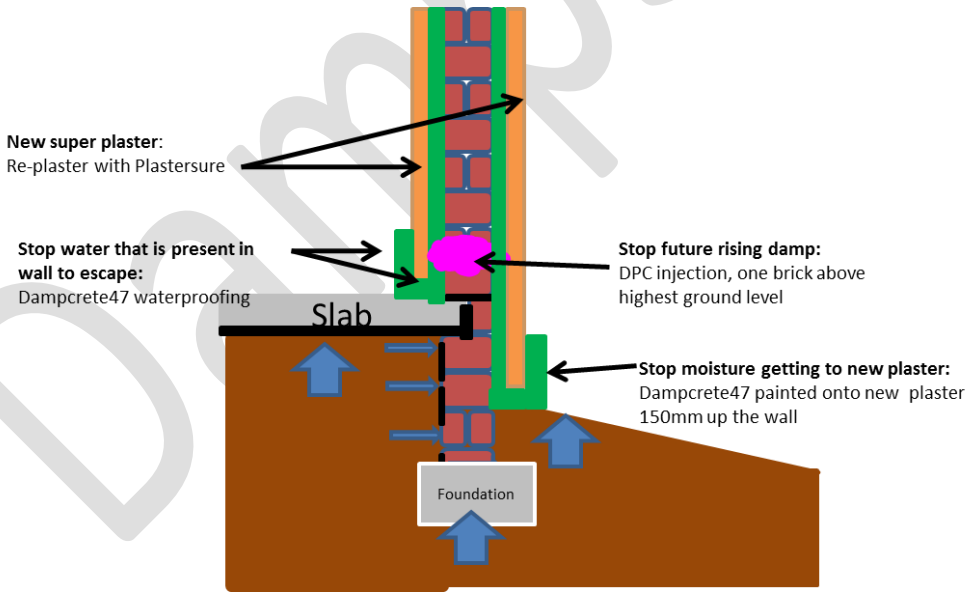
Summary - 10 year solution – exterior walls

As long as the new plaster stays dry or moisture content does not exceed 8% paint will not bubble

Procedure

- Remove plaster up to 1.2m above DPC line
- Re-glue brittle bricks with 4-6 coats (wet on wet) of **Dampsure GlueBack**
- **Bag Wash** with 3:1 plaster mix onto exposed bricks to create a smooth surface to waterproof onto.
- Spray the dried **Bag Wash** with 2x coats **GlueBack**
- Drill 12mm dia holes one brick above highest ground level, min 100mm apart
- Inject chemical **DPC Cream** stopping future rising damp
- Waterproof wall where plaster was removed with **Dampsure Dampcrete47** – prevent retained moisture to permeate into new plaster
- Apply mixture of **Bonding Liquid** with **river sand** to waterproofed wall
- Re-plaster with **Dampsure Plastersure Plaster Additive** –
  - capillaries in plaster are rubberised and
  - Plastersure prevents forming of efflorescence (bubbling of paint)
- Put a **Dampcrete47** waterproofing sock on bottom of wall onto dried new plaster
- **Paint 21 days after remedial work was done**

The diagram below depicts the process to be followed:



Dampsure is achieving phenomenal damp proofing results with its 10 year rising damp solution.

This recipe has been designed in Europe to fix rising damp problems.

This recipe is long lasting and has stood the test of time.

Dampsure has had no comebacks or failures on the above recipe.

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Recipe - Rising damp – 10 year solution

Step 1: Preparation before starting with project

Warning!!

You are going to work with moisture and products that may damage floors and furniture.

1. Cover all tile floors, paving etc with plastic to minimize moisture and or chemical damage and or water ingress
2. Tape aluminium window and door frames with yellow aluminium tape
3. Cover window panes and windows with plastic, this will prevent chemicals pitting the glass
4. Remove all down pipes and tape all effluent and water pipes and fittings on walls with masking tape. This will reduce cleaning time.
5. Close all electrical points with waterproofing tape or plastic
6. Remove all skirting and fixtures that are in the area that will be treated, check for mold on skirtings, rotten skirting must be destroyed.
7. Identify the areas where **water pipes and electrical wires** might be damaged by drilling or chipping, mark these areas and handle these areas with care.

Step 2: Remove plaster

We have to unfortunately remove the plaster, the plaster has been affected with salts and these salts are like an unstoppable cancer. Non removal of the plaster will create an unstoppable chemical reaction between moisture and the nitrates, chlorides and calcium's inside the plaster, mortar and bricks.

