

Many years ago this team of workmen built a foundation of wood ... We help you preserve it

WSP Terrasond

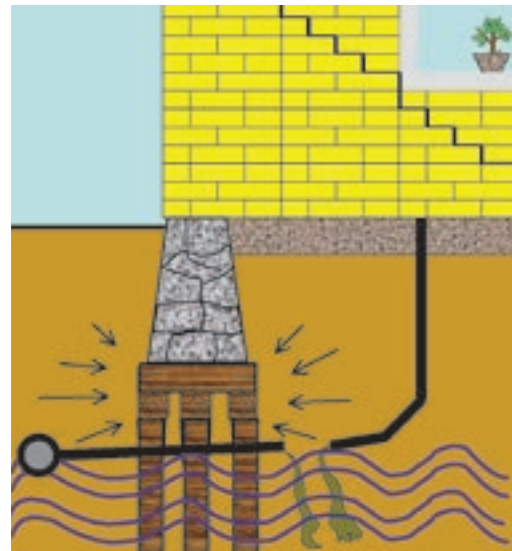


WSP Terrasond diagnoses and protects your wooden piles

Piles do not last for ever. Wooden piles and grillage can be more or less contaminated by destructive organisms, but if located beneath groundwater level the wood still has a considerable durability.

However, due to sewer leakage and other pollutants the decay can be considerable even here. If the groundwater sinks to beneath the foundation level decay will increase in the zone above.

The decay can be halted, at considerable cost-saving, if discovered in time and the wooden construction still has sufficient strength.



Causes of rapid decay

- Lowered groundwater level
- Leaking wastepipes
- Higher temperature



Be on your guard for changes such as

- Deep pits
- Cracks in the building
- Structural changes on the ground floor
- Land elevation



Pile fungus hypha

Destructive organisms favour leaking wastepipes that

- Provide nutritive substances
- Provide warmth
- Sometimes lower the groundwater level

“The quicker you investigate your wooden foundation, the less the risk for expensive consequences. You should act before cracks appear in the building.”

Does your building stand firm? A simple foundation inspection will provide the answer

Do you know the condition of your wooden foundation? It is not difficult to envisage the consequences for a building when its foundation can no longer carry its weight, but many still turn a blind eye to the problem. WSP Terrasond has vast experience of such problems having inspected the foundations of more than 300 properties.

Foundation inspection

- A study of existing drawings
- A visual inspection of the property and its surroundings
- The groundwater level is measured and water samples sent to the lab
- Wood samples are sent to the lab
- Wastewater pipes are checked
- Subsidence levelling

A complete inspection not only covers the foundation but also the close surroundings and a study of the building’s technical background. A correct inspection must always include laboratory analyses of wood samples. Just sticking a knife into the wood in an attempt to assess the extent of the decay is never sufficient.



A sample sawn out of a wooden pile.

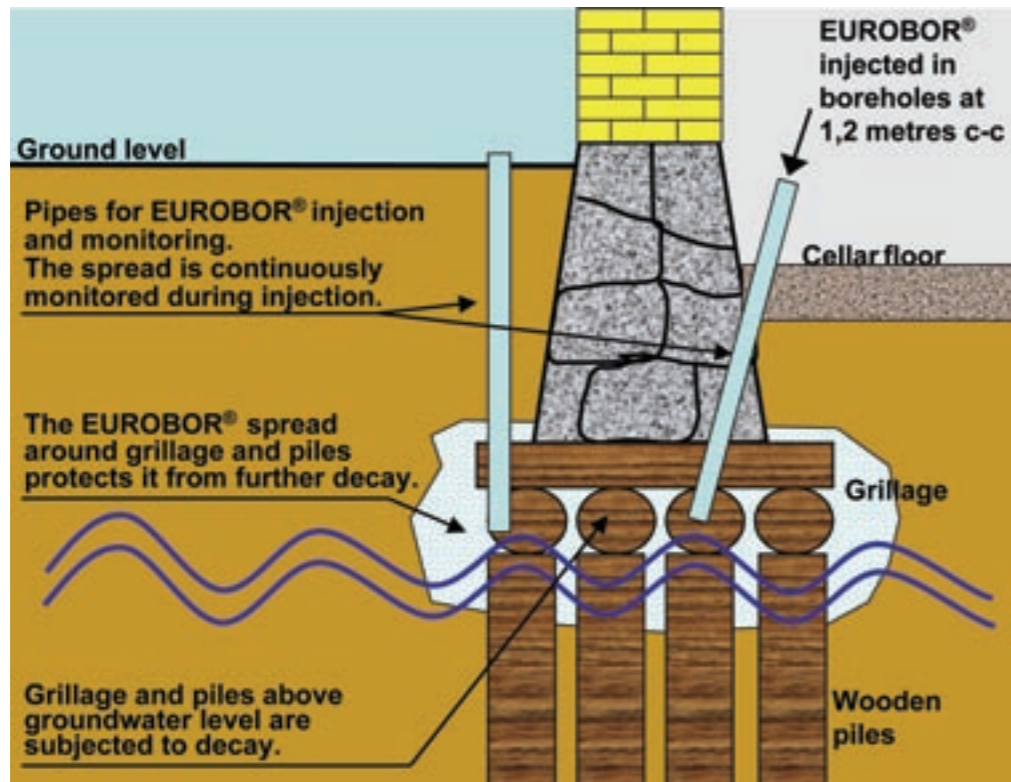
WSP Terrasond compiles the findings into a report and suggests measures.

