

calorex® case study

BUILDING DRYING

Construction Companies Opt For Portable Dryers

Construction companies, struggling to cope with the problems associated with the notoriously damp British climate, are being offered a helping hand by Calorex with the aid of its Porta range of portable dehumidifier and heaters.

The shocking fact is, there are only about 21 days every year when the outside air is dry enough to allow concrete curing to reach 0.3% moisture content – the recommended building regulation.

over the wet material that restricts moisture from leaving it.

Temporary heating will create comfort for site workers and go some way towards increasing the air's ability to absorb moisture. Yet, unless this moisture is removed from the building, drying times will be slow.

Even in the case of timber that may be kiln dried, it is possible to prevent shrinkage or expansion by controlling the building humidity during the construction stage.

WITHOUT DRYING	ANHYDRITE	CEMENT
50 – 60mm	6 – 8 weeks	6 – 8 weeks
50 – 60mm	8 – 16 weeks	8 – 16 weeks
70 – 80 mm	12 – 18 weeks	12 – 18 weeks
WITH DRYING	ANHYDRITE	CEMENT
40 – 50mm	1 – 2 weeks	1 – 2 weeks
50 – 60mm	2 weeks	2 weeks
70 – 80 mm	3 weeks	3 weeks

Drying Times for common building materials with and without Porta Dryers.

Pioneered some 10 years ago, portable dehumidifiers and heaters provide an efficient, practical solution to coping with the British weather. Building dryers will generally dry materials four times more quickly than natural drying and will consume four times less energy than heat and vent methods, while ensuring materials are dried thoroughly, regardless of outside conditions.

Calorex Porta-Dry dehumidifiers are available in three sizes and can be supplied in either 220V, 240V or dual voltage to meet building site requirements.

Calorex Porta-Cal mobile electric heaters and Porta-Air fans complete the range of portable equipment designed for construction site use.

Designed specifically for portable site work where ease of handling and robustness are of primary importance, Calorex building dryers will control the humidity within building spaces without relying on the influence of fresh air, giving ideal drying conditions every day of the year rather than just a few.

Heat and vent, or desiccant drying, can over-dry materials during the early stages, causing overall slower drying and even material damage. This is due to skins forming



Calorex Porta range of portable dehumidifiers and heaters provide a practical solution to coping with the notorious British weather.

LIGHTWEIGHTS PACK PUNCH

Building dryers are mobile dehumidifiers specifically designed to withstand the rigours of building site use.

Primary points that all building dryers should include are:

- Rotary compressor to allow unit to be transported without damage
- Defrost system that allows the unit to operate at low temperatures. This is generally a hot gas defrost system that allows operation down to 0°C.
- Sturdy, mobile construction for ease of transportation and longevity.
- Condensate pump options.
- Non CFC or HCFC refrigerant. Generally the accepted refrigerant is R407C.



Building dryers are designed to withstand the rigours of building site use.

DRYER SIZES ADD UP

Air can absorb little moisture below 10°C. It is therefore advisable to size the machine for 10°C as a minimum temperature.

With this in mind the following maximum room volumes are suggested;

- Porta Dry 150 150 m³
- Porta Dry 300 300 m³
- Porta Dry 600 600 m³

In the event that heating is considered necessary to maintain 10°C, the following heater sizes are recommended;

- Porta Cal 25 Rooms up to 100 m³ or 110 W/m² of floor
- Porta Cal 65 Rooms up to 375 m³ or 110 W/m² of floor
- Porta Cal 95 Rooms up to 550 m³ or 110 W/m² of floor

RED ALERT FOR AUTUMN FLOODS

Specialist manufacturer, Calorex, has stepped up production of its comprehensive range of dehumidifiers in the last two consecutive years to help an estimated 20,000 householders cope with the aftermath of devastating floods.

With around two million properties lying within flood risk areas, Calorex believes forward planning will pay off for companies ready to cash in on a predicted repeat of seasonal flooding on an annual basis.

"Recent incidents have highlighted both the increased risk of flooding, in areas where there had been no previous history, and the extent of flooding which can come from ordinary watercourses and inadequate surface water drains," said Calorex managing director, Richard Carrington.

"Flood defences will never be able to prevent every flooding event and we aim to play our part in ensuring people are able to access efficient and reliable equipment to cope with the floods when they inevitably occur."



Speeding Up Building Drying

A vast majority of materials that are used to construct new buildings are applied as a wet process.



Concrete slabs, screeds, plaster, wall and floor coverings are all applied in this way. As these processes cure, vast amounts of excess moisture are liberated into the building space.

The speed at which this moisture is released will dictate the curing or drying time of the material.

Controlling the building space temperature and humidity will effectively control the speed at which this happens.

Building dryers are refrigerant dehumidifiers that can be controlled to provide desired humidities and temperatures. They recirculate the building space air, rather than continuously replace it, and in doing so remove moisture from it.

PORTA DRY RANGE CHANGES ADD UP

Calorex has taken the mathematics out of the specification of its top-selling Porta Dry building driers, renumbering the range to indicate maximum room volumes for typical applications such as building and flood restoration.

The rugged Porta Dry range, with its strong construction and rotary compressors, is built to withstand the rigours of transportation and hire and the numbering system aims to help specify the correct unit for the right job.

The Porta Dry units are available to operate



The Porta-Dry range from Calorex will speed drying and construction times.

RED CARPET TREATMENT

Family business, Hart Carpet Services, of Berkshire, maintains a steadily increasing stock of Calorex Porta-Dry 300 units to meet a growing demand from stricken business premises as well as households.

"We know that the water tables are higher than they have ever been and it will take comparatively little rainfall to set the flood warnings off again" warns Sam Marshall who runs Hart Carpet Services with his father, Robert.

"We have never known demand like it and we have had some very sad cases of some clients being flooded four times in the past four years.

"When people are in trouble we need to respond quickly and effectively and we have stuck with the Calorex dehumidifiers because they have stood up to everything asked of them - and more."

The Marshalls favour the high performance Calorex Porta-Dry 300 which offers both building drying and general dehumidification functions. Fully mobile, the compact but robust Porta-Dry 300 is fitted with heavy-duty castors and built-in carrying handles and can be transported lying down. It copes with a wide temperature range from 0°C to 40°C with a high efficiency rotary compressor and a high level condensate drain.

As well as flood damage, the Calorex Porta-Dry 300 is ideal for general environment control use in areas such as:

- Basements cellars
- Paper Stores
- Pump rooms
- Museums
- Sports Halls
- Storerooms
- Warehouses

Options include a built-in humidistat with an adjustable range between 20-80% and a condensate pump kit with full level control and 30m pumping distance.

with either 220V, 240V or dual voltage power supplies and have condensate pump, hours-run timer and humidistat options.

The popular Porta Dry 300 and 600 models are provided as standard with site wheels and handles, and these are available as an optional extra on the Porta Dry 150 which is provided, as standard, with castors.

Independently performance tested by BSRIA, the Porta range comes with the usual Calorex complete factory support that includes the back up of its expert nationwide service network.