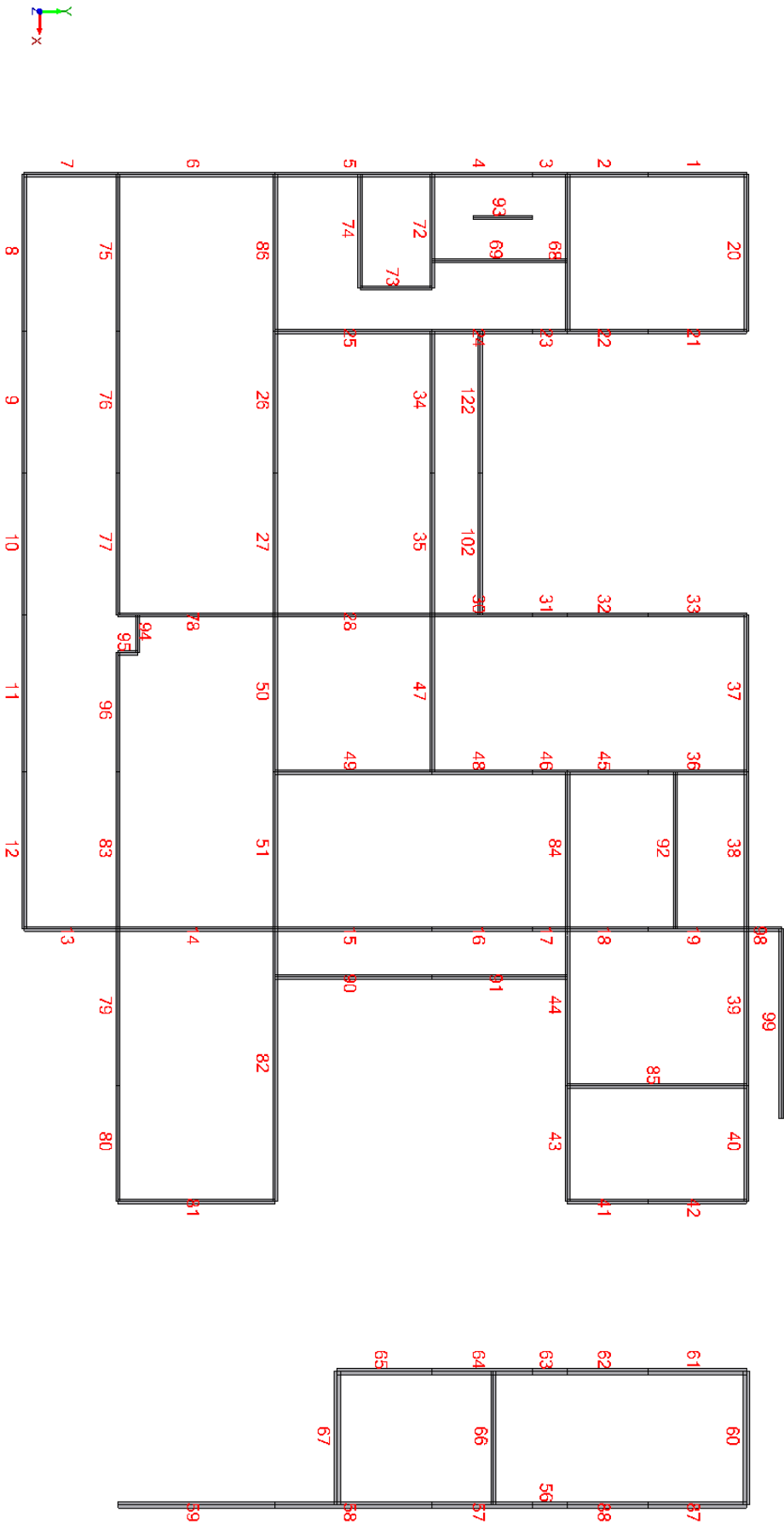
### Torseurs des appuis linéaires

N° Élément	Cas de charges	Fz (kN)	Longueur (m)	Fz (kN/m)
81(R)	G	-331.0	3.7	-89.5
	Q	-36.3	3.7	-9.8
	G+Q	-367.3	3.7	-99.3
82(R)	G	-164.3	7.2	-22.8
	Q	-62.4	7.2	-8.7
	G+Q	-226.7	7.2	-31.5
83(R)	G	-186.1	6.2	-30.0
	Q	-54.1	6.2	-8.7
	G+Q	-240.3	6.2	-38.8
84(R)	G	-827.4	7.2	-114.9
	Q	-148.4	7.2	-20.6
	G+Q	-975.8	7.2	-135.5
85(R)	G	-218.6	2.7	-81.0
	Q	-33.9	2.7	-12.6
	G+Q	-252.5	2.7	-93.5
86(R)	G	-215.8	1.7	-126.9
	Q	-25.2	1.7	-14.8
	G+Q	-240.9	1.7	-141.7
87(R)	G	-273.7	0.9	-304.1
	Q	-33.4	0.9	-37.1
	G+Q	-307.0	0.9	-341.1
88(R)	G	-775.0	5.5	-140.9
	Q	-91.6	5.5	-16.7
	G+Q	-866.6	5.5	-157.6
89(R)	G	-29.5	1.6	-18.4
	Q	-2.4	1.6	-1.5
	G+Q	-31.9	1.6	-19.9
90(R)	G	-49.5	8.7	-5.7
	Q	0.2	8.7	0.0
	G+Q	-49.3	8.7	-5.7
91(R)	G	-356.6	6.5	-54.9
	Q	-89.0	6.5	-13.7
	G+Q	-445.6	6.5	-68.6
92(R)	G	-366.0	6.5	-56.3
	Q	-52.2	6.5	-8.0
	G+Q	-418.2	6.5	-64.3



DDC Niv. Fondation

Vue de DESSUS



### Torseurs des voiles - Charge Permanente

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
1	G	-58.3	-61.0	-403.5	-403.7	4.50	4.50
2	G	20.8	21.0	-367.7	-366.6	3.70	3.70
3	G	0.5	0.5	-146.9	-146.7	1.60	1.60
4	G	-22.7	-21.1	-440.8	-438.8	4.60	4.60
5	G	59.4	60.3	-702.4	-701.3	7.20	7.20
6	G	446.6	437.8	-968.9	-965.8	7.20	7.20
7	G	-17.5	-10.2	-118.5	-118.1	4.30	4.30
8	G	-134.4	-95.1	-265.7	-312.1	7.20	7.20
9	G	103.6	29.6	-425.8	-339.1	6.50	6.50
10	G	40.5	8.1	-433.3	-351.2	6.50	6.50
11	G	-15.7	78.2	-356.4	-411.8	7.20	7.20
12	G	215.4	168.1	-289.9	-329.0	7.20	7.20
13	G	14.1	6.8	-113.9	-112.6	4.30	4.30
14	G	95.3	78.2	-825.9	-832.4	7.20	7.20
15	G	-593.7	-594.4	-473.2	-473.0	7.20	7.20
16	G	216.6	214.4	-592.8	-593.4	4.60	4.60
17	G	6.6	6.6	-131.4	-131.6	1.60	1.60
18	G	-82.2	-94.6	-454.6	-462.4	3.70	3.70
19	G	116.8	122.3	-226.3	-244.6	4.50	4.50
20	G	18.5	18.4	-568.5	-567.4	7.20	7.20
21	G	31.1	32.9	-396.1	-395.4	4.50	4.50
22	G	-11.2	-11.8	-355.1	-354.8	3.70	3.70
23	G	2.1	2.1	-146.8	-146.3	1.60	1.60
24	G	10.1	8.2	-420.8	-419.9	4.60	4.60
25	G	3.1	-8.5	-923.5	-922.5	7.20	7.20
26	G	-173.9	-156.6	-989.9	-966.2	6.50	6.50
27	G	582.4	563.8	-721.1	-729.9	6.50	6.50
28	G	-53.8	-57.8	-877.4	-875.4	7.20	7.20
30	G	57.2	61.2	-398.4	-396.1	4.60	4.60
31	G	0.4	0.4	-170.3	-170.6	1.60	1.60
32	G	9.6	9.4	-406.9	-407.4	3.70	3.70
33	G	-46.1	-44.9	-464.1	-462.3	4.50	4.50
34	G	88.0	82.9	-709.3	-708.6	6.50	6.50
35	G	-160.3	-160.4	-737.3	-738.4	6.50	6.50
36	G	22.1	24.4	-435.8	-438.4	4.50	4.50
37	G	-41.6	-40.9	-460.4	-461.3	7.20	7.20
38	G	-61.0	-63.1	-440.2	-439.6	7.20	7.20
39	G	132.2	126.3	-502.1	-504.8	7.20	7.20
40	G	-58.4	-58.8	-381.9	-381.0	5.30	5.30
41	G	-5.6	-5.2	-238.6	-238.1	3.70	3.70
42	G	18.9	21.5	-303.7	-302.8	4.50	4.50
43	G	-19.1	-17.9	-377.7	-376.9	5.30	5.30
44	G	-243.5	-243.3	-504.2	-504.6	7.20	7.20
45	G	-28.5	-35.6	-499.3	-493.9	3.70	3.70
46	G	-8.8	-8.8	-209.1	-208.8	1.60	1.60
47	G	142.6	133.7	-279.9	-274.4	7.20	7.20
48	G	-53.7	-43.6	-605.9	-610.4	4.60	4.60

