

Marcegaglia Case Study



About Marcegaglia

Founded in 1959, Marcegaglia is the leading global industrial group in the steel processing sector, with a yearly output of over five million tons. Fully owned by the Marcegaglia family, the group is headquartered in Gazoldo degli Ippoliti, Mantova (Italy) and has operations worldwide with 6,500 employees and 60 sales offices.

The group has 43 manufacturing plants covering six million square meters, where 5,500 kilometers of carbon and stainless steel products are manufactured every day, serving more than 15,000 international customers. Focusing on product differentiation, Marcegaglia is a supplier to a wide array of markets around the world, with a growing share of international sales.

Marcegaglia employs a highly skilled staff of technicians and quality assurance specialists dedicated to permanent research and development activities. The staff's experience, competence, and knowledge has earned the company important international certifications for products and processes, and assures customers are receiving quality products.



Company

Marcegaglia

Country

Gazoldo degli Ippoliti, Mantova, Italy

Industry

Manufacturing – Stainless Steel

Business Challenges

Standardize connectivity solutions to speed communications, decrease downtime, and control costs, while promoting integration and interoperability between IT and OT.

Panduit Solution

Pre-configured Network Zone System, Pre-configured Industrial Distribution Frame, multimode fiber cabling and Category 6A/6 copper cabling.

Business Benefits

Standardized pre-configured equipment for consistency and quick deployment equate to reduced time for designing, procurement, and installation, resulting in 25% faster implementation than a non-pre-configured solution.

Pre-configured Network Zone System Standardizes Operations and Enhances Productivity

Panduit helps Marcegaglia decrease downtime to speed production and control costs, while increasing network reliability and performance

Business Challenges

For several years, Marcegaglia unsuccessfully experimented with numerous network infrastructure solutions from various manufacturers to increase network uptime and availability. The company was unable to realize benefits from these solutions and experienced poor cable management due to inconsistent deployment and insufficient cooling capacity, which resulted in increased downtime, slower communications, and unreliability.

Another challenge for Marcegaglia was the limited floor space within the manufacturing plant. The company also needed to protect its rack mount switches in the harsh steel processing environment.

Moreover, it was critical that the cabling infrastructure be deployed as quickly as possible to allow for a seamless transition that would not interrupt production.

In an attempt to simplify operations within the manufacturing plant and incorporate new technology with existing network equipment while supporting increasing production demands, Marcegaglia decided to standardize its network infrastructure.

“We needed a high performance structured cabling system that would provide network security in harsh environments and interoperability among all systems. Addressing these challenges would allow us to focus on our core business and increase our international presence to support our continuous growth.”

– Livio Bonatti
Network and Infrastructure Manager, Marcegaglia

Strategic Objectives

As a global leader in the steel processing industry, Marcegaglia understands the importance of anticipating market trends and responding quickly and positively to market shifts. To keep pace with the latest technologies within the market and increase ROI, Marcegaglia needed a faster maintenance process.

In addition, Marcegaglia had to make adjustments to its installation and deployment procedures for faster communications and to promote the integration and interoperability between IT and Operations Technology (OT).

To meet these requirements, Marcegaglia needed a reliable solution to withstand harsh environments, and shorten the time to perform functions ranging from diagnostics and maintenance to upgrades and expansion. This new system would also allow Marcegaglia to communicate information in real time, improving performance while maintaining quality and network security.



*Integrated Network Zone
Enclosure*

“After assessing several options, we chose the Panduit solution because it allowed us to standardize our network connectivity in all production sites, streamlining resources and reducing installation time.”

Panduit Solution

“Panduit helped ease the integration of the proposed new network systems with existing systems, ensuring their interoperability and our confidence,” said Mr. Bonatti. “We specifically appreciated their approach, which allowed us to select the correct networking to improve resiliency and performance.”

To accommodate Marcegaglia’s requirements, Panduit proposed its Pre-configured Network Zone System, Industrial Distribution Frame (IDF), and fiber and copper connectivity to offer the flexibility for future growth that the company needed, along with a demonstrable ROI due to the speed and ease of installation, to increase cost savings.

The Pre-configured Network Zone System is part of a plant-wide Ethernet architecture designed to address environmental, performance, and security challenges, and IT and OT best practices. This factory tested and validated system protects Marcegaglia’s rack mount Ethernet switches and includes pre-installed DIN rails for switch mounting and cable management accessories for switch installation, DIN rail patch modules, and a grounding bar enclosure. This integrated enclosure is securely mounted on the columns, which are located away from vehicle and personnel traffic to safely maximize space.

The pre-configured IDF allows Marcegaglia to:

- Perform quick and sufficient deployment and protection of rack mount Ethernet switches
- Accomplish rapid and easy maintenance of its network switch equipment
- Achieve 25% faster IDF installation than a non-pre-configured IDF installation
- Experience 3X the cooling capacity over typical enclosures

The distribution switch within the IDF has fiber optic OM3 cabling to handle distances greater than 100m to protect against EMI, and to achieve faster switch convergence after a network drop-out. For cable runs less than 100m, Marcegaglia used Panduit Category 6A/6 copper in a structured cabling connectivity deployment. The structured channel uses solid horizontal cable terminated to Mini-Com® jacks connected with patch cords to network devices.

To secure horizontal fiber and copper in a reliable, consistent manner, Marcegaglia chose Panduit® PatchLink™ Horizontal Cable Managers and Panduit® Open-Access™ Cable Management components which simplify moves, adds, and changes. Integral bend radius control protects the patch cables in the pathway while ensuring system reliability.

As part of a defense-in-depth strategy, Panduit network security lock-in/block-out devices prevent unauthorized access to data to prevent damage and help ensure the security of Marcegaglia’s network infrastructure.

Business Benefits

With Panduit's expertise, Marcegaglia was able to deploy a robust, scalable, industrial network system with a single point of reference for connectivity within plants, simplifying connections and standardizing the technological characteristics of the entire infrastructure. The system also allowed Marcegaglia to quickly communicate important information while improving interoperability between IT and OT.

Implementing the Pre-configured Network Zone System and the IDF allowed Marcegaglia to achieve:

- **Pre-Configuration:** Built-in features such as cable management, power infrastructure and grounding deliver 25% faster installation
- **Thermal validation:** Panduit Laboratories tested the thermal performance with recommended AC unit and verified the ambient limitations to 50°C
- **Consistent defined deployment:** The standardized pre-configured equipment, accessory layout and cabling instructions assure successive deployments are consistent and repeatable
- **Scalability:** Single part number simplifies the design and execution for a fast and repeatable solution
- **Security:** Protects the integrity of cabling media and enables network security devices to allow access control over critical network systems

“Panduit allowed us to achieve a unique platform with a faster manufacturing process that guarantees business continuity, which was fundamental for our company.”



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