

Nordic Galvanizers conference and annual meeting in Stockholm

Nordic Galvanizers spring conference and annual meeting was held in Stockholm May 7th. The conference was located at the Clarion Hotel Sign in the city center and gathered about 60 participants. After the traditional buffet lunch and welcome speech by the association's president, Bill Carlsson, the conference started with a presentation by the architect Per Johansson from architect company Joliark, which is behind many of the houses with galvanized façade, recently built in the Stockholm area.

Hot-dip galvanized steel from an architect's perspective

The lecture title was "Why galvanized steel - an architectural thinking." Per launched with that question, which he said is very much justified, since there are so many different materials to choose from. Wood has been a natural choice in the Nordic countries for thousands of years, but the downside is that it easily burns and that the facade must be maintained regularly. Bricks are a better bet, they have been used at least as long as the wood and the low maintenance requirement makes them a favorite in housing associations. But beautiful bricks are expensive. And if you ask the building contractor, he will choose components of prefabricated concrete, quick and easy to build with, but unfortunately often badly produced, with low accuracy and because of that with a bad reputation among architects. Stockholm politicians on the other hand prefer a plastered facade, especially in the "warm, bright, classic Stockholm color scheme", as in Joliark's own office at Norr Mälarstrand in central Stockholm.

"One of our customers, Jan Kruhsberg, is less fond of the plaster because of the risk of damage caused by moisture. During a trip in Switzerland, he found a house with an unusual façade and became curious about the facade material " Per explained. At a distance the material looked like concrete or marble, but as getting closer you could see that it was hot dip galvanized steel. Jan phoned Per, who went down and looked at the facade, and they decided to create something similar in Stockholm.

"For our project, " De Gamlas Väner ", a residential area in Enskede south of Stockholm, we had a full-scale prototype made of galvanized steel."

Jan Kruhsberg had contact with Professor Inger Odnevall-Wallinder at the Royal Institute of Technology regarding the environmental impact from the galvanized steel, which was found to be low. He also had a dialogue with the Stockholm Environmental Department, which approved the facade.

One of the advantages of constructing a facade of steel is that it is possible to integrate the various parts of the building and thus build "seamlessly". The roof merges into the facade, where the gutter is integrated in the design, and the facade reaches down to the ground, without plinth. "A reduced, uncluttered architecture". Several of Joliark's buildings with galvanized facade have been very famous around the world.

Galvanizing with higher aluminum content

The next speaker was Kenneth Andersson from Recyclean AB. His lecture was about galvanizing in zinc melt with elevated aluminum content. Recyclean are partners with, and reseller for, the Italian company Gimeco, who developed the concept HAP (High Aluminium Process), which works with higher aluminum concentrations than normally is possible in batch galvanizing. According to Kenneth the higher aluminum content gives a number of advantages in the galvanizing process.

White rust protection

Kenneth Andersson also informed about two systems for post treatment of galvanized steel, Gimecos product Gimpass, which is an organic polymer layer, and Recyclean's own product BriteSeal. Both products are applied by dipping the hot-dip galvanized steel in less than 1 minute in the fluids, and have been shown to give good protection against white rust during transport and storage, concluded Kenneth.

Approved galvanizer - certification for galvanizers

Annikki Hirn from Nordic Galvanizers' Information Office informed about Approved Galvanizer, a certification for galvanizers who are suppliers to steelwork contractors/fabricators that CE mark their products.

To make it easier for the steelwork contractors/fabricator Nordic Galvanizers, MVR, a Swedish association for steel construction companies, and the certification company Nordcert have formed a committee, which also includes representatives from two galvanizers and a blacksmith company. Within the Committee the certification system Approved Galvanizer has been developed. It is a market-oriented certification for galvanizers who are suppliers to steelwork contractors/fabricators that CE mark their products.