### Torseurs des voiles - Charge Permanente

<b>N° Élément</b>	<b>Cas de charges</b>	<b>M haut (kN*m)</b>	<b>M bas (kN*m)</b>	<b>N haut (kN)</b>	<b>N bas (kN)</b>	<b>L haut (m)</b>	<b>L bas (m)</b>
49	G	17.8	36.2	-886.9	-892.8	7.20	7.20
50	G	149.5	152.5	-906.2	-918.6	7.20	7.20
51	G	88.8	85.4	-328.1	-325.8	7.20	7.20
56	G	1.0	1.0	-88.3	-88.8	1.60	1.60
57	G	8.9	14.9	-228.0	-232.4	4.60	4.60
58	G	-316.2	-323.0	-327.3	-330.0	7.20	7.20
59	G	8.0	6.4	-164.8	-164.0	7.20	7.20
60	G	-41.7	-41.4	-257.8	-257.5	6.10	6.10
61	G	-42.8	-43.5	-282.5	-281.1	4.50	4.50
62	G	18.1	16.1	-274.2	-274.9	3.70	3.70
63	G	7.5	7.5	-37.4	-37.7	1.60	1.60
64	G	25.1	28.0	-88.9	-86.2	4.60	4.60
65	G	129.6	133.2	-252.2	-256.7	4.35	4.35
66	G	137.9	149.1	-423.7	-423.6	6.10	6.10
67	G	60.4	60.2	-256.4	-255.6	6.10	6.10
68	G	208.9	216.8	-664.6	-657.0	7.20	7.20
69	G	76.3	59.4	-655.1	-659.6	6.20	6.20
72	G	-1.3	-25.2	-741.6	-732.8	5.20	5.20
73	G	2.1	2.6	-362.6	-360.0	3.30	3.30
74	G	222.9	235.3	-257.0	-247.1	5.20	5.20
75	G	-705.6	-685.7	-1099.	-1079.	7.20	7.20
76	G	24.0	14.2	-969.9	-970.1	6.50	6.50
77	G	308.2	290.1	-1081.	-1086.	6.50	6.50
78	G	-509.3	-514.3	-624.2	-620.3	7.20	7.20
79	G	-59.0	-63.0	-671.5	-670.7	7.20	7.20
80	G	61.0	61.5	-411.2	-408.0	5.30	5.30
81	G	4.6	4.3	-487.6	-487.5	7.20	7.20
82	G	570.7	568.5	-848.2	-849.3	12.50	12.50
83	G	-30.3	36.0	-1074.	-1062.	7.20	7.20
84	G	653.2	633.4	-879.0	-893.3	7.20	7.20
85	G	681.6	682.9	-750.6	-732.7	8.20	8.20
86	G	-290.0	-276.5	-442.6	-435.4	7.20	7.20
87	G	107.2	115.4	-287.4	-287.9	4.50	4.50
88	G	8.3	19.5	-324.0	-323.8	3.70	3.70
90	G	76.2	73.7	-98.1	-94.9	7.20	7.20
91	G	-106.3	-105.9	-109.3	-110.5	6.20	6.20
92	G	35.1	22.7	-596.5	-600.9	7.20	7.20
93	G	2.2	2.2	-215.1	-211.9	2.72	2.72
94	G	-15.8	-9.8	-32.5	-19.9	1.74	1.74
95	G	6.9	6.9	-225.8	-225.6	0.90	0.90
96	G	75.9	83.7	-780.3	-779.5	5.46	5.46
98	G	6.4	6.4	-21.3	-21.1	1.60	1.60
99	G	-40.3	-23.5	-23.5	-19.3	8.70	8.70
102	G	156.7	140.6	-285.6	-279.1	6.50	6.50
122	G	-168.5	-159.8	-283.3	-279.1	6.50	6.50

## Torseurs des voiles - r harge

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
1	Q	-62.1	-63.4	-119.3	-122.3	4.50	4.50
2	Q	35.0	35.5	-92.3	-92.1	3.70	3.70
3	Q	0.6	0.6	-15.6	-15.4	1.60	1.60
4	Q	0.7	0.3	-44.0	-43.3	4.60	4.60
5	Q	-4.5	-4.8	-56.1	-56.3	7.20	7.20
6	Q	83.5	81.6	-110.5	-109.8	7.20	7.20
7	Q	-3.6	-3.0	-12.4	-12.4	4.30	4.30
8	Q	-17.0	-13.6	-33.5	-35.8	7.20	7.20
9	Q	8.5	2.4	-48.5	-41.1	6.50	6.50
10	Q	2.9	-0.2	-49.0	-43.1	6.50	6.50
11	Q	-1.3	6.8	-45.0	-49.1	7.20	7.20
12	Q	25.6	24.4	-36.7	-38.8	7.20	7.20
13	Q	-0.6	-0.7	-10.2	-10.3	4.30	4.30
14	Q	-11.5	-14.7	-180.2	-180.9	7.20	7.20
15	Q	-138.5	-138.7	-105.4	-105.4	7.20	7.20
16	Q	32.9	32.8	-100.5	-100.8	4.60	4.60
17	Q	1.9	1.9	-22.5	-22.5	1.60	1.60
18	Q	-7.8	-9.2	-58.1	-59.1	3.70	3.70
19	Q	18.5	18.6	-34.5	-37.9	4.50	4.50
20	Q	-5.7	-5.6	-158.2	-160.6	7.20	7.20
21	Q	44.2	44.4	-118.5	-120.6	4.50	4.50
22	Q	-25.0	-26.5	-112.3	-112.6	3.70	3.70
23	Q	1.8	1.8	-19.6	-19.4	1.60	1.60
24	Q	-8.0	-8.7	-55.7	-54.6	4.60	4.60
25	Q	-15.6	-18.5	-147.4	-147.6	7.20	7.20
26	Q	-105.6	-101.8	-197.7	-196.0	6.50	6.50
27	Q	120.9	115.7	-155.0	-157.1	6.50	6.50
28	Q	-31.7	-32.1	-165.5	-165.1	7.20	7.20
30	Q	56.1	58.6	-142.7	-141.1	4.60	4.60
31	Q	0.4	0.4	-76.1	-76.5	1.60	1.60
32	Q	1.0	1.0	-175.1	-176.3	3.70	3.70
33	Q	-60.7	-56.5	-142.3	-142.7	4.50	4.50
34	Q	78.6	75.5	-162.8	-163.9	6.50	6.50
35	Q	-66.8	-66.6	-188.5	-188.4	6.50	6.50
36	Q	-47.0	-45.0	-148.7	-150.7	4.50	4.50
37	Q	0.2	1.0	-120.1	-121.7	7.20	7.20
38	Q	-13.9	-14.2	-51.4	-51.3	7.20	7.20
39	Q	26.9	26.0	-62.5	-62.8	7.20	7.20
40	Q	-33.6	-34.5	-87.7	-88.6	5.30	5.30
41	Q	-31.9	-31.4	-59.5	-59.6	3.70	3.70
42	Q	54.7	56.5	-98.6	-101.1	4.50	4.50
43	Q	-17.5	-16.8	-84.8	-85.4	5.30	5.30
44	Q	-65.5	-65.6	-132.7	-132.7	7.20	7.20
45	Q	-16.2	-18.2	-242.8	-241.0	3.70	3.70
46	Q	-2.4	-2.4	-108.5	-108.4	1.60	1.60
47	Q	54.0	53.9	-132.7	-132.2	7.20	7.20
48	Q	37.8	45.8	-209.4	-212.1	4.60	4.60
49	Q	50.0	52.6	-149.4	-150.2	7.20	7.20

