

Czech Technical University in Prague, Department of Materials Engineering, Innovation Centre for Diagnostics and Application of Materials

Flexicoat® 850: a Narrow Escape...

If you combine a historical building with a modern machine, all kinds of challenges appear out of the blue.



Petr Jurci, Head of the Innovation Centre for Diagnostics and Application of Materials, explains that obtaining the technology of Nitrocoat Duplex Treatment has been the main aim to buy a Flexicoat® 850. "Our Department of Materials Science began in 1921," says Petr Jurci. "Professor Vojtech Jareš, member of the Czech Academy of Sciences, founded the Institute of Metallography at the Czech Technical University in Prague. Since then, the activities of the department have significantly broadened. Nowadays, the research, development and education of the department covers practically all the fields of metallic and non-metallic materials. Upon buying the Flexicoat® 850, our department obtains the technology of plasma nitriding and PVD coating in one chamber, which will extend our areas of research. Our main research projects with this machine will be plasma nitriding and duplex coating of cold work tool steels, PVD coating of non-ferrous alloys (titanium alloys for biomedical application in particular), development of nanostructured coatings and superlattices and PVD coating of non-metallic materials, such as polymers and anorganic materials."



The Flexicoat® 850 in its full glory

Custom Engineering

Buying the machine is one thing, transporting it through the narrow hallways and small entrances is another. Don Derckx, project manager at Hauzer, explains how custom engineering made the project possible. "As soon as the machine was sold, we adapted our engineering to the challenges of transport and utilities", says Don Derckx. "Usually we choose electrical cabinets of two metres high, but now we chose a height of 1,80m. Every step in the engineering was adapted to the building plan. The machine had to make many turns in a narrow hallway and had to fit through

a doorway of 0.90 x 1.87m, so all pieces of the machine had to be smaller than that. We also took the utilities into account. Usually the machine is connected to a chiller for water cooling, but that was impossible in this case. We had to cool the machine with a normal water flow. We tested these special request extensively in our factory to prevent problems upon delivery." The photos give an impression of the challenges faced.