

Non-chemical treatment of woodworm – Cambs

Background

The property is a timber frame barn conversion which had been completed in 2008. In the early summer of 2009 evidence of an active infestation of woodworm - common furniture beetle (anobium punctatum) was found with characteristic piles of frass appearing.



Conventional spray treatments would mean protecting the newly laid oak flooring, hire and erection of scaffold access towers, cleaning down surfaces after spray treatment and possibly redecorating. All added costs on top of the cost of the preservative spray treatment. It was therefore decided to use a heat treatment process, in conjunction with our partner company ThermDry UK .

The Solution

All insects die when subjected to extremes of heat. The common furniture beetle & its larvae are no exception; they will die when subjected to temperatures of 54 °C for a minimum of 2 hours. The heat needs to penetrate deep into the fabric of the building, killing the insects and larvae in all stages of their growth, therefore both the time & temperature related to conditions within the matrix of the host materials; they do not refer to air temperature. For this effect to take place, the air temperature has to be raised to at least 70c and in many instances much higher.

The DRYAIR system is a self contained trailer unit containing a generator and boiler to raise the temperature of a water/glycol heat transfer fluid. The heat transfer fluid is pumped to independent portable heat exchangers, (which can be up to 500 feet away from the Trailer Heater Unit) comprising a hydronic coil and fan. Thermostats are used on each individual heat exchanger. The thermostats act as on/off switches for the heat exchangers. By shutting off the fan, heat transfer from fluid to air is interrupted.

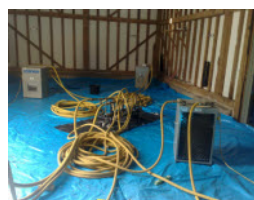


The Work Required



ThermDryUK used a 240-EU heater with six PHE 25-EU heat exchangers to generate enough heat to raise the air temperature to 70 °C to ensure that the timber temperature was raised to 54 °C for a minimum of 2 hours to ensure complete eradication of all the woodworm. Accurate monitoring and recording was needed to ensure the temperature had been achieved in the coldest areas and in the centre of the thickest timbers. Temperature probes and thermal imaging cameras were used throughout the process to monitor the

temperatures. A thermal tarpaulin was laid over the new oak flooring to protect it from abrasion by moving equipment and to reduce the effect of extreme temperature on the flooring. The kitchen sink unit was similarly protected. The works were carried out in a phased manner to allow the building materials to heat up and cool down slowly to reduce the risk of any distortion.



Conclusion

Whilst not offering any protection against re-infestation a total extermination of the beetle has been achieved this year without any chemical residues being left in the building and no distortion of the timber components. In durable timber like oak and elm any subsequent re-infestation if at all is likely to be at a very low level over say a twenty five year period.

