1	2	3	4	5	6	7	8	9	10	11	12	13
2	http://dpcalc. org/index.php											
3											Col 3 RH	4 * 4 * 2.4 m
4	Temp ^C	RH	Dew Point	Days to Mould		No Risk		No Risk			Water Vap	"Typical Room"
5						RH min		RH Max			g/m3	g or ml
6	**25**	65	18	756		23	Mechanical Damage	26	Natural Ageing		14.9	572
7	**24**	66	17	763		22	Mechanical Damage	32	Natural Ageing		14.3	549
8	**22**	67	16	335		22	Mechanical Damage	40	Natural Ageing		12.9	495
9	**20**	69	14	236		23	Mechanical Damage	49	Natural Ageing		11.9	457
10	**18**	71	13	123		23	Mechanical Damage	57	Metal Corrosion		10.8	415
11	**15**	74	11	55		21	Mechanical Damage	56	Metal Corrosion		9.4	361
12	**10**	80	6	19		22	Mechanical Damage	56	Metal Corrosion		7.5	288
13	**5**	87	3	12		22	Mechanical Damage	55	Metal Corrosion		5.9	227
14	**2**	89	2	23		22	Mechanical Damage	55	Metal Corrosion		4.9	188
15	**0**	'-		'-		22	Mechanical Damage	55	Metal Corrosion			
16	**-10**	'-		'-		23	Mechanical Damage	56	Metal Corrosion			
17	**-20**	'-		'-		27	Mechanical Damage	59	Metal Corrosion			

The above table is based on :- http://dpcalc.org/index.php however I have added the information in Columns 12 and 13.

*About the **Image Permanence Institute (IPI)***

The Image Permanence Institute (IPI) is a university-based research centre in the College of Art and Design at Rochester Institute of Technology (RIT) dedicated to supporting the preservation of cultural heritage collections in libraries, archives, and museums around the world.

IPI's Guide to Sustainable Preservation Practices for Managing Storage Environments

The IPI's Guide may be for storage environments but it equally applies to UK homes.

As an example row 9 from the above table shows at a temperature of 20^C and Relative Humidity, RH, of 69% the Dew Point is 14^C with 11.9g of water vapour per cubic metre or 457 ml, just short of 0.5 litre, in a 4 * 4 * 2.4 m room. The Dew Point indicates that in any adjacent room or surface where the temperature is 14^C or less condensation will occur. Should the Relative Humidity at 20^C be at 69% or greater mould will occur in 236 days.

To avoid mould in UK homes dehumidifiers can be used to reduce the Relative Humidity, RH, to say 60% which is drier than the RH shown in column 3 of the above table and allows for a margin of error.

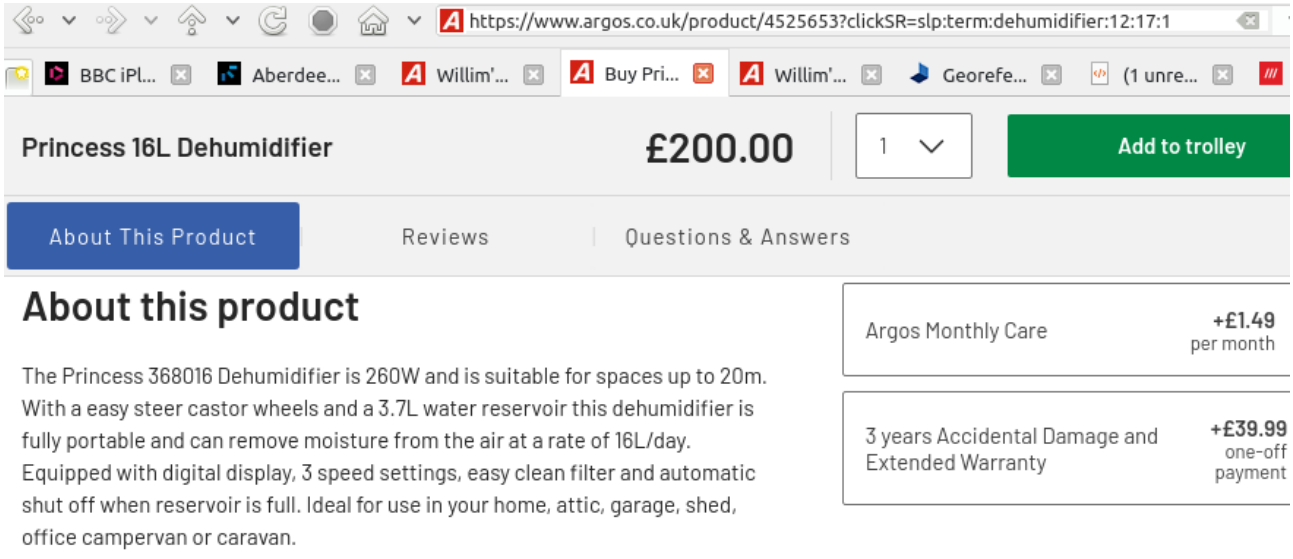
In my 1960 ex-council flat I run my dehumidifier via a programmable timer plug as shown. The timings being set so that the dehumidifier operates after my showering and cooking times.

