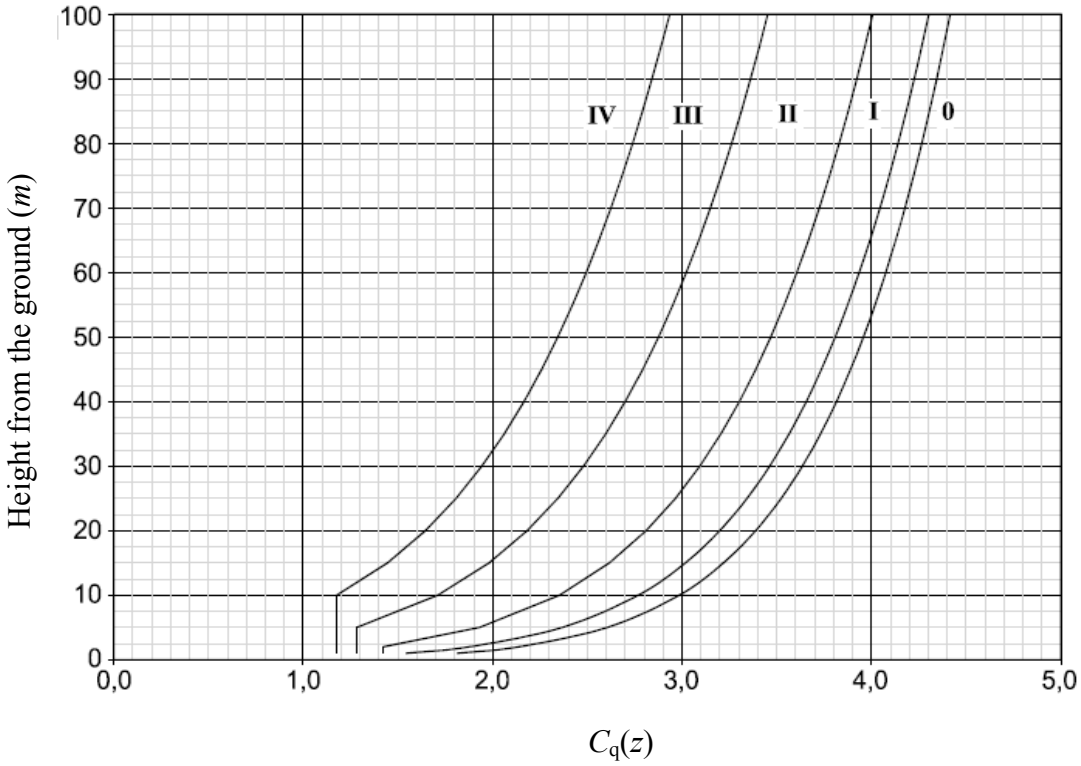

Figure 4.1. Variation of $C_q(z)$ with height for the five terrain types, assuming C_t =1.

4.2. MAXIMUM WIND LOAD ON A SURFACE

The maximum wind load, $Q(z)$, at height z on a surface perpendicular to the main wind flow is calculated by multiplying the maximum wind pressure by the surface area, A, and the surface pressure coefficient, C_p, that is

$$Q(z) = q_p(z) \cdot C_p \cdot A \tag{4.5}$$

The value and the sign of C_p depend on the location of the surface within the structure (i.e., whether it is on the front, back, side, roof, or inside). A positive C_p denotes compression against the surface and a negative C_p denotes suction.

Depending on the size of the surface area, two sets of pressure coefficients are defined: for surface areas 1.0 m^2 or smaller $C_{p,1}$, and for surface areas 10.0 m^2 or larger $C_{p,10}$. The value of C_p for surface areas between 1.0 and 10.0 m^2 is determined by logarithmic interpolation using the following equation

$$C_{p,A} = C_{p,1} - (C_{p,1} - C_{p,10}) \log_{10} A \qquad (1 m^2 \le A \le 10 m^2) \tag{4.6}$$