### Torseurs des voiles - r harge

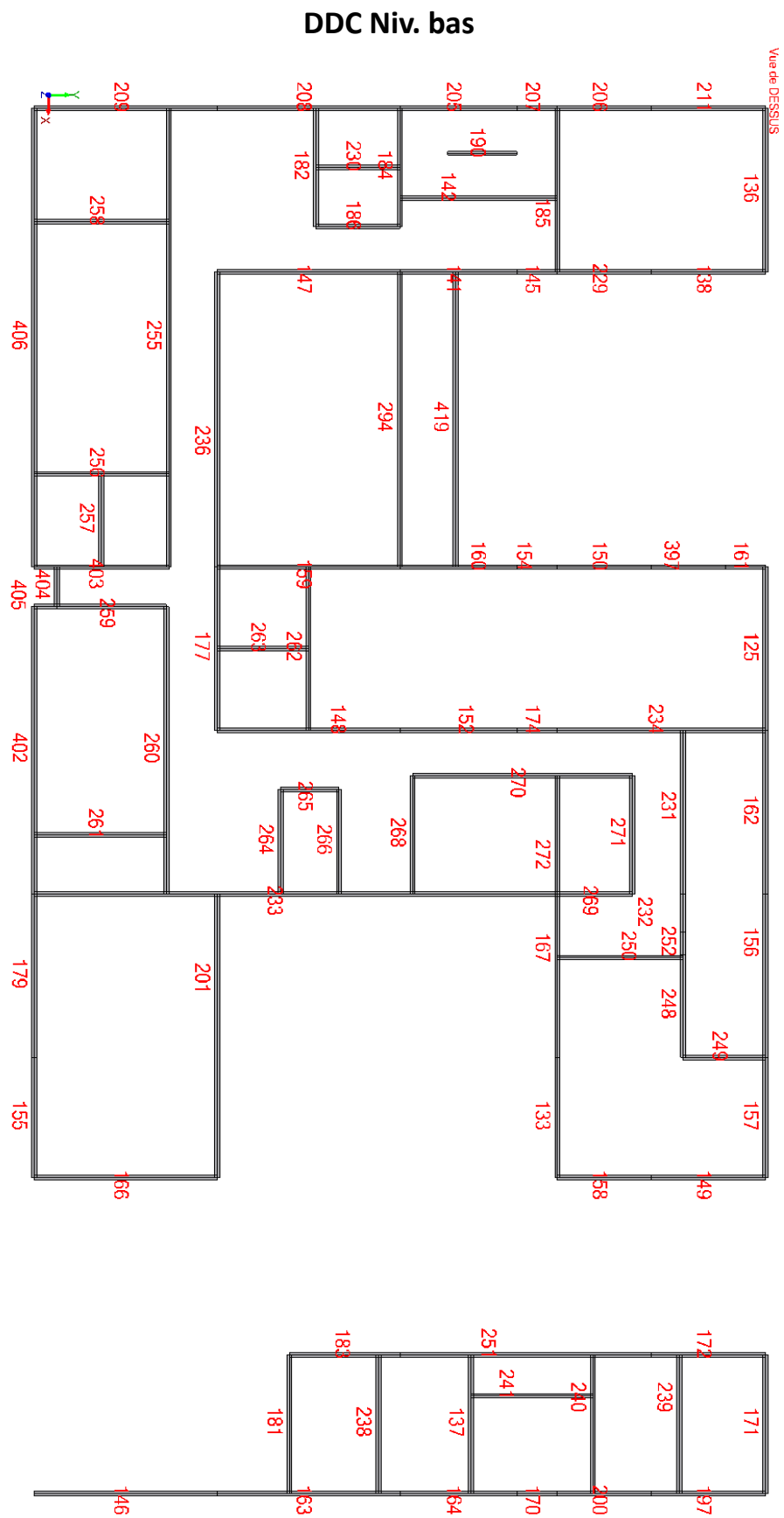
N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
50	Q	27.9	28.1	-89.8	-91.0	7.20	7.20
51	Q	3.2	8.0	-99.4	-100.5	7.20	7.20
56	Q	0.0	0.0	-9.9	-10.0	1.60	1.60
57	Q	0.7	1.5	-23.3	-23.9	4.60	4.60
58	Q	-49.0	-49.9	-27.1	-27.5	7.20	7.20
59	Q	-0.6	-0.6	0.5	0.5	7.20	7.20
60	Q	-6.0	-5.9	-24.5	-24.6	6.10	6.10
61	Q	-6.6	-6.6	-30.1	-30.0	4.50	4.50
62	Q	2.1	1.9	-29.8	-29.9	3.70	3.70
63	Q	0.8	0.8	-4.1	-4.1	1.60	1.60
64	Q	2.5	2.8	-10.1	-9.8	4.60	4.60
65	Q	18.9	19.3	-28.6	-29.2	4.35	4.35
66	Q	19.9	21.5	-54.0	-54.1	6.10	6.10
67	Q	8.3	8.2	-23.9	-23.9	6.10	6.10
68	Q	88.8	112.1	-182.2	-171.7	7.20	7.20
69	Q	41.0	40.3	-88.9	-87.7	6.20	6.20
72	Q	-7.9	-10.2	-67.6	-65.9	5.20	5.20
73	Q	4.5	4.6	-25.1	-24.7	3.30	3.30
74	Q	26.3	26.3	-26.0	-24.8	5.20	5.20
75	Q	-154.9	-150.3	-167.6	-163.2	7.20	7.20
76	Q	10.1	8.0	-149.8	-150.2	6.50	6.50
77	Q	68.8	66.1	-146.3	-147.8	6.50	6.50
78	Q	-110.7	-111.6	-106.7	-106.2	7.20	7.20
79	Q	-132.1	-135.7	-230.7	-229.6	7.20	7.20
80	Q	81.8	83.5	-134.0	-131.6	5.30	5.30
81	Q	-13.7	-14.1	-132.6	-134.7	7.20	7.20
82	Q	114.7	118.3	-325.4	-326.9	12.50	12.50
83	Q	0.3	9.8	-130.7	-128.5	7.20	7.20
84	Q	128.0	127.8	-104.8	-106.6	7.20	7.20
85	Q	11.2	9.8	-323.5	-317.3	8.20	8.20
86	Q	-61.6	-62.5	-78.7	-78.2	7.20	7.20
87	Q	15.7	16.7	-30.2	-30.3	4.50	4.50
88	Q	1.1	2.5	-37.0	-37.0	3.70	3.70
90	Q	31.9	27.0	-45.1	-42.4	7.20	7.20
91	Q	-17.2	-16.8	-42.7	-43.0	6.20	6.20
92	Q	-6.5	-11.4	-96.9	-98.6	7.20	7.20
93	Q	-9.8	-9.8	-34.4	-33.5	2.72	2.72
94	Q	-2.1	-1.3	-3.9	-2.4	1.74	1.74
95	Q	0.9	0.9	-28.3	-28.2	0.90	0.90
96	Q	11.0	12.1	-93.0	-93.0	5.46	5.46
98	Q	0.7	0.7	-1.7	-1.6	1.60	1.60
99	Q	-2.1	-2.0	0.4	0.4	8.70	8.70
102	Q	59.6	49.7	-70.9	-66.5	6.50	6.50
122	Q	-9.0	-8.0	-44.5	-43.7	6.50	6.50

## Torseurs des voiles - G + Q

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
1	G+Q	-120.4	-124.4	-522.8	-525.9	4.50	4.50
2	G+Q	55.8	56.5	-460.0	-458.7	3.70	3.70
3	G+Q	1.1	1.1	-162.5	-162.1	1.60	1.60
4	G+Q	-22.0	-20.8	-484.7	-482.1	4.60	4.60
5	G+Q	54.9	55.5	-758.5	-757.6	7.20	7.20
6	G+Q	530.1	519.4	-1079.	-1075.	7.20	7.20
7	G+Q	-21.1	-13.2	-130.9	-130.5	4.30	4.30
8	G+Q	-151.4	-108.7	-299.2	-348.0	7.20	7.20
9	G+Q	112.2	32.0	-474.4	-380.2	6.50	6.50
10	G+Q	43.4	7.9	-482.3	-394.2	6.50	6.50
11	G+Q	-17.0	84.9	-401.4	-460.9	7.20	7.20
12	G+Q	241.0	192.6	-326.6	-367.7	7.20	7.20
13	G+Q	13.6	6.1	-124.1	-122.9	4.30	4.30
14	G+Q	83.8	63.6	-1006.	-1013.	7.20	7.20
15	G+Q	-732.2	-733.1	-578.5	-578.4	7.20	7.20
16	G+Q	249.5	247.2	-693.3	-694.2	4.60	4.60
17	G+Q	8.5	8.5	-153.8	-154.1	1.60	1.60
18	G+Q	-89.9	-103.8	-512.7	-521.5	3.70	3.70
19	G+Q	135.4	140.9	-260.8	-282.5	4.50	4.50
20	G+Q	12.7	12.9	-726.7	-728.0	7.20	7.20
21	G+Q	75.3	77.3	-514.6	-516.0	4.50	4.50
22	G+Q	-36.2	-38.3	-467.3	-467.4	3.70	3.70
23	G+Q	3.8	3.8	-166.4	-165.7	1.60	1.60
24	G+Q	2.1	-0.6	-476.5	-474.6	4.60	4.60
25	G+Q	-12.5	-27.0	-1070.	-1070.	7.20	7.20
26	G+Q	-279.5	-258.4	-1187.	-1162.	6.50	6.50
27	G+Q	703.2	679.5	-876.1	-886.9	6.50	6.50
28	G+Q	-85.4	-89.9	-1042.	-1040.	7.20	7.20
30	G+Q	113.3	119.8	-541.1	-537.2	4.60	4.60
31	G+Q	0.8	0.8	-246.4	-247.1	1.60	1.60
32	G+Q	10.6	10.4	-582.0	-583.7	3.70	3.70
33	G+Q	-106.8	-101.4	-606.4	-605.1	4.50	4.50
34	G+Q	166.7	158.4	-872.1	-872.4	6.50	6.50
35	G+Q	-227.1	-227.0	-925.8	-926.9	6.50	6.50
36	G+Q	-24.9	-20.6	-584.5	-589.1	4.50	4.50
37	G+Q	-41.4	-39.9	-580.6	-583.0	7.20	7.20
38	G+Q	-74.9	-77.2	-491.6	-490.8	7.20	7.20
39	G+Q	159.1	152.3	-564.5	-567.5	7.20	7.20
40	G+Q	-92.0	-93.3	-469.6	-469.6	5.30	5.30
41	G+Q	-37.5	-36.6	-298.1	-297.7	3.70	3.70
42	G+Q	73.5	78.1	-402.3	-403.9	4.50	4.50
43	G+Q	-36.6	-34.6	-462.5	-462.3	5.30	5.30
44	G+Q	-308.9	-308.9	-636.9	-637.3	7.20	7.20
45	G+Q	-44.8	-53.7	-742.1	-734.8	3.70	3.70
46	G+Q	-11.2	-11.2	-317.6	-317.2	1.60	1.60
47	G+Q	196.6	187.6	-412.6	-406.6	7.20	7.20
48	G+Q	-15.9	2.2	-815.3	-822.5	4.60	4.60
49	G+Q	67.8	88.9	-1036.	-1043.	7.20	7.20

