

Select pollutant

NO

Select type of district

Highly developed urban area

Calculate Pollution Index

Discharge Rate	D	0.19	gs ⁻¹	(1)
Guideline Concentration of Discharged Pollutant	Gd	1	mgm ⁻³	
Background Concentration	Bc	0.25	mgm ⁻³	
Pollution Index	Pi	253.3333	m ³ s ⁻¹	

Stage 1 - Discharge Stack Height Based on Buoyancy

Volume rate of discharge gases	V	1.046	m ³ s ⁻¹	
Temperature of discharge gases	Td	523.15	K	
Heat Release (assuming an ambient temp of 283k)	Q	0.2	MW	(3)

If the discharge contains water vapour, the heat release is reduced to take into account latent heat of condensation

Discharge rate of water droplets	n	0	gs ⁻¹	
Heat loss in discharge due to the loss of the latent heat of evaporation of the liquid water.	Qw	0	MW	
Dry Heat Release	Qd	0.17		
Interim result a	a	-0.96		
Interim result b	b	0.49		
Interim Ub	Uba	1.61	m	(6)
Minimum Ub	MinUb	1.39	m	(7),(8)
Calculated Stack Height Based on Buoyancy	Ub	1.61	m	

Stage 2 - Discharge Stack Height Based on Momentum

Discharge velocity	w	12	ms ⁻¹	
Discharge momentum	M	6.79	m ⁴ s ⁻²	(11)
Interim result x	x	-2.85		(15)
Interim result y	y	5.38		
Interim result z	z	-2.85		
Interim Um	Uma	2.10		(15)
Minimum Um	MinUm	1.51		(16)
Calculated Stack Height Based on Momentum	Um	2.10	m	

Uncorrected Stack Height	U	1.610	m	
	A	1.305	m	
Range for consideration of nearby buildings	5*U	8.0	m	

Q1: Are any buildings within 8 m of the chimney?

Q1 yes

If Q1 = Yes, enter height of tallest building within 8 m of the chimney?

Ht 7.3 m

Q2: Is uncorrected stack less than 2.5 times building height?

Q2 No

Stage 3A - Correction for Single Dominant Building

Height of single dominant (must be wider than high)	H	7.3	m	
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Corrected Chimney Height for Single Building 9 m (17), (18)