

UHPC Joints – Not Just for Bridges

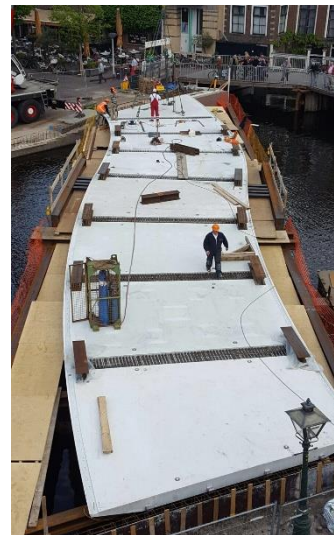
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Connections
Project Examples/Applications

November 1, 2018

Extended Abstract

The use of UHPC joints has been highly successful in North America in connection with the ABC concept. For some reason this system has not really caught on in Europe. Some early applications were carried out for bridges and buildings as early as 1996 and it is still used for special projects such as the UHPC bridge shown below, but applications are nowhere close to the scale of applications in North America.



However, a number of other applications has been identified in buildings and I will show a few examples – including structural details - and discuss some of the advantages, as applications of this type could also be useful in the US. Applications include shear wall connections, load-bearing connections between floor and wall, repairs where rebars have accidentally been cut, modifications of structural elements for re-use in renovations and casting of very complicated joints. Examples will be shown in the presentation. As a precast producer who produces solely elements in UHPC (since 2001), Hi-Con often uses this type of connection to reduce the cost of moulds and make it easier to transport elements. Examples of elements with UHPC joints are shown on the next page. Generally, we use this type of joint if we want to achieve a monolithic

Second International Interactive Symposium on Ultra-High Performance Concrete
Extended Abstract (no paper submission)

structure, where the joints are small and relatively easy to cast on site. By using UHPC it is possible to ensure, that the joint is not the weak part of the structure, neither with regard to strength nor durability. As Scandinavia has low seismic activity the ductility achieved with the fibre reinforced UHPC has not really been an issue with regard to seismic resistance, but this should be a field that could also be of interest in the US, Asia or Southern Europe.

