

Resistograph Tree Report

For

Vivid Housing Limited



At

No.75 & No.79

Belmont Road,

Velmore,

Eastleigh,

Hampshire,

SO53 5FF



A trading name of RG Consultancy Ltd

**Prepared by
Richard Daubeney Our Ref 0724-RD
8th of July 2024**

1.0 Introduction.

- 1.1 Ruskins Tree Consultancy have been instructed by Vivid Housing Limited to undertake resistograph decay detection to English oak T4052.4 growing at No. 75 and English oak T4052.6 growing at No.79, Belmont Road, Eastleigh, Hampshire. The resistograph inspection was undertaken by Richard Daubeney who visited the site on 04/07/24.

2.0 The Benefits of Trees

- 2.1 Trees have many benefits are integral to natural ecosystems, providing a wide range of related benefits to humankind (ecosystem services), including mitigating the harmful effects of climate change. Trees are an important part of the economy, providing timber and non-timber forest products.
- 2.2 With urban trees these benefits can often be amplified with trees contributing to the landscape and character of an area, creating a sense of place with mature trees providing a link to the past. They help reduce the impacts of extreme weather by providing shade and intercepting rainfall, help reduce air pollution by removing particulates, help absorb CO₂ whilst providing habitat for wildlife and associated bio-diversity benefits.
- 2.3 Trees can also contribute to society by having a positive impact on health, reducing anti-social behaviour and having a positive impact on the quality and value of the built environment.
- 2.4 Their importance is recognised in national and local government policies, and many non- governmental organisations have policies dedicated to conserving trees and their biodiversity.

3.0 The risks from trees

- 3.1 The risk, per tree, of causing fatality is around one in 150 million for all trees in Britain or one in 10 million for those trees in, or adjacent to areas of public use. This is clearly significantly less than the 1 in 1 million thresholds that the Health and Safety Executive (HSE) considers 'broadly acceptable', within the Tolerability of Risk Framework.
- 3.2 The HSE have developed the Tolerability of Risk Framework which has been incorporated into the National Tree Safety Group (NTSG) guidance. Risks above 1/10,000 per annum are generally considered unacceptable when placed on the public. Risks between 1/10,000 and 1/1,000,000 per annum are tolerable, but consideration should be given to managing them 'as low as reasonably practicable' (ALARP), where it is cost effective to do so.
- 3.3 This risk therefore represents an extremely small proportion of the background risk that we commonly accept in our everyday lives, and the ongoing removal and general management of trees is probably the most important factor in keeping this figure at such a low level. However, there can be pressure to remove trees because of a perception of risk, which may be much greater than any actual risk a tree poses.
- 3.4 Trees are growing dynamic structures. No tree is ever absolutely safe due to the unpredictable laws and forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.

4.0 Statutory Protection of Trees.

- 4.1 We have been informed that there is a Tree Preservation Orders and no Conservation Area protection relating to this English oak trees T4052.4 and T4052.6 at this site for Eastleigh Borough Council. (TPO 549-E)
- 4.2 Before any tree works are carried out the presence of Tree Preservation Orders (TPO) or Conservation Area status should be established with the Local Planning Authority and permission obtained from the tree owners if required.
- 4.3 All tree works should be carried out by qualified, trained and fully insured operators in accordance with BS 3998: 2010 'Recommendations for Tree Works'.

