## 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 |
|---|---|---|---|
| What is the moisture content of our various aggregate deliveries? | | | |
| Are our storage arrangements as effective as possible at keeping the aggregate dry? | | | |
| Can we install a vacuum dewatering system? | | | |
| Are we minimising the amount of moisture reaching the dryer? | | | |

### Example recording chart

| Who | Action taken/when | Impact |
|---|---|---|
| | | |
| | | |
| | | |

## Remember

Cut aggregate moisture by just 2% and you can save £50,000 a year!

# HOW-TO GUIDE

## Keep your aggregates dry

# HOW-TO GUIDE

## What this guide is about

**This guide is designed to complement the moisture control toolbox talk. It focuses on:**

- Why it makes sense to control the moisture in your aggregate
- Practical steps to reduce moisture levels in your aggregate
- Tools to help you plan and record

The purpose of the guide is to help you make a business case for taking control of the moisture in aggregate deliveries, reducing the moisture content of stored aggregate, and minimising the amount of water reaching your dryer. It will also help you create a specific site 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 control moisture

- 30% of the energy in an asphalt plant is spent on drying water out of the aggregate.
- Any water removed from the feedstock before it goes into the dryer means less energy is required from the burner to remove it.
- Reducing aggregate moisture content by 2% can reduce energy consumption on your site by 15%.

## Did you know?

30% of the energy in an asphalt plant is spent on drying water out of the aggregate.

## Practical steps to control the moisture in your aggregate

**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.

- A simple energy balance calculation demonstrates that a 2% reduction in the total moisture content of your stone can save up to 15% of the energy used by the dryer.
- For an average asphalt plant, this could be 1,500,000 kWh, or £50,000 per year.

### Step 2: Control the moisture of delivered aggregate.

- Measure the moisture content of the sands and fine aggregates delivered to the site:
  - Take a sample of each one when delivered and measure its moisture content. You only need to weigh it, dry it and re-weigh to calculate the moisture content. Record this for each delivery.
- Ask the supplier what he can do to reduce the moisture content to the lowest possible levels. The supplier is often a colleague who may not understand the impact of increased moisture on your process.
- Establish a standard for supplied aggregates to keep the moisture content as low as possible – less than 4% is reasonable.
- Check that all site supplied aggregates are delivered directly from the crushing plant, wherever possible. If they are not, put in place a process to make it happen. The fine grades often come out of the crusher with moisture levels of less than 1%.

### Step 3: Reduce the moisture content of stored aggregate.

- Store fine materials under cover wherever possible. Coarse aggregate will quickly drain by itself, but sand will hold water, especially if exposed to further rain.
- Ensure yards and stockpiles slope away from the front to allow water to drain away.
- Make sure that surface water does not run into the storage bays.
- Give wet stockpiles enough time to drain before you use them – waiting 24 hours can reduce moisture by 2%.
- Where feasible, invest in additional covered storage.
- If you can, install vacuum dewatering systems to remove water from storage bays. This consists of a system of buried pipes underneath the stocking area attached to a pump, and need not be a high-tech solution.

### Step 4: Minimise the amount of water reaching your dryer.

- Ask the loading shovel operator to take aggregate from the top of the stockpile – the top third has up to 1% less moisture than the rest of the pile. Point out how much money this could save to encourage him.