



BESTAND	
CALCULATIE NUMMER	TOL P081613-76
KLANT	

Mast is geschikt voor: EN 40 -Windgebied III $V_{ref,0}=22.5\text{m/s}$
 Terrein categorie II, Klasse B $y_f:g=1.2$ en $y_f:q=1.2$, materiaal factor $\gamma_m=1.05$
 Horizontale verplaatsing Klasse 2 = $0.06(h+w)$

ALGEMENE INFORMATIE

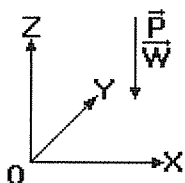
BEREKENINGSUITGANGSPUNT

EN40-3-1 en EN40-3-3 - Europese normen (C) Copyright 1998...2009 [Versie 5 Release Mar 13 2009]

MATERIAAL

Soort	E-module daN/mm ²	G-module daN/mm ²	SM kg/dm ³	Constante van Poisson	Toelaatbare spanning daN/mm ²	Treksterkte daN/mm ²	Rek %
Z6CN18-09	20000	7500	7.85	0.3	21.5	53	40

ASSENSTELSEL



STRUCTUUR OMSCHRIJVING

BUIZEN LIJST (Diameters zijn uitwendige maten)

Omschrijving	Materiaal	Aantal zijden	Bodem/vlak mm	Top/vlak mm	Bodem/Punt mm	Top/Punt mm	Dikte mm	Lengte m	Hoogte m
RVS MAST	Z6CN18-09	0	133.0	133.0	133.0	133.0	4.00	3.251	3.251
	Z6CN18-09	0	80.0	80.0	80.0	80.0	2.90	0.033	3.284
rechter deel arm hor.	Z6CN18-09	0	76.1	76.1	76.1	76.1	2.90	0.171	3.150
linker deel arm hor.	Z6CN18-09	0	76.1	76.1	76.1	76.1	2.90	0.471	3.150
radius deel	Z6CN18-09	0	76.1	76.1	76.1	76.1	2.90	0.157	3.250
linker deel arm	Z6CN18-								

vert.	09	0	76.1	76.1	76.1	76.1	2.90	0.442	3.692
passtuk boven	Z6CN18-09	0	50.0	50.0	50.0	50.0	2.90	0.123	3.599
passtuk onder	Z6CN18-09	0	50.0	50.0	50.0	50.0	2.90	0.123	3.355

Mast gewicht : 48.8779 kg

DEUR AFMETINGEN

Omschrijving	Hoek deg	Onderzijde mm	Lengte mm	Breedte mm
Deur 400 * 85 in buis 133 *4	-90.0	850.0	400.0	87.7
Drukknopgat rnd60	0.0	1320.0	60.0	61.9

BELASTING

BELASTING COMBINATIE LIJST

Combinatie	Belastingsfactor voor eigen gewicht	Belastingsfactor voor windbelasting
Sterkte	1.2	1.2
Uitbuiging	1	1

CALCULATIE RESULTATEN

BELASTINGEN Sterkte :

Omschrijving	Winddruk daN/m ²	Snelheid m/s	Richting (X, Y, Z)	Toegevoegde parameters voor windlast		
				Omschrijving	Waarde	Eenheid
wind EN40 WG.3 KL2	29.1094	22.5	(0 1 0)	Basiswaarde windsnelheid Vref,0	22.5	m/s
				Terrein categorie	2	
				Hoogte factor CALT	1	
				Montage hoogte	0	m
				Bekende topografie factor	Ja	
				Topografie factor f	1	
				Berg hoogte	0	m
				Helling lengte	0	m
				H.O.H. afstand top berg/mast	0	m
				Coëfficiënt Cs	0.959166	

Omschrijving	Gewicht kg of kg/m	Oppervlakte (Cxs=A.c) m ² of m ² /m	Kracht daN of kg/m	Moment daN.m of daN	Start aangrijping mm	Eind aangrijping mm
1/2 Display 986*498*402.8mm M= 80Kg	40	0.3			(123, 0, 3599.5)	
1/2 Display 986*498*402.8mm M= 40Kg	40	0.3			(123, 0, 3354.5)	

EIGEN FREQUENTIE

	Order 1	Eenheid
Trillingstijd	0.314619	s
Eigen frequentie	3.178450	s-1
Rotatie freq.	19.970792	rd/s