5.0 Tree Inspections

- 5.1 To maintain trees in a reasonable condition and reduce the risk of personal injury to acceptable levels trees should be inspected by a suitably trained and competent person using the Basic or Professional Level tree surveying methodology, which can be undertaken by an arboriculturist as set out by LANTRA utilising visual tree assessment (VTA) methodology (Lonsdale 1999).
- 5.2 Where the visual tree assessment finds features that merit further inspection then the trees should be inspected using appropriate methodology. This might range from climbing inspections, root collar excavations to use of resistograph and/or tomographs to help determine the structural integrity of the wood within the tree. For the trees at this site our VTA identified issues that we considered should be assessed by use of a resistograph.
- 5.3 T4052.4 English oak tree has shown following the testing, evidence of moderate areas of decay present within the stem, this decay is considered to be linked to the fruiting bodies *Ganoderma australe* brackets at the base of the stem to the East and West sides at ground level. Readings No.1 to South demonstrated evidence of decay including readings 2 and 4 to the Southwest and West sides, although it is shown within the other readings 3, 6 and 8 there is still moderate and residual sound wood present within the stem. However, when looked from a distance the crown shows areas of dieback to 10-20%, this in turn suggests the tree is in decline. The concern of the known characteristics of these fruiting bodies will impact the tree, based on the decay process of fungus *Ganoderma australe* which effects the stem and the underside of the rooting area, although the readings show limited areas of decay at this time, this will in time further increase the decay and dysfunctional wood within the stem, leading to significant hollowing and a decline in structural root stability.

5.4 T4052.6 English oak tree, following the testing carried out to this tree, the results have concluded that although there are basal cavities to the West side, there is still good sound wood present within the stem and buttresses, although there is minor areas of decay present within reading no. 1 to the South side. Despite the basal cavity, the buttresses are shown to still have moderate sound wood present. The tree has had recent crown reduction carried out following the previous testing to this tree T4052.6 in 2021, which in turn has reduced the potential risk of whole tree failure to the immediate area.

5.5 The following comment is from 'The Principles of Tree Hazard Assessment and Management' by David Lonsdale (DTLR/Forestry Commission 1999):

'As with any fungus that causes root and butt rot in living trees, decay by these Ganoderma species can cause mechanical failure of the stem, base or root plate. However partially decayed wood retains considerable tensile strength due to the fact that decay involves selective delignification'

In the 'Evaluation of current rigging and dismantling practices used in arboriculture' Prepared by Treevolution and Brudi & Partner TreeConsult for the Health and Safety Executive and the Forestry Commission 2008 it states;

The following fungi usually occur as a result of root damage and are found in roots or at the base of the stem. Ganoderma australe has been reported as a reason for failure during rigging or climbing operations (Wessolly, pers. comm. 2005). Due to their ability to cause rapid and severe decay in roots, and/or the stem base, some species should be considered a hazard for climbing arborists. Species known to have such potential are (but are not limited to):

- *Armillaria spec.*
- *Ganoderma adspersum* e.g. on Ash (Reinartz, Schlag 1999a; Schwarze 2003)
- *Heterobasidion annosum* e.g. on Spruce
- *Kretzschmaria deusta* e.g. on Lime (Reinartz, Schlag 1999b)
- *Meripilus giganteus* in an advanced stage of infection

6.0 Conclusion

6.1 Following the results of T4052.4 and T4052.6 English oak trees mentioned within this report, we now provide our conclusions.

6.2 The testing to T4052.4 English oak tree has concluded that although the results show some areas of moderate sound wood present within the stem, however the presence of the *Ganoderma australe* fruiting bodies at the base of the tree will continue to further weaken the tree from a structural stability standpoint, this will continue to decrease the residual sound wood within the stem and rooting area, due to the known decay process of these fruiting bodies. It is clear future decline of this tree raises concerns of risk for potential stem or whole tree failure, with targets such as buildings, communal area, public footpath, main road all within striking distance of tree. Based on the above information, we advise the English oak T4052.4 is crown reduced by 4m all round, this includes the removal of deadwood over 100mm throughout the canopy. By doing these works will ensure that the risk is reduced to the immediate area, but still retaining a smaller and compact canopy. We recommend these tree works is carried out within 3 months from date of this report.

