

**Table 18-1.** The Davenport-Wieringa roughness-length  $z_0$  (m) classification, with approximate drag coefficients  $C_D$  (dimensionless).

$z_0$ (m)	Classification	$C_D$	Landscape
0.0002	flat land calm sea	0.0014	paved areas, snow-covered flat plain, tide flat, smooth desert, calm sea
0.005	smooth	0.0028	beaches, pack ice, morass, snow-covered fields
0.03	open	0.0047	grass prairie or farm fields, tundra, airports, heather
0.1	roughly open	0.0075	cultivated area with low crops & occasional obstacles (single bushes)
0.25	rough	0.012	high crops, crops of varied height, scattered obstacles such as trees or hedgerows, vineyards
0.5	very rough	0.018	mixed farm fields and forest clumps, orchards, scattered buildings
1.0	closed	0.030	regular coverage with large size obstacles with open spaces roughly equal to obstacle heights, suburban houses, villages, mature forests
$\geq 2$	chaotic	$\geq 0.062$	centers of large towns and cities, irregular forests with scattered clearings