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 or technical advice, please contact:



www.f-ball.co.uk

Moisture Measurement *and* Control

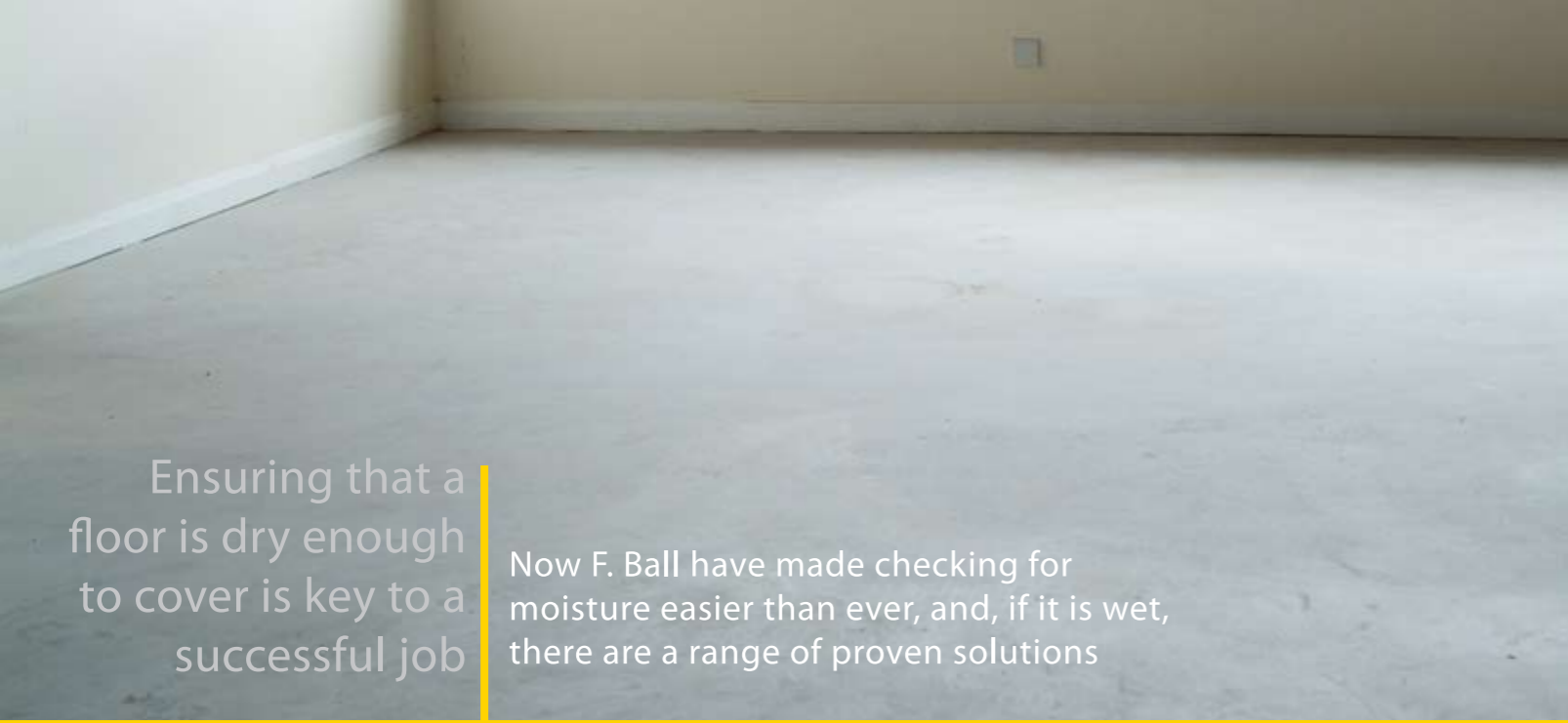
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Measuring and controlling subfloor moisture





Ensuring that a floor is dry enough to cover is key to a successful job

Now F. Ball have made checking for moisture easier than ever, and, if it is wet, there are a range of proven solutions



Moisture Measurement and Control

Step 1
CHECK IT



Undertake an initial test for the presence of moisture in the subfloor using a radio frequency moisture meter such as the Aquant[™] Protimeter. If moisture is present, investigate further.