- 6.3 Testing to T4052.6 English oak has shown that although there is a basal cavity to the West side, the evidence produced from the testing shows moderate areas of sound wood present within the stem and buttresses. The tree has recently undergone a heavy crown reduction following the previous testing to the tree in 2021, this in turn is reducing the risk to the immediate area with targets such as buildings, public footpath, and communal area all within striking distance of tree. Based on the above evidence, we do not recommend any works at this time for T4052.6 English oak tree.
- 6.4 All works to date is to be undertaken within the requirements of the tree table works schedule. The trees listed in this report to be reinspected as outlined within the tree tables.



Richard Daubeney
Arboricultural Consultant
8th of July 2024

Tree Data

Tree No. Tree Tag.	Tree Species	Hgt (m)	Past Management	Age Class	Risk Target	Defects	Works	Work Priority
T4052. 4 Tree tag: 1339	English oak	15-20m	Subject to past management	Mature	High/ reinspect in 2027	Gross Defect Noted. Fruiting bodies <i>Ganoderma australe</i> brackets x 3 located to East and West side at ground level. 2 fresh and one old in appearance. No hollow sound when tapped to those sides. Further investigation required by means of decay detection. Some minor wounds to buttresses to East and South sides. Multiple pruning wounds on main stem. Below average shoot extension. Crown dieback of 10-20% Deadwood.	Crown reduce by 4m all round. Remove deadwood over 100mm throughout canopy. (All tree works to be carried out to BS3998 2010)	Urgent within 3 months
T4052. 6 Tree tag: 1952	English oak	10-15m	Recent reduction to crown.	Mature	High/ reinspect in 2027	No Gross Defect Noted. Ivy Covered stem unable to fully inspect. Basal cavity to West side, depth is 30cm approx. No hollow sound around that area when tapped with sounding hammer. Further investigation required by means of decay detection. Multiple pruning wounds on main stem. Recent crown reduction to crown.	No works.	N/A

Photographs

T4052.4 English oak looking Northeast towards Drill No.1 and old *Ganoderma australe* fruiting body.



T4052.4 English oak tree looking to East towards *Ganoderma australe* fruiting bodies on stem.



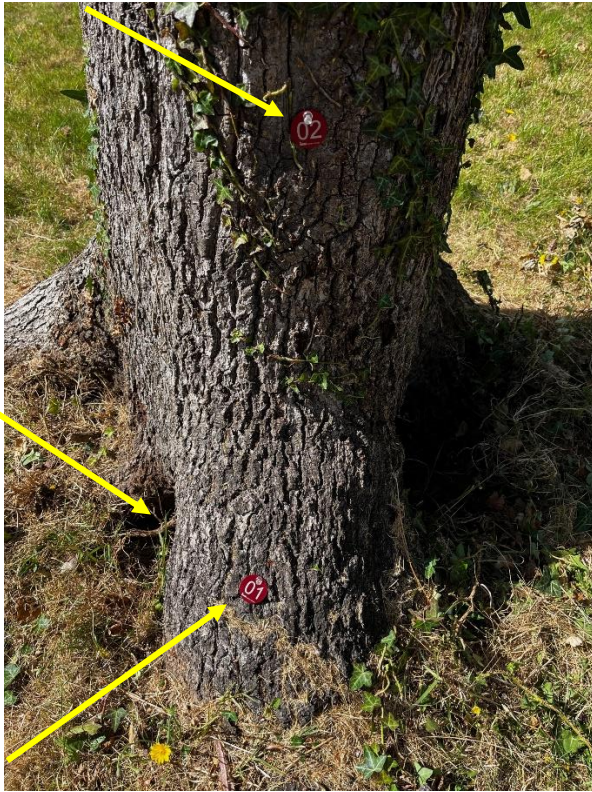
T4052.4 English oak tree looking Southwest



T4052.4 English oak tree Looking West



T4052.6 English oak looking Southeast towards Drill location No. 1 and 2 and basal cavity