## Torseurs des voiles - G + Q

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
50	G+Q	177.4	180.5	-996.0	-1009	7.20	7.20
51	G+Q	92.0	93.4	-427.5	-426.4	7.20	7.20
56	G+Q	1.0	1.0	-98.3	-98.8	1.60	1.60
57	G+Q	9.6	16.5	-251.2	-256.3	4.60	4.60
58	G+Q	-365.2	-372.9	-354.5	-357.6	7.20	7.20
59	G+Q	7.4	5.8	-164.3	-163.5	7.20	7.20
60	G+Q	-47.7	-47.3	-282.3	-282.2	6.10	6.10
61	G+Q	-49.4	-50.1	-312.6	-311.1	4.50	4.50
62	G+Q	20.2	18.0	-304.1	-304.8	3.70	3.70
63	G+Q	8.4	8.4	-41.4	-41.8	1.60	1.60
64	G+Q	27.6	30.8	-99.0	-96.0	4.60	4.60
65	G+Q	148.5	152.5	-280.8	-286.0	4.35	4.35
66	G+Q	157.8	170.6	-477.7	-477.7	6.10	6.10
67	G+Q	68.7	68.4	-280.3	-279.5	6.10	6.10
68	G+Q	297.7	328.8	-846.8	-828.7	7.20	7.20
69	G+Q	117.3	99.6	-744.1	-747.3	6.20	6.20
72	G+Q	-9.2	-35.3	-809.2	-798.6	5.20	5.20
73	G+Q	6.6	7.2	-387.7	-384.7	3.30	3.30
74	G+Q	249.2	261.7	-283.0	-271.9	5.20	5.20
75	G+Q	-860.5	-835.9	-1266.	-1243.	7.20	7.20
76	G+Q	34.1	22.2	-1119.	-1120.	6.50	6.50
77	G+Q	377.0	356.2	-1228.	-1234.	6.50	6.50
78	G+Q	-620.1	-625.9	-730.8	-726.5	7.20	7.20
79	G+Q	-191.1	-198.7	-902.1	-900.4	7.20	7.20
80	G+Q	142.8	145.0	-545.3	-539.6	5.30	5.30
81	G+Q	-9.1	-9.8	-620.1	-622.1	7.20	7.20
82	G+Q	685.4	686.8	-1173.	-1176.	12.50	12.50
83	G+Q	-29.9	45.8	-1205.	-1191.	7.20	7.20
84	G+Q	781.2	761.2	-983.8	-999.9	7.20	7.20
85	G+Q	692.8	692.7	-1074.	-1049.	8.20	8.20
86	G+Q	-351.6	-339.0	-521.4	-513.6	7.20	7.20
87	G+Q	122.9	132.1	-317.6	-318.2	4.50	4.50
88	G+Q	9.4	22.0	-361.0	-360.8	3.70	3.70
90	G+Q	108.1	100.7	-143.1	-137.3	7.20	7.20
91	G+Q	-123.5	-122.7	-152.0	-153.5	6.20	6.20
92	G+Q	28.5	11.3	-693.4	-699.5	7.20	7.20
93	G+Q	-7.6	-7.6	-249.5	-245.4	2.72	2.72
94	G+Q	-17.9	-11.2	-36.4	-22.3	1.74	1.74
95	G+Q	7.9	7.9	-254.0	-253.8	0.90	0.90
96	G+Q	86.9	95.8	-873.3	-872.5	5.46	5.46
98	G+Q	7.1	7.1	-22.9	-22.7	1.60	1.60
99	G+Q	-42.4	-25.5	-23.0	-18.9	8.70	8.70
102	G+Q	216.3	190.2	-356.5	-345.6	6.50	6.50
122	G+Q	-177.6	-167.8	-327.9	-322.8	6.50	6.50





### Torseurs des voiles - Charge Permanente

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
125	G	-6.7	-32.9	-112.2	-280.9	7.20	7.20
133	G	101.6	70.1	-261.4	-312.5	5.30	5.30
136	G	21.8	47.7	-348.3	-420.3	7.20	7.20
137	G	21.2	149.0	-164.8	-298.5	6.10	6.10
138	G	-30.9	20.2	-179.7	-294.2	4.50	4.50
141	G	-154.1	10.1	-174.1	-340.0	4.60	4.60
142	G	-4.0	93.5	-442.2	-499.3	6.20	6.20
145	G	0.0	-0.7	-116.1	-126.7	1.60	1.60
146	G	1.4	2.6	-34.3	-103.6	7.20	7.20
147	G	90.4	169.2	-693.0	-771.1	7.20	7.20
148	G	56.2	-283.8	-501.6	-565.2	7.20	7.20
149	G	9.3	-7.8	-156.6	-201.0	4.50	4.50
150	G	-5.1	1.6	-100.7	-281.6	3.70	3.70
152	G	-278.3	-279.3	-393.5	-478.0	4.60	4.60
154	G	-8.9	0.5	-43.5	-118.9	1.60	1.60
155	G	31.5	9.2	-211.0	-268.3	5.30	5.30
156	G	-100.6	165.9	-379.7	-403.6	7.20	7.20
157	G	-50.0	-46.0	-221.4	-287.7	5.30	5.30
158	G	-6.0	5.9	-129.3	-170.4	3.70	3.70
159	G	-62.6	94.3	-391.5	-567.7	7.20	7.20
160	G	-62.7	-16.6	-323.4	-335.7	4.60	4.60
161	G	-18.6	-4.2	-105.1	-124.7	1.58	1.58
162	G	153.4	146.1	-219.6	-381.1	7.20	7.20
163	G	-63.2	-126.2	-70.4	-175.4	7.20	7.20
164	G	9.3	13.3	-54.7	-124.7	4.60	4.60
166	G	-1.8	6.8	-258.6	-333.2	7.20	7.20
167	G	-209.5	-255.9	-232.8	-375.0	7.20	7.20
170	G	-1.4	-2.0	-26.5	-48.9	1.60	1.60
171	G	-12.4	-37.5	-76.8	-143.2	6.10	6.10
172	G	-19.1	-37.5	-79.1	-178.0	4.50	4.50
174	G	16.0	8.8	-154.5	-228.4	1.60	1.60
177	G	226.7	67.8	-557.1	-539.2	7.20	7.20
179	G	165.9	122.7	-420.4	-473.7	7.20	7.20
181	G	4.9	26.0	-78.5	-140.5	6.10	6.10
182	G	46.2	31.1	-285.9	-236.7	5.20	5.20
183	G	15.1	40.9	-59.1	-122.2	4.35	4.35
184	G	34.5	36.5	-409.8	-492.5	5.20	5.20
185	G	64.2	151.5	-464.7	-498.8	7.20	7.20
186	G	-6.1	-8.9	-294.5	-344.0	3.30	3.30
190	G	-4.5	0.4	-144.1	-164.2	2.72	2.72
197	G	24.0	55.0	-69.8	-158.1	4.50	4.50
200	G	-4.5	-8.2	-66.6	-160.2	3.70	3.70
201	G	-30.3	-7.0	-403.7	-644.8	12.50	12.50
205	G	-24.8	-26.0	-313.6	-359.5	4.60	4.60
206	G	47.9	6.5	-273.0	-298.4	3.70	3.70
207	G	0.8	0.6	-86.2	-118.6	1.60	1.60
208	G	9.1	-5.2	-535.7	-638.9	7.20	7.20
209	G	-184.4	-26.9	-507.4	-621.6	7.20	7.20

### Torseurs des voiles - Charge Permanente

<b>N° Élément</b>	<b>Cas de charges</b>	<b>M haut (kN*m)</b>	<b>M bas (kN*m)</b>	<b>N haut (kN)</b>	<b>N bas (kN)</b>	<b>L haut (m)</b>	<b>L bas (m)</b>
211	G	-113.9	-45.3	-227.2	-298.6	4.50	4.50
229	G	57.6	1.2	-140.5	-271.5	3.70	3.70
230	G	5.4	-30.5	-243.8	-268.4	3.30	3.30
231	G	-247.3	-238.9	-310.1	-553.9	7.20	7.20
232	G	26.4	41.5	-90.3	-71.2	1.68	1.68
233	G	913.4	352.1	-752.1	-1362	20.60	20.60
234	G	99.8	-329.4	-618.7	-719.9	8.20	8.20
236	G	-671.0	-809.4	-1341	-1407	13.00	13.00
238	G	16.7	66.9	-87.4	-51.8	6.10	6.10
239	G	-31.2	-69.0	-62.3	-0.1	6.10	6.10
240	G	-72.8	-81.7	-70.3	-46.3	6.10	6.10
241	G	-6.0	-77.3	0.2	48.2	4.80	4.80
248	G	212.3	366.4	-162.6	-144.6	4.52	4.52
249	G	-7.0	-22.6	-195.0	-263.5	3.25	3.25
250	G	-180.8	-362.0	-122.0	-129.3	4.95	4.95
251	G	190.5	360.0	-122.1	-270.9	9.90	9.90
252	G	-2.3	-2.3	-9.2	-7.8	1.00	1.00
255	G	-792.8	-628.8	-319.0	-489.2	20.20	20.20
256	G	-228.7	-442.4	-144.5	-82.3	5.30	5.30
257	G	-78.2	-240.6	-70.0	-143.1	4.10	4.10
258	G	-155.2	-470.2	-134.3	-76.4	5.30	5.30
259	G	106.0	334.6	-91.1	-185.7	4.30	4.30
260	G	-656.7	-1115	-249.2	-214.8	12.66	12.66
261	G	-128.4	-350.0	-95.8	-98.3	5.20	5.20
262	G	30.1	87.1	-62.8	-132.0	7.20	7.20
263	G	-155.7	-220.2	-173.2	-155.8	3.60	3.60
264	G	79.0	252.9	-203.2	-251.1	4.60	4.60
265	G	14.6	29.0	-33.2	-46.4	2.30	2.30
266	G	-137.2	-361.6	-97.9	-96.1	4.60	4.60
268	G	33.0	308.6	-204.1	-155.4	5.20	5.20
269	G	-22.2	14.8	-213.2	-257.8	2.95	2.95
270	G	246.9	-280.5	-69.8	-257.9	8.65	8.65
271	G	-314.4	-397.8	-101.6	-89.9	5.20	5.20
272	G	-29.7	70.1	-212.8	-277.8	5.20	5.20
294	G	483.9	235.4	-964.3	-1103	13.00	13.00
397	G	99.7	8.2	-223.5	-265.1	2.92	2.92
402	G	186.9	310.4	-908.8	-1169	12.66	12.66
403	G	14.4	10.8	-140.1	-290.1	5.30	5.30
404	G	0.3	5.5	-1.4	-43.9	1.74	1.74
405	G	-5.9	-0.2	-60.1	-115.9	0.90	0.90
406	G	-731.7	-671.5	-1325	-1986	20.20	20.20
419	G	-45.5	-14.4	-225.5	-437.0	13.00	13.00