1. Remove affected plaster. Efflorescence is caused by 5 types of salts that migrates from the bricks and plaster to the outer edge of the plaster. These salts are hygroscopic, i.e attracts damp and moisture that will create more salt. These salts will attract more damp, even from the air. .....this is a cancer and needs to be removed.
2. Removing the blistered paint only will not work. Reason - The salts have also infected, like a cancer the inside of the plaster. These salts are hygroscopic, i.e attracts damp and moisture that creates more salts, the old and new salt will attract even more damp that creates more salts ..... this chemical process is unstoppable.

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3. Chip off all old plaster (tip – hire a mechanical chipper from Hire All or a hiring company). Reason – Chipping with a hammer and chisel might result in structural damage, you will save a lot of money and time in labour cost. The amount for rental normally equates to the saving in labour cost.
4. Plaster needs to be chipped to at least **1.2 meter above DPC level**. Reason – Rising damp will rise to 1.2m above the source, the chipping of plaster up to 1.2m will ensure that the bubbling of paint do not climb above the new plaster in the future.
5. **Do not chip in a straight line.** Reason – the plaster will crack between the old and new plaster and leave an unsightly line. It is also easier to blend old and new plaster into each other.
6. **Do not chip in a straight line**. Reason – Wet (new plaster) and dry strata (old plaster) will separate and create a distinctive line where old a new plaster meet and will be unsightly in future. It is also easier to blend new plaster into old plaster.

Step 3: Re-glue brittle bricks

1. Once you are finished chipping, use a garden broom to brush the wall, this will remove all loose plaster residue, loose stones. Brush particularly around door and window frames, pipes and very brittle areas.
2. Dusty patches and loose grit should also be removed. It is usually not sufficient to prepare the wall only by brushing loose grit from the wall. It is necessary to ensure that the wall surface is free from crumbly or other unsound areas
3. Create a sound sub surface for waterproofing by re-gluing brick and mortar surface with Dampsure Glue Back. Deep penetration of the bonding liquid into the porous brick face is required.) Reason – this loose debris will result in un-waterproofed sections in the wall, letting residual damp to escape and leave the possibility of efflorescence forming again.
4. **Important!!!!** Apply a **deep penetrating saturated coat of Dampsure GlueBack** to the wall (**use 6x coats at intervals of 1 ½ minutes apart**, wet on wet) - Reason – replace the glue that has been lost on the surface of the bricks and to provide a sound surface for waterproofing materials. Also increases the spreading ratio of the bag-wash and waterproofing material.

Step 4: Bag-wash the chipped wall

1. We need to create a smooth surface to apply the Dampcrete47 waterproofing onto.
2. **Mix a 3:1 soft plaster mix and utilize a block brush to paint the chipped wall with the plaster mix.**
3. Ensure that all the holes and crevices in the wall is properly smoothed over.
4. Let the Bag-Wash dry.

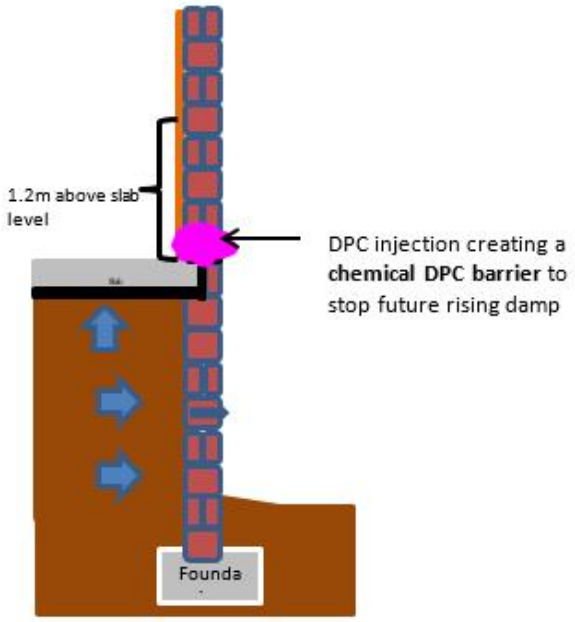
Step 5: Apply Glue Back to the bag-wash

1. **Apply 2x coats** (1 ½ minutes apart, wet on wet) **of Glue Back** onto the bag wash. This will act as a primer and will glue sandy and dusty plastered surface and will create a sound base for the Dampcrete47 waterproofing

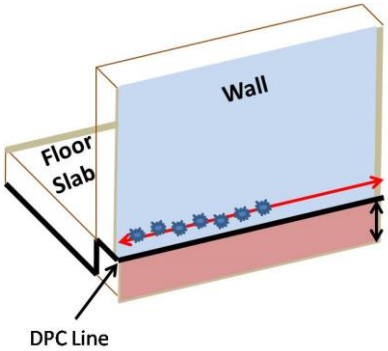
Step 6: Inject DPC Cream

The **DPC Cream** stops future rising damp. The product has been created to provide a chemical barrier that will stop future rising damp.

