

Drying Room Efficiency

Outline

Greater Manchester Fire & Rescue Service (GMFRS) carried out a detailed study of the different technologies available to dry clothes in a 'drying room'. The study is applicable to organisations with a requirement to dry large amounts of clothing or kit over a moderate amount of time (3-7 hours).

Our test used the same clothing, doused with a fixed amount of water, in the same room at the same starting temperature and humidity each time.

We compared 5 technologies for drying clothes in several combinations which reflect common drying room setups, as well as a control with no heating or dehumidification. These are as follows:

DEHUMIDIFIER

FAN HEATER

CENTRAL HEATING

INFRA-RED PANEL

DRYING CABINET



Results

Our results demonstrated that dehumidifiers were the most energy and cost-efficient method to dry clothes, they are 44 times more efficient than fan heaters.

Following the study, Greater Manchester Fire & Rescue Service have undertaken a programme of replacing fan heaters in drying rooms with dehumidifiers with integrated humidistats. As well as saving energy, fire crews have provided feedback that the equipment is extremely effective at drying PPE.

Technology used	Time taken to dry	Energy used (kWh)	Cost to dry (£)
Dehumidifier only	6h30	0.3	£0.04
Dehumidifier and central heating	4h30	7.7	£0.29
Central heating only	5h	10.1	£0.35
Fan heater and central heating	4h30	7.0	£0.58
Drying cabinet	3h30	6.16	£0.71
Dehumidifier and fan heater	6h	8.4	£0.99
Infra-red panel and dehumidifier	4h30	9.6	£1.13
Infra-red panel only	5h30	11.5	£1.36
Fan heater only	6h30	13.6	£1.61
Control (nothing used)	9h30	-	-

Fig. 1 Energy, cost and time to dry clothes doused with 1kg of water, in a 5.2m² room.

Further details

For a full methodology and detailed report, or for any other questions, please contact sustainability@manchesterfire.gov.uk