Niveau m	D uitw. mm	Traagheids moment cm ⁴		Momenten daN.m			Krachten daN		
		Ix	Iy	X	Y	Z	X	Y	Z
0.00	133.0	337.2	337.2	-234.4	8.6	2.1	0.0	83.6	-150.1
0.50	133.0	337.2	337.2	-193.6	8.6	2.1	0.0	78.9	-142.6
0.85	133.0	310.1	161.1	-166.5	8.6	2.1	0.0	75.7	-137.4
1.25	133.0	310.1	161.1	-136.8	8.6	2.1	0.0	71.9	-132.8
1.32	133.0	219.3	328.6	-131.7	8.6	2.0	0.0	71.2	-131.8
1.38	133.0	219.3	328.6	-127.4	8.6	2.0	0.0	70.7	-131.0
1.88	133.0	337.2	337.2	-93.0	8.6	2.0	0.0	66.0	-123.5
2.38	133.0	337.2	337.2	-60.8	8.6	2.0	0.0	61.3	-116.0
2.88	133.0	337.2	337.2	-31.0	8.6	2.0	0.0	56.6	-108.5
3.15	133.0	337.2	337.2	-0.1	0.0	0.0	0.0	1.2	-1.7
3.25	80.0	52.2	52.2	-0.0	0.0	0.0	0.0	0.2	-0.2
3.28	80.0	52.2	52.2	0.0	0.0	0.0	0.0	0.0	0.0
3.15	76.1	44.7	44.7	0.0	0.1	0.1	0.0	1.1	-1.1
3.15	76.1	44.7	44.7	0.0	0.0	0.0	0.0	0.0	0.0
3.15	76.1	44.7	44.7	-15.8	8.5	1.9	0.0	51.8	-101.7

3.15	76.1	44.7	44.7	-15.8	55.7	25.6	0.0	48.7	-98.8
3.15	76.1	44.7	44.7	-15.8	55.7	25.6	0.0	48.7	-98.8
3.15	76.1	44.7	44.7	-15.8	57.0	26.2	0.0	48.6	-98.7
3.15	76.1	44.7	44.7	-15.7	58.2	26.8	0.0	48.5	-98.6
3.16	76.1	44.7	44.7	-15.5	59.5	27.4	0.0	48.4	-98.6
3.16	76.1	44.7	44.7	-15.2	60.6	28.0	0.0	48.3	-98.5
3.17	76.1	44.7	44.7	-14.8	61.7	28.5	0.0	48.2	-98.4
3.18	76.1	44.7	44.7	-14.4	62.6	29.0	0.0	48.1	-98.3
3.19	76.1	44.7	44.7	-13.9	63.5	29.4	0.0	48.1	-98.2
3.20	76.1	44.7	44.7	-13.4	64.2	29.7	0.0	48.0	-98.2
3.21	76.1	44.7	44.7	-12.8	64.8	30.0	0.0	47.9	-98.1
3.22	76.1	44.7	44.7	-12.2	65.2	30.2	0.0	47.8	-98.0
3.24	76.1	44.7	44.7	-11.6	65.4	30.3	0.0	47.7	-97.9
3.25	76.1	44.7	44.7	-11.0	65.5	30.4	0.0	47.6	-97.8
3.25	76.1	44.7	44.7	-11.0	65.5	30.4	0.0	47.6	-97.8
3.35	76.1	44.7	44.7	-5.9	32.8	15.2	0.0	24.6	-49.6
3.60	76.1	44.7	44.7	-0.0	0.0	0.0	0.0	0.6	-0.6
3.69	76.1	44.7	44.7	0.0	0.0	0.0	0.0	0.0	0.0
3.60	50.0	11.9	11.9	-0.0	32.7	15.2	0.0	22.3	-47.6
3.60	50.0	11.9	11.9	-0.0	26.9	12.5	0.0	21.8	-47.1
3.35	50.0	11.9	11.9	0.0	32.7	15.2	0.0	22.3	-47.6
3.35	50.0	11.9	11.9	0.0	26.9	12.5	0.0	21.8	-47.1

