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Palms, wind and safety

Wind load analysis

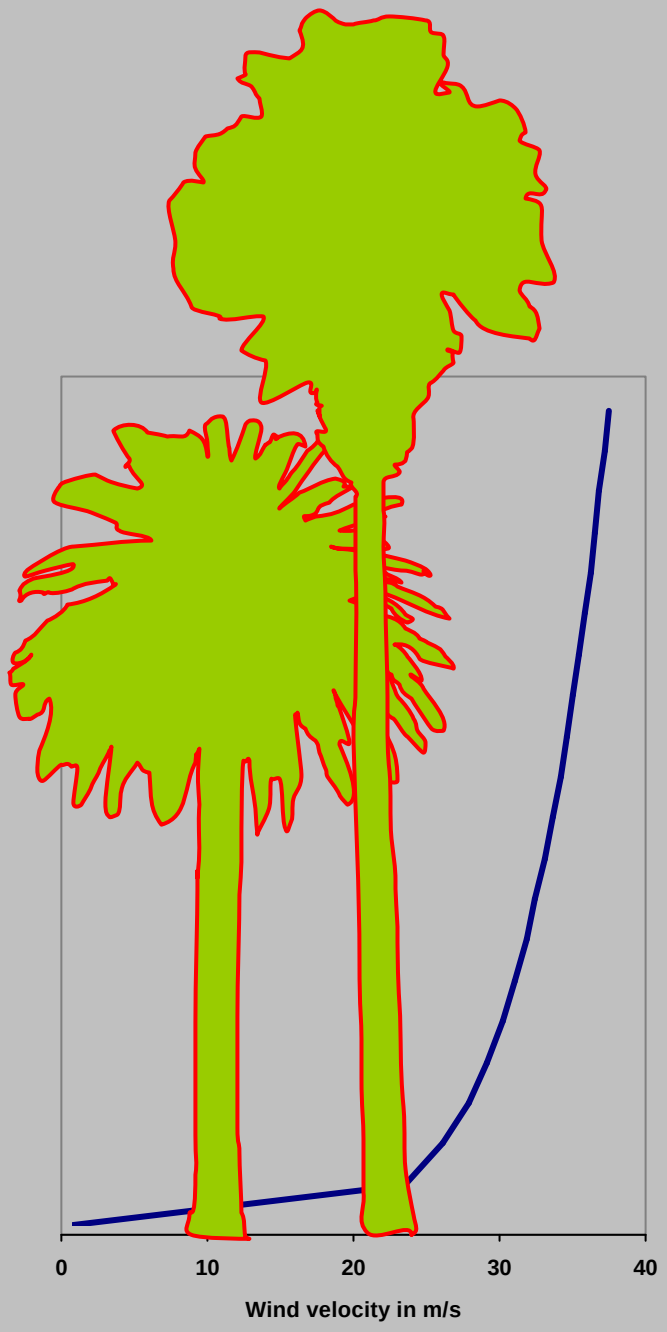
in accordance with Eurocode 1, part 2-4

Data input=

Height palm=	14,15	m
Stem diameter=	60,48	cm
Height crown=	7,08	m
Diameter crown=	7,67	m
Cw chosen=	0,20	
Weight of the fruits=	0,00	kg

Expected wind speed for the area=

	125,00	km/h
	34,72	m/s
Minimum temperature=	-5,00	ºC
Altitude=	0,00	m



Results=

Wind load analysis for palms	7,59	kN
Wind force in the crown=	774,51	kg

Expected wind speed at crown height

V expected:	35,05	m/s

Natural bending frequency

n=	13,35	Hz

Optimal wind speed for excitation of the palm

Vcrit=	40,37	m/s
	145,35	km/h
Equivalent wind load=	10,07	kN
	1027,52	kg

Disclaimer: While every effort has been made to validate the solutions in this worksheet, Peter Sterken is not responsible for any errors contained and is not liable for any damages resulting from the use of this material. These calculations are only intended for educational purposes.