T4052.6 English oak tree looking to West towards drill location No. 6



T4052.6 English oak tree looking South

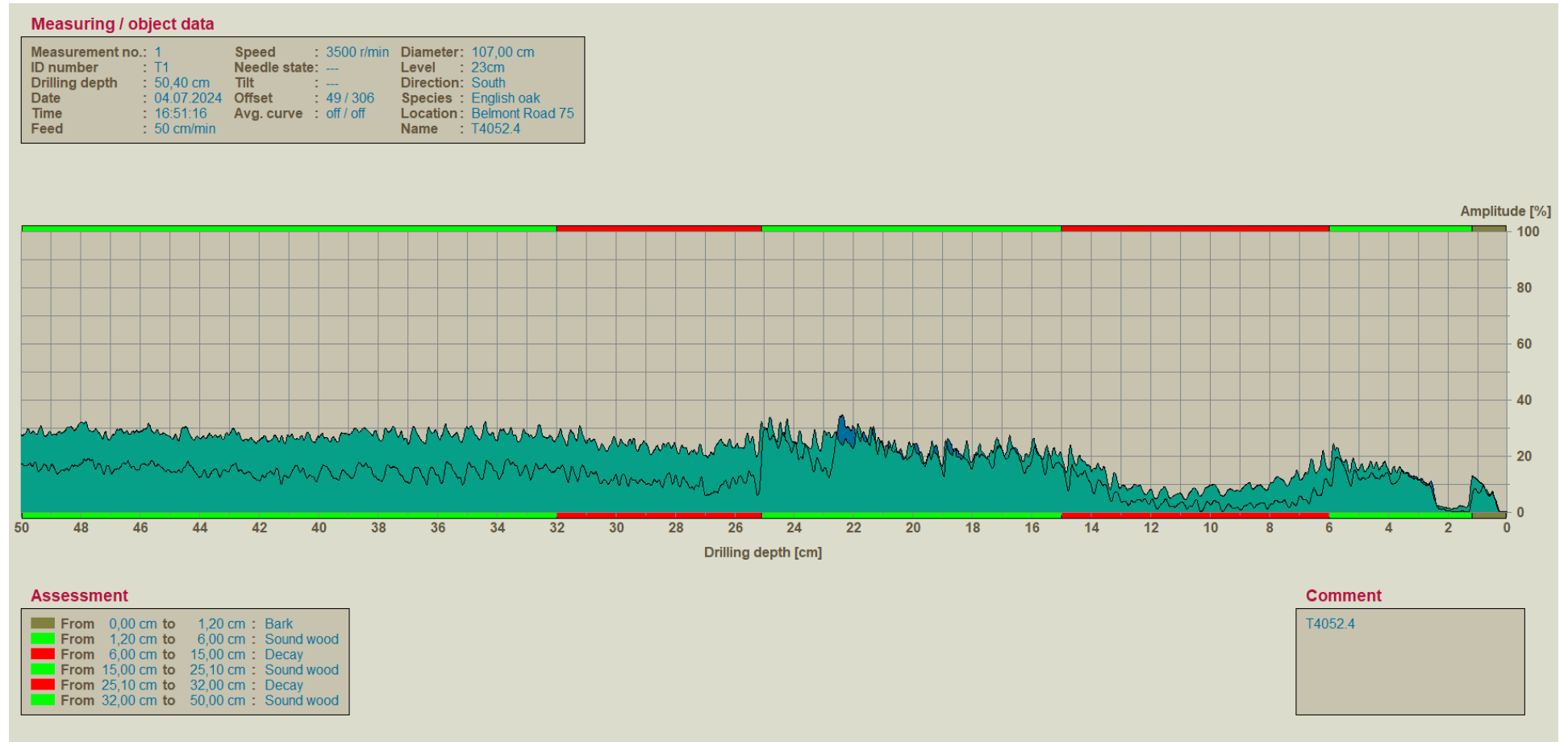


T4052.6 English oak tree Looking East.