Niveau m	Doorsnedecapaciteit daN.m			Reken momenten daN.m			Csr ≤ 1	Uitbuiging mm	Hoek deg
	Buig/X	Buig/Y	Torsie	Buig/X	Buig/Y	Torsie			
0.00	1362.98	1362.98	1070.48	-234.39	8.65	2.06	0.17	0.00	0.0910
0.50	1362.98	1362.98	1070.48	-193.64	8.64	2.06	0.14	0.79	0.1446
0.85	1053.35	718.25	167.09	-166.46	8.64	2.06	0.18	1.68	0.2009
1.25	1053.35	718.25	167.09	-136.76	8.63	2.05	0.15	3.08	0.2089
1.32	975.62	1256.47	722.96	-131.72	8.62	2.05	0.14	3.33	0.2191
1.38	975.62	1256.47	722.96	-127.43	8.62	2.05	0.14	3.56	0.2660
1.88	1362.98	1362.98	1070.48	-92.96	8.60	2.04	0.07	5.88	0.2989
2.38	1362.98	1362.98	1070.48	-60.82	8.58	2.03	0.05	8.49	0.3186
2.88	1362.98	1362.98	1070.48	-31.02	8.56	2.01	0.03	11.27	0.3241
3.15	1362.98	1362.98	1070.48	-0.08	0.00	0.00	0.00	12.80	0.3241
3.25	352.98	352.98	277.23	-0.00	0.00	0.00	0.00	13.37	0.3241
3.28	352.98	352.98	277.23	0.00	0.00	0.00	0.00	13.56	0.3241
3.15	318.18	318.18	249.90	0.00	0.09	0.10	0.00	12.80	0.3241
3.15	318.18	318.18	249.90	0.00	0.00	0.00	0.00	12.82	0.3241
3.15	318.18	318.18	249.90	-15.84	8.45	1.91	0.06	12.80	0.4088
3.15	318.18	318.18	249.90	-15.83	55.68	25.57	0.28	12.44	0.4088
3.15	318.18	318.18	249.90	-15.83	55.68	25.57	0.28	12.44	0.4123
3.15	318.18	318.18	249.90	-15.78	56.97	26.20	0.29	12.43	0.4159
3.15	318.18	318.18	249.90	-15.66	58.23	26.82	0.30	12.44	0.4195
3.16	318.18	318.18	249.90	-15.45	59.45	27.42	0.30	12.46	0.4232

3.16	318.18	318.18	249.90	-15.17	60.61	27.99	0.31	12.49	0.4269
3.17	318.18	318.18	249.90	-14.81	61.67	28.51	0.31	12.53	0.4307
3.18	318.18	318.18	249.90	-14.39	62.64	28.99	0.32	12.59	0.4345
3.19	318.18	318.18	249.90	-13.91	63.48	29.40	0.32	12.65	0.4384
3.20	318.18	318.18	249.90	-13.38	64.20	29.75	0.33	12.72	0.4422
3.21	318.18	318.18	249.90	-12.81	64.76	30.02	0.33	12.80	0.4461
3.22	318.18	318.18	249.90	-12.21	65.17	30.22	0.33	12.89	0.4500
3.24	318.18	318.18	249.90	-11.59	65.41	30.34	0.33	12.98	0.4539
3.25	318.18	318.18	249.90	-10.96	65.49	30.38	0.33	13.07	0.4539
3.25	318.18	318.18	249.90	-10.96	65.49	30.38	0.33	13.07	0.4836
3.35	318.18	318.18	249.90	-5.94	32.76	15.20	0.17	13.86	0.5213
3.60	318.18	318.18	249.90	-0.03	0.00	0.00	0.00	15.79	0.5213
3.69	318.18	318.18	249.90	0.00	0.00	0.00	0.00	16.53	0.5213
3.60	131.73	131.73	103.46	-0.00	32.70	15.17	0.39	15.79	0.5848
3.60	131.73	131.73	103.46	-0.00	26.88	12.45	0.39	16.12	0.5848
3.35	131.73	131.73	103.46	0.00	32.70	15.17	0.39	13.86	0.5408
3.35	131.73	131.73	103.46	0.00	26.88	12.45	0.39	14.12	0.5408

CALCULATIE RESULTATEN

BELASTINGEN Uitbuiging :

Omschrijving	Winddruk daN/m ²	Snelheid m/s	Richting (X, Y, Z)	Toegevoegde parameters voor windlast		
				Omschrijving	Waarde	Eenheid
wind EN40 WG.3 KL2	29.1094	22.5	(0 1 0)	Basiswaarde windsnelheid Vref,0	22.5	m/s
				Terrein categorie	2	
				Hoogte factor CALT	1	
				Montage hoogte	0	m
				Bekende topografie factor	Ja	
				Topografie factor f	1	
				Berg hoogte	0	m
				Helling lengte	0	m
				H.O.H. afstand top berg/mast	0	m
				Coëfficiënt Cs	0.959166	

Omschrijving	Gewicht kg of kg/m	Oppervlakte (Cxs=A.c) m ² of m ² /m	Kracht daN of kg/m	Moment daN.m of daN	Start aangrijping mm	Eind aangrijping mm
1/2 Display 986*498*402.8mm M= 80Kg	40	0.3			(123, 0, 3599.5)	
1/2 Display 986*498*402.8mm M= 40Kg	40	0.3			(123, 0, 3354.5)	

