



**TIMBER TREATMENT**

Remove debris and clear obstructions (such as floorboards or insulation materials) sufficiently to ensure access for the cleaning of dust etc, and effective inspection and treatment of timbers.  
Check the timbers by probing, and in the case of heavy Death watch beetle (if found) infestation in large section timbers, check the internal condition of the timber by drilling or other means.  
Where necessary, expose the built-in ends of structural timbers for investigation and treatment.  
Carry out all repairs and replacements. Replacement timbers should be pre-treated in accordance with BS8417 2003 (Use Class 2 or 3) or when this is not possible or practical timbers should be treated on site with a wood preservative recommended by the manufacturer as meeting the requirements of BS8417 2003 when applied as a surface treatment. If cutting to size, notching etc is required, any freshly-cut surfaces should be treated as detailed above. It is desirable for replacement timbers to be protected against dampness especially where they are in contact with masonry walls.  
Cleaning of dust and debris from timbers scheduled for treatment should be undertaken prior to treatment, sufficiently, properly and safely so as to apply preservative it is important to-  
Allow thorough inspection Ensure adequate treatment Minimise the absorption of active ingredients into the dust particles so as to prevent contaminated material becoming a health risk  
Reduce the risk of slips, trips and falls during the treatment  
Note: one method of cleaning which ensures the above risks are controlled is by the use of suitable industrial vacuum machines.  
Apply the wood preservative specified in the survey report in the manner and at the rate specified by the manufacturer.  
Preservative formulations commonly used for the control of wood destroying insects currently include:-  
Water based emulsions insecticides Solvent based insecticides Oil based pastes Paste spray or fog applied formulations using Disodium octaborate as the active.

Each formulation may have different properties, modes of action, ability to penetrate timber and safety risks associated with their use. Application methods and choice of preservative formulations will be influenced by the insect being treated, the accessibility of the timber and indeed the type of timber that is being treated. These factors must be considered by the surveyor when formulating and undertaking treatments to control wood destroying insects.  
Reinstate or make arrangement for the reinstatement of any materials that have been removed prior to treatments.  
Special care must be taken to deal effectively with Death watch beetle and House longhorn beetle infestation. Any control strategy should take into account the inherent difficulty of treating such infestations and the limitations of the chemical treatments that are available.  
NOTE: If it is not possible to inspect or treat all the surfaces of timber infested by wood destroying insects, or where other factors may limit the effectiveness of a control strategy, the client should be informed and the risk of continued infestation must be made clear, preferably in writing.

**Fungal Decay**

Fungal decay affecting building timbers can be divided into two categories:-  
Dry Rot - this applies only to True dry rot (Serpula lacrymans)  
Wet Rot - this applies to a wide range of fungi, the most common of which are Coniophora puteana and Fibroporia vaillantii  
All active fungal attacks result from the presence of excess water within the fabric of a building. The identification and rectification of this water ingress and the removal or control of existing water within the structure must be regarded as the most important element of a successful long term treatment for fungal decay.

**Dry rot**

Obtain indications of the possible extent of the outbreak by testing timbers in the vicinity by prodding, preferably with a tool with a screw- driver type point.  
Note: Guidance as to the possible extent and direction of spread of fungus within walls can sometimes be obtained by observations aided by the use of an electronic moisture meter. Alternatively, moisture content measurement can be made by inserting timber dowels into holes set into damp masonry. These must be left in the wall for a period to ensure that they reach equilibrium with the surrounding masonry.  
The extent of growth of dry rot mycelium should be determined in order to ascertain the extent of risk of infection of adjacent timber. This usually requires opening up of the affected area by removal of joinery, stripping of plaster and lifting of floors.  
Note: In areas of the building in which it is known from previous experience that no woodwork is embedded in walls, it may not be necessary to strip large areas of such plaster even though it may be thought to overlie fungus strands. It may then suffice to remove plaster for some 300mm adjacent to woodwork at risk to confirm that no fungus has reached it. Alternatively, the spread of fungus can be determined by removal of plaster samples at intervals. Special considerations must be given to areas of solid flooring which are in contact with dry rot attack.  
At the discretion of the surveyor cut out and remove from site all decayed timber. Up to 600mm of sound timber beyond the visible limits of fungal growth may also be removed as a safety margin.

