Remember to email results to corn@eyerhymer.com or text them to 07875010336 quoting number:

WALLCONSERVE

How happy is your wall? That depends on temperature.
Pin this to an outside wall, and tell me the lowest your 'Mood Strip' goes.
Happy walls are warm and dry inside and out, and send warmth back to you.

100% HUMIDITY would be indicated by the card going soggy, due to the dreaded surface condensation.

80% HUMIDITY - HELP!

60% HUMIDITY - WORRYING

40% HUMIDITY - HAPPY WALL

20% HUMIDITY - IDEAL WALL

The big strip is the MOOD STRIP as it works on the same principle as a mood ring. Read the lowest figure that isn't black.

The little strip measures Relative Humidity, using chemicals that turn from blue to pink at different relative humidity. So the pink pad is the one to read.

The Science:

Thermal Radiation

We can't see infra-red heat radiation with our eyes, but we can feel it on our skin. Stand outside with your eyes closed. Hold out your hand and use it to 'look at' the sun,5000 degrees hotter than your hand. Or 'look at' a bonfire 500 degrees hotter than your hand. Buildings and trees will be at roughly the air temperature, hard to 'see'. But (even on a sunny day) a clear sky is a hundred degrees colder than your hand, and you should be able to 'see' this.

Dew

Plants cool down at night, but not as much as you'd expect, now you know the air near their leaves is 'looking' at a sky 100 degrees colder. It is a fact that as this air temperature goes down, its relative humidity goes up and when it gets to 100%, tiny drops of water form a fog and condense on the leaf. This releases the 'Latent Heat of Evaporation' in the water vapour and actually makes the air less cold.

Condensation - good for plants, BAD for walls. Either on the surface of the wall, or hidden inside the wall, BAD, BAD, BAD.

Your skin can feel humidity too, and work this effect backwards. At less than 100% relative humidity, your skin can turn some of its heat into the latent heat of evaporation, and it floats away into the air as water vapour. If you sweat when the relative humidity is 100%, nothing evaporates so your sweat won't cool you down.

Frost

Yes, there is a latent heat of melting too. So water at 0 degrees doesn't freeze, it needs to be at about minus 2. By the way, if you don't believe me that the cold radiation from the sky is important, compare the frost on your car's windscreen to the frost on the side windows, which have been 'looking' at walls and trees, not the stratosphere.

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WALLCONSERVE

This foam has about the same insulation value as a brick wall.
Pin this next to the green card, and tell me the highest air temperature.
Happy walls are dry inside and out, and save on heating costs.

SKIN TEMP

REDUCE HEATING. PROBLEM CANNOT BE SOLVED WITH HEATING ALONE

IF WALL = 14^{O}

IF WALL = 18^{O}

IF WALL = 22^{O}

100% HUMIDITY would be indicated by the card going soggy, due to the dreaded surface condensation.

80% HUMIDITY - VENTILATE!

60% HUMIDITY - FINE

40% HUMIDITY - ALSO FINE

20% HUMIDITY - TOO DRY

MOULD ALERT!

This big strip is measuring the room air temperature. Read the lowest figure that isn't black and check the green card temperature

This little strip measures Relative Humidity of the air in the room, which affects human comfort. Again, the pink pad is the one to read.

The Science:

Heat Loss

If this yellow card and its blue insulation is stuck to a solid brick wall, you will be losing 3 KWh of heat per year through the area of the postcard. The uninsulated green card will lose twice as much, 6 kWh.

Energy Saving

If you lose 6kWh from your house, you need to replace it. One KWh of heat from an electric fire costs 26p, from a heat heat pump 7.5p, and from a gas boiler 10.5p. OK so that bit of insulation saved you just 60p a year, but multiply that by how many postcards would cover your whole wall...

Radiative Comfort

We can't see infra-red heat radiation with our eyes, but we can feel it on our skin. So if the walls are not radiating enough heat, we feel cold even if the air is at 20 degrees, and have to turn up the heating. If the wall temperature on the green card is an ideal 18 degrees, turn the heating to 20. If the walls are two degrees colder, you will need to turn the heating up one degree, losing even more heat. This applies in cars on cold days too.

Ventilation

Draughty houses can lose more energy through their windows than through their walls. Use a company like Ventrolla to drraught proof them. You lose heat by extract ventilation too, but keep it on - otherwise the Relative Humidity will rise above 60%.

Wall Insulation.

If you have already fixed your windows and insulated your loft, walls are next on the list. If you have brick or stone walls, don't insulate them on the outside, even if this is easier. Wallconserve has experts capable of insulating your walls cost-effectively by calculating the expected temperature on the inside and outside surface and even inside the wall to make sure the insulation does no harm.

E.P.C.

Even a little wall insulation helps your house to an EPC 'C' rating.