



Our Ref: ITC 361

10th December 2019

RE: Comms room dust analysis.

Attached you will find the lab report for the dust sample analysis, taken by Stephen Yates from Guys Hospital Comms Room. Below I have attempted to explain, the main findings for you.

41.1% Silicon dioxide (SiO₂), also known as silica. This is the main component of cementitious materials, as it is used in the manufacturing of cement.

16.4% Calcium oxide (CaO), commonly known as quicklime or burnt lime, is a widely used chemical compound. It is a white, caustic, alkaline, crystalline solid at room temperature. And used in cementitious materials, example plaster.

10.7% Sulphur trioxide SO₃, I am not sure were this would have come from, in its solid form It will be in crystal form, SO₃ is the main contributor in the world, to acid rain, I would say it has come from car exhaust, particulate, as it can be formed during the burning of petroleum products.

8.21% Titanium dioxide TiO₂. Also called Titanium white is a pigment, used in paint.

4.0% Aluminium oxide Al₂O₃. It is the most commonly occurring of several aluminium oxides, and specifically identified as aluminium oxide. There is a lot of Aluminium in a comms room.

0.17% Zinc Oxide ZnO. Is a white powder that is insoluble in water, and it is widely used as an additive in numerous materials and products including rubbers, plastics, ceramics, glass, cement. Again this will be from the construction process.

The rest of the finding are pretty obvious, example iron oxide (rust), lots of this in a comms room.

One not so obvious, is Strontium Oxide SrO, this is a highly insoluble, thermally stable Strontium source, suitable for glass, optic, and ceramic applications.

Conclusion: The dust is what one would expect to find in a comms room. Cement, plaster, paint and oxides of metal, which would be present. SO₃ is explained above. Any further questions please ask.

Regards

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