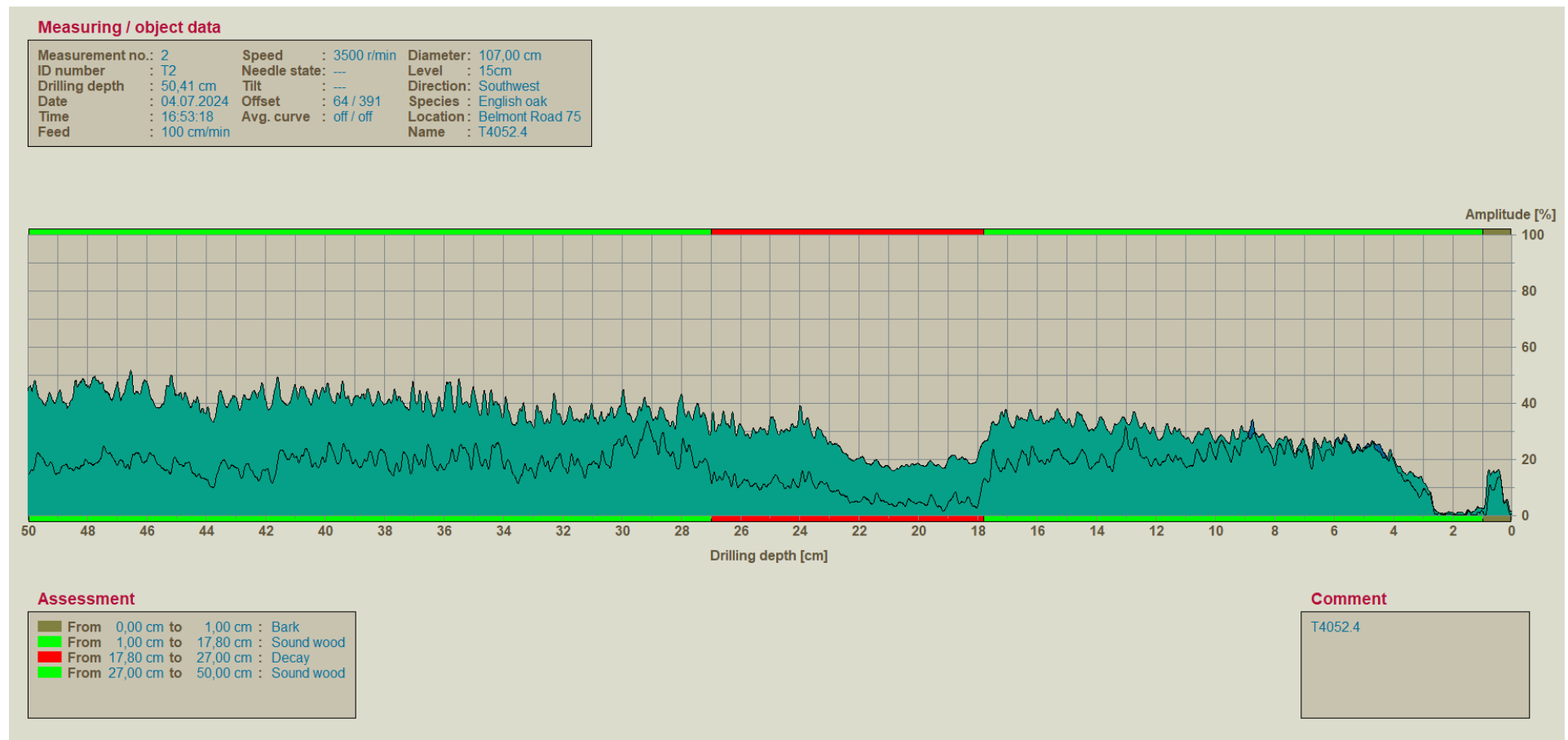


Resistograph Readings

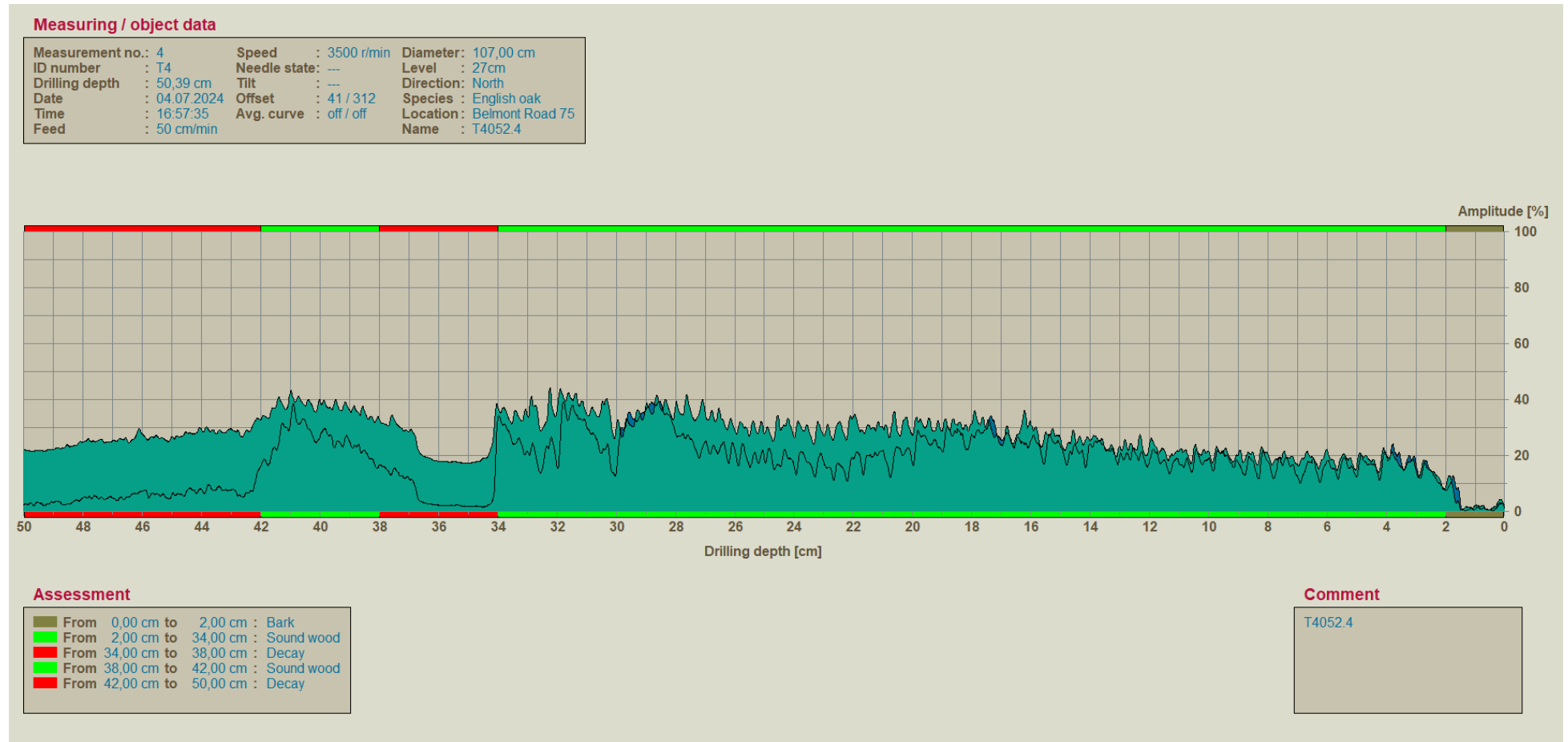
