A1 BRIDGE FLUE SYSTEMS

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CHIMNEY DIAMETER CALCULATION - EN 13384-1 / DIN 4705

Project Ref:- Pear Tree Farm **Cal.Ref:-** Biomass
Customer :- Rural Energi **Date :-** 19/02/2013
Engineer :- -

SYSTEM TYPE:- Boiler Chimney - Single Connection **FUEL:-** BM Chip

APPLIANCE DETAILS:- (Full Load / Red.Load)
No.of: - 1 / 0 + 1 Pressure(-ve Req.d) F.Gas Temp.:- 130 / 80^C
Total Rating:- 108 / 30kg/hr F.Gas Co2: - 13.8 / 13.0%
Make: - Herz Firematic 45 Flue Conn.: - 150mm

RESULTS:-

	Full Load	Red. Load	
Combustion Air Intake PD - (Std.Louvre)	**2.0**		**Pa**
System Buoyancy @ 15dec C Amb.	**-15**	**-9**	**Pa**
System Flow Resistance	**+6**	**+0**	**Pa**
Oper.Press at Appliance Outlet	**-9**	**-8**	**Pa**
Target Oper.Press. App.Outlet	**-9 to -25**		**Pa**
			Pa
Outlet liner Temp. @ 0 deg C Amb.	**64**	**18**	**C**
Target Min. liner Temp. (Su=0.1%)	**115**	**114**	**C**
Flue Gas Terminal Exit Velocity	**4.0**	**1.0**	**m/s**
Target Exit Gas Vel. (D1)	**10.0**		**m/s**
Chimney Exit Diameter.	**105**		**mm**
Surface Temp. Int. @ 20 deg C Amb.	**40**		**C**

Cold Start-Up - Boiler @ F/Load - Press(Pa) = 6 Time(sec) = 20.0

SYSTEM DETAILS:-

1 = Flue Pipe
2 = Chimney
3 =
4 =
5 =
6 =

	Product Type	Insulation	I/D mm	O/D mm	Inc/Red	Add.Res Pa
1	Twin Wall	25mm Vermiculite	200	250	Tapered	
2	Twin Wall	25mm Vermiculite	200	250		
3						
4						
5						
6						

Lengths(m)	1	2	3	4	5	6
In Open	1.8	1.0				
In Enc.						
Outside		3.6				
Vert.Rise	0.4	4.6				
Tees:						
90^std						
90^boot	2					
135^						
135^ + 45E						

Elbows	1	2	3	4	5	6
90^Sm Rd						
90^std.						
90^min.						
60^std						
45^std						
30^std						
15^std						
Add'k'						
Terminal	Tapered Cone(open)					

COMMENTS:- 6. Exit Cone ? - Yes - cone outlet dia. = 105mm