## Torseurs des voiles - ur ar e

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
125	Q	1.3	-16.0	4.8	-17.4	7.20	7.20
133	Q	18.6	18.0	-22.7	-23.1	5.30	5.30
136	Q	5.0	9.0	-32.2	-34.0	7.20	7.20
137	Q	0.4	18.4	-26.8	-35.6	6.10	6.10
138	Q	-3.6	-3.8	-17.4	-25.6	4.50	4.50
141	Q	-19.4	2.8	-21.5	-39.6	4.60	4.60
142	Q	3.2	16.1	-53.7	-57.3	6.20	6.20
145	Q	-0.1	-0.5	-14.4	-14.5	1.60	1.60
146	Q	0.1	-0.1	0.1	0.4	7.20	7.20
147	Q	18.7	10.7	-71.9	-71.5	7.20	7.20
148	Q	49.7	14.3	-70.9	-64.6	7.20	7.20
149	Q	-1.7	-10.7	-4.9	-3.8	4.50	4.50
150	Q	-2.0	-5.1	-30.4	-67.1	3.70	3.70
152	Q	-11.9	-43.0	-134.6	-132.9	4.60	4.60
154	Q	-3.3	-0.1	-14.6	-31.8	1.60	1.60
155	Q	-0.4	-6.9	-8.7	-9.1	5.30	5.30
156	Q	-10.0	21.4	-49.6	-46.3	7.20	7.20
157	Q	-11.0	-7.0	-18.5	-21.3	5.30	5.30
158	Q	0.8	6.6	-5.1	-7.0	3.70	3.70
159	Q	-37.8	-36.9	-59.3	-70.9	7.20	7.20
160	Q	0.6	7.4	-104.5	-85.5	4.60	4.60
161	Q	-4.4	-0.8	-22.5	-24.2	1.58	1.58
162	Q	17.2	8.7	-29.6	-43.6	7.20	7.20
163	Q	-11.9	-21.8	-7.4	-13.3	7.20	7.20
164	Q	1.4	1.8	-7.2	-11.6	4.60	4.60
166	Q	-1.7	-1.1	-11.3	-11.6	7.20	7.20
167	Q	-32.2	-23.5	-27.1	-55.4	7.20	7.20
170	Q	-0.2	-0.3	-3.9	-4.6	1.60	1.60
171	Q	-1.9	-5.7	-10.9	-11.6	6.10	6.10
172	Q	-2.9	-5.5	-10.6	-19.0	4.50	4.50
174	Q	0.2	1.9	-59.2	-79.6	1.60	1.60
177	Q	11.4	2.1	-47.0	-43.4	7.20	7.20
179	Q	21.2	23.8	-23.8	-18.5	7.20	7.20
181	Q	0.8	4.0	-11.0	-10.9	6.10	6.10
182	Q	8.8	3.7	-27.5	-17.2	5.20	5.20
183	Q	2.0	6.6	-7.8	-13.1	4.35	4.35
184	Q	6.2	5.5	-38.1	-41.5	5.20	5.20
185	Q	-2.4	-0.4	-56.9	-49.3	7.20	7.20
186	Q	0.3	0.2	-25.3	-29.1	3.30	3.30
190	Q	0.7	2.9	-23.1	-23.1	2.72	2.72
197	Q	3.7	8.6	-9.3	-16.5	4.50	4.50
200	Q	-0.6	-1.2	-8.9	-17.9	3.70	3.70
201	Q	1.6	-15.7	-25.1	-34.3	12.50	12.50
205	Q	2.3	1.3	-29.6	-30.2	4.60	4.60
206	Q	3.2	-4.8	-25.0	-24.7	3.70	3.70
207	Q	-0.1	0.2	-9.0	-12.3	1.60	1.60
208	Q	-5.5	-7.1	-40.9	-47.0	7.20	7.20

## Torseurs des voiles - ur ar e

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
209	Q	-15.9	11.4	-42.6	-53.6	7.20	7.20
211	Q	-12.1	5.6	-20.9	-22.6	4.50	4.50
229	Q	6.8	1.7	-14.3	-18.5	3.70	3.70
230	Q	0.8	-1.0	-20.6	-20.2	3.30	3.30
231	Q	-18.9	-8.5	-48.6	-94.0	7.20	7.20
232	Q	3.4	6.2	-14.2	-13.0	1.68	1.68
233	Q	-43.7	-150.1	-68.3	-149.9	20.60	20.60
234	Q	-143.6	-243.8	-176.1	-210.4	8.20	8.20
236	Q	-53.4	-64.9	-138.1	-134.2	13.00	13.00
238	Q	2.1	8.7	-17.2	-1.8	6.10	6.10
239	Q	-4.6	-8.2	-12.9	5.1	6.10	6.10
240	Q	-12.4	-9.1	-13.6	-2.7	6.10	6.10
241	Q	0.8	-11.7	-0.8	11.2	4.80	4.80
248	Q	18.6	62.2	-25.1	3.5	4.52	4.52
249	Q	2.0	-4.6	-21.4	-40.6	3.25	3.25
250	Q	-19.2	-73.0	-22.4	9.2	4.95	4.95
251	Q	24.0	38.8	-16.8	-29.9	9.90	9.90
252	Q	-1.1	-1.1	-2.7	-1.2	1.00	1.00
255	Q	55.4	87.7	-193.3	-171.2	20.20	20.20
256	Q	-26.3	-66.9	-36.4	-3.9	5.30	5.30
257	Q	-11.3	-31.5	-10.7	-26.5	4.10	4.10
258	Q	-20.6	-87.1	-31.9	-10.9	5.30	5.30
259	Q	9.4	38.6	-13.9	-20.0	4.30	4.30
260	Q	-17.6	-68.1	-29.3	2.0	12.66	12.66
261	Q	-15.9	-36.1	-20.8	-15.0	5.20	5.20
262	Q	6.2	18.3	-6.0	-17.0	7.20	7.20
263	Q	-10.8	-24.4	-19.3	-6.6	3.60	3.60
264	Q	11.4	48.6	-19.9	-14.8	4.60	4.60
265	Q	0.9	5.2	3.2	6.7	2.30	2.30
266	Q	-15.7	-73.2	-8.2	10.5	4.60	4.60
268	Q	-6.0	46.2	-34.1	-8.5	5.20	5.20
269	Q	-5.3	3.2	-34.5	-33.3	2.95	2.95
270	Q	159.6	2.2	34.1	-12.0	8.65	8.65
271	Q	-42.3	-68.9	-17.2	-4.4	5.20	5.20
272	Q	11.3	-5.2	-40.0	-29.4	5.20	5.20
294	Q	150.1	125.9	-189.6	-185.1	13.00	13.00
397	Q	22.2	1.1	-52.4	-54.8	2.92	2.92
402	Q	8.4	11.5	-89.4	-112.3	12.66	12.66
403	Q	-9.6	-17.4	-19.3	-39.4	5.30	5.30
404	Q	0.1	0.5	-0.1	-5.1	1.74	1.74
405	Q	-0.6	0.2	-5.0	-12.6	0.90	0.90
406	Q	-11.2	-12.8	-180.3	-257.2	20.20	20.20
419	Q	-16.0	64.8	-79.4	-101.5	13.00	13.00