Step 2
MEASURE IT

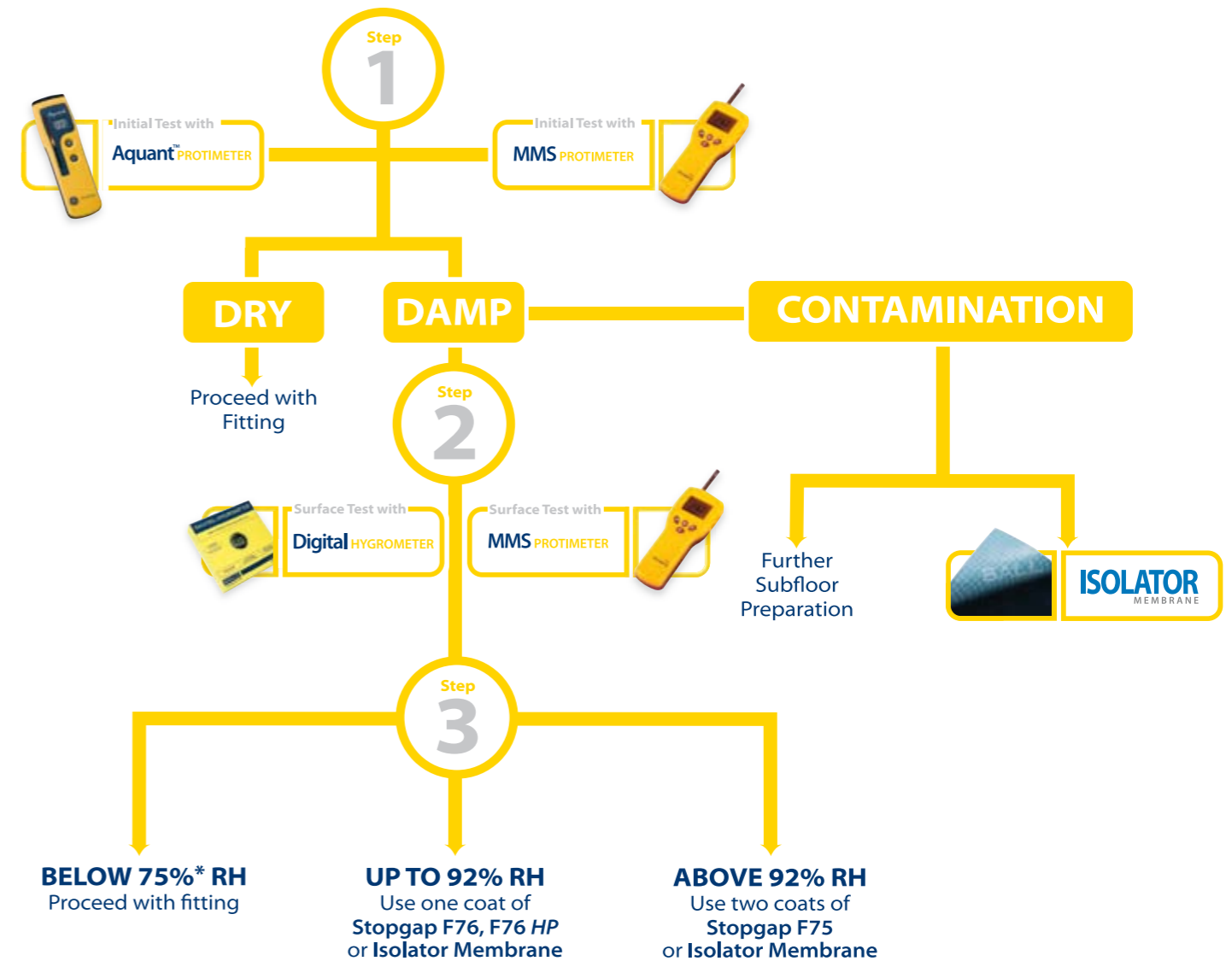


Confirm and accurately measure the moisture levels present using a F. Ball Digital Hygrometer. If the relative humidity is below 75%* it is safe to proceed with fitting. If above 75% RH go to step 3.

