

Projects

Norwegian Style of Catwalk

In 2005 the architect Prof. Arne Eggen won the tender for a cable stayed pedestrian bridge, crossing the Drammenselvan River in Drammen (part of Oslo) in Norway. The construction had to be accessible to the disabled but also high enough for ships passing underneath and so Prof. Eggen conceived the idea of a "Y" shaped bridge. The original plan was to cover the surface of the bridge with white granite but when construction finally started the company supplying the granite, had gone into liquidation. Prof. Eggen had to find another solution but didn't want to waive his idea of a light and shiny look that would be visible at a distance.



In the summer of 2007 Elisabet Michelson, one of the 3 owners of the Norwegian system house Elmico (founded 2003), came up with the idea of a unique surface protection that covered all the requirements of the new bridge.



We discovered Elmico's passion for bridges during their presentation at last years PDA Europe Conference – so "Mama Mia here we go again!"

Meanwhile the new bridge was already constructed and heavily used. It had become an essential transit for residents, so Elmico were given a maximum of 2 days to apply their unique surface protection. The bridges' steel construction incorporates a water heating system to protect it against ice in winter time. The surface has to be abrasion and slip resistant. The surface to be protected was based on concrete with joints set vertical and horizontal to allow the concrete to move. Due to a construction defect the rebars were too high (too close to the surface), therefore a protective coating against corrosion was needed. Another request was a joint-free surface – one more reason for Elmico to suggest polyurea, which also works in cold conditions.

Processing stages

In the first stage a fast-reacting epoxy primer was applied on top of the concrete and scattered with white quartz sand to give good adhesion to the surface.

After 4 hours a white pigmented aromatic polyurea system Micorea™ S3(*) was sprayed 2 mm thick, then without delay, a 2 kg/m² epoxy resin was applied and scattered with 4-5 kg/m² calcinated flint.

Sidebars had to be coated with a paint specially mixed to match the white and shiny look of the pathway.

Today the "Ypsilon" bridge is world-famous and has won several prizes:

Prof. Eggen won the "Drammens Award for Architecture 2008" as well as the "Governments Award for Architecture 2008". Company Ruukki Construction, who created the steel construction, has received awards from the Norwegian Steel Association and Norwegian Structural Steel Association. The bridge also received the ECCS Awards for Steel Bridges in summer 2008.

Meanwhile "Ypsilon" bridge has also been entered for the ECCS Biannual European Steel Design Awards to be held in Barcelona in September 2009. Good Luck!

(*)Micorea™ S3 is a fast setting 2-component polyurea system for spray application. It is dealing as the waterproofing layer on mineral substrate like concrete. Application field are bridges and roofs. Micorea™ S3 is an approved system by Polymer Institute, Flörsheim-Wicker, Germany according to ETAG 033 - Liquid Applied Bridge Deck Waterproofing Kit ("The tested waterproofing system Micorea S 3 shows sufficient results and depending on the composition meets the specified requirements")