Very good condition	No measures required but any changes should be observed
Good condition	Continue to regularly monitor the status in compliance with the prescribed control programme
Minor attack	Biocide-treat using EUROBOR® or JERBOR®
Mixed attack	Underpin the worst affected and biocide-treat the rest
Very bad condition	Underpin the entire building

EUROBOR® – the method that preserves your wooden foundation

Foundation-preserving is a quick, gentle and cost-effective way of avoiding having to strengthen your foundation at a later date. The biocide treatment stops the decomposition of wooden piles and grillage caused by microorganisms.

WSP Terrasond has biocide-treated more than 160 buildings with excellent results and has developed the technique for 25 years together with Senior Lecturer Allan Jerbo.



EUROBOR® is a further development of the JERBOR® method, which is based on an overdosage of trace elements making it biologically correct. Its chemical formula and effect is nationally and internationally documented and accepted, and the method has EUREKA status.

EUROBOR® consists of inorganic boron compounds, water and expansive clay (bentonite).

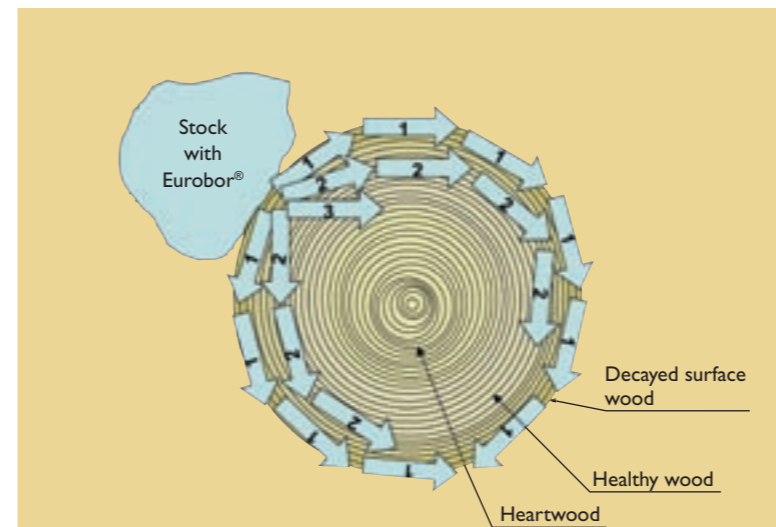
When injected, the mixture become a soft slurry that thickens and swells up to 20 per cent in volume after around 10 hours in the ground. When EUROBOR® comes into contact with the grillage and piles its boron content begins to level out between EUROBOR® and the wood. The decaying process is halted and the EUROBOR® protects the wood for many years to come. A EUROBOR® injection carries a 5-year warranty, although the

protection against further decay normally lasts much longer. The cost of injection treatment is 10-20 per cent of conventional foundation underpinning.

The injection holes are 40-50 mm in diameter at a centre to centre distance of 1.2 metres. This type of injection enables continuous monitoring of the distribution of EUROBOR® between the holes to ensure that all the wood is treated.



An injection sleeve is mounted in the borehole and EUROBOR® is pumped at low pressure.



Cross-section of a pile showing the penetration of boron.

