

NOVOMUR

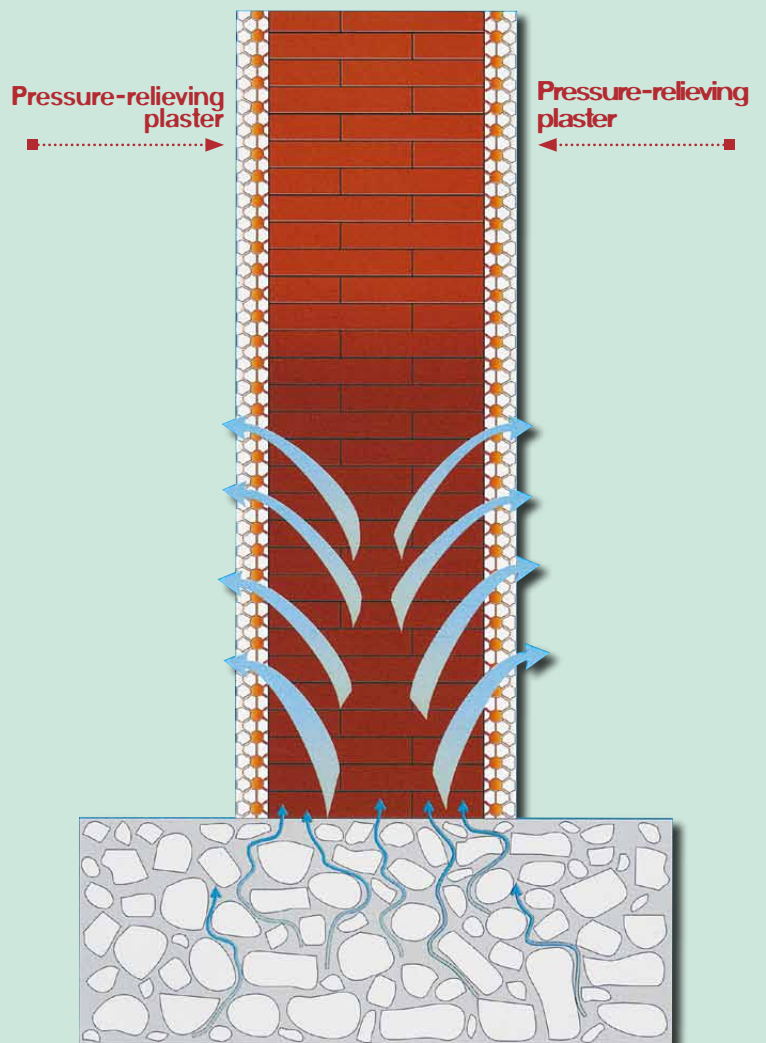
How to beat damp walls, once and for all

In the building industry, the problem of damp has grown increasingly urgent and has been made even worse by the thermal insulation requirement, probably because unsuitable materials have been used in most cases.

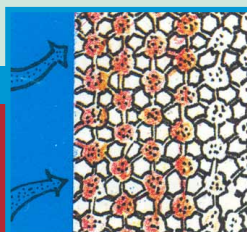
The problem is addressed by making the plaster harder, stronger and more water-resistant to counter the pressure of water.

New techniques have been tested, but the results are always the same: they will just postpone or divert the onset of damp, often making the situation worse, so that any new moisture-absorbing product is often mistrusted.

The reason why damp collects in walls is due to the fact that the partial pressure in any area of a wall is lower than the partial pressure in the environment; this means that damp spreads through the walls through tiny channels; the smaller the channels, the higher it rises.



**DRYING UP THE WALL
FOR A HEALTHIER PLACE**



AFON CASA
PRODOTTI SPECIALI PER L'EDILIZIA

Thermal pressure relief

So, in order to defeat damp, there are two ways to go:

- 1) balancing the thermal hygrometry of the wall;
- 2) reversing the trend of factor Pv in the material used to coat the wall.

So far, this problem has been dealt with by trying to resist steam pressure by erecting barriers in the form of deeply-secured plasters, disregarding the fact that steam cannot be trapped but should be helped out.

For example, if we take a damp wall that has been left un-plastered, it will dry up because the steam will find no resistance and, with the help of a favourable climate, will flow out into the air.

This applies to the wall surface, but the wall will not dry up throughout, unless a new situation or a special effect helps the damp flow out.

