

SIKA AT WORK

PROJECT FARRISEIDET - PORSGRUNN

TM Sealing&Bonding:

SikaHyflex-250 Facade, Sika PE backer rod, primer, insulation and
Sikaplan WP 1100-20HL

BUILDING TRUST







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The demand for reduced travel time, increased capacity and a reliable train solution which combines the cities along the Vestfold railway were important arguments for constructing a double track railway. In a time when the globe is facing environmental challenges, transport of people and goods by mean of railways contributes to the reduction of greenhouse gas emissions, it was decided by the authorities to upgrade the existing railway line. The need for modernization of the railway had been going on since 1993. In august 2010 the work with the line Holm - Nykirke started. For the first time a railway designed for a speed of 250 km/hour was going to be constructed in Norway.

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THE LENGTH OF THE NEW DOUBLE TRACK railway Farriseidet – Porsgrunn is 22,5 km. Seven tunnels (15 km) and ten bridges (1,5 km) will be constructed, designed for speeds up to 250 km/h. The efficiency in travel time will be reduced with more than 20 minutes, from 34 minutes today till 12 minutes between Larvik and Porsgrunn. The line Farriseidet – Porsgrunn consists of four contracts:

- UFP-01 Vestfold contract includes the 3670 m long Kleiver tunnel (former Martineåsen). Performed by main contractor Skanska AS.
- UFP-05 Skillingsmyr contract with 3810 m tunnel and escape tunnels. The new name of the tunnel is Nøklegård tunnel. Performed by main contractor Veidekke ASA.
- UFP-07 Storberg tunnel is 4680 m and represents the largest tunnel in this project. The contract includes also escape tunnels. Performed by main contractor NCC Construction AS.
- UFP-08 Eidanger contract constitutes a 1500 m tunnel together with access and escape tunnels. Performed by main contractor Implenia AS.



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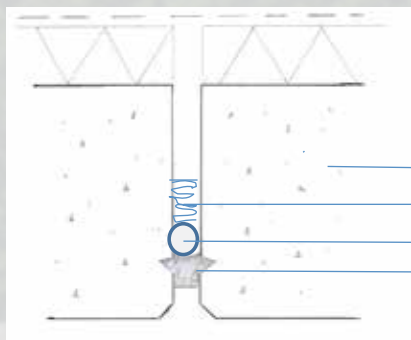
SikaHyflex-250 Facade, Sika PE backer rod, primer, insulation and Sikaplan WP 1100-20HL

REQUIREMENTS The design of the tunnels is constructed with 2 m wide concrete elements as the inner lining. Behind the elements the frost and water protection is executed with sprayed concrete and a loosely fixed membrane (the umbrella method). All the joints between the concrete elements were specified to be sealed with a fire resistant sealing system, classified EI 120. Besides, the project demanded priority to products with an environmental profile. Low emitting products were given preference. In comparison with a duplex sealant system, the National Rail Authorities in this type of construction design had to rely on only a fire resistant unilateral sealing system. The design of the joint was different from ordinary joint profile (see figure). The sealant had also to be retracted compared to the concrete surface due to heavy wind velocity in the tunnel.

In the entrances of the tunnels the system was designed with a 2 mm PVC membrane fixed to the sprayed concrete and then fully casted with concrete. The open cut constructions were specified protected with a 2 mm PVC membrane.

Weighting factors in the design and construction of the tunnels were the following:

- Safety and operation
- Fire
- Suitability for use
- Easy to maintain
- Life expectancy and life cycle cost



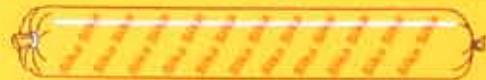
1. Concrete element
2. Superwool fire insulation
3. Sika PE backer rod
4. SikaHyflex® 250 Facade joint sealing incl. primer





SikaHyflex®
SikaHyflex®

20 x 600 ml



SikaHyflex®-250 Facade
20x600ml



PROJECT DESCRIPTION

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SIKA SOLUTIONS

Fire rated solution for unilateral joints:
SikaHyflex-250 Facade, Sika PE backer rod, primer and insulation

MEMBRANE FOR THE PORTALS:

Sikaplan WP 1100-20HL

Project owner:	Jernbaneverket AS
Project Management:	Jernbaneverket AS
Sub-contractor membranes:	Borge Miljø AS
Sub-contractor joint sealing:	Øyan & Schie AS Helper/Allfug AS
Construction start-up:	2012
Completion:	Autumn 2018
Budget:	NOK 6,6 billion (2015)



Våre generelle salgs- og leveringsbetingelser er alltid gjeldende.
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Med forbehold om skrivefeil/utsolgte varer.

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