



A Tata Steel Enterprise



Case Study

Logistics building DGS Druckguss Systeme AG in St. Gallen, Switzerland

Products:

2'000 m ²	SWISS PANEL SP 40/183 as the exterior façade
1'850 m ²	SWISS PANEL SP 153/280 perforated as the support profile
1'560 m ²	MONTAWALL MK 140/500
540 m ²	SWISS PANEL SP 153/280 with fleece in RAL 7010

Owner:

DGS Druckguss Systeme AG, St. Gallen

Civil engineers – concrete construction:

BPA GmbH, St. Gallen

Construction manager:

Helbling Architektur GmbH, Dominic Sedda,
Engelburg

Engineers – structural steelwork:

WITO-engineering GmbH, St. Gallen

Architect:

Helbling Architektur GmbH, Daniel Helbling,
Engelburg

Suppliers:

Swisspor AG, Steinhausen

Realisation:

2018



The way to ultra-modern logistics with liner trays

New logistics building erected with highly thermally insulated liner trays at DGS Druckguss Systeme AG.

Industrial construction 2.0: Topics such as value retention, thermal insulation and energy efficiency appear to be omnipresent whenever it's to do with construction. And these terms have long since transcended the bounds of residential construction: increasing energy costs and stricter legal requirements are leading to higher-quality construction methods in trade and industry, too. A current example of this can be found in St. Gallen at the head office of DGS Druckguss Systeme AG. The company has recently invested 3.5 million Swiss francs in a new logistics building here. The MONTAWALL® liner trays from Montana Bausysteme AG in Villmergen were used for this. These load-bearing steel liner trays not only exhibit good static values, they also achieve U-values of as low as 0.15 W/(m²K) in combination with special insulating panels.

DGS Druckguss Systeme AG has been operating out of St. Gallen for almost 70 years. Originally founded as a "test laboratory" for the die-casting department of Bühler AG in Uzwil, the company has since established itself as a system supplier, primarily in aluminium and magnesium die-casting. St. Gallen has also long ceased to be DGS's only location: the internationally operative company has operated a factory in Liberec in the Czech Republic since the early 1990s, to which a branch office in the Chinese province of Guangdong was added in 2007. DGS supplies its customers all over the world with high quality die-cast aluminium and magnesium parts from these locations.

From St. Gallen to the whole world

As an internationally operative company whose products are chiefly used in the automotive industry, DGS relies on ultra-modern plants and constant further development. One of the topics here is the increasing automation of procedures and production. The die-casting specialist has thus recently already invested 4.5 million Swiss francs in an automated production line for the St. Gallen location. "We are starting with the introduction of automated logistics systems at our main location in St. Gallen", explains Andreas Müller, CEO of the DGS Group. For instance with automated guided vehicles. In addition, DGS St. Gallen still supports its foreign subsidiaries in fields such as technology, research and development.



However, those who drive development require a highly-developed environment themselves. Entirely in keeping with this spirit, a new logistics building was built at the company's Swiss headquarters in 2018. The building, which was planned as an extension to the existing building, has a floor area of 2,000 square metres. An equally large open-air area is available in front of the building for use as an outdoor store and transhipment yard. In planning the building the company attached importance to a high-quality construction method – apart from value retention, the possibility of a change of use at a later date was to remain open.

Steel liner trays for the statics

Precisely the right element was found for the planned building in the MONTAWALL® construction from Montana Bausysteme AG. These load-bearing liner trays made of coated steel were specially developed for use in industrial, traffic and sports infrastructure. On account of their good static properties, the MONTAWALL® liner trays are ideally suited for the lightweight construction method and require little use of materials in the sub-construction as they can readily bridge spans of over 8 metres. This allowed the existing structure to be retained as desired by the building owner. Thanks to corresponding factory prefabrication, a high-performance wall structure was manufactured in a short time that will guarantee long-lasting value retention of the building. However, it wasn't only the static benefits that were in demand in St. Gallen – the system also had to guarantee good thermal insulation. This consideration was indispensable in case the building should undergo a change of use at some point in the future.

The happy medium

Together with market-leading partners from the insulating materials sector, Montana AG has continuously developed the MONTAWALL® liner tray constructions in recent years. Hence, the product has been optimised in particular

with regard to thermal insulation. "Thanks to the consistent reduction of thermal bridges, which are otherwise unfortunately typical of the liner tray construction method, we can now achieve thermal insulation values with the MONTAWALL® constructions that even exceed the Minergie standard by a considerable margin", says Markus Dürr, Director technic at Montana. The system thus combines top-class insulating properties with the benefits of a rear-ventilated façade construction.



The swisspor LAMBDA Cassette system is used as the insulation in the MONTAWALL® liner trays for the new logistics hall. This is the result of cooperation between Montana and the experts from Swisspor AG and the SFS Group. The innovative system structure for thermally insulated metal cassettes contains insulating boards made of expanded polystyrene hard foam, which are completely recyclable. Due to precise matching, the insulating elements fit precisely inside the MONTAWALL® liner trays. That reduces the thermal bridges and also minimises the installation times. Since the insulating material is also extremely pressure-resistant, the sub-construction needs no vertical bracing for the fastening of the outer shell up to a weight of 20 kg per fastening point. The low thermal conductivity of 0.029 W/(mK) makes particularly slender wall constructions possible. Overall, U-values of as little as 0.15 W/(m²K) can be achieved with the MONTAWALL® liner tray structure. "The good insulation values in combination with the static properties and the simple structure

result in a high-quality but nevertheless cost-effective concept", explains Dominic Sedda, who was responsible for the planning of the new DGS building as construction manager. "The processing on site also proceeded efficiently and without problems."

Clothes make the man

However, it's not just what's inside the walls that counts with a building: A new building should also be representative towards the outside – and in the ideal case it should remain so. The SWISS PANEL® trapezoidal profile therefore provided the low-maintenance but nevertheless visually appealing cladding in St. Gallen. The façade profiles, which are available in steel or aluminium versions, form the basis for a pleasing and at the same time weather-resistant exterior wall. Manufactured in a dark grey colour and decorated with the plain black DGS logo, a classy and timeless look results that at the same time requires hardly any maintenance. A solution that is both simple and efficient and once again underlines the desired long-lasting value retention of the building.



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