

Tools to help you plan and record (and remember to celebrate success)

The steps above will help you decide what actions to take. You also need to decide who will be responsible for getting the job done. Here is a simple way to plan this.

Example action plan

Investigation	Action needed	Desired outcome	Who's responsible/ deadline
How much fuel does our burner use? Is it changing over time?			
What condition are our valves and linkages in? Do we need an engineer?			
What do the oxygen and CO levels tell us? Are there leaks and can we make repairs ourselves?			
Do we need to call an engineer? If so, who is our company's preferred provider and do we have a service spec for the burner?			

Example recording chart

Who	Action taken/when	Impact

Remember

Improve the efficiency of your burner and you can save up to 20% of the total energy used on the site, which is about £100,000 per year!

HOW-TO GUIDE

Don't burn money: how to take good care of your asphalt dryer burner



HOW-TO GUIDE

What this guide is about

This guide is designed to complement the asphalt dryer burner toolbox talk. It focuses on:

- Why it makes sense to save energy on your dryer burner
- Practical steps to make your dryer burner more efficient
- Tools to help you plan and record

The purpose of the guide is to help you better understand your asphalt dryer burner and make improvements to its performance, as well as create a specific action plan. Keep the guide as a reminder for yourself, hand it out to the person on your site who may take charge of this action plan, or simply write on it to keep a record of all actions taken.

Why it makes sense to save energy on your dryer burner

- The dryer burner is often a neglected part of the operation, but it uses 80% of the energy in asphalt production.
- Most dryer burners are not as efficient as they might be – you can save between 5% and 20% by keeping it in optimum condition.
- Asphalt dryer burners emit more CO₂ than any other piece of equipment.
- Simply measuring oxygen and carbon monoxide levels in the stack can help you keep your burner running in optimum condition and let you know whether your maintenance contractor has done a good job for you.

Did you know?

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Practical steps to make your dryer burner more efficient

Every site's action planning will differ. Please consider the steps below as a suggested route and adapt the actions under each step to your site's specific needs.

Step 1: Work out how much money you could save.

- Keep a daily record of burner energy use, usually litres of oil per tonne or kWh per tonne, and track the trend over time. Is consumption per tonne going up or down? Reducing consumption by 10% will save you about £50,000 per year (if average annual fuel costs are £500,000).

Step 2: Find out how your control system works.

- Investigate whether the gas and air valves are controlling flow to give the correct proportions for efficient combustion. You may need to check this with a service engineer, but if the linkages are loose and worn, then the air to gas ratio is unlikely to be stable and accurately controlled.

Step 3: Check the efficiency of your burner.

An inefficient burner will have increased levels of oxygen and carbon monoxide (CO) in the exhaust – these should be measured regularly because they signal that the burner needs servicing. They are caused by incomplete combustion which allows fuel to pass through the dryer without burning fully. Incomplete combustion may be due to a badly adjusted or worn fuel nozzle, insufficient combustion air or poor mixing in the drum.

- Measure the level of oxygen and carbon monoxide in the exhaust gas using portable or continuous analysers to calculate the amount of energy.
 - Extra oxygen in the exhaust gas shows that too much air is passing through the dryer.
 - If oxygen levels are above 16%, fuel is being wasted heating unnecessary cold air, and the burner needs attention.
 - If CO levels are over 250 ppm, the fuel is not being burnt fully, and the burner needs attention.
- Note any leaks allowing air to be drawn into the dryer – it takes extra energy to heat up this air.
- Make any necessary adjustments to the burner with skilled site personnel. If you do not have the skills on site, call a service engineer when oxygen and CO levels are high.

Step 4: Ensure a good service.

- Draw up a service specification, drawing knowledge from across the business, so that you know what the engineer is doing and what operating parameters the burner should work within. This will help you know whenever the burner is not operating efficiently.