Does stack height exceed $H_b + 0.5L_b$

Yes

No

Huber-Snyder Downwash Procedure

$H_e > H_b + 1.5L_b$

Yes

No

Building downwash effects are assumed to be negligible

Is stack height less than $1.2H_b$

Yes

No

Enhance σ_y σ_z

Tall

$H_b > H_w$

$\sigma'_y = 0.35H_w + 0.067(x - 3H_w)$

$3H_b < x < 10_b$

$\sigma'_z = 0.7H_w + 0.067(x - 3H_w)$

$3H_w < x < 10_w$

Squat

$H_w > H_b$

$H_w/H_b > 5$

Yes

No

$\sigma'_y = 0.35H_b + 0.067(x - 3H_b)$

$3H_b < x < 10_b$

or

$\sigma'_y = 1.75H_b + 0.067(x - 3H_b)$

$3H_b < x < 10_b$

(upper bound)

$\sigma'_z = 0.7H_b + 0.067(x - 3H_b)$

$\sigma'_y = 0.35H_w + 0.067(x - 3H_b)$

$3H_b < x < 10_b$

$\sigma'_z = 0.7H_b + 0.067(x - 3H_b)$

$3H_w < x < 10_w$

Schulman Downwash Procedure

$\sigma'_z = A\sigma'_z$

$$A = \begin{cases} 1 & H_e \le H_b \\ \frac{H_b - H_e}{2L_b} + 1 & H_b < H_e \le H_b + 2L_b \\ 0 & H_b + 2L_b < H_e \end{cases}$$

Enhance σ_z

Tall

$H_b > H_w$

$\sigma'_z = 0.7H_w + 0.067(x - 3H_w)$

$3H_w < x < 10_w$

Squat

$H_w > H_b$

$\sigma'_z = 0.7H_b + 0.067(x - 3H_b)$

Effects of building downwash on reducing plume rise are incorporated

Equations discussed in Section 2.4.4