

SEALOFLEX[®]

Polymer Modified Bitumen

SOLVES PAVEMENT CHALLENGES





Business Lines





Mobile PMB production plants

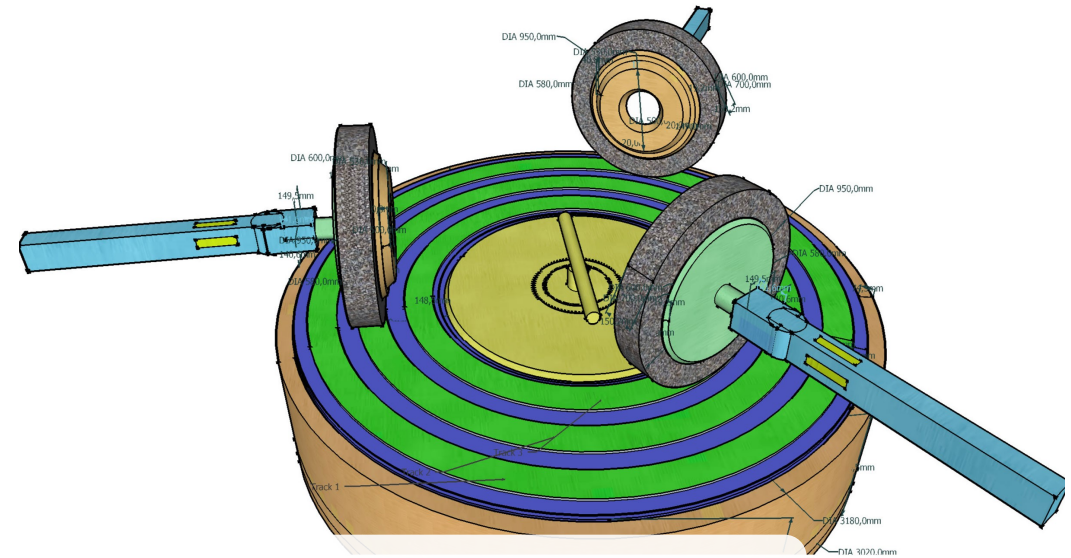
*Containerized plants, easily installed on project locations
Saudi (Riyadh), two in Qatar (Doha)*

R&D center (Netherlands)