T4052.4 English oak measurement 1



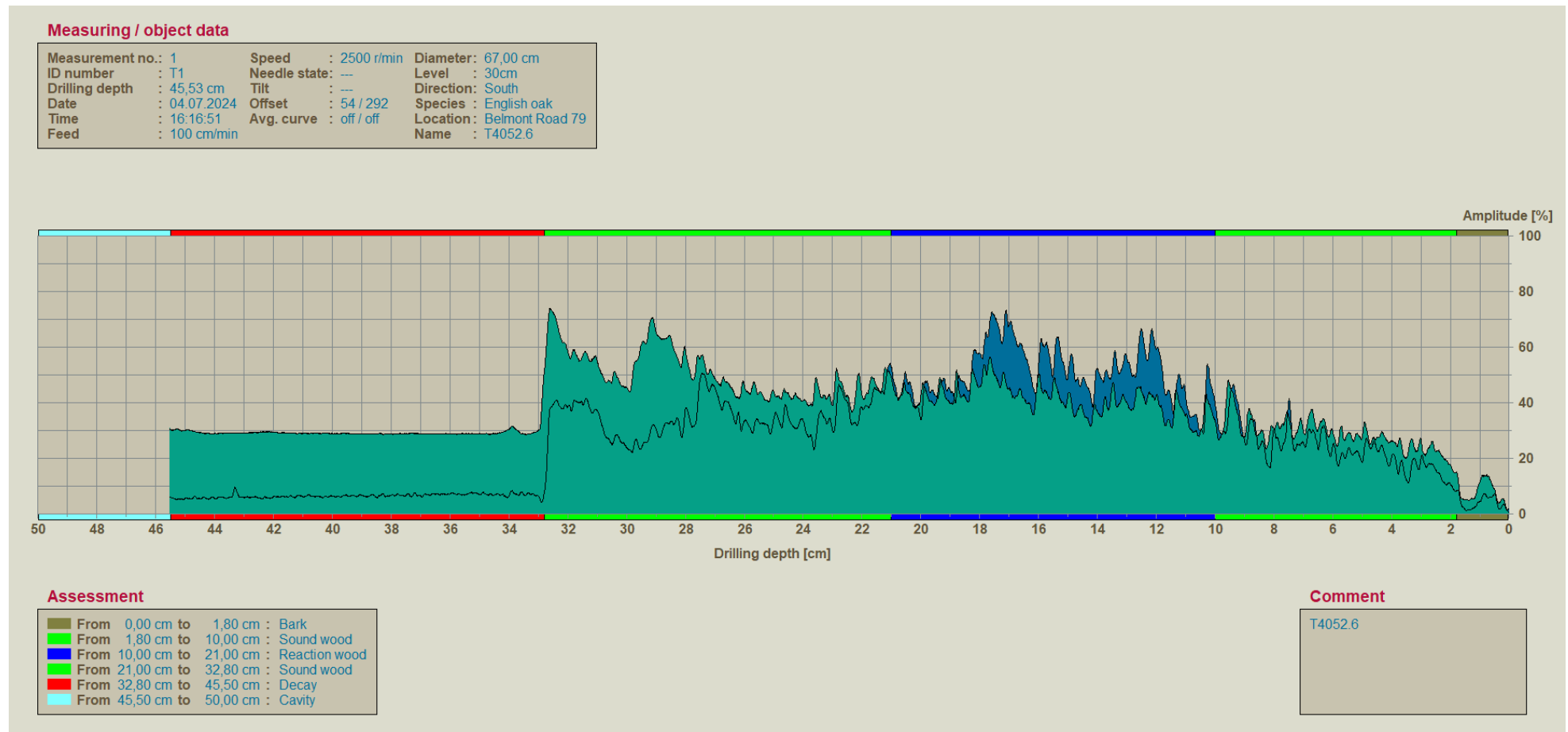
T4052.4 English oak