Note: Whilst it is usually economic to cut away the full extent of even lightly affected building softwoods, there are special cases, for example durable timbers both hard and soft woods in which the removal of lightly affected members would be disproportionately costly or would destroy historically important features. In such cases clients should be advised of the possibilities of alternative in situ treatments. Alternatives to complete removal may be particularly appropriate when the affected members are still structurally adequate and will readily dry out after being isolated from damp walls e.g. at first floor level and when effective ventilation can be arranged.  
The suggested safety margin may be inadequate in the case, for example, of a wall plate or alternatively it can be excessive in the case of a floorboard where it should normally be necessary only to cut away to the next joint.  
NOTE: The extent of the exposure work, strip out, chemical treatments and timber replacement will always be subject to variation and will be dictated by the prevailing site conditions and must ultimately be the responsibility of the surveyor.  
Isolate existing sound timbers from dampness.  
Note: Isolation of timber in direct contact with damp and infected walls can be effected by means of physical isolation, for example for joist ends, removal of the ends embedded in the walls and re-supporting independently. A variety of support methods are available, suitable for a range of situations (e.g. sleeper walls at ground level, joists hangers RSJ's, concrete lintels, cellar brackets, steel plates etc). The choice will depend on the position of the timbers affected, space availability and, in some cases, providing continuity or lateral restraint to the wall in question.  
Remove all identified built-in timbers, lintels, plates, bonding timbers etc. within the affected wall area and replace in accordance with Building Regulations, in a suitable material which may be treated timber, steel, concrete, or brickwork.  
In order to reduce the risk of further decay, clean all wall areas and oversites / solum to remove visible surface fungal growth and other cellulose rich materials that may be at risk of decay.

The surveyor must be aware that the long term solution to the eradication of decay in buildings is the elimination of excessive water in the buildings fabric. The use of masonry biocides must therefore be seen as a control that will lap rapid or cost effective reinstatement. Wood preservatives should not be relied upon to provide long term protection against dry rot in conditions where timbers are persistently wet.  
Unless otherwise recommended in the survey report and agreed by the client, treat exposed wall surfaces identified as showing evidence of mycelium by one of, or a combination of, the following:

1. surface application of a masonry biocide;
2. localised treatment of specific areas by insertion of preservative plugs or pastes into holes drilled in the masonry.
3. irrigation with fungicidal solution via holes drilled in the wall

The use of controlled heat may be an alternative method of dry rot control however this form of treatment falls outside this document.  
Carry out all repairs and replacements. Replacement timbers should be pre-treated in accordance with BS8417 2003 (Use Class 2 or 3) or when this is not possible or practical timbers should be treated on site with a wood preservative recommended by the manufacturer as meeting the requirements of BS8417 2003 when applied as a surface treatment. If cutting to size, notching etc is required, any freshly-cut surfaces should be treated as detailed above. It is desirable for replacement timbers to be protected against dampness especially where they are in contact with masonry walls.  
Where no alternative solution exist and timbers are to be reinstated into a persistently damp area, only pre-treated timber should be used. In these circumstances the client must be put on notice preferably in writing that the new timbers will continue to be at risk of decay  
Residual sound timbers in the vicinity of the outbreak should be thoroughly cleaned and treated with a fungicidal wood preservative. (the limited value of surface application of preservative in the face of sustained damp conditions must be understood by the surveyor).

**Wet Rot - if discovered**

Open up the affected area, cut out and discard structurally unsound timbers  
Replace removed timbers preferable with timbers pre-treated in accordance with BS8417 2003 ensuring that any cut ends are retreated, and that there is adequate isolation from the damp walls.  
When controlling dry rot and wet rot it is essential that necessary steps to eliminate the source(s) of moisture causing the decay are carried out as part of the overall specification of repairs. This must be included in the specialist contractor's or the responsibility placed on others (e.g. a general builder). In either case, this work should be carried out concurrently, or within a specified period. Particular emphasis should be laid on efficient ventilation, particularly subfloor and roof voids.