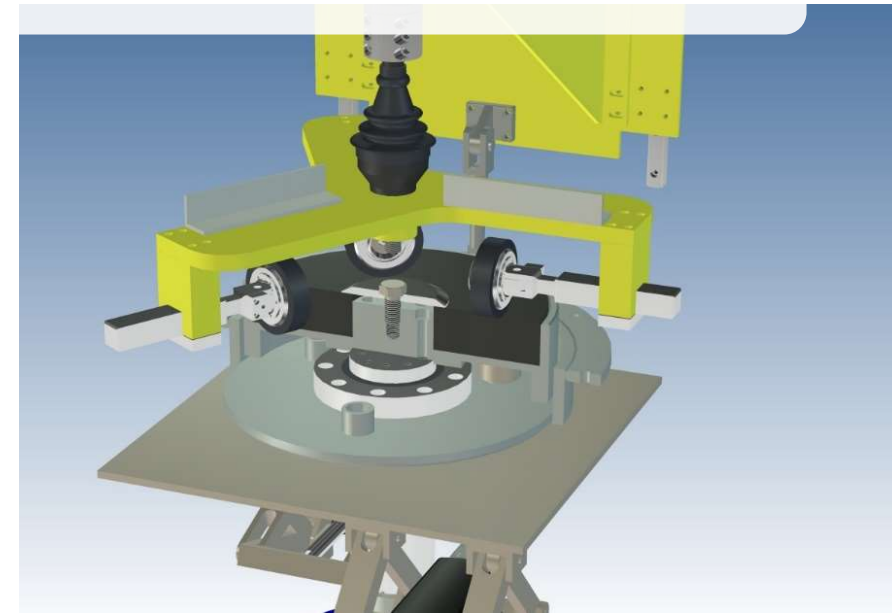
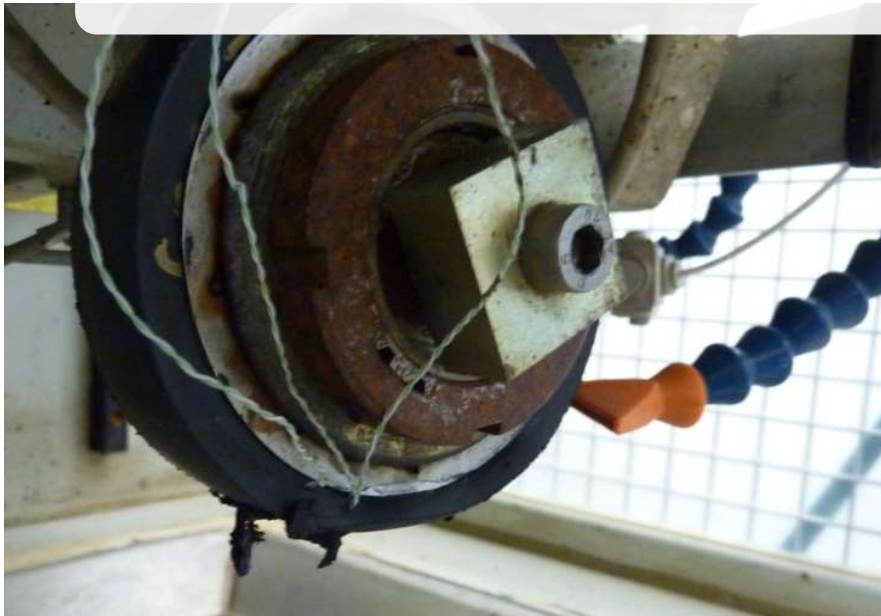


- ✓ *Functional binder testing*
- ✓ *SuperPave binder testing*
- ✓ *Mix design*
- ✓ *Functional mix testing*





SR-ITD® Skid Resistance & Smart Ravelling Interface Testing Device





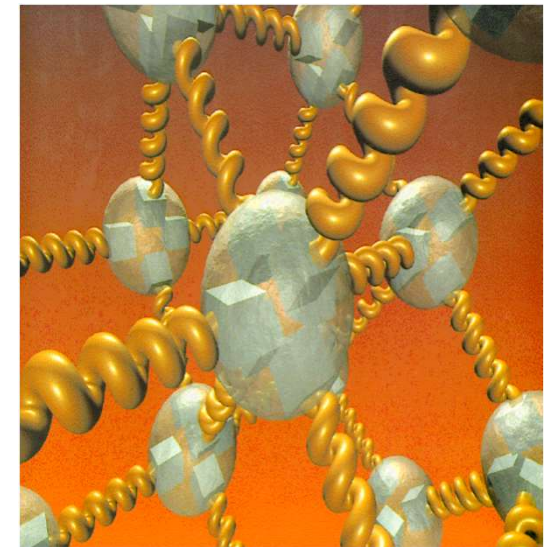
SR-ITD® Skid Resistance & Smart Ravelling Interface Testing Device