1. First, identify if there are pipes or electrical cables that you might drill into. You will be drilling into the unknown, a leaking pipe and or sitting with no electricity will not make you or your client happy.
2. **Injection is normally done just above the DPC line.** Except if there is a level difference, then drilling will be done above the highest floor level.
3. Locate highest ground level. See below where to inject at highest ground level. Normally 1 brick above slab level.



4. **Where to drill:**
   a. **Cement stock bricks** – 5cm above floor level and DPC line. Insert the DPC as close to the internal floor level as possible.
   b. **Clay bricks** – in mortar line, 1 brick above the DPC line
   c. **Back fill walls** - Locate a mortar joint at least 150mm above highest ground level (2 bricks height).



Drill Holes are spaced 100mm apart. Drilling & Injection will be done 1-brick height above the DPC line i.e on the red line in the diagram.

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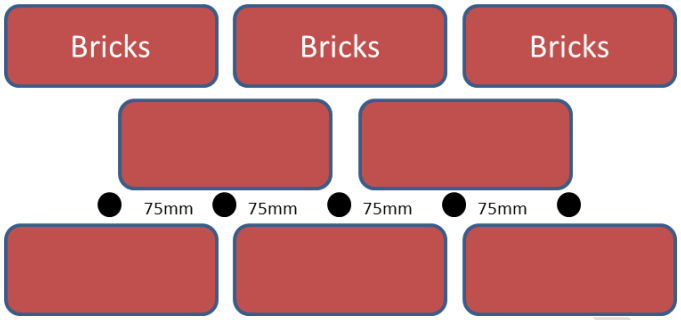
5. **Drill 12mm diameter holes:**
    a. Horizontally into wall
    b. **Clay bricks -** at 100mm intervals in the mortar course (or via the brickwork, angled down to meet the mortar course) selected to be at least 150mm above outside ground level.
    c. **Cement Stock bricks** - Care must be taken about the quality and porosity of the brick. Reduce the drilling intervals to 75mm if the bricks are very porous or weak.



6. **Drilling**
    a. Drill horizontally into wall
    b. **Drill depth -** Stop 2cm before wall end. The holes must be drilled to a depth of 30 to 20mm less than the wall thickness. We don't want to drill through the wall and waste DPC cream.
    c. **Remove the dust** from the holes. You have to create enough volume for the cream to spread and create a chemical DPC.
    d. **Fill hole to capacity**, pipe fitted to nozzle must reach the back of the hole.
    e. Inject the DPC Cream slowly into each hole using a caulking gun. Insert the nozzle to the rear of the hole and slowly withdraw the nozzle as the cream fills the hole. A 1lt bucket of DPC cream will treat approximately 3.2m at 100mm spacing and 2.8m at 75mm spacing on a double brick wall, depending on the porosity of the wall.
    f. After injection - **holes must be capped with Plug Mix** or mortar. Reason: the DPC cream will spill out of the drilled holes.

Warning!!!

Ensure that you do not inject the DPC cream into cavities, this is wastage, only the drill hole must be filled with DPC cream

Step 7: Waterproof wall with Dampcrete47

Dampsure Dampcrete47 will prevent the moisture trapped in the wall from migrating into the new plaster. Dampcrete47 consist of 47% latex solids, this is the same product used in Europe to waterproof water reservoirs as well as effluent tanks.

Important!!!

It is imperative to ensure all the holes created by chipping the plaster are filled in with the plaster bag-wash before applying Dampcrete47. Also ensure that the Dampcrete47 covers the entire chipped area. The idea is to prevent any retained moisture or possible future moisture to enter into new plaster.

1. Only **apply Dampcrete47 on sound substructures**. Dampcrete47 will delaminate on oily, brittle, sandy or powdery surfaces.
2. Mix Dampsure DAMPCRETE47 Cementitious Waterproofing - **mix the 2 parts provided into a smooth slurry**, this mix will produce a single coat of waterproofing for about 6-9 square meters depending on the porosity of wall. **(Never add water to the Dampcrete47 mix)**
3. Waterproof the wall using Dampsure DAMPCRETE47 waterproofing slurry. Dampsure DAMPCRETE47 will prevent the retained moisture inside the wall from escaping to the newly plastered surface, thus preventing future bubbling of paint (efflorescence).
4. Apply a thick first coat of Dampsure DAMPCRETE47, with horizontal brush strokes, on to wall. Wait for the 1st coat to become tacky before applying the 2nd coat.. (Approx. 2-4 hours, depending if it is inside or outside the building).
   The Bag-Wash must not be visible after applying the first coat.
5. Apply the second coat of Dampsure DAMPCRETE47 cementitious waterproofing and wait at least 8 hours to dry, the second coat is applied vertically.