Step 3
SOLVE IT



If relative humidity is above 75%, treatment is required. Up to 92% RH use one coat of Stopgap F76 (or for small areas Stopgap F76 HP) or Isolator Membrane. Above 92% RH use two coats of Stopgap F75 or Stopgap Isolator Membrane.



* For wood floors F. Ball recommend a maximum of 65% RH. Consult wood floor manufacturer.

Moisture Measurement

and Control



Aquant™ PROTIMETER

The new Protimeter Aquant™ is the quick and easy way to check subfloors and determine if areas contain moisture and are of concern.

- Handy size and non invasive
- Quickly identifies potential moisture
- Affordable



Digital HYGROMETER

The new F. Ball Digital Hygrometer allows you to accurately determine the % Relative Humidity level and decide whether a waterproof surface membrane is required.

- Ready to use – pre-calibrated
- Simple and reliable way to measure Relative Humidity in subfloors



MMS PROTIMETER

The Protimeter MMS is a complete multi-mode system. It can provide a quick check for moisture presence, or with the use of probes or foam measurement blocks, allows % RH to be measured directly.

- Handy size - convenient to use
- Complete moisture checking system



F76 HP One-Coat, Accelerated, Waterproof Surface Membrane in a handy size pack

- Fast curing (3 hours @ 20° C)
- Suppresses passage of construction moisture and rising damp up to 92% RH



Hardener for use with F76 HP



F75 Two-Coat High-Performance Waterproof Surface Membrane

- Suppresses the passage of construction moisture and rising damp up to 98% RH
- Pigmented red to aid coverage uniformity
- Can be used with STOPGAP Accelerator



F76 One-Coat High-Performance Waterproof Surface Membrane

- Suppresses passage of construction moisture and rising damp up to 92% RH
- Pigmented blue to aid coverage uniformity
- Can be used with STOPGAP Accelerator

DPM Hardener for use with F75 & F76



STOPGAP ISOLATOR Impervious Loose-Lay Laminated Sheet Membrane

- Impervious loose lay sheet designed to be laid over damp subfloors
- Isolates floorcoverings from damp and contaminated floors
- Easy to lay and easy to remove, leaving the surface in its original condition
- Ideally suited for fast-track and refurbishment projects

Technical Information

WHAT IS THE PROBLEM?

It was only in 1965 that it became mandatory to install a Damp Proof Membrane (DPM) in new buildings. Where there is no DPM or in cases where the DPM has failed, moisture can rise into the slab from the ground. In cases of new construction the slab itself will contain a considerable amount of residual moisture and although this will generally reduce with time, dependent on environmental conditions, this can cause a significant delay to building occupancy.

There are, of course, other circumstances where a floor slab may temporarily absorb water, after a flood, broken pipe etc.

In any circumstance where the floor slab contains significant amounts of moisture, if floorcoverings are installed without precautions being taken, the floorcovering will reduce moisture release thereby trapping moisture under the covering with the potential to cause blisters or even failure of the adhesive. When problems like this occur (after floorcovering installation) there is no 'quick fix' other than to undertake an expensive rip out, then to either let the floor dry naturally or apply a Waterproof Surface Membrane (WSM) and install a new floor covering.

The difficulty is that moisture is not always visible and estimates of drying times can be very inaccurate. The best estimate at how long a floor takes to dry to an acceptable level of 75% RH is at a rate equivalent to 1

day per 1mm of subfloor thickness up to 50mm. So typically a 50mm thick screed will take at least 50 days to dry. Thicker floors can dry at an even slower rate than that. Given the financial pressure to occupy a building the temptation is to take a risk and proceed with installing the floorcovering – however, the costs of getting this wrong can be substantial, not only in wasted material but because occupancy may be even further delayed while remedial action is taken.