Polymer Modified Bitumen

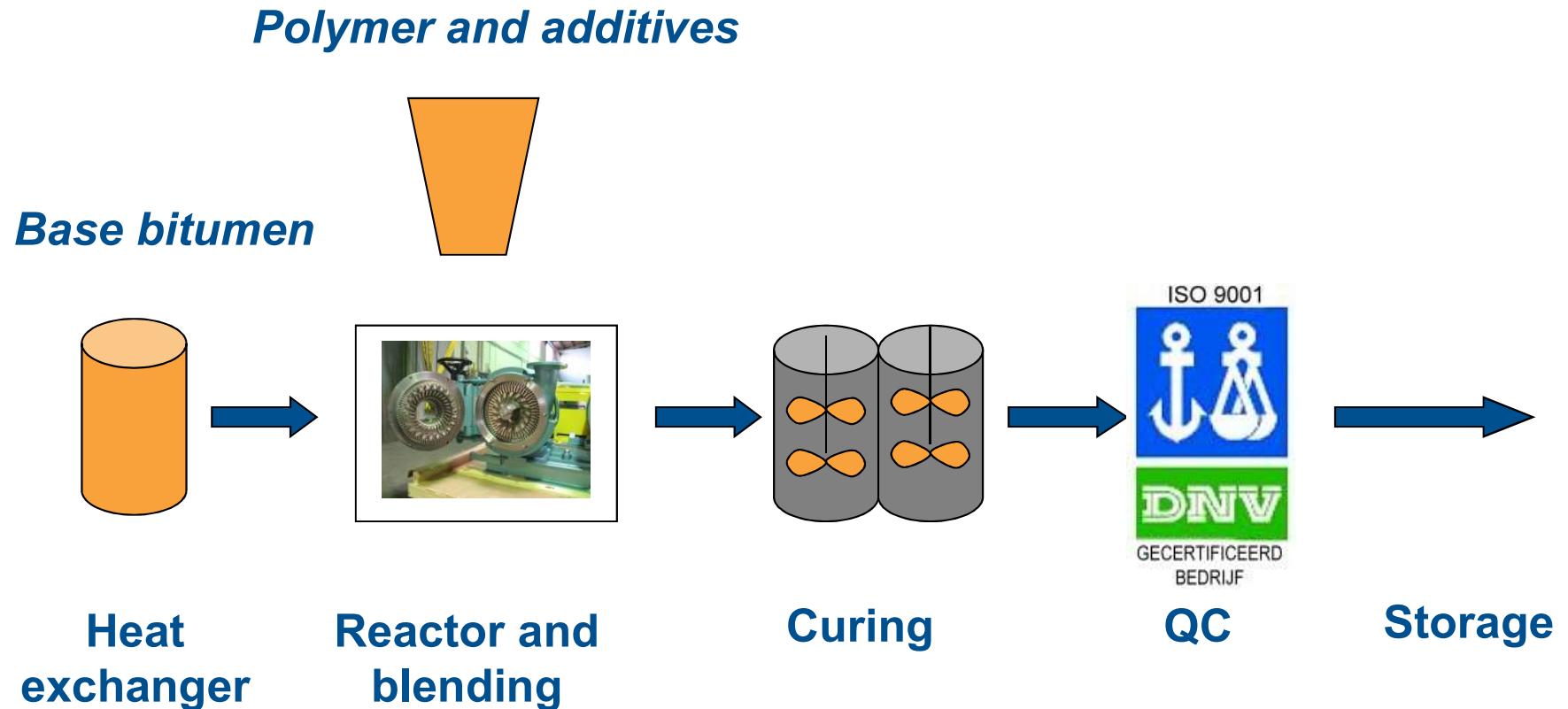
- **SEALOFLEX**® technology was developed in the 70's
- Based on **Radial type Styrene Butadiene Styrene (SBS)** modification
- Unique **additives** and **production technology**
- **Unique properties:**
 - ✓ Temperature susceptibility
 - ✓ High resistance to deformation / cracking
 - ✓ High resistance to fatigue and aging
 - ✓ Adhesion promotion between binder and aggregates
 - ✓ Good dispersion of polymer into bitumen
 - ✓ High storage stability



Polymer



Production Process





Why choose SEALOFLEX® ?

Cost effective and durable solution

- ✓ Lifespan is approx. **two times** higher than normal asphalt
- ✓ Layer thickness reduction (up to **30%**)

Proven performance in both extreme hot and cold climates

- ✓ Highly elastic recovery product
- ✓ High resistance to deformation, aging and cracking in extreme climates





Why choose **SEALOFLEX®**?

