

Wood burning and air quality.

There is a constant flow of rumour regarding air quality in connection with wood burning stoves, the vast majority of what you will read is just plain wrong. If you would like to borrow an analyser to verify the below for yourself please contact us.

Indoor air quality

A report was released regarding the detrimental effect that wood burning stoves have on indoor air quality, <https://www.mdpi.com/2073-4433/11/12/1326?s=09> . Unfortunately this research was seriously flawed as it failed to take into account other sources of pollution in the home such as cooking.

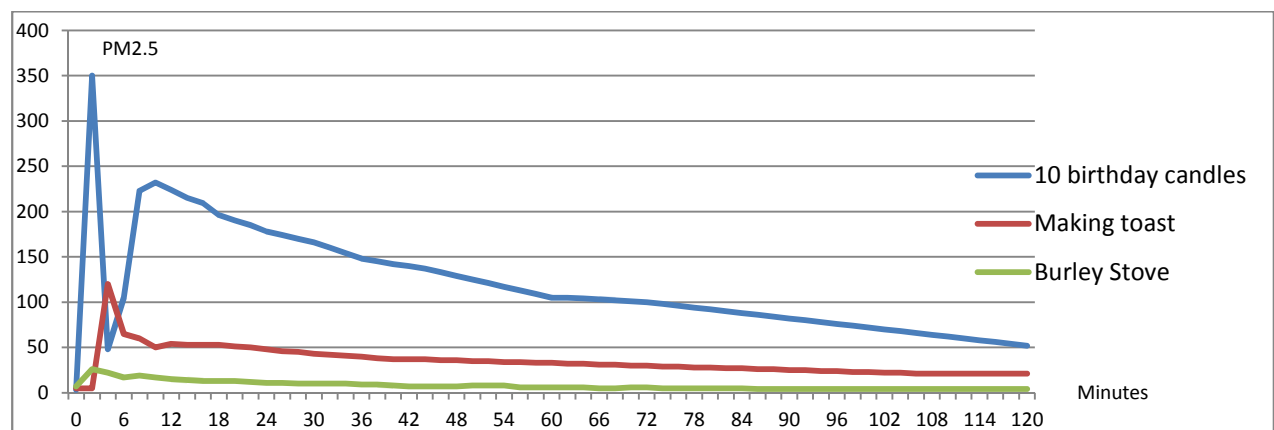
Research

To provide meaningful figures we repeated the tests but ensured no other activity was taking place in the house. For comparison we also took air quality readings while making toast and when lighting ten candles on a birthday cake and then blowing them out.

Measurements

	PM2.5 particulates measured during activity		
Time (minutes)	Wood burning stove	Making toast	Ten birthday candles
00:00 (ambient)	7	5	3
01:00	26	5	730
02:00	24	5	62
04:00	22	120	48
06:00	17	65	105
08:00	17	60	223
10:00	16	50	232
14:00	14	53	215
18:00	13	53	196
30:00	10	43	166
60:00	6 (refuelled stove)	35	105
90:00	4 (refuelled stove)	28	82
120:00	4	21	52

Note- when the toast was burned even a little the analyser exceeded its limit of 1000 and the test had to be repeated.



Conclusions

The WHO advised limit for continuous exposure to PM2.5's over 24 hours is 25. Using a properly installed and used Burley stove has little effect on indoor air quality and is well within WHO recommendations. At the end of the two hour test period however, after making toast the level of pm2.5's was still 8 times ambient and after blowing out the candles it was 30 times ambient and double the WHO advised exposure.

Common sense when lighting, using and refuelling your wood burning stove

- Only use dry wood and kindling.
- Do not use your stove with the door open
- After lighting the stove, close the door just leaving a small gap to prevent any smoke coming out.
- Refuel when the logs have burned down to mostly embers, not when logs are still burning vigorously.
- When refuelling, open the door slowly, allowing the pressure to equalize.
- Have the correct fuel ready for refuelling, don't open the door and then go looking logs.

Outdoor air quality

When outdoor air quality is being measured it is impossible to determine whether the source of the pollution is stoves, open fires, bonfires, barbeques, biomass power stations, incinerators or naturally occurring fires.

Even if it you could blame stoves and open fires for 100% of the emissions, an open fire can easily produce 300 times more pollution than one Burley stove. Using a conservative estimate of just one open fire for every nine stoves in use, swapping the open fires and less clean stoves for a Burley stove, could cut emissions by 97%.

Open fires are the problem, wood burning stoves are the solution.

A responsible and considerate use of energy

Even when people are aware of the facts concerning wood burning stoves, a common response is 'but there are other cleaner sources of energy', the simple answer is 'no there are not'.

Electricity is quoted as being clean, but what most people don't know is that for every one kilowatt of electricity coming out of your plug, three kilowatts of fuel have to be burned at the power station. Until 100% of electricity is created by renewable energy, running an electric car means you are using three times more fossil fuels than if you were just putting petrol in your car. Heating your house with electricity creates three times more greenhouse gasses than heating it with gas.

Wood on other hand is the only zero carbon heating we have. Trees absorb carbon dioxide as they grow, if the wood is burnt or if the tree lies on the floor and rots exactly the same amount of CO2 is returned back into the atmosphere. Putting 10kg of logs on your Burley stove during an evening creates as much warmth in your home as burning over 100kW of gas in a power station, which in turn saves 25kg of carbon dioxide (enough to offset a 600 mile train journey).

Allowing wood burning stoves to be banned and losing a vast source of carbon-free energy due to public ignorance would be a pointless tragedy for the environment and our way of life.



The World's cleanest and most efficient
wood burning stoves