**Proposed Alterations and Extensions  
at Mill Cottages, Mill Lane  
Empingham LE15 8QE**

**Drawing Title : Rooflight Details  
Client : Mrs. R. Griffin  
Date APRIL 2024  
Scale NTS**

**Drawing No JDA/2024/20.2100.ROOFLIGHT/002**

**CONDITION 3 DISCHARGE APPLICATION DRAWING**

**John Dickie Associates  
Chartered Building Engineers  
5, Victor Way, Cherry Holt Road,  
Bourne, Lincs PE10 9PT  
Tel 07778 297733 jda@ndirect.co.uk**

**AIR SOURCE HEAT PUMP**

Located as shown - Mitsubishi Ecodan single phase PUHZ-W85VHA2 or equivalent.  
SOUND PRESSURE LEVEL AT 1M (dBA) - 45 LOW NOISE MODE (dBA) - 40

Air Source Heat Pump Installation will comply with the Domestic Building Service Compliance Guide - Dept for Communities and Local Government 2001 and BS EN15450 Tables C1 & C2 with a Seasonal Performance Factor (SPF) of at least 2.7.

The heating system is to be underfloor with water supply temperatures in the range of 30c to 40c. The Coefficient of Performance (CoP) is to be not less than 2.2 for space heating and 2.0 for domestic hot water. The Seasonal Performance Factor will be no worse than as described in Table C1 of BS EN 15450. The system will meet the minimum requirements for installation and controls in Table 35 for heat pumps.

The water distribution system is to include a low loss manifold system to maximize efficiency and ease commissioning and future maintenance. Pipework not contributing to the space heating system will be insulated to prevent heat loss. External pipework between the unit and the house to be insulated to the TIMSA Guide. The internal water distribution circuit should be protected by an anti freeze solution as recommended by the heat pump manufacturer.

For full heating, the heat pump and any supplementary domestic HW heating should be capable of supplying water in the range of 60c to 65c. The domestic hot water (DHW) system should include a tank thermostat and a time clock to optimise the time taken to heat the water.

Heat pump unit controls to include:

1. control of water pump operation (internal and external)
2. control of water temperature for the distribution system
3. control of outdoor fan operation
4. defrost control of external airside heat exchanger
5. protection for water flow failure
6. protection for high water temperature
7. protection for high refrigerant pressure
8. protection for air flow failure

External controls to include:

1. room thermostat to regulate the space temperature and interlocked with the heat pump operation
2. timer to maximize the operation of the heat pump

System installation by Radiant Heating Hougham Mill Lane, Marston, Grantham Lincs, NG32 2FU.  
info@heating-solutions.biz 01400 250572

**LINTOLS**

For uniformly distributed loads and standard 2 storey domestic loadings only  
Lintol widths are to be equal to wall thickness. All lintols over 750mm sized internal door openings to be 65mm deep pre-stressed concrete plank lintels. 150mm deep lintols are to be used for 900mm sized internal door openings. Lintols to have a minimum bearing of 150mm on each end. All pre-stressed concrete lintols to be designed and manufactured in accordance with BS 8110, with a concrete strength of 50 or 40 N/mm² and incorporating steel strands to BS 5896 to support loadings assessed to BS 5977 Part 1.

For other structural openings provide proprietary insulated steel lintols suitable for spans and loadings in compliance with Approved Document A and lintol manufacture standard tables. Stop ends, DPC trays and weep holes to be provided above all externally located lintols.

**Timber Repairs General**

BRITISH & EUROPEAN STANDARDS : comply with the following British and European Standards -  
BS EN 335 (2013) Durability of wood and wood-based products. Use classes: definitions, application to solid wood and wood-based products.  
BS EN 350-2 (1994) Durability of wood and wood-based products. Natural durability of solid wood. Guide to natural durability and treatability of selected wood species of importance in Europe.  
BS 1186-2 (1988) Timber for and workmanship in joinery. Specification for workmanship.  
BS 1186-3 (1990) Timber for and workmanship in joinery. Specification for wood trim and its fixing.  
BS EN 1313-1 (2010) Round and sawn timber. Permitted deviations and preferred sizes. Softwood sawn timber.  
BS EN 1313-2 (1999) Round and sawn timber. Permitted deviations and preferred sizes. Hardwood sawn timber.  
BS 4978 (2007) +A1:2011 - Visual strength grading of softwood. Specification.  
BS 5756 (2007) +A1:2011 Visual strength grading of hardwood. Specification.  
BS 8000-5: (1990) - WORKMANSHIP ON BUILDING SITES - Code of practice for carpentry, joinery and general fixings.  
BS 8213-1: (2004) - Windows, doors and rooflights - Design for safe use.  
BS 8213-4 (2007) - Windows, doors and rooflights. Code of practice for the survey and installation of windows and external doorsets