1. Only a part of the pile needs to come into contact with EUROBOR® to provide total protection. The decayed surface wood has a higher water content, which helps spread the boron quicker. It is also where fungi and bacteria thrive best, so they are quickly killed and the pile is well protected against further attack.
2. The further boron reaches into the pile, the better it binds to the wood.
3. Once it reaches the heartwood leakage is almost impossible.

Treatment can be carried out from both inside and outside the building.

Tenants and activities in the premises are not greatly affected by the work so no temporary replacement premises are required.

Before treatment can commence, several administrative details must be cleared up. In Sweden WSP Terrasond usually accepts all-in contracts that include all the extra work required for adequate treatment.

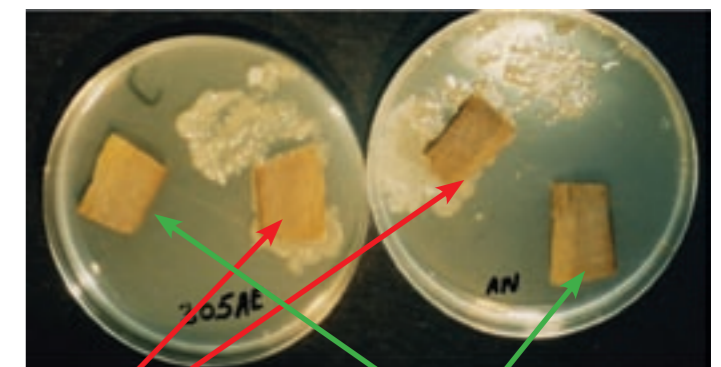
EUROBOR® treatment must be carried out by professionals, which is why we only use experienced and skilled staff.

Measurements are taken prior to and during injection in order to monitor the spread.

The measurement readings and injected amounts are recorded and the entire treatment presented in a final report.

Follow-up tests are made at the expiry of the warranty.

Deadly effect in the wood.



Untreated: visible bacteria

Treated with Jerbor®: no visible bacteria

A few examples of our projects



Eklandagatan 14, Göteborg
 Foundation inspection year 2005
 Eurobor®treatment year 2006
 Client: Brf Eklandagatan 14



Kvistrumsbron, Munkedal
 Foundation inspection 1992
 Jerbor®treatment 1993
 Client: Swedish Road Administration



Stora Teatern, Göteborg
 Foundation inspections 86-91
 Jerbor®treatment 1991
 Client: KIGAB



Humalistonlinna, Åbo, Finland
 Eurobor®treatment year 2005
 Client: As Oy Humalistonlinna



Trädgårdsgatan 12, Uppsala
 Eurobor®treatment 2003
 Client: Akademiska Hus



Göta Källare, Göteborg
 Foundation inspection 2003
 Client: HIGAB



Martinsilta, Åbo, Finland
 Eurobor®treatment 2004
 Client: As Oy Martinsilta



Hornsgatan 45, Stockholm
 Eurobor®treatment 2003
 Client: Gatu- & fastighetskontoret



Kungssportsavenyn 27, Göteborg
 Foundation inspection 2004
 Eurobor®treatment 2005
 Client: Brf Lorensberg 57:1



Tre Ponti, Venedig, Italien
 Eurobor®treatment 1994
 Client: Municipality of Venice



Hantverksföreningen, Uppsala
 Eurobor®treatment 2004
 Client: Uppsala Fabriks- och Hantverksförening



Postgatan 4, Göteborg
 Foundation inspection 1991
 Eurobor®treatment 2005
 Client: KIGAB



Djupedalsgatan 4, Göteborg
 Foundation inspection 2002
 Eurobor®treatment 2004
 Client: Eklandia Fastighets AB



Södra Vägen 24, Göteborg
 Eurobor®treatment 2004
 Client: ISS ECURO



Alexanderinkatu 11, Helsingfors, Finland
 Eurobor®treatment 2003
 Client: Kiinteistö Oy c/o Realco



Länsresidenset, Göteborg
 Foundation inspection 2000
 Jerbor®treatment 2000
 Client: National Property Board Sweden

WSP is a global company that offers qualified consultancy services for the public sector and the environment. With 6 000 employees WSP is one of the largest consulting companies in Europe, and amongst the ten largest in the world. Operations are concentrated primarily in England and Sweden, but also extend to the rest of Europe, the United States, Africa and Asia. In Sweden, WSP is a nationwide consultancy company employing 1 900 people with operations in WSP Arkitektur, WSP Byggprojektering, WSP Environmental, WSP International, WSP Management, WSP Samhällsbyggnad and WSP Systems.