Tip!

Ensure that the Dampcrete47 runs down onto the ground or floor and that this waterproofing creates a pedestal on which the new plaster can rest. This pedestal will prevent ground water/moisture entering into the foot of the new plaster.

Step 8: Slush dried Dampcrete47 with bonding liquid-river sand mix

Dampcrete47 will be very smooth and plaster will not stick to it. The Dampcrete47 surface will need to be treated to accept the new plaster.

1. Mix 2 hand full off river sand into 2.5lt bonding liquid
2. Apply with a block brush a thin coat of bonding liquid mixed with river sand to wall.

Step 9: Re-plaster with Plastersure

Re-plastering with Dampsure Plastersure prevents future efflorescence, the plaster additive consists of anti-efflorescence chemicals that will prevent the salts binding with the moisture and prevents the migration of these salts to the surface that will create blistering of the paint.

1. Plaster with 3 wheelbarrows plaster sand to 50kg 32.5 cement.
2. Do not use water in the plaster mix, add only diluted Plastersure to smoothen plaster mix.
3. Plastersure is provided in a concentrate and must be diluted with water.

Dilution instructions for Plastersure Plaster Additive

- 3lts of Plastersure is added to
- 22lts of water into a 25lt drum.

Tip:
It is advisable to make 3 to 4 drums of the **Plastersure Plaster Additive Mixture**. Only this Diluted Plastersure must be added to the plaster mix. Never add water to the plaster mix when working with Plastersure Additive.

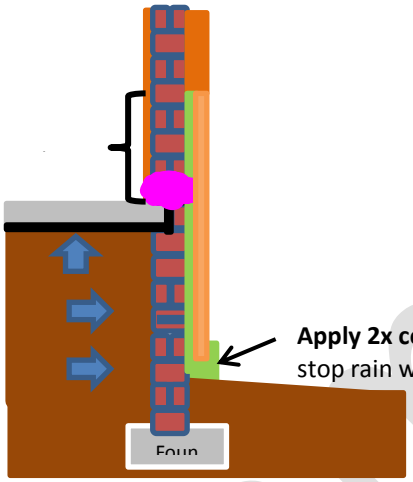
4. **1st Coat plaster** - apply a thin coat (maximum 6mm) of plaster is applied onto wall. Thick coats of plaster are more likely to slump down. The plaster with additive takes very long to dry and a slush coat is required to speed up the process.
5. For the second coat of plaster, scratch the plaster surface liberally all over with a nail board, trowel, metal float or similar object. Reason - without these scratches the natural drying shrinkage will cause cracking, crazing and hollowness to develop - the next coat will probably pull the first coat off as it dries.
6. **2nd Coat plaster** -
    a. Apply with a brush a liberal coat of **Bonding Liquid** to 1st plaster coat. The keying-agent assists with plaster adhesion.
    b. **Use only Diluted Plastersure Additive Mixtu**re for the liquid that the plaster is mixed with. This will ensure that paint will not bubble on new plastered surface
        i. Plastersure - Reduces the size of the capillaries in the plaster preventing damp passing through.
        ii. Plastersure - also makes the mix stickier (plasticising) which help to hold the plaster together. Wet sand weighs more than dry, so it will make your mix weak.
        iii. Plastersure - Prevents the moisture in binding with the salts – thus reducing efflorescence.

    c. When the plaster surface is firm enough (but not bone dry, or it will need re-wetting) apply a second coat to exactly the same specification - further coats might be needed to reach the desired thickness don't forget to scratch plaster layer liberally before applying next coat.
    d. **Preventing plaster cracks** - Spray the plaster surface with water to slow the drying process (every 1to 1.5 hours). Reasons - excessive drying out increases the suction and can prevent one coat sticking to another. Rapid drying always increases shrinkage, which gives rise to cracking of the plaster or finish plaster.

Step 10: Waterproof Sock on the base of the newly plastered wall

Prevent rain water and irrigation moisture entering the plaster at the bottom of the wall by putting a waterproofing sock over the bottom of the plaster.

1. Apply 2x coats Dampcrete47 300mm up the wall from ground level onto the new plaster. This is to prevent rain water splashing and penetrating onto the base of the wall that has been re-plastered.



Apply 2x coats Dampcrete47 waterproof barrier.
stop rain water splashing directly onto plaster

Step 11: Painting and Decorating wall.

Delay any decoration for at least 21 DAYS. The additives added into the plaster will result in the plaster drying out slower than normal plaster. **Wait at least 21 days** before any painting, rhinoliting, decoration, skirting, etc is affixed to treated walls