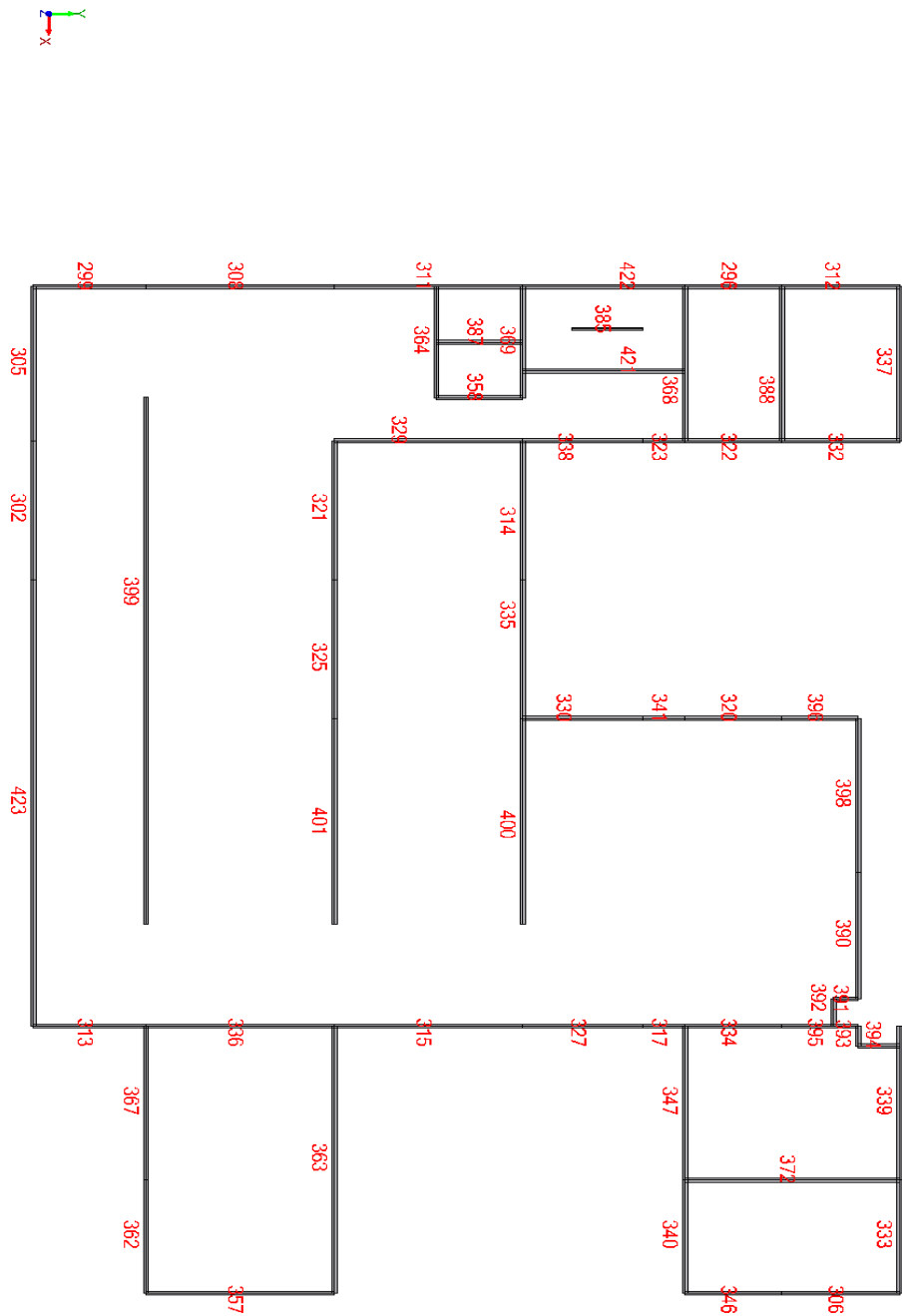
## Torseurs des voiles - G + Q

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
125	G+Q	-5.4	-48.9	-107.3	-298.3	7.20	7.20
133	G+Q	120.3	88.1	-284.1	-335.6	5.30	5.30
136	G+Q	26.8	56.8	-380.5	-454.3	7.20	7.20
137	G+Q	21.6	167.5	-191.6	-334.2	6.10	6.10
138	G+Q	-34.5	16.4	-197.2	-319.8	4.50	4.50
141	G+Q	-173.4	12.9	-195.6	-379.7	4.60	4.60
142	G+Q	-0.8	109.6	-495.9	-556.6	6.20	6.20
145	G+Q	-0.1	-1.2	-130.5	-141.2	1.60	1.60
146	G+Q	1.5	2.5	-34.1	-103.3	7.20	7.20
147	G+Q	109.1	179.9	-764.9	-842.5	7.20	7.20
148	G+Q	105.9	-269.4	-572.5	-629.8	7.20	7.20
149	G+Q	7.6	-18.5	-161.5	-204.8	4.50	4.50
150	G+Q	-7.1	-3.6	-131.1	-348.6	3.70	3.70
152	G+Q	-290.2	-322.4	-528.1	-610.9	4.60	4.60
154	G+Q	-12.2	0.4	-58.1	-150.7	1.60	1.60
155	G+Q	31.0	2.3	-219.6	-277.4	5.30	5.30
156	G+Q	-110.6	187.3	-429.3	-449.9	7.20	7.20
157	G+Q	-61.0	-52.9	-239.9	-309.0	5.30	5.30
158	G+Q	-5.2	12.5	-134.4	-177.4	3.70	3.70
159	G+Q	-100.5	57.4	-450.7	-638.6	7.20	7.20
160	G+Q	-62.1	-9.2	-427.9	-421.2	4.60	4.60
161	G+Q	-23.0	-5.0	-127.6	-148.9	1.58	1.58
162	G+Q	170.5	154.8	-249.2	-424.6	7.20	7.20
163	G+Q	-75.1	-148.0	-77.8	-188.8	7.20	7.20
164	G+Q	10.7	15.1	-61.9	-136.2	4.60	4.60
166	G+Q	-3.5	5.8	-269.9	-344.8	7.20	7.20
167	G+Q	-241.7	-279.4	-259.9	-430.5	7.20	7.20
170	G+Q	-1.6	-2.3	-30.4	-53.6	1.60	1.60
171	G+Q	-14.3	-43.2	-87.7	-154.8	6.10	6.10
172	G+Q	-22.0	-43.0	-89.7	-196.9	4.50	4.50
174	G+Q	16.2	10.8	-213.7	-308.1	1.60	1.60
177	G+Q	238.1	69.9	-604.1	-582.6	7.20	7.20
179	G+Q	187.1	146.5	-444.2	-492.2	7.20	7.20
181	G+Q	5.7	29.9	-89.5	-151.3	6.10	6.10
182	G+Q	55.0	34.7	-313.4	-253.9	5.20	5.20
183	G+Q	17.1	47.5	-66.9	-135.3	4.35	4.35
184	G+Q	40.7	42.0	-447.9	-534.0	5.20	5.20
185	G+Q	61.8	151.0	-521.6	-548.1	7.20	7.20
186	G+Q	-5.8	-8.7	-319.9	-373.1	3.30	3.30
190	G+Q	-3.8	3.3	-167.2	-187.3	2.72	2.72
197	G+Q	27.8	63.6	-79.1	-174.6	4.50	4.50
200	G+Q	-5.1	-9.3	-75.5	-178.0	3.70	3.70
201	G+Q	-28.7	-22.7	-428.8	-679.1	12.50	12.50
205	G+Q	-22.4	-24.8	-343.2	-389.6	4.60	4.60
206	G+Q	51.1	1.7	-298.0	-323.1	3.70	3.70
207	G+Q	0.6	0.8	-95.2	-130.8	1.60	1.60
208	G+Q	3.5	-12.3	-576.6	-685.8	7.20	7.20
209	G+Q	-200.3	-15.5	-549.9	-675.3	7.20	7.20

## Torseurs des voiles - G + Q

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
211	G+Q	-126.0	-39.7	-248.1	-321.2	4.50	4.50
229	G+Q	64.4	2.9	-154.7	-290.0	3.70	3.70
230	G+Q	6.2	-31.5	-264.4	-288.7	3.30	3.30
231	G+Q	-266.2	-247.4	-358.7	-647.9	7.20	7.20
232	G+Q	29.8	47.8	-104.5	-84.2	1.68	1.68
233	G+Q	869.7	201.9	-820.3	-1512.5	20.60	20.60
234	G+Q	-43.8	-573.2	-794.8	-930.3	8.20	8.20
236	G+Q	-724.4	-874.3	-1479	-1542	13.00	13.00
238	G+Q	18.8	75.6	-104.6	-53.6	6.10	6.10
239	G+Q	-35.9	-77.2	-75.2	5.0	6.10	6.10
240	G+Q	-85.2	-90.7	-83.9	-49.0	6.10	6.10
241	G+Q	-5.2	-89.0	-0.6	59.4	4.80	4.80
248	G+Q	230.9	428.6	-187.7	-141.1	4.52	4.52
249	G+Q	-5.0	-27.2	-216.4	-304.1	3.25	3.25
250	G+Q	-200.0	-435.1	-144.4	-120.1	4.95	4.95
251	G+Q	214.5	398.8	-138.9	-300.8	9.90	9.90
252	G+Q	-3.4	-3.4	-11.9	-9.0	1.00	1.00
255	G+Q	-737.5	-541.1	-512.3	-660.4	20.20	20.20
256	G+Q	-255.1	-509.4	-180.9	-86.2	5.30	5.30
257	G+Q	-89.5	-272.1	-80.7	-169.5	4.10	4.10
258	G+Q	-175.8	-557.3	-166.2	-87.3	5.30	5.30
259	G+Q	115.4	373.2	-105.0	-205.7	4.30	4.30
260	G+Q	-674.3	-1183	-278.4	-212.8	12.66	12.66
261	G+Q	-144.3	-386.1	-116.6	-113.3	5.20	5.20
262	G+Q	36.3	105.4	-68.8	-148.9	7.20	7.20
263	G+Q	-166.5	-244.6	-192.5	-162.3	3.60	3.60
264	G+Q	90.4	301.5	-223.1	-266.0	4.60	4.60
265	G+Q	15.5	34.2	-30.0	-39.7	2.30	2.30
266	G+Q	-152.9	-434.9	-106.1	-85.6	4.60	4.60
268	G+Q	27.0	354.8	-238.2	-163.8	5.20	5.20
269	G+Q	-27.5	18.0	-247.7	-291.1	2.95	2.95
270	G+Q	406.5	-278.4	-35.7	-270.0	8.65	8.65
271	G+Q	-356.7	-466.7	-118.8	-94.3	5.20	5.20
272	G+Q	-18.4	64.9	-252.8	-307.2	5.20	5.20
294	G+Q	634.1	361.3	-1154	-1288	13.00	13.00
397	G+Q	121.8	9.3	-275.9	-319.9	2.92	2.92
402	G+Q	195.3	321.8	-998.2	-1281.0	12.66	12.66
403	G+Q	4.8	-6.7	-159.4	-329.5	5.30	5.30
404	G+Q	0.3	6.0	-1.5	-49.0	1.74	1.74
405	G+Q	-6.5	0.0	-65.2	-128.5	0.90	0.90
406	G+Q	-742.9	-684.2	-1505	-2243	20.20	20.20
419	G+Q	-61.5	50.4	-305.0	-538.5	13.00	13.00