This means, therefore, that climate will also dictate whether the damp will flow out or will be trapped in. After all, condensation is a climatic effect:

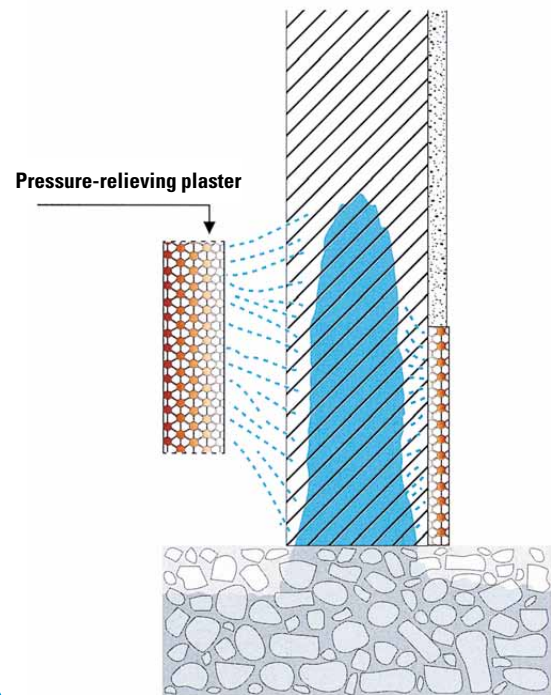
the thermal gradient turns a gas into a liquid. So far, any attempt at solving the problem of rising damp has been frustrated, because no way has been found to prevent damp rising through a wall by removing the causes of the problem.

THERMAL PRESSURE RELIEF

NOVOMUR puts an end to the destructive effect of salts and to the continuing deterioration of the walls induced by rising damp.

Let's look at the drying effect of the thermal pressure-relieving plaster; but, to make things clearer, the damp mass trapped into the wall should be compared with ambient condensation: in a place where the difference between the temperature of the walls and the interior surfaces of the built features is wide, the outdoor temperature is lower than the indoor

Fig. 1. The pressure-relieving effect reduces the pressure of the damp and helps it flow out. The drawing shows a wall affected by rising damp, which is being dried up by the thermal pressure-relieving plaster **Novomur**.



one, the partial pressure of steam is higher than the exterior one, the steam is pushed to move from the inside out.

As it moves, the steam tends to flow through the partitions, the surfaces it touches have a different temperature, and any excess steam settles on the surfaces of the materials or finishes that are less permeable to steam. The same happens with damp walls: supposing the mass of damp trapped into a wall is the interior of a place where the climate is colder and the wall surface and the exteriors are warmer. So, there are two different temperatures and two different pressures; such difference in temperature causes the damp to uninterruptedly flow out of the wall.

and dehumidification

Fig. 2. The thermal pressure-relieving plaster **Novomur** acts as a trap that sucks up all the surrounding steam and then gradually breathes it out into the air at the right time, by as much as it can dispose of.

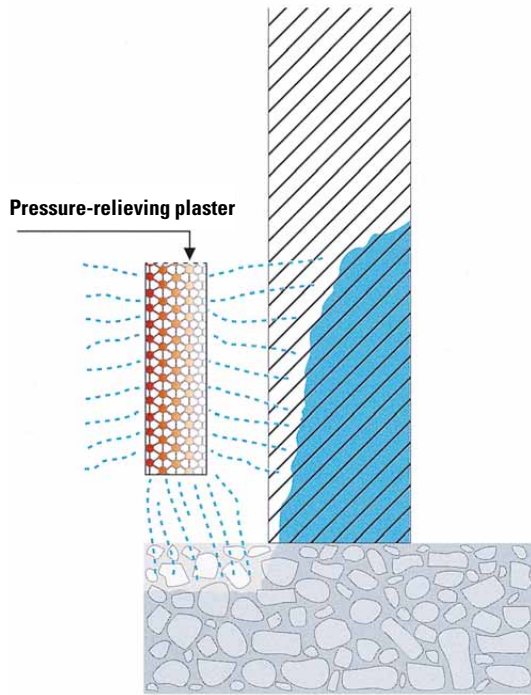
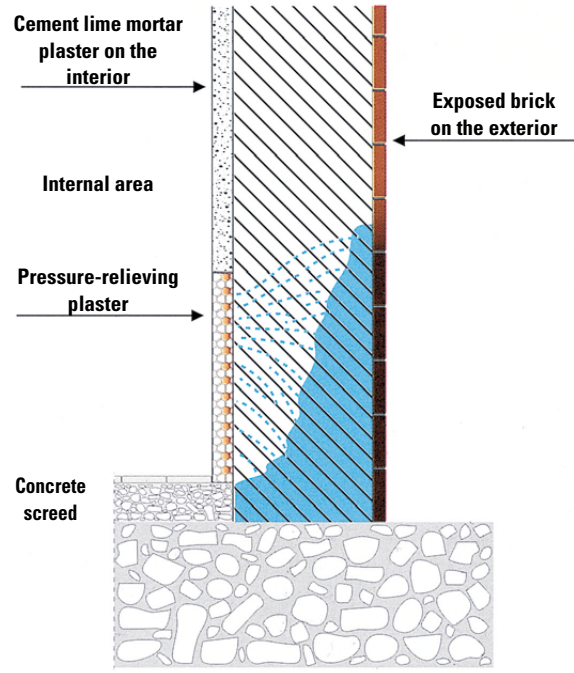