During the certification it is verified that the galvanizer following the standards EN ISO 1461, EN ISO 14713-2 and

for galvanizing relevant parts of EN 1090. It is important to remember that Approved Galvanizer is not an EN 1090 certification. The purpose of Approved Galvanizer is to ensure that the galvanizer has the right skills, procedures and conditions to perform galvanizing in such a way that the steelwork contractors/fabricators can feel safe. Approved Galvanizer is a voluntary certification, open to members in Nordic Galvanizers and other galvanizing companies connected to the European General Galvanizers Association EGGA.

Approved galvanizer from a user perspective

Björn Uppfeldt from MVR, gave the view of how the steelwork contractors/fabricators perceive the situation when they should procure galvanizing for steel that they will CE mark. The steelwork contractor/fabricator is responsible for production control, declaration of performance and CE-marking. The production control includes also the galvanizing, and since the construction manufacturer does not perform the galvanizing themselves, it should be an advantage if the galvanizer can show that he meets the requirements regarding galvanizing that is given in the standard EN 1090, and which in turn refers to the galvanizing standards EN ISO 1461 and EN ISO 14713 -2.

Approved Galvanizer – how it works

Douglas Wallding from the certification company Nordcert explained how the Approved Galvanizer certification works. The galvanizing company must have a quality system according to ISO 9001 or equivalent, work according to the standards EN ISO 1461, EN ISO 14713-2 and also follow for galvanizing relevant parts of EN 1090. The right skills among the staff and routines for exchange of information between galvanizer and customer are other areas that are checked.

Before the conference a "pilot audit" of a galvanizing company, JIWE Varmförzinkning i Eskilstuna AB, was performed, where both the company and the system Approved Galvanizer was evaluated. The Certification Committee got a few points to clarify, but the system will be fully completed and Nordcert is ready to certify other galvanizers from June. The interest among the participants was high and we believe that Approved Galvanizer will be considered as a guarantee of quality among customers in the future. The clear cooperation with MVR and its members are new to Nordic Galvanizers and definitely feels like a step in the right direction to strengthen the competitiveness of the galvanizing companies in Nordic countries.

Accelerated corrosion tests

Lena Sjögren from the research institute Swerea KIMAB held a presentation with the perhaps somewhat provocative title "Will accelerated corrosion testing tell the truth?" Accelerated testing, such as salt spray test, often are used when new types of corrosion protection system are introduced on the market.

The advantage of accelerated tests is that a result is quickly obtained, but the downside is that there are rarely consistent with the results obtained during normal use of the product. In accelerated testing there are parameters such as temperature, humidity, pollution and salinity that are played with, and the test conditions do not reflect the environments where the product normally is used. The method is suitable for assessing mutually similar products, for example, to ensure that the production of a certain coating keeps the same quality week after week. However, it says nothing about the mutual resistance between the different types of surface coatings, and it is inappropriate to use it to rank the corrosion properties of different coatings or materials, Lena Sjögren concluded.

Environmental assessment of buildings

Environmental characteristics of construction products and sustainable construction of buildings becomes more and more important in today's society. How does hot dip galvanized steel cope in comparison with other building materials? Today there are many different environmental assessment system for buildings. The most common in the Nordic countries are LEED, BREEAM, the Swan and in Sweden also the Swedish system Miljöbyggnad.

LEED is a points-based system, where the project collects points for environmental activities associated with the construction and use of a building. LEED certification, which also includes completion of a third party, proves to the customer and the public that environmental objectives are met and that the building works as it is supposed to.

BREEAM, which in many ways is similar to LEED, is originally from Britain. The system evaluates a building's planning, design, construction and use, by generally recognized performance measurements that are compared with established norms. The measurements cover a wide range of categories and criteria from energy to ecology.

The Nordic Eco label, *the Swan*, guarantees that the criteria for environmentally hazardous and harmful substances, energy and resource consumption, waste management, recycling, etc. are met. Regarding buildings the Swan has developed criteria's for small houses, family houses and preschool buildings.

