



High-Tech Nuclear Surveys are Helping Property Managers Make Smarter, and Less Costly, Choices on Roof Repairs

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As demand grows for roofing repairs that are more targeted, less costly and have reduced environmental impact, Scott Deighton of testing company Everlast Specialist Surveys looks at how nuclear moisture surveys are becoming a game changer.

Using nuclear technology to assess the damage to the roof of a building might sound like a very high-tech approach to the perpetual problem of roofing maintenance that plagues landlords and property managers. However, thanks to their scientific accuracy at pinpointing areas that are damaged and have become damp, there is growing demand for the ‘Troxler’ nuclear moisture count roofing surveys that Everlast was the first firm to introduce into the UK and Europe, 15 years ago.

For those with the headache of maintaining a multi-construction roof system as part of complex building management requirements, the advantage of using the highly scientific survey method is that it accurately targets problem areas, which can then be repaired at a far lower cost than the replacement of an entire roof.

The Troxler survey uses a RoofReader moisture gauge to swiftly pinpoint problem

areas while simultaneously revealing zones of the roof that are in good condition and do not need replacing. A cheaper repair bill is coupled with speedier repairs, reduced waste and fewer materials required to complete the job.

And if you’re wondering how nuclear moisture surveys actually work, well here comes the science... Using a principle called neutron moderation, scientists discovered that tiny amounts of radiation can be used to detect hydrogen ions, which in a roof system typically indicate water.

Neutrons emitted from an isotopic source collide easily with the highly exposed neutrons of hydrogen, and these collisions slow their travel. By detecting changes in the speed of the emitted neutrons, a Troxler survey safely and accurately identifies moisture damage, even deep within a roof.

A nuclear moisture survey is typically carried out on one-metre-squared grid pattern across an entire roof surface.

Readings are taken at each grid intersection to build a hydrogen inventory of the roof system and, as a back-up, core samples can also be taken to verify the results if necessary.

Next, we analyse the data we’ve collected using statistical and visualisation software. Using these diagnostic tools, we convert the raw data produced by the Troxler gauge into a detailed map of moisture penetration inside the roof system.

The system is perfect for large residential buildings and there are growing numbers of residential property clients for whom Troxler surveys are helping generate significant savings on roof repairs for apartment blocks and other types of accommodation. The system’s ability to laser in on precise areas of damage can be invaluable in settling disputes relating to roofs for which tenants or owners have shared responsibility, as well as having the potential to create significant savings on service charges for residents in shared buildings.

With no face-to-face contact required, importantly the roof-top survey process is also COVID-safe and can be carried out within the Government’s coronavirus regulations.

As awareness of the technology grows, there has been a climb in demand for Troxler roof surveys across a wide range of buildings. In the education sector a Troxler survey is often the cornerstone of a successful academy trust bid to secure significant funding to repair an existing roof or installing new roofing.

In the retail sector too, firms such as the major supermarket operators, which have vast areas of roofing to maintain on their stores, are seeing the benefits of highly accurate roof surveys. We’ve seen how, based on less than a dozen surveys of one of the ‘big four’ grocery retailer’s worst affected roofs, Troxler technology has already saved the business hundreds of thousands of pounds on its budget forecast for the coming year.

Even Facebook is a fan of these highly accurate surveys: the roof of the social media giant’s enormous data centre in Lulea, in the far north of Sweden, underwent a Troxler survey at the end of last year.

With nuclear moisture detection the only truly accurate and scientific method for testing roofs and the underlying sections of multiple-construction roof systems, Troxler surveys provide excellent information at relatively low cost - and they are having a transformative effect on the roofing options for organisations across the UK and Europe.



Find out more

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