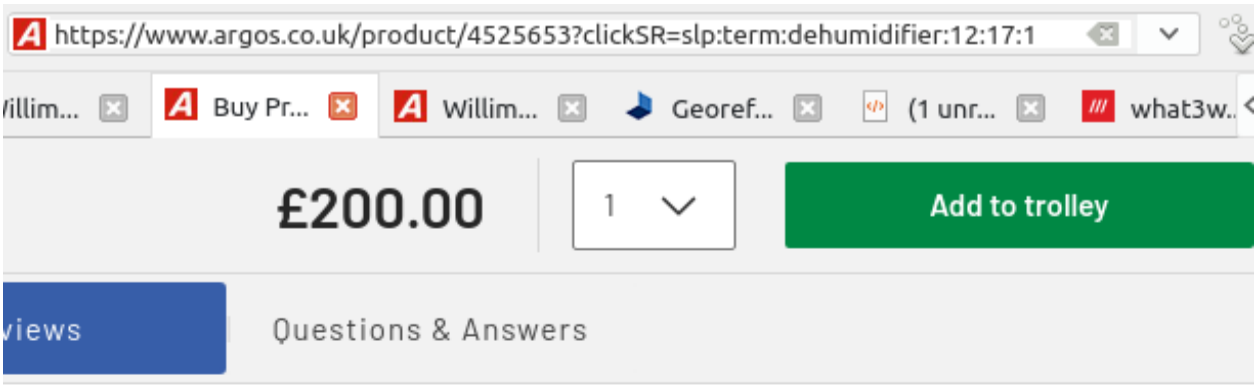
Overall my dehumidifier is set to operate for up to 12 hours per day.

The dehumidifier shown on the following page is similar to the one I use in a space of 70 square metres which is somewhat larger than the 20 m on the advertisement.

24 Hour Basic Programmable Mechanical Timer Switch for Mains Plug

£11.00





Great dehumidifier

5 30 May 2024

Performance Noise Design

Capacity

Bought this as I started getting mould in my daughter bedroom. I used it everyday for 2 hours over 2 weeks. It cleared the ceiling and I've had no mould grow back since my purchase. I now don't have to put it on everyday, most of the time it's only on once a week now. Great when drying clothes in house. I also don't have a window in my bathroom so i use it when I've taken a shower, not only does it take the moisture out of the air, it dries my used towel too. Great product. Tells you the percentage of moisture in air and the ideal amount. Easy to move as on wheels and the draw pulls down to empty. Lets you know when it's getting full too. Highly recommend.

Rachel84, 35 - 44, Leeds

The review above shows the typical efficacy of a dehumidifier.

Many UK homes e.g. “multi-storey” flats have concrete walls and condensation is likely to occur if insufficiently heated.

From 25-July-2024 – 30 July-2024, some of the best weather of 2024 so far, during 5 days my dehumidifier has removed 3.5 litres of water.

Had I dried clothes on an airing rack the quantity of water removed would have been greater. In the past I have solved the issue of “damp” for friends who used drying racks by suggesting the use of dehumidifiers.

For a 260 watt appliance the running cost would be 1 unit of electricity per 4 hours maximum, so for 12 hours per day 3 units of electricity maximum.

When beginning the use of a dehumidifier I would run it continuously for the first week or two to “dry the building out” with the objective relative humidity, RH, set to 50% and then use a timer to limit the run time and running cost with the relative humidity, RH set to 60%.

As shown column 3 in the initial table mould for temperatures of less than 25^C will only grow if the relative humidity, RH, is greater than 65%.

Dehumidifiers are one solution for “damp” homes i.e. many homes in the UK.

From 2009 :-
WHO guidelines for indoor air quality : dampness and mould

ISBN 978 92 890 4168 3

2. Building dampness and its effect on indoor exposure to biological and non-biological pollutants

Jeroen Douwes

2.1 Frequency of indoor dampness

A review of studies in several European countries, Canada and the United States in 2004 indicated that at least 20% of buildings had one or more signs of dampness (Institute of Medicine, 2004). This estimate agrees with those of a study of 16 190 people in Denmark, Estonia, Iceland, Norway and Sweden, which gave an overall prevalence of indoor dampness of 18%, with the lowest prevalence in Göteborg, Sweden (12.1%), and the highest in Tartu, Estonia (31.6%) (Gunn-björnsdóttir et al., 2006). Dampness was defined on the basis of self-reported indicators, such as water leakage or damage, bubbles or discoloration of floor coverings, and visible mould growth indoors on walls, floors or ceilings. From several studies conducted in the United States, Mudarri and Fisk (2007) estimated the prevalence of dampness or mould in houses to be approximately 50%.

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