"*Miljöbyggnad*" is a certification system that is based on the Swedish construction and government regulations and the Swedish construction practices. "Miljöbyggnad" give a receipt for the important qualities of a building in terms of

energy, indoor environment and materials. "Miljöbyggnad" is used for newly and existing buildings, regardless of size.

There are no restrictions on use of zinc or galvanized products in any of these environmental assessment system for buildings.

Environmental assessment of building materials

In Sweden there are three major systems for the assessment of building products; BASTA, Byggvarubedömningen and SundaHus. In Denmark and Finland, there are no such databases. The products EPDs, i.e. environmental product declarations, are used for decision support. Norway has discussed developing a database for product assessment linked to BIM. BIM stands for Building Information Modeling, which is a system that greatly increases throughout the Nordic region. With BIM, you can create a digital model of a building that contains all the relevant information in a construction project.

The aim of *BASTA* is to phase out substances with harmful chemical properties from construction products and contribute to Sweden's national environmental non-toxic environment goal. Products are assessed based on their chemical content. The database is free for users and open to all. It is the product manufacturer who self-register their products in the database and pay an annual fee for this. The information is checked by BASTA's auditors. There are many hot dip galvanized products that are BASTA registered.

In "*Byggvarubedömningen*" there are consultants that perform the assessment based on the product's declaration of construction materials (Byggvarudeklaration). Also in this database there are a lot of hot dip galvanized products available.

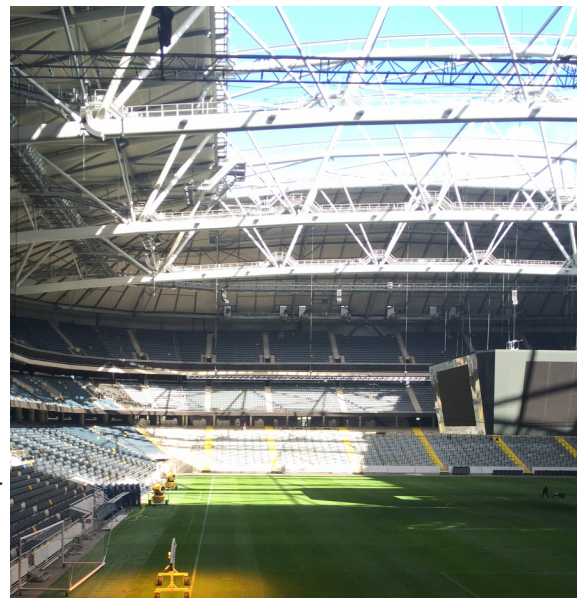
Visits to the Friends Arena

The day after the conference it was a study trip to Friends Arena in Solna close to Stockholm. The stadium has a maximum capacity of 75,000 visitors, but is suitable also for smaller events.

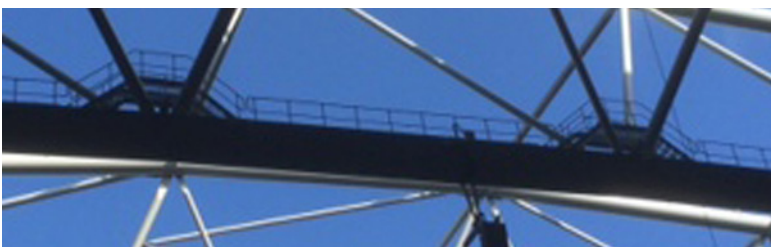
Nordic Galvanizers have been involved in the hot dip galvanized structures that make up the so-called feeder bridges in the stadium's roof. These bridges are used both for maintenance and for example, to hang equipment on during concerts. It was a cool experience to walk around the arena when there are no events and, among other things look into the football team's locker room. Zlatan had forgotten his shirt there, we can tell you!



The hotel sign on the ninth floor of the Clarion Hotel Sign was firmly secured by a rack of hot dip galvanized steel.



The study visit at Friends Arena was appreciated.



Hot dip galvanized feeder bridges with railings under the roof of the arena.