



POSSEHL
SPEZIALBAU

For the fast repair of
of traffic areas

RAPID CONCRETE SB20



Paving
Professionals

DEVELOPED BY PAGEL - INSTALLED BY SPEZIALBAU RAPID CONCRETE SB 20

The continually growing number of passengers and freight volume places increasingly higher demands on national and international airport operators, who are often operating on the brink of their capacity.

Longer maintenance and repair measures of air traffic pavements lead to a reduction in landing and take-off capacities, as well as a reduction in passenger volume and freight, which accounts for lost revenues to the airport.

Therefore, rapid and lasting construction methods are needed, in order to guarantee smooth and safe air traffic operations. Should concrete slabs show excessive defects, such as subsidence, cracks, spalling and damage to edges, a removal and replacement of damaged slabs and slab parts in a few hours – often during the night – would be the most economic repair solution.

PAGEL SPEZIAL-BETON GmbH & Co. KG and POSSEHL SPEZIAL-BAU GMBH have developed the high-strength 2-hour **Rapid Concrete SB20**, which is mixed on site using special machines and installed by our experienced and specifically trained personnel.

Rapid Concrete SB20 is produced on the basis of a mixture of special cement and aggregates 0-16mm.

This provides an extremely fast-curing specialist concrete with an early compressive strength. Areas repaired with **Rapid Concrete SB20** can be opened to traffic without restriction after just 2 hours.

Advantages of Rapid concrete SB 20

- Traffic areas open to traffic after 2 hours
- ASR Performance Test
- FDE Concrete Test (acc. to Federal Water Act)
- Quality is assured by regular self-supervising testing
- Impeccable installation quality assured by own, especially trained personnel
- DIN EN 13813

Technical data of Rapid concrete SB 20

- Compressive strength 20N/mm² after 2 hours
- Flexural strength > 3N/mm² after 2 hours
- Final strength ≥ 60N/mm²
- Freeze-thaw and de-icing resistance acc. to test procedure CDF, exposition class XF4



Development and Testing

This is how Rapid concrete SB20 gets better and better

PAGEL SPEZIAL-BETON has continued to develop the Rapid Concrete SB20 with POSSEHL SPEZIALBAU since 2009. Here, the focus is on the respective processing safety and quality workmanship. Not only the individual components (cement and aggregates), but the overall system with all its components, namely the mixed, ready concrete, have been subjected to extensive, time and cost intensive tests through an accredited test center.

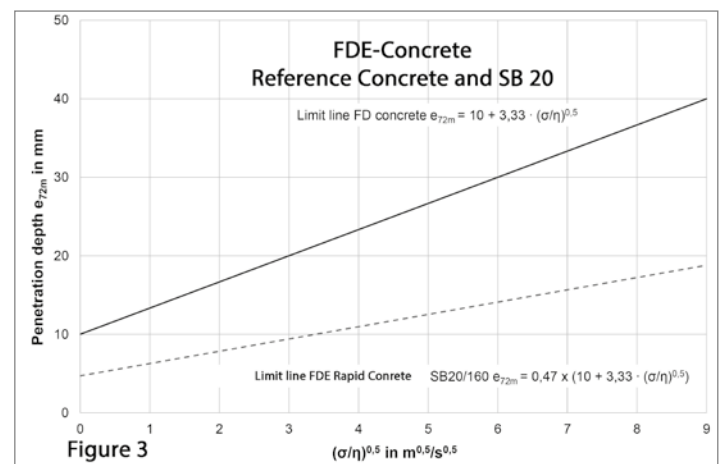
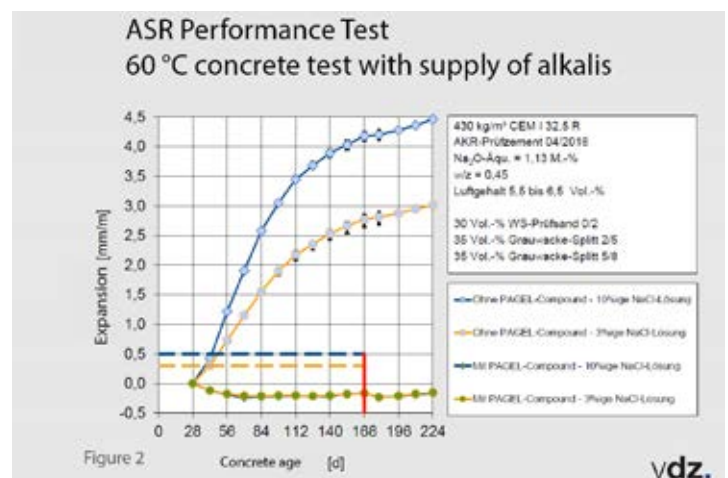
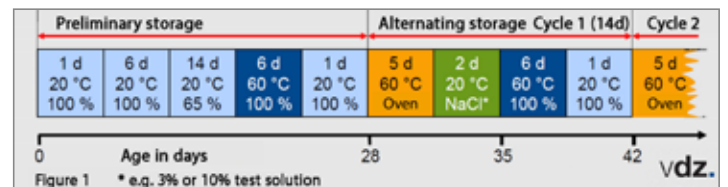
As part of the ASR performance test, an evaluation of the ASR resistance of the concrete within resistance class WS was carried out by means of a 60°C concrete cyclic storage test with external supply of alkalis over a period of 168 days (see figure1). Several test series during recent years found that the **Rapid Concrete SB20** with the PAGEL compound passes the respective ASR performance test with excellent results.