Fig. 3. A wall with an exposed-brick side. The pressure-relieving method is so effective that the damp wall needs to be treated on one side only to dry up the opposite side as well. This happens because the steam moves faster than the damp coming into the wall. That's why the walls have dried up throughout.



RESULTS: THE PRESSURE-RELIEVING EFFECT

As a result of the pressure-relieving effect of this special insulating coating, pressures are inverted: the exterior pressure of the wall increases and the interior pressure of the damp mass decreases, so the steam flows to and through the exterior facing, without any condensation, because the surface it comes into contact with is warmer, of course, but it is also largely breathing, and in addition the steam is sucked in by the pressure-relieving mass and dried up. Unless such conditions are met, the damp cannot flow out of a surface and **the wall would never get dry.**

Dehumidifying is one thing, erecting a barrier is quite another thing; dehumidification means the total removal of any humidity from a wall.

How can one think that a barrier product could push humidity out when its main effect is to trap it in? Because all commercial products act as barriers that are in opposition to the pressure of water, they cannot be classed as dehumidifiers. They cause humidity to expand and trap it in, they do not dehumidify. Unfortunately, such products are so well advertised that they are very confusing for the industry professionals, because the advantages the manufacturers boast of are more virtual than real; but, even if they are generally badly thought of, it would be wrong to think there is no product that can truly defeat damp. Now, at last, and we can say that aloud, with the revolutionary thermal pressure-relieving method, the damp will finally leave your walls, once and for all.

HYGROMETRIC TEST ON THE WALL AFTER APPLICATION OF NOVOMUR

Since 1979, the **NOVOMUR** mixture has been used as a dehumidifier with amazing results; technical tests conducted over thirty years after the application of the product found that the treated surfaces are still in perfect condition and the walls underneath are perfectly dry throughout. In addition, when the product was applied on one side only for aesthetic reasons, the opposite side dried up too.

Here are two extremely interesting projects completed by us.



1



2



3



4

The cellar shown in pictures **1** and **2** (before and after) is in a small building in Senigallia, below sea level. Before applying the **NOVOMUR** in 1990, the floor surface was constantly flooded with thirty centimetres of seawater. After the application, the cellar was converted into a stationery shop and then into an artist studio (photo no. **4**), which is now home to paintings by famous artists. The third photo was taken when the place was inspected in 2000 and shows the result: the wall surfaces are perfectly dry, with no swelling or salt deposits. Interestingly, the treatment was applied up to 120 cm high: if the product had acted as a barrier, now the damp would have reached the top and would have drained down. On the contrary, applied on such a smaller surface, the **NOVOMUR** did and does act as a 'lung', soaking up and ejecting plenty of water, even if the base of the walls is wet with seawater.

The other equally interesting example is Count Oliva's Castle in Pian di Mileto (Ps), where the ground floor was extensively damaged.

The project began in 1994, under the direction of the Fine Arts Service of Ancona (project managed by architect Simoncini).

Before, the walls were wet with rising damp up to 1.5 metres from the floor surface; the treatment was applied up to the level of the damp, while on the exterior walls the **NOVOMUR** was only applied on the inner side, since the outer side was exposed brick. In 2000, it was thoroughly inspected by engineers. Long nails were driven deep into the wall, underneath the thermal pressure-relieving plaster: the needle of the hygrometer (photo no. **3**) indicated **no humidity**. The operation was repeated up and down the wall and the walling was found to be dry throughout, even under the layer of **NOVOMUR** plaster.

Aeration, which is essential to the thermal pressure-relieving effect, occasionally takes place through a secondary inlet. Such exceptional results are testament to the actual dehumidifying effect of the **NOVOMUR**, which has put an end to the problem of damp, once and for all.

Many manufacturers will hardly ever guarantee an earlier job to pass the hygrometric test (under the dehumidifying layer).

