Fair-Faced Concrete with Sika® PerFin
Project Description
The Tüffenwies area in Zurich has a long history and has been growing since its first days. It is a typical example for the industrial sector in Zurich. For over a 100 years Sika has some production facilities in the Tüffenwies area. In order to bundle its research and development activities in Switzerland Sika built a new Technology Center in Tüffenwies. The focus of research in this new facility is on adhesives and sealants, which are based on polyurethanes, silane modified polymers, polyacrylates and epoxyhybrids.

The scientists in this building are surrounded by Sika know-how and products used in the building. Not only has the concrete been enhanced by Sika products also a new window adhesive has been used. The Sika concept “from basement to roof” has been applied in this building. Sika products are used for sealing underground, sealing and anchoring the glass façade on the court side, floor and wall coverings, the fair-faced concrete and on the roof. The research building has six floors above ground, a ground floor and a roof center. The conference area is on the ground floor, together with testing laboratories and a pilot facility. The building has 10’000 m² of floor space and a total volume of 40’000 m³.

Project Requirements
The façade is made out of self-compacting concrete (SCC) with a fair-faced appearance in a thin-wall construction of only ten centimeter without any movement joints. Only with constant quality control, profession in concrete production and placing as well as the use of Sika admixtures it was possible to create such a construction. The beauty of the look of the concrete is based on the excellent surface quality achieved by a suitable formwork skin and optimized placing of the SCC by the contractor as well as the use of Sika concrete technology know-how.

The requirements for the façade of the new R&D building were:
- Self-compacting concrete (SCC)
- C 30/37 class
- Fair-faced concrete with excellent surface appearance
- Initial slump flow of 700 mm
- 320 m³ concrete
- Ca. 3000 m² surface
- Wall thickness of 10 cm
- Low shrinkage value (no visible cracks)

Sika Solution
In order to achieve the lowest possible shrinkage value Sika® Control-40 was included in the mix design. The binder content was 290 kg of cement and 140 kg of fly ash per cubic meter. To improve the concrete surface and create a beautiful fair-faced concrete Sika® PerFin-300 and the mould release agent Separol®-4G were utilized.

Sika Products
With a specially designed self-compacting concrete consisting of:
- Sika® ViscoCrete®-1 S
Superplastizer to improve workability characteristics of the SCC.
- Sika® Control-40
Admixture to reduce the dry shrinkage and therefore reduce cracks in the concrete.
- Sika® PerFin-300
Admixture to improve the surface quality and create a beautiful fair-faced concrete.
- Separol®-4G
Mould release agent to create blowhole free concrete surfaces.

New R&D Building at Sika in Zurich
In the end the contractor was able to create an exceptionally high quality façade for the Sika Technology Center.

Furthermore the following Sika products have been used:

Concrete façade
- SikaTop®-Armatec® 110 EpoCom®

Structural concrete
- Sika® ViscoCrete®-3081/-3082, SikaCrete®-SCC 08, Sika® Antifreeze, Sika Rapid®-2, Sikament®-210, SikaGrout®-314, SikaRefit®-2000

Waterproofing
- Sikadur®-Combiflex®, Sikadur®-Hypalon, Sika® Injectoflex-System, Sika® Waterbar-DR 26

Floors and ceiling

Glas façade and windows
- SikaBond®, Sikasil®-605 S, Sikaflex®-11 FC, Sika Boom®-G, SikaBond® AT-20 M, SikaMembran® System

Roof
- Sarnafil® TG 66-16, S-Therm Roof 180 mm
Participants

Owner: Sika Schweiz AG, Zürich
Architect: Architekturbüro Andrea Roost, Bern
Engineer: Walt + Galmarini AG, Zürich
Main Contractor: Bauengineering.com AG, Zürich
Project manager Sika: Jürg Mettler
Contractor: ARGE Sika:
Marti AG (Lead Management, Technical Management),
Implenia AG (Commercial Management)
Owners representation: Helbling Beratung und Bauplanung AG, Zürich