

P602 - Basic Design Principles of Local Exhaust Ventilation Systems.

	Item	Ref/Equations	Units				
1	Duct ID		From-to				
2	Design Flowrate, 'Q'		m ³ /s				
	Slotted Hood?						
	(If 'yes' = row 3, if 'no' = row 10)						
3	Slot Velocity		m/s				
4	Slot Area		m ²				
5	Slot VP		Pa				
6	Entry Loss Factor	1.78	-				
7	Acceleration Factor	1	-				
8	Plenum Loss Factor	Row 6 + Row 7	-				
9	Plenum Sp	Row 5 x Row 8	Pa				
	Duct Diameter	$\sqrt{4xA/\pi}$	m				
	Duct Area	$Q/V = A$	m ²				
	Duct Velocity	HSG 258	m/s				
10	Available Duct Diameter		m				
11	Duct Area	$\pi D^2/4$	m ²				
12	Duct Velocity	Row 2 / row 11	m/s				
13	Duct VP	$VP=(V/1.29)^2$	pa				
14	Duct Length	Drawing	m				
15	Friction Factor	Nomograph	Vp/m				
16	Actual Friction	row 14 x row 15	-				
17	Hood Entry Loss	Fig	-				
18	Acceleration Hood Fudge Factor	add value of 1.0	-				
19	Elbows	Fig	-				
20	Branch Entry	Fig	-				
21	Other (a)		-				
22	Other (b)		-				
23	Other (c)		-				
24	Total Loss Factor	row 16 - row 23	-				
25	Duct Sp Loss	row 13 x row 24	Pa				
26	Other Equipment Losses (a)		Pa				
27	Other Equipment Losses (b)		Pa				
28	Preceding Junction (Index duct)		Pa				
29	Junction Vp Change		Pa				
30	Total Sp Losses		Pa				
31	Is this the governing Sp?		Yes/No				