Optiwood Biomass Boiler Guide Values for Operators-Owners

Boiler item	Boiler running condition	Boiler parameters	Notes
Boiler flue gas temperature	Boiler running with clean heat exchanger	150^{o}C to 190^{o}C	Check boiler modulation setting
	Boiler start sequence / ignition to run phase	Approximately 70^{o} to 150^{o}C	Set points specific to each boiler
Boiler combustion space underpressure	Boiler steady state running	-15 to -30 Pascals	Biomass boiler must always run
	Boiler start sequence/ pre-purge	-50 to -100 Pascals	with an underpressure to
	Boiler shut down / burn out	-50 to -100 Pascals	prevent smoke and ash emissions
Boiler flue oxygen content	Boiler steady state running	8% to 11% oxygen	Maximum oxygen content in fresh air
	Boiler start sequence / pre-purge	12% - 18%	20.9% Check lambda
	Boiler shut down / burn out	12% to 20.9%	probe
Boiler flow water temperature	Boiler steady state running	80^{o}C to 95^{o}C	
Boiler return water temperature	Boiler steady state running	ΔT 10^{o}C to 20^{o}C below flow water temperature	
	Boiler start from cold	Minimum 60^{o}C when temperature available, controlled by back end protection valve	Minimum temperature to prevent possible corrosion in boiler
Boiler furnace temperature	Boiler steady state running	650^{o}C to 850^{o}C	N.B. will depend on location of the temperature sensor
Boiler ash condition		Light grey in colour and dry fine particles.	Indicating complete burn out of fuel
		Black ash or dark grey in colour	Indicating partial burn out of fuel
		Hard, dark granular or very hard glassy solid ash	Indicates ash melt and / or poor quality fuel
Boiler ash collection		May be manual operation, semi-automatic or fully automatic according to boiler specification	Frequency depends on boiler usage, settings and fuel quality