EIGEN FREQUENTIE

	Order 1	Eenheid
Trillingstijd	0.314619	s
Eigen frequentie	3.178450	s-1
Rotatie freq.	19.970792	rd/s

Niveau m	D uitw. mm	Traagheids moment cm ⁴		Momenten daN.m			Krachten daN		
		Ix	Iy	X	Y	Z	X	Y	Z
0.00	133.0	337.2	337.2	-195.1	7.2	1.7	0.0	69.7	-125.1
0.50	133.0	337.2	337.2	-161.1	7.2	1.7	0.0	65.8	-118.8
0.85	133.0	310.1	161.1	-138.5	7.2	1.7	0.0	63.0	-114.5
1.25	133.0	310.1	161.1	-113.8	7.2	1.7	0.0	59.9	-110.7
1.32	133.0	219.3	328.6	-109.6	7.2	1.7	0.0	59.4	-109.8
1.38	133.0	219.3	328.6	-106.0	7.2	1.7	0.0	58.9	-109.2
1.88	133.0	337.2	337.2	-77.3	7.1	1.7	0.0	55.0	-102.9
2.38	133.0	337.2	337.2	-50.6	7.1	1.7	0.0	51.1	-96.7
2.88	133.0	337.2	337.2	-25.8	7.1	1.7	0.0	47.2	-90.4
3.15	133.0	337.2	337.2	-0.1	0.0	0.0	0.0	1.0	-1.4
3.25	80.0	52.2	52.2	-0.0	0.0	0.0	0.0	0.2	-0.2
3.28	80.0	52.2	52.2	0.0	0.0	0.0	0.0	0.0	0.0
3.15	76.1	44.7	44.7	0.0	0.1	0.1	0.0	0.9	-0.9
3.15	76.1	44.7	44.7	0.0	0.0	0.0	0.0	0.0	0.0
3.15	76.1	44.7	44.7	-13.2	7.0	1.6	0.0	43.2	-84.8

3.15	76.1	44.7	44.7	-13.2	46.4	21.3	0.0	40.6	-82.3
3.15	76.1	44.7	44.7	-13.2	46.4	21.3	0.0	40.6	-82.3
3.15	76.1	44.7	44.7	-13.1	47.5	21.8	0.0	40.5	-82.3
3.15	76.1	44.7	44.7	-13.0	48.5	22.3	0.0	40.4	-82.2
3.16	76.1	44.7	44.7	-12.8	49.5	22.8	0.0	40.3	-82.1
3.16	76.1	44.7	44.7	-12.6	50.5	23.3	0.0	40.3	-82.1
3.17	76.1	44.7	44.7	-12.3	51.4	23.8	0.0	40.2	-82.0
3.18	76.1	44.7	44.7	-12.0	52.2	24.1	0.0	40.1	-81.9
3.19	76.1	44.7	44.7	-11.6	52.9	24.5	0.0	40.0	-81.9
3.20	76.1	44.7	44.7	-11.1	53.5	24.8	0.0	40.0	-81.8
3.21	76.1	44.7	44.7	-10.6	54.0	25.0	0.0	39.9	-81.7
3.22	76.1	44.7	44.7	-10.1	54.3	25.2	0.0	39.8	-81.7
3.24	76.1	44.7	44.7	-9.6	54.5	25.3	0.0	39.8	-81.6
3.25	76.1	44.7	44.7	-9.1	54.6	25.3	0.0	39.7	-81.5
3.25	76.1	44.7	44.7	-9.1	54.6	25.3	0.0	39.7	-81.5
3.35	76.1	44.7	44.7	-4.9	27.3	12.7	0.0	20.5	-41.4
3.60	76.1	44.7	44.7	-0.0	0.0	0.0	0.0	0.5	-0.5
3.69	76.1	44.7	44.7	0.0	0.0	0.0	0.0	0.0	0.0
3.60	50.0	11.9	11.9	-0.0	27.2	12.6	0.0	18.6	-39.6
3.60	50.0	11.9	11.9	-0.0	22.4	10.4	0.0	18.2	-39.2
3.35	50.0	11.9	11.9	0.0	27.2	12.6	0.0	18.6	-39.6
3.35	50.0	11.9	11.9	0.0	22.4	10.4	0.0	18.2	-39.2