Proven technology, high quality guaranteed

- ✓ Based on **40 years** of research and development
- ✓ Extensive worldwide track record in road, airport and terminal application

Systematic production and application process

- ✓ Stable, homogeneous mix, improved storage life
- ✓ Input of laboratory, engineering and construction knowledge
- ✓ High level Quality Assurance / Quality Control process



Pavement engineering

- ✓ Pavement investigation & consultancy
- ✓ Dimensioning of pavement constructions
- ✓ Pavement management
- ✓ Life cycle cost analysis
- ✓ Construction supervision





Pavement design optimizations

- Design reviews (asphalt pavement structure)
- Integration of design and construction materials
- Determine pavement performance in case **SEALOFLEX®** PMB is applied
- Alternative pavement design based on **SEALOFLEX®**
 - ✓ Asphalt layer thickness reduction
 - ✓ Lifetime extension asphalt pavement
 - ✓ Saving construction materials

Why colored asphalt?

good
reasons to use
colored
asphalt

Controlling and Guiding traffic

Increasing safety

Improving comfort

Sustainable development

Reducing energy costs

Increase attractiveness

Architectural freedom



Colored asphalt





Colored asphalt for safety



Clear binders vs black bitumen



Bright binder



Color binder



***Standard
(black) binder***





Types of clear binder

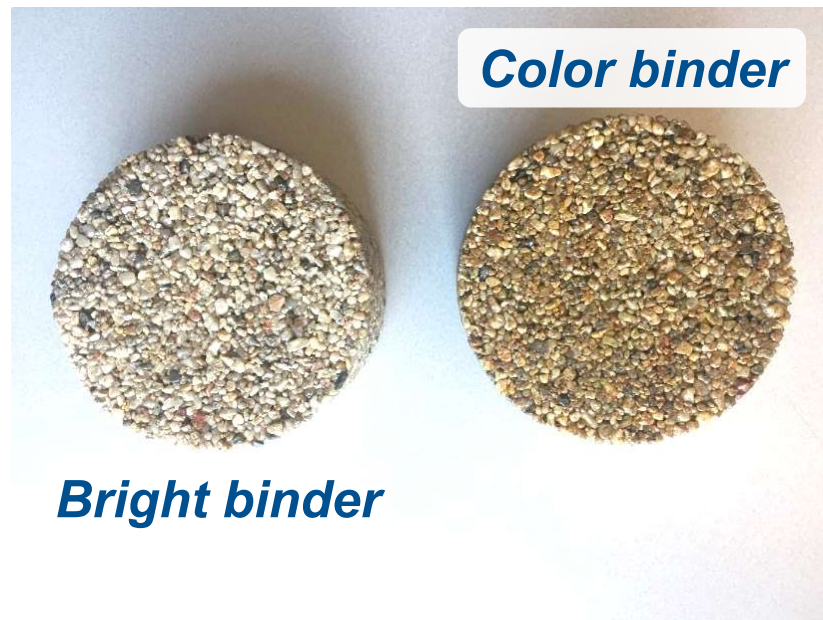
SEALOFLEX® Color

- Polymer modified clear binders
- Characteristics
 - ✓ *High softening point*
 - ✓ *High elastic recovery*
 - ✓ *Resistance to deformation, cracking and aging*

Types **SEALOFLEX®** color binder

- | | |
|------------------------------------|--------------------------|
| • Sealoflex Color 70-100 | • Sealoflex Color 45A |
| • Sealoflex Color 70-100 Wax | • Sealoflex Color PG76 |
| • Sealoflex Color 50-70 | • Sealoflex Color Bright |
| • Sealoflex Color 50-70 Fraass -20 | • Sealoflex Color 5 |
| • Sealoflex Color 35-50 | |
| • Sealoflex Color 35-50 Plus | |

Bright binder/ Color binder



Pigments for colored asphalt



Advantages

- ✓ Dust free and easy to dose
- ✓ Higher color intensity
- ✓ Contains an EVA carrier (modifier)
- ✓ Less pigment is needed

Result of using pigment





SEALOFLEX® Color + green Colorfalt® pigments

