

**ABM Critical Solutions: Zinc Whiskers**

***Alex Blake, business development director at ABM Critical Solutions shares his thoughts***

“We see the data centre market as a huge opportunity for our business, which is why the acquisition of one of the UK’s most experienced data-centre cleaning businesses, 8 Solutions, was a central part of our growth plan. It also further reinforces our focus on becoming a fully integrated facilities services provider; something we think is essential to the long-term success of ABM UK.

“Now branded under ABM Critical Solutions, this part of the business offers market leading data centre healthcare with 25 years’ experience behind us.

“The UK is the largest data centre market in Europe, and is second only to the United States worldwide. With fantastic network connectivity and a solid regulatory environment, growth of data centres in the UK has been significant in recent years. Today, businesses are reliant on information technology and minimising server down-time can directly influence the bottom line, which is why a reliable provider of technical cleans is essential.

“A big risk to the health of data centres is the issue zinc whiskers. These are tiny growths of zinc that form on electroplated surfaces, or those that are galvanized with zinc. When these particles enter critical spaces in data centres they can cause circuit trips and system failures. As they are hard to see with the naked eye, identifying zinc whiskers is the first step to preventing this problem from happening. When a short circuit occurs, these particles disintegrate so unless the technician is aware of this problem, the source of the failure may go undetected.

“Zinc whiskers are relevant to the broader FM world, as they can form at any critical sites that house cable trays or cable baskets and surfaces that are electroplated. MEP (Mechanical, Electrical, Plant) areas should be checked periodically for signs of zinc whiskers by trained specialists to ensure clients are getting the best possible service and maximising performance of their facility.

“Regular and thorough specialist cleans, air and surface quality tests and visual inspections are vital even though system operators may not believe there is a problem. To confirm if zinc whiskers are present, ABM

Critical Solutions undertake SEM testing on the suspected areas: the analysis is collected on a sticky tape stud which is examined using a scanning electron microscope and energy-dispersive X-ray analysis (EXD).

“Unknown causes of machines failures can be very damaging. For example, in the healthcare or retail sector of the facilities management industry, identifying machine failures before they occur could be crucial to the day to day running of the business. If a retail site was to lose power due to a circuit trip, the technicians would be tasked with finding a solution to the problem, and fast.

“As a system failure can result in loss of revenue, we ensure that ABM Critical Solutions technicians are trained to identify zinc whiskers. All FM providers should be promoting ‘best practices’ within the Data Centre industry to their clients and risk mitigation through technical cleaning should always be considered.

“One project undertaken by ABM Critical Solutions saw the team design and build a protective frame that was installed around the IT equipment to protect the racks from zinc whiskers while the technicians removed the infected material from inside the Data Centre’s ceiling void for cleaning.

“ABM Critical Solutions also utilise methods such as the installation of ‘sub floor plenum walls’ to stop any zinc whiskers becoming transferred to other areas of the critical space through the air flow. All zinc whisker remediation projects are different and full advice is supplied by ABM Critical Solutions.”