measurement 2



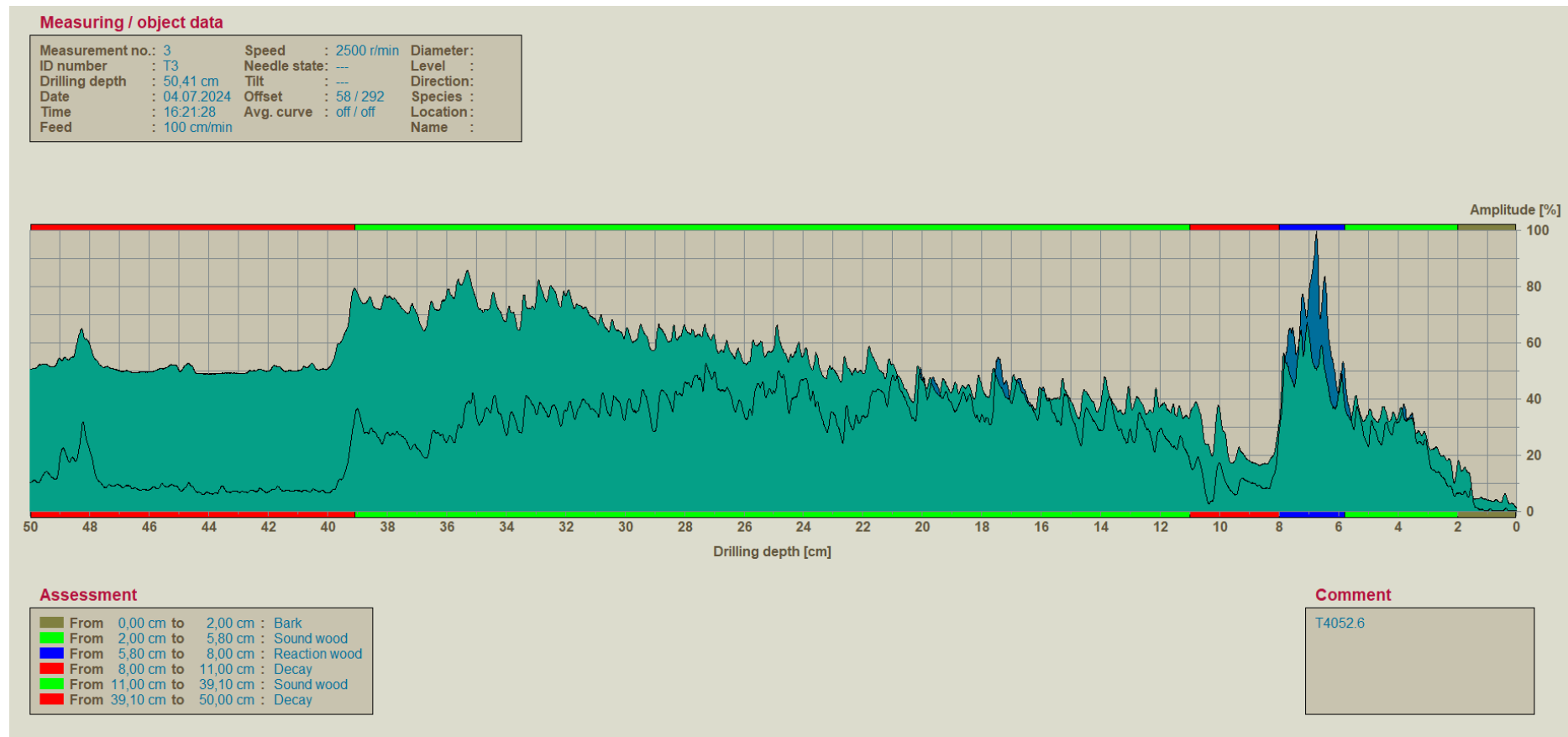
T4052.4 English oak measurement 3



T4052.6 English oak measurement 1



T4052.6 English oak measurement 2



T4052.6 English oak measurement 3