Niveau m	Doorsnedecapaciteit daN.m			Reken momenten daN.m			Csr	Uitbuiging mm	Hoek deg
	Buig/X	Buig/Y	Torsie	Buig/X	Buig/Y	Torsie			
0.00	1362.98	1362.98	1070.48	-195.07	7.17	1.70	0.14	0.00	0.0757
0.50	1362.98	1362.98	1070.48	-161.13	7.17	1.70	0.12	0.66	0.1203
0.85	1053.35	718.25	167.09	-138.50	7.17	1.70	0.15	1.40	0.1672
1.25	1053.35	718.25	167.09	-113.77	7.16	1.69	0.13	2.56	0.1738
1.32	975.62	1256.47	722.96	-109.57	7.16	1.69	0.12	2.77	0.1823
1.38	975.62	1256.47	722.96	-106.00	7.16	1.69	0.12	2.97	0.2213
1.88	1362.98	1362.98	1070.48	-77.32	7.14	1.69	0.06	4.90	0.2487
2.38	1362.98	1362.98	1070.48	-50.58	7.13	1.68	0.04	7.07	0.2651
2.88	1362.98	1362.98	1070.48	-25.80	7.11	1.67	0.02	9.38	0.2697
3.15	1362.98	1362.98	1070.48	-0.06	0.00	0.00	0.00	10.65	0.2697
3.25	352.98	352.98	277.23	-0.00	0.00	0.00	0.00	11.12	0.2697
3.28	352.98	352.98	277.23	0.00	0.00	0.00	0.00	11.28	0.2697
3.15	318.18	318.18	249.90	0.00	0.08	0.08	0.00	10.65	0.2697
3.15	318.18	318.18	249.90	0.00	0.00	0.00	0.00	10.67	0.2697
3.15	318.18	318.18	249.90	-13.16	7.03	1.58	0.05	10.65	0.3401
3.15	318.18	318.18	249.90	-13.16	46.38	21.30	0.24	10.35	0.3401
3.15	318.18	318.18	249.90	-13.16	46.38	21.30	0.24	10.35	0.3430
3.15	318.18	318.18	249.90	-13.12	47.45	21.83	0.24	10.34	0.3459
3.15	318.18	318.18	249.90	-13.02	48.51	22.34	0.25	10.35	0.3490
3.16	318.18	318.18	249.90	-12.84	49.53	22.84	0.25	10.37	0.3520

3.16	318.18	318.18	249.90	-12.61	50.49	23.32	0.26	10.39	0.3551
3.17	318.18	318.18	249.90	-12.31	51.38	23.75	0.26	10.43	0.3583
3.18	318.18	318.18	249.90	-11.96	52.18	24.15	0.26	10.47	0.3615
3.19	318.18	318.18	249.90	-11.56	52.89	24.49	0.27	10.52	0.3647
3.20	318.18	318.18	249.90	-11.12	53.48	24.78	0.27	10.58	0.3679
3.21	318.18	318.18	249.90	-10.65	53.95	25.01	0.27	10.65	0.3712
3.22	318.18	318.18	249.90	-10.15	54.29	25.18	0.27	10.72	0.3744
3.24	318.18	318.18	249.90	-9.63	54.50	25.28	0.28	10.80	0.3776
3.25	318.18	318.18	249.90	-9.11	54.56	25.31	0.28	10.88	0.3776
3.25	318.18	318.18	249.90	-9.11	54.56	25.31	0.28	10.88	0.4024
3.35	318.18	318.18	249.90	-4.94	27.29	12.66	0.14	11.53	0.4338
3.60	318.18	318.18	249.90	-0.02	0.00	0.00	0.00	13.14	0.4338
3.69	318.18	318.18	249.90	0.00	0.00	0.00	0.00	13.76	0.4338
3.60	131.73	131.73	103.46	-0.00	27.25	12.64	0.33	13.14	0.4867
3.60	131.73	131.73	103.46	-0.00	22.40	10.38	0.33	13.41	0.4867
3.35	131.73	131.73	103.46	0.00	27.25	12.64	0.33	11.53	0.4501
3.35	131.73	131.73	103.46	0.00	22.40	10.38	0.33	11.75	0.4501

(≤6%)

GEBRUIK VAN DIT DOCUMENT

Alle technische specificaties in dit document zijn voorlopig en zijn eigendom van VALMONT.
Het bedrijf VALMONT

- behoud zich het recht voor om te allen tijde, het ontwerp en/of de technische specificaties van dit document te wijzigen.
- wijst alle verantwoording van de hand indien de technische specificaties uit dit document gebruikt worden zonder schriftelijke toestemming van Valmont Nederland BV.

By : ma.schepers