**Vue de DESSUS**



### Torseurs des voiles - Charge Permanente

<b>N° Élément</b>	<b>Cas de charges</b>	<b>M haut (kN*m)</b>	<b>M bas (kN*m)</b>	<b>N haut (kN)</b>	<b>N bas (kN)</b>	<b>L haut (m)</b>	<b>L bas (m)</b>
296	G	-19.8	15.5	-87.7	-192.7	3.70	3.70
299	G	50.5	47.8	-74.6	-131.9	4.30	4.30
302	G	-94.4	-40.7	-73.6	-129.6	6.50	6.50
305	G	-47.3	-99.0	-88.4	-73.1	7.20	7.20
306	G	25.4	17.4	-71.0	-113.7	4.50	4.50
308	G	137.7	311.3	-225.1	-348.3	7.20	7.20
311	G	-49.8	179.7	-326.9	-380.3	7.20	7.20
312	G	7.5	-12.0	-51.2	-103.4	4.50	4.50
313	G	14.3	-12.2	-39.5	-115.0	4.30	4.30
314	G	57.2	-31.2	-59.3	-202.1	6.50	6.50
315	G	-12.3	-5.3	-140.1	-185.5	7.20	7.20
317	G	-1.2	-2.6	-54.2	-71.2	1.60	1.60
320	G	0.4	-2.8	-91.7	-122.2	3.70	3.70
321	G	195.8	273.6	-430.2	-523.5	6.50	6.50
322	G	30.9	7.9	-82.6	-172.1	3.70	3.70
323	G	5.9	-2.9	-61.5	-11.7	1.60	1.60
325	G	-21.9	26.3	-330.9	-350.0	6.50	6.50
327	G	18.0	-10.8	-19.7	-153.3	4.60	4.60
329	G	1.4	285.3	-429.8	-456.8	7.20	7.20
330	G	-28.8	31.1	-114.3	-139.5	4.60	4.60
332	G	-2.8	36.1	-72.7	-165.1	4.50	4.50
333	G	-7.0	-31.0	-73.9	-147.2	5.30	5.30
334	G	-14.2	-13.6	-171.4	-226.0	3.70	3.70
335	G	77.4	219.1	-211.6	-339.0	6.50	6.50
336	G	53.2	207.4	-284.2	-337.8	7.20	7.20
337	G	10.2	32.0	-110.9	-193.0	7.20	7.20
338	G	-31.8	143.7	-208.8	-144.4	4.60	4.60
339	G	-41.0	-128.9	-112.4	-244.3	7.20	7.20
340	G	6.0	49.3	-78.9	-168.2	5.30	5.30
341	G	-3.1	3.3	-41.4	-45.5	1.60	1.60
346	G	-18.8	-11.7	-54.2	-91.4	3.70	3.70
347	G	49.0	59.6	-103.2	-216.6	7.20	7.20
357	G	-7.3	-5.2	-122.3	-189.2	7.20	7.20
358	G	1.4	-10.4	-185.9	-227.4	3.30	3.30
362	G	61.2	50.5	-103.0	-155.9	5.30	5.30
363	G	-76.6	-60.7	-231.1	-404.3	12.50	12.50
364	G	-4.4	-3.0	-181.7	-156.7	5.20	5.20
367	G	-28.9	93.6	-184.0	-313.1	7.20	7.20
368	G	19.5	146.3	-256.3	-333.3	7.20	7.20
369	G	-23.4	-17.4	-234.6	-291.2	5.20	5.20
372	G	85.4	201.5	-247.7	-227.5	8.20	8.20
385	G	-2.7	-3.2	-63.8	-83.8	2.72	2.72
387	G	3.4	-18.2	-158.2	-205.5	3.30	3.30
388	G	73.2	148.0	-95.6	30.3	7.20	7.20
390	G	-195.0	-337.8	-197.4	-263.5	5.93	5.93
391	G	2.4	2.2	-23.3	-45.6	0.95	0.95
392	G	-0.5	-4.3	-1.1	-9.4	1.28	1.28
393	G	3.2	-0.9	-13.8	-10.0	0.92	0.92



### Torseurs des voiles - Charge Permanente

<i>N° Élément</i>	<i>Cas de charges</i>	<i>M haut (kN*m)</i>	<i>M bas (kN*m)</i>	<i>N haut (kN)</i>	<i>N bas (kN)</i>	<i>L haut (m)</i>	<i>L bas (m)</i>
394	G	0.5	4.7	-1.5	-8.7	1.57	1.57
395	G	40.8	23.1	-60.2	-98.9	2.93	2.93
396	G	-8.8	35.7	-69.3	-163.3	2.92	2.92
398	G	222.3	245.4	-199.6	-171.5	7.20	7.20
399	G	-1350	48.4	-1144	-1523	24.66	24.66
400	G	-437.5	-923.0	-461.2	-567.4	9.63	9.63
401	G	-221.8	132.9	-597.8	-729.5	9.63	9.63
421	G	-87.9	-168.3	-215.2	-298.9	6.20	6.20
422	G	-75.6	-153.0	-217.6	-265.0	6.20	6.20
423	G	245.6	539.6	-271.8	-310.2	20.90	20.90

## Torseurs des voiles - ur ar e

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
296	Q	-1.7	1.1	-8.5	-16.5	3.70	3.70
299	Q	5.5	4.6	-7.2	-10.2	4.30	4.30
302	Q	-9.7	-5.2	-8.5	-10.0	6.50	6.50
305	Q	-5.3	-9.2	-8.4	-0.9	7.20	7.20
306	Q	3.2	1.6	-6.0	-5.6	4.50	4.50
308	Q	-3.5	0.2	-16.0	-15.0	7.20	7.20
311	Q	3.9	15.9	-18.4	-21.7	7.20	7.20
312	Q	1.7	-2.9	-4.4	-7.4	4.50	4.50
313	Q	2.2	1.2	-3.5	-7.5	4.30	4.30
314	Q	7.2	-0.7	-4.7	-13.0	6.50	6.50
315	Q	-3.1	-3.9	-12.0	-1.8	7.20	7.20
317	Q	-0.1	-0.4	-6.2	-8.0	1.60	1.60
320	Q	0.7	-0.6	-9.4	-7.1	3.70	3.70
321	Q	9.7	31.2	-20.7	-21.7	6.50	6.50
322	Q	5.3	5.5	-11.0	-19.5	3.70	3.70
323	Q	0.8	-0.4	-10.4	-1.6	1.60	1.60
325	Q	-3.6	-6.8	-17.3	-14.2	6.50	6.50
327	Q	1.5	-3.2	-2.0	-15.7	4.60	4.60
329	Q	-2.5	22.1	-26.6	-25.5	7.20	7.20
330	Q	-11.6	-14.6	-12.7	-9.9	4.60	4.60
332	Q	-0.1	4.0	-7.2	-13.4	4.50	4.50
333	Q	-1.0	-4.8	-7.1	-12.1	5.30	5.30
334	Q	-0.9	0.3	-19.5	-24.1	3.70	3.70
335	Q	21.5	55.6	-29.0	-46.2	6.50	6.50
336	Q	7.3	25.4	-13.7	-14.2	7.20	7.20
337	Q	1.9	4.8	-9.6	-12.1	7.20	7.20
338	Q	-13.1	11.6	-22.6	-12.2	4.60	4.60
339	Q	-3.5	-17.1	-10.9	-20.9	7.20	7.20
340	Q	1.1	9.4	-8.0	-15.6	5.30	5.30
341	Q	-0.3	1.4	-3.8	1.8	1.60	1.60
346	Q	-2.4	-1.1	-4.5	-4.7	3.70	3.70
347	Q	0.0	-3.6	-8.5	-10.2	7.20	7.20
357	Q	-1.0	-2.3	-11.0	-11.4	7.20	7.20
358	Q	0.8	-0.7	-14.3	-16.5	3.30	3.30
362	Q	7.4	4.9	-9.4	-9.1	5.30	5.30
363	Q	-9.0	-5.0	-22.4	-29.2	12.50	12.50
364	Q	0.1	-0.2	-13.9	-8.5	5.20	5.20
367	Q	-6.1	6.9	-18.0	-21.8	7.20	7.20
368	Q	-20.7	4.1	-39.2	-35.0	7.20	7.20
369	Q	-1.9	-2.1	-19.0	-19.6	5.20	5.20
372	Q	9.2	22.2	-20.3	0.8	8.20	8.20
385	Q	-1.5	-0.7	-8.3	-8.3	2.72	2.72
387	Q	1.4	-0.3	-13.2	-14.0	3.30	3.30
388	Q	7.3	14.5	-8.4	12.2	7.20	7.20
390	Q	-26.0	-55.7	-23.6	-36.3	5.93	5.93
391	Q	0.4	0.3	-3.3	-5.6	0.95	0.95
392	Q	-0.1	-0.6	-0.2	-1.0	1.28	1.28
393	Q	0.3	-0.6	0.0	2.4	0.92	0.92

## Torseurs des voiles - ur ar e

<i>N° Élément</i>	<i>Cas de charges</i>	<i>M haut (kN*m)</i>	<i>M bas (kN*m)</i>	<i>N haut (kN)</i>	<i>N bas (kN)</i>	<i>L haut (m)</i>	<i>L bas (m)</i>
394	Q	0.1	0.8	-0.1	-0.2	1.57	1.57
395	Q	5.1	1.0	-4.3	-2.9	2.93	2.93
396	Q	-0.3	12.8	-13.0	-32.8	2.92	2.92
398	Q	29.9	28.9	-5.0	26.0	7.20	7.20
399	Q	6.2	159.7	-45.8	-61.8	24.66	24.66
400	Q	-65.1	-187.2	-50.7	-46.3	9.63	9.63
401	Q	-2.0	24.7	-34.7	-40.1	9.63	9.63
421	Q	1.0	-9.1	-27.7	-29.3	6.20	6.20
422	Q	-2.7	-9.3	-18.9	-18.9	6.20	6.20
423	Q	31.7	55.7	-32.7	-15.0	20.90	20.90

