

5.1.4 Methods of measurement and observation

Wind Speed Equivalents

Table 5.1. Wind speed equivalents

Beaufort scale number and description	Wind speed equivalent at a standard height of 10 m above open flat ground				Specifications for estimating speed over land
	(kt)	(m s ⁻¹)	(km h ⁻¹)	(mi h ⁻¹)	
0 Calm	< 1	0 – 0.2	< 1	< 1	Calm; smoke rises vertically
1 Light air	1 – 3	0.3 – 1.5	1 – 5	1 – 3	Direction of wind shown by smoke- drift but not by wind vanes
2 Light breeze	4 – 6	1.6 – 3.3	6 – 11	4 – 7	Wind felt on face; leaves rustle; ordinary vanes moved by wind
3 Gentle breeze	7 – 10	3.4 – 5.4	12 – 19	8 – 12	Leaves and small twigs in constant motion; wind extends light flag
4 Moderate breeze	11 – 16	5.5 – 7.9	20 – 28	13 – 18	Raises dust and loose paper; small branches are moved
5 Fresh breeze	17 – 21	8.0 – 10.7	29 – 38	19 – 24	Small trees in leaf begin to sway, crested wavelets form on inland waters
6 Strong breeze	22 – 27	10.8 – 13.8	39 – 49	25 – 31	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty
7 Near gale	28 – 33	13.9 – 17.1	50 – 61	32 – 38	Whole trees in motion; inconvenience felt when walking against the wind
8 Gale	34 – 40	17.2 – 20.7	62 – 74	39 – 46	Breaks twigs off trees; generally impedes progress
9 Strong gale	41 – 47	20.8 – 24.4	75 – 88	47 – 54	Slight structural damage occurs (chimney-pots and slates removed)
10 Storm	48 – 55	24.5 – 28.4	89 – 102	55 – 63	Seldom experienced inland; trees uprooted; considerable structural damage occurs
11 Violent storm	56 – 63	28.5 – 32.6	103 – 117	64 – 72	Very rarely experienced; accompanied by widespread damage
12 Hurricane	64 and over	32.7 and over	118 and over	73 and over	

Reference: WMO Part I. Measurement of meteorological variables (2014 Edition)

https://library.wmo.int/doc_num.php?explnum_id=3177