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SYSTIMAX® Structured Connectivity Solutions Serve 30-Hectares of Buildings at Tornio Steel Mill

Outokumpu Stainless chooses SYSTIMAX® GigaSPEED® XL and OptiSPEED® cabling for high performance data connections in hostile environment

Steel melting and rolling equipment at integrated steel production plants produce one of the most hostile electromagnetic environments anywhere in industry. At the same time, efficient working of the electric arc furnaces and mills that produce the intense electromagnetic noise depends on fast, reliable control systems. To maintain the necessary level of control, a plant needs a cabling infrastructure that combines high performance with reliability, even under the most adverse conditions.

Cabling was a key factor when Outokumpu, an international steel and technology business operating in 40 countries, expanded its Tornio plant. At this integrated coil production facility in northern Finland, the network serves buildings covering more than 30 hectares. These include a steel melting shop and the hot and cold rolling mills that contribute to making the site one of Finland's biggest energy consumers.

"Stainless steel is the world's fastest growing metal market, with demand increasing at 5-6% per annum," said Petteri Yliniemi, IT Manager - Steel Melting Shop and Hot Rolling Mill, at Tornio.
"With efficient, integrated production, our plant can help meet the world's growing appetite for stainless steel products. But, to do this we need communication, control and management systems that are fast and highly reliable - and that requires high quality cabling."

To provide cabling that could maintain gigabit performance under the conditions in a steel mill, Outokumpu turned to SYSTIMAX® Solutions.
The solutions it selected were SYSTIMAX GigaSPEED XL copper cabling for connections to controllers and computers and OptiSPEED singlemode fiber for network backbones and cross-site connections.

GigaSPEED XL unshielded twisted pair (UTP) cabling is designed at the world renowned SYSTIMAX Labs to support data transmission up to 1 Gb/s, even in the presence of intense electromagnetic noise.
Special software tools developed at the Labs are used to test end-to-end channel connections and ensure they comfortably exceed the Category 6 cabling standard.

The singlemode OptiSPEED fiber cabling, with compact, high performance SYSTIMAX LC connectors, is optimized for gigabit data speeds over long distances. It is inherently resistant to electromagnetic interference since it carries optical rather than electrical signals.

At Tornio, nearly 1,000 GigaSPEED XL outlets are connected to the OptiSPEED fiber backbones via 30 distribution frames across the site. These frames house high density SYSTIMAX FlexiMAX patching panels featuring RJ45-type connectors.

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Petteri Yliniemi, IT Manager - Steel Melting Shop and Hot Rolling Mill, at Tornio

"We chose SYSTIMAX cabling because of its strong track record of performance and reliability in other installations throughout Finland," said Petteri Yliniemi. "It was an important part of the project to increase annual output at Tornio to 1.65 million tonnes. As a result of this and other projects, Outokumpu will be one of the largest stainless steel producers."

Planning and installation of new cabling at Tornio was completed using the services of several SYSTIMAX BusinessPartners based in Finland. During the project, installers had to work in the harsh conditions of the steel mill and avoid any interruption of production. Installation schedules were fitted into overall project timetables by dividing the cabling work into several small sub-projects.

The Outokumpu Stainless IT department handled the design of the cabling infrastructure. During this process, they referred to the SYSTIMAX Cabling Guide - 'A Guide to Networks and connectivity' for best practice on component selection and cable routing.

The finished infrastructure now connects the steel melting shop production lines, hot rolling mill and cold rolling plant. The largest of these buildings the cold rolling plant, covers 12.5 hectares. In each of the production units, the new cabling supports all process and production control systems, together with other IT applications.

Commenting on the installation, Tommi Kuusisto, Sales Director, SYSTIMAX Solutions™ in Finland said: "In many parts of the Tornio site, GigaSPEED XL cabling replaced coaxial types. Its high quality UTP design makes the GigaSPEED XL Solution insensitive to external noise - so it is excellent for use in conditions where very heavy duty electrical equipment is being used."

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