HOW CAN YOU TELL IF IT IS SAFE TO PROCEED WITH INSTALLING A FLOORCOVERING?

Where there is a suspicion that the floor may contain moisture, this needs to be carefully checked – visual inspection is inadequate as what may appear dry on the surface may conceal retained moisture that is being slowly released.

Firstly the presence or absence of moisture can be checked easily using a radio frequency moisture meter such as the Protimeter AQUANT™ or Protimeter MMS*. These devices are quick and easy to use and give instant readings that indicate whether moisture is present or not.

If no moisture is present then flooring installation can proceed, but if there is an

indication of moisture presence, then this needs further investigation. Measurements need to be made at a number of points across the floor and over a period of time to allow measurement of moisture release from the slab. Traditionally such measurements have been undertaken using a hair hygrometer that itself required careful calibration immediately prior to use. This method has now been superseded by the pre-calibrated F. Ball Digital Hygrometer* which is temporarily sealed to the floor surface for a period of 4-24 hours and gives a direct read out of the relative humidity of the floor. Thicker power floated slabs may take longer.

An alternative measurement method is to utilise a Protimeter MMS* in conjunction either with foam measurement boxes (similar to those used with the digital hygrometer) or using moisture probes that are inserted into pre-drilled holes in the slab.

Where Relative Humidity (RH) levels are measured at below 75%**, flooring may proceed without further treatment. At levels over 75% further treatment is required.

** For detailed operating instructions and information on how to interpret results please see the relevant product data sheets and operating instructions.*

*** For wood floors F. Ball recommend a maximum of 65% RH. Consult wood floor manufacturer.*

SOLVE THE PROBLEM WITH A WATERPROOF SURFACE MEMBRANE

A Waterproof Surface Membrane (WSM) is an impervious layer placed above the concrete slab that acts as a barrier to moisture vapour transmission.

WSM's are typically formed by applying one or two coats of an Epoxy Resin system which bonds to the floor surface to create a waterproof layer. A proven alternative is a WSM in the form of sheet membranes such as Stopgap Isolator.

Stopgap Isolator is a loose lay fibre reinforced vinyl sheet which sits proud of the subfloor yet allows a floorcovering to be bonded to its upper surface. Once installed it is very hard to believe that the floorcovering is not adhered directly to the floor. With Isolator, the WSM can simply be lifted and removed at a later date without any damage to the subfloor – an important consideration where heritage floors are concerned or where a building is to be occupied on a limited tenancy and floors will later need to be returned to their original condition.

The appropriate treatment depends on the Relative Humidity (RH) of the subfloor:

Over 75% RH but under 92% RH, F. Ball recommend the use of one-coat of Stopgap F76 (or for smaller areas Stopgap F76 HP) or Stopgap Isolator Membrane.

Over 92% RH, F. Ball recommend two-coats of Stopgap F75 or Stopgap Isolator Membrane.

For installations where speed is important, Stopgap Accelerator can be added to F75 or F76 to achieve a 3 hour curing time at 20°C. Alternatively, Stopgap Isolator can be laid directly on the floor and a floorcovering installed immediately using the recommended Styccobond adhesive.

WHAT IF THERE ARE OTHER PROBLEMS?

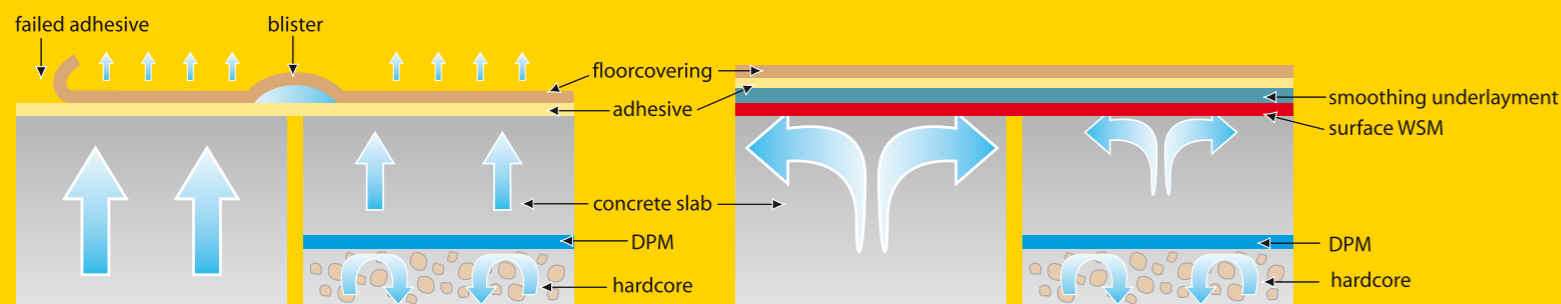
If the floor suffers from other problems in addition to moisture, these can generally be overcome by using one of F. Ball's specialist range of underlayments in conjunction with the WSM. For example:

- Stopgap 900 DPM-PREP is a specialist smoothing compound for use under Stopgap Waterproof Surface Membranes.
- With the application of modern cement technology the smoothing or levelling of a subfloor can now take place in 2-3 hours rather than the usual 24 hours by using Stopgap 100 RAPID. Stopgap 100 can be used over either F75 or F76 WSM's and its unique ultra fast drying technology allows the floor to be levelled and floorcoverings to be laid in as little as 2-3 hours.

For details of other products that can be used in conjunction with WSM's please either contact F. Ball's technical department, view the F. Ball website on-line at www.f-ball.co.uk or consult F. Ball publications such as 'Barriers Work' or individual Product Data Sheets.

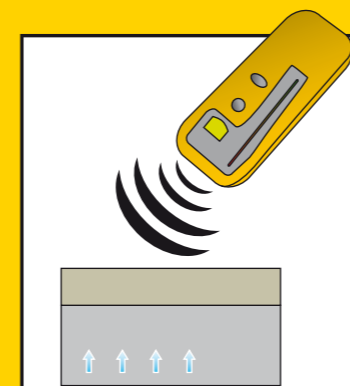
Many old floors may well have previously been painted or be suffering from efflorescence. Where the subfloor is flaking or contaminated, Isolator Membrane provides a solution as well as providing an effective WSM. For advice on subfloors refer to the F. Ball Subfloor Preparation Guide.

F. Ball manufacture a complete range of primers and adhesives for use with WSM's. For recommendations appropriate to a particular floorcovering please refer to the latest issue of the F. Ball Recommended Adhesives Guide (RAG).

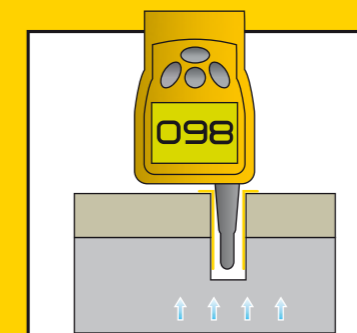


Floorcovering traps moisture release causing blisters or damage to adhesive layer allowing floorcovering to lift

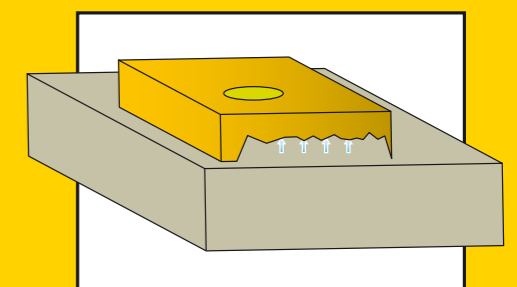
Waterproof Surface Membrane controls moisture release and allows floorcovering to be installed



Radio meters detect the presence of moisture



Moisture probes measure humidity within the slab



Digital hygrometers are sealed to the slab and accurately measure relative humidity