Compared to other competitive products, **SB20** does not expand, but convinces due to its very low shrinkage behavior (see Figure 2). These results are even more significant, as experts are already discussing, whether tests on individual concrete components are sufficient, or whether the overall system (ASR performance) should be tested instead. These considerations have already been taken into account with **SB20**, as it has already passed ASR performance tests with great success.

SB20 also passed standard frost, freeze/thaw and de-icing salt tests (CDF/CIF) without any problems. It may therefore be utilized for the highest exposition classes XF 3 and XF4.

The FDE tests carried out with **SB20** were executed in line with DAfStb guidelines. Here, **SB20** was exposed to dichloromethane and n-hexane as per the guidelines, and the respective penetration depth into the concrete was registered. **SB20** passed this test with excellent results. As can be seen in Figure 3, **SB20** scored more than 50% as reference concrete. It is the only 2-hour Rapid Concrete, which has passed this test successfully.

The engineering office Roxeler, which specializes in tests in line with the Federal water act (WHG), was tasked with testing the resistance of the **Rapid Concrete SB20** in regard to a penetration with fuel oil, diesel (5% biodiesel), diesel (20% biodiesel), biodiesel, gasoline with 5% ethanol, E85 (85% bioethanol, 15% gasoline), Adblue urea solution, JET-A1 jet fuel, potassium formate solution 50% and glycol. Based on the respective penetration depths for FDE concrete **SB20**, a solidity certificate as per part 1 of the DAfStb guideline "concrete when handling substances dangerous to water" may be displayed, whilst taking into account the static measurements. Furthermore, the penetration depths regarding the lateral infiltration behavior of substances dangerous to water concerning air traffic sealing systems authorized and installed in accordance with the water act, may be listed as per the respective permit. Therefore, **SB20** may be utilized in airports, de-icing areas, filling stations and chemical facilities.



Since 1956, POSSEHL SPEZIALBAU has been active in the field of maintenance of vehicular-use surfaces, industrial and manufacturing areas, and aircraft-use pavements to maintain their value and ensure their use.

The company's headquarters are in Sprendlingen, Rheinland-Pfalz, Germany. In order to be closer to its customers, POSSEHL SPEZIALBAU is divided into regional divisions and operating facilities. The division Special Coatings for Airfield and Road Infrastructure is also based in Sprendlingen, and is internationally active.

From the very beginning, our corporate guidelines have entailed offering all construction services, including preparatory and additional work, from one source - to the benefit of our clients.

We view interdependent cooperation of the individual specialty divisions as one of our great strengths. Always standing behind POSSEHL SPEZIALBAU is a team of experienced specialists in the fields of surface construction and maintenance, who use their knowledge and expertise to focus on customized solutions to problems for the benefit of the customer.



Prequalification Certificate of DQB
 Deutsche Gesellschaft für Qualifizierung
 und Bewertung GmbH, N° 101.000199



CE marking according to
 EN 12273 DSK



Member of
 Deutscher Asphaltverband e.V.



Member of FGSV
 (Forschungsgesellschaft für Straßen-
 und Verkehrswesen e.V., Köln)



Member of Gütegemeinschaft AKB
 für Asphalt-Kaltbauweisen zur
 Erhaltung von Straßen e.V.



Member of
 Landesgütegemeinschaft
 Betoninstandsetzung

Specialist company according to WHG

**POSSEHL Spezialbau GmbH is a
 member of the POSSEHL Group,
 Lübeck**



Scan the code and find your contact person
www.possehl-spezialbau.de/en/contact-us/