

Phenom Desktop SEM for mobile risk assessment

On-site analysis speeds operations for clients

In October 2014, RPS became the first company in the Netherlands to bring a mobile electron microscope to its clients. Below is an overview of the reaction this innovative application received.

RPS Analyse BV first launched its mobile electron microscope (SEM/EDX) at the World of Technology & Science (WOTS) exhibition at the Jaarbeurs Utrecht in October 2014. The instrument attracted a great deal of interest from colleagues within industry, government, research institutes and universities.

Edith Sweep, Quality and Application Development Manager within RPS, remembers it well: "The public was very intrigued. Visitors wondered whether such an application was even possible, how it would actually work and whether there would be a market for it." Nearly a year later, Edith takes stock. "Of course, we had total confidence in the mobile SEM. But it's impossible to predict how such an innovative application will do in the market. The exhibition was a perfect opportunity to introduce the market to this new technology. We were able to prove its technical feasibility. Now we can say that the mobile SEM has generated the expected added value within our program of services."

On site analyses

Until the launch of the mobile SEM, asbestos analysis, using electron microscopy (SEM/EDX), could only be carried out in laboratories. Couriers transported the samples to the labs and it could then take several days before the client knew the results. Meanwhile, operations were at a standstill. "We can now take samples and analyze them on site. We also print out the certificates on location, so that the client immediately has all the necessary documents. They can then continue operations or prepare the necessary plan of action for remediation," Edith, who was closely involved in developing the application, explains. "It was a substantial investment, but if you're not innovative, you stagnate. Clients appreciate companies that dare to stick their necks out."

Speed

Rogier de Korte (analyst at RPS) is now an expert in using the mobile SEM and has been out in the field many times with the instrument on board. "Speed is what counts," he has observed from his initial on-site visits, which included a water purification system installer, a bank branch, a media company, a care home and an army base. These are all organisations for which a rapid risk assessment is crucial. "Obviously an organisation doesn't want to shut down its operations." Rogier can begin the analyses within an hour of parking the truck. "During that hour, I need to prepare the samples and conduct the performance tests." After sample preparation, he can use the mobile SEM to clearly visualize the fibers he is dealing with. Subsequently, an X-ray spectrum of the suspect samples can be used to determine their chemical composition. This allows him to distinguish between asbestos, mineral wool, glass and other inorganic fibers.

Magnified 200x

Curious clients regularly watch over his shoulder. "They may have read about the application but they can now see how it works in practice. It's obvious that they are really interested in it. Of course, when you see a fiber magnified 200x on the monitor, it does look rather different. Sometimes clients take a photo on their phone." Rogier quickly became familiar with the



Edith Sweep and analyst Rogier de Korte with the truck housing the mobile SEM.

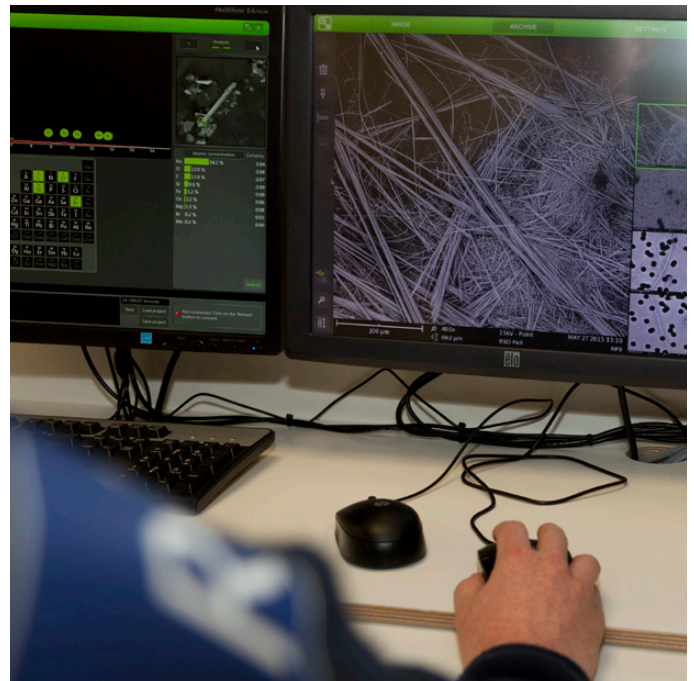
mobile SEM. “Initially, I didn’t really know what to expect. It’s very user-friendly and it generally takes me 15 minutes to analyze one sample. Clients appreciate flexibility. If I find that more samples are needed, I can do them while I’m there.”

Trust

“As soon as we had the accreditation, requests for the application started to arrive. You’d think that organizations would wait and see the results before getting involved with this sort of innovation. But our clients were immediately confident in the device, which makes for a pleasant start,” Edith reported. “Technologically, it’s a sound piece of equipment. It performs well. The device is every bit as good as the traditional technique in the laboratory and the maintenance costs are relatively low.”

Final check measurement

So far, the mobile SEM has only been used to conduct risk assessments. However, the application was mainly developed to be the deciding factor in final check measurements. Edith is confident about the future. “We already have the right accreditations. Moreover, in the development of the mobile SEM, we aimed to measure lower limit values than the 2,000 fibers/m³ which will shortly be in force. The market has already seen what is technically possible with the mobile SEM. I expect the use of the application and its reputation will only increase.”



Asbestos fibre displayed on the monitor magnified 200x.

RPS

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