## Torseurs des voiles - G + Q

N° Élément	Cas de charges	M haut (kN*m)	M bas (kN*m)	N haut (kN)	N bas (kN)	L haut (m)	L bas (m)
296	G+Q	-21.6	16.6	-96.1	-209.2	3.70	3.70
299	G+Q	56.0	52.4	-81.8	-142.1	4.30	4.30
302	G+Q	-104.1	-45.9	-82.1	-139.5	6.50	6.50
305	G+Q	-52.6	-108.2	-96.8	-74.0	7.20	7.20
306	G+Q	28.6	18.9	-77.1	-119.3	4.50	4.50
308	G+Q	134.2	311.5	-241.1	-363.3	7.20	7.20
311	G+Q	-45.9	195.6	-345.3	-402.0	7.20	7.20
312	G+Q	9.2	-14.9	-55.6	-110.8	4.50	4.50
313	G+Q	16.4	-11.0	-43.0	-122.5	4.30	4.30
314	G+Q	64.4	-31.9	-64.0	-215.1	6.50	6.50
315	G+Q	-15.4	-9.1	-152.0	-187.3	7.20	7.20
317	G+Q	-1.2	-3.0	-60.4	-79.2	1.60	1.60
320	G+Q	1.1	-3.4	-101.1	-129.3	3.70	3.70
321	G+Q	205.5	304.8	-450.9	-545.2	6.50	6.50
322	G+Q	36.2	13.5	-93.7	-191.5	3.70	3.70
323	G+Q	6.7	-3.3	-71.9	-13.3	1.60	1.60
325	G+Q	-25.5	19.4	-348.2	-364.2	6.50	6.50
327	G+Q	19.5	-14.0	-21.8	-169.0	4.60	4.60
329	G+Q	-1.1	307.4	-456.4	-482.3	7.20	7.20
330	G+Q	-40.4	16.4	-127.1	-149.4	4.60	4.60
332	G+Q	-2.9	40.1	-79.9	-178.5	4.50	4.50
333	G+Q	-8.1	-35.8	-81.0	-159.3	5.30	5.30
334	G+Q	-15.1	-13.3	-190.9	-250.0	3.70	3.70
335	G+Q	98.9	274.7	-240.7	-385.2	6.50	6.50
336	G+Q	60.5	232.8	-297.9	-352.1	7.20	7.20
337	G+Q	12.1	36.8	-120.6	-205.1	7.20	7.20
338	G+Q	-44.8	155.3	-231.4	-156.6	4.60	4.60
339	G+Q	-44.5	-146.0	-123.3	-265.3	7.20	7.20
340	G+Q	7.0	58.7	-86.9	-183.8	5.30	5.30
341	G+Q	-3.4	4.7	-45.2	-43.7	1.60	1.60
346	G+Q	-21.3	-12.9	-58.7	-96.1	3.70	3.70
347	G+Q	49.0	56.0	-111.7	-226.8	7.20	7.20
357	G+Q	-8.3	-7.6	-133.3	-200.6	7.20	7.20
358	G+Q	2.2	-11.1	-200.2	-244.0	3.30	3.30
362	G+Q	68.7	55.4	-112.5	-165.0	5.30	5.30
363	G+Q	-85.6	-65.6	-253.5	-433.5	12.50	12.50
364	G+Q	-4.3	-3.1	-195.6	-165.1	5.20	5.20
367	G+Q	-35.0	100.5	-202.0	-334.9	7.20	7.20
368	G+Q	-1.3	150.5	-295.5	-368.3	7.20	7.20
369	G+Q	-25.3	-19.5	-253.7	-310.8	5.20	5.20
372	G+Q	94.6	223.6	-268.0	-226.6	8.20	8.20
385	G+Q	-4.3	-3.9	-72.1	-92.1	2.72	2.72
387	G+Q	4.8	-18.6	-171.4	-219.5	3.30	3.30
388	G+Q	80.5	162.4	-103.9	42.5	7.20	7.20
390	G+Q	-221.0	-393.5	-221.0	-299.7	5.93	5.93
391	G+Q	2.7	2.5	-26.6	-51.2	0.95	0.95
392	G+Q	-0.6	-4.9	-1.3	-10.4	1.28	1.28
393	G+Q	3.5	-1.5	-13.9	-7.7	0.92	0.92

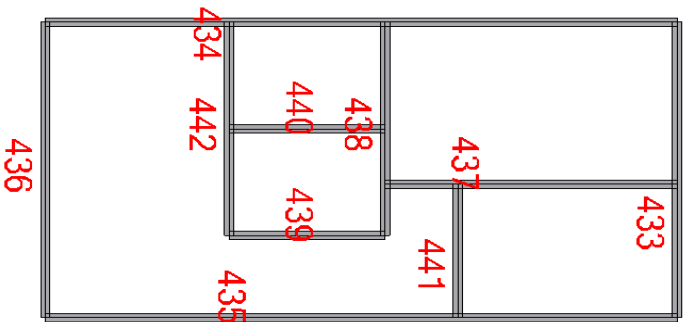
**Torseurs des voiles - G + Q**

<b>N° Élément</b>	<b>Cas de charges</b>	<b>M haut (kN*m)</b>	<b>M bas (kN*m)</b>	<b>N haut (kN)</b>	<b>N bas (kN)</b>	<b>L haut (m)</b>	<b>L bas (m)</b>
394	G+Q	0.6	5.6	-1.6	-8.9	1.57	1.57
395	G+Q	45.8	24.1	-64.5	-101.8	2.93	2.93
396	G+Q	-9.1	48.5	-82.3	-196.1	2.92	2.92
398	G+Q	252.2	274.3	-204.5	-145.5	7.20	7.20
399	G+Q	-1344	208.1	-1190	-1585	24.66	24.66
400	G+Q	-502.7	-1110	-511.9	-613.7	9.63	9.63
401	G+Q	-223.8	157.6	-632.6	-769.7	9.63	9.63
421	G+Q	-86.9	-177.3	-243.0	-328.3	6.20	6.20
422	G+Q	-78.3	-162.3	-236.5	-283.9	6.20	6.20
423	G+Q	277.3	595.4	-304.5	-325.2	20.90	20.90

DDC Niv. Haut



Vue de DRESSUS



## Torseurs des voiles - ar e er anen e

<i>N° Élément</i>	<i>Cas de charges</i>	<i>M haut (kN*m)</i>	<i>M bas (kN*m)</i>	<i>N haut (kN)</i>	<i>N bas (kN)</i>	<i>L haut (m)</i>	<i>L bas (m)</i>
433	G	10.8	30.4	-56.0	-102.9	7.20	7.20
434	G	-143.3	119.9	-111.7	-314.0	13.40	13.40
435	G	-9.2	-160.3	-161.7	-384.8	13.40	13.40
436	G	-28.1	-193.0	-45.4	-27.1	7.20	7.20
437	G	49.2	19.2	-78.9	-119.0	6.20	6.20
438	G	-14.3	-23.8	-78.9	-137.3	5.20	5.20
439	G	-13.4	-36.4	-62.4	-130.8	3.30	3.30
440	G	-2.0	-28.1	-47.3	-109.1	3.30	3.30
441	G	3.8	18.3	-22.0	-24.6	3.25	3.25
442	G	1.7	3.8	-23.6	-22.2	5.20	5.20

## Torseurs des voiles - ur ar e

<i>N° Élément</i>	<i>Cas de charges</i>	<i>M haut (kN*m)</i>	<i>M bas (kN*m)</i>	<i>N haut (kN)</i>	<i>N bas (kN)</i>	<i>L haut (m)</i>	<i>L bas (m)</i>
433	Q	2.3	8.8	0.5	0.2	7.20	7.20
434	Q	-1.2	9.5	-0.8	-6.0	13.40	13.40
435	Q	2.6	-2.1	-3.0	-11.5	13.40	13.40
436	Q	-1.5	-8.0	3.3	10.0	7.20	7.20
437	Q	-1.9	-11.0	3.5	10.6	6.20	6.20
438	Q	-1.4	-2.9	-1.7	-2.3	5.20	5.20
439	Q	0.0	-0.7	-1.6	-3.8	3.30	3.30
440	Q	0.4	-0.2	1.0	1.7	3.30	3.30
441	Q	-0.7	-0.5	0.9	3.2	3.25	3.25
442	Q	0.0	0.2	0.3	-0.2	5.20	5.20



**Torseurs des voiles - G + Q**

<i>N° Élément</i>	<i>Cas de charges</i>	<i>M haut (kN*m)</i>	<i>M bas (kN*m)</i>	<i>N haut (kN)</i>	<i>N bas (kN)</i>	<i>L haut (m)</i>	<i>L bas (m)</i>
433	G+Q	13.1	39.2	-55.5	-102.7	7.20	7.20
434	G+Q	-144.5	129.4	-112.4	-320.0	13.40	13.40
435	G+Q	-6.6	-162.4	-164.7	-396.3	13.40	13.40
436	G+Q	-29.6	-201.0	-42.2	-17.2	7.20	7.20
437	G+Q	47.3	8.2	-75.4	-108.5	6.20	6.20
438	G+Q	-15.7	-26.7	-80.6	-139.5	5.20	5.20
439	G+Q	-13.4	-37.0	-64.0	-134.5	3.30	3.30
440	G+Q	-1.5	-28.3	-46.3	-107.5	3.30	3.30
441	G+Q	3.1	17.8	-21.0	-21.4	3.25	3.25
442	G+Q	1.7	4.0	-23.3	-22.5	5.20	5.20