

PROPERTY CARE ASSOCIATION

Certificated Surveyor of Timber and Dampness in Buildings

MODULE 2: The Identification and Control of Dampness

NOTES FOR CANDIDATES

1. Read the instructions and questions carefully.
 2. Answers should be illustrated with sketches where appropriate.
 3. Any abbreviations must be given in full when first used.
 4. The duration of this written examination paper is 2 hours 15 minutes.
 5. The paper consists of two sections which are assessed separately and both must be passed; the pass mark in both cases is 50%.
 6. **All** questions should be answered.
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SECTION A

(This section should be answered in no longer than about **45 minutes**; marked out of 25)

Outlined below are some basic facts about a property and a problem within it.

The property is a substantial semi-detached house built in the 1920s. The walls are solid 225 mm (9") brickwork and a slate damp-proof course (dpc) is clearly evident. Internally, there are suspended timber floors in the reception rooms and hall and the level of the dpc is compatible with these floors. In the kitchen, there is a solid concrete floor which is at the same level as the timber floors and which replaced the original timber floor about 5 years ago.

The owner, Mr R Jenner, has recently inherited the property and it is currently unfurnished. He originally asked you to investigate dampness and signs of deterioration of the plaster visible in the rear room all along the length of the wall with the kitchen. When you arrive on site, Mr Jenner tells you that all units and appliances have now been removed from the kitchen prior to refurbishment.

You have permission to remove skirting boards, lift floor boards etc. and to undertake any destructive examination found to be necessary to fully investigate the problem during this site visit.

Using your experience and knowledge, create and layout a report including recommendations for appropriate remedial measures exactly as you would submit it to Mr Jenner. A sketch plan of the ground floor layout is provided for you to add notes to and use as part of your report. **Do not include your own name or that of your company in the report.**

SECTION B (All questions are worth 6 marks)

- 1) Describe how you would determine if there was sufficient sub-floor ventilation in a semi-detached house with a suspended timber floor.
- 2) List all the relevant factors which may contribute to condensation problems in domestic dwellings.
- 3) Condensation commonly causes problems in buildings.
 - a) Explain the difference between 'vapour pressure' and 'relative humidity'.
 - b) By **marking up** the psychrometric chart supplied, calculate **both** the vapour pressure **and** the dew point temperature when room conditions are 60% relative humidity at 20°C, and
 - c) If the humidity in a room at 15°C is at 90%, again by marking up the chart, calculate the **rise in temperature** required to lower the humidity to 60%.
- 4) You carry out a damp survey and observe and diagnose rising damp with areas of contaminated plaster up to the underside of a dado rail which is at approx. 800mm above internal floor level. The client does not wish to have the rail removed or damage to the decoration to a higher level.
 - a) What are the re-plastering height guidelines,
 - b) Discuss the potential risks of minimal re-plastering, and
 - c) How would you advise the client?
- 5) Positive Input Ventilation systems can be used to combat condensation.
 - a) Explain how such a system works, and
 - b) Explain the benefits of installing this type of system.
- 6) Describe the different characteristics of water repellents and water-proofers and give examples when each type of product can be used.
- 7) Describe how you would distinguish between condensation and penetrating dampness in the ground floor bay window of a house with solid 225 mm brick walls.
- 8) List at least **SIX** reasons why an electrical moisture meter will give an misleading reading even when the instrument, including the battery, is in good working order.
- 9) It may be necessary to treat dampness in an external wall where the outside ground level is 300mm above the level of an internal suspended timber floor e.g. due to a Local Authority pavement.
 - a) Describe how you would treat the dampness, and
 - b) List the other measures that you would recommend to prevent any future problems with the floor.

- 10) You are instructed to investigate the problem of persistent penetrating dampness to a solid external wall of a detached domestic dwelling.
- List all the potential external defects which could be the cause of the problem, and
 - Describe the investigations that you would carry out internally in the area affected by the penetrating dampness
- 11) If you suspect that condensation is the cause of a dampness problem, but conditions at the time of your survey were not creating condensation, describe the means by which you could establish **during your initial inspection** that condensation was the most likely cause.
- 12) A surveyor may have to interpret data from laboratory reports about samples removed from a wall and analysed. Give your interpretation of the data in the table below (all samples are mortar). Explain your answer.

Height up wall (mm)	Total moisture content (% wt/wt)	Hygroscopic moisture content (% wt/wt)	Capillary moisture content (% wt/wt)
1750	0.2	0.2	Nil
1500	0.3	0.3	Nil
1250	0.2	0.2	Nil
1000	4.1	3.9	0.2
750	8.4	2.8	5.6
500	10.0	2.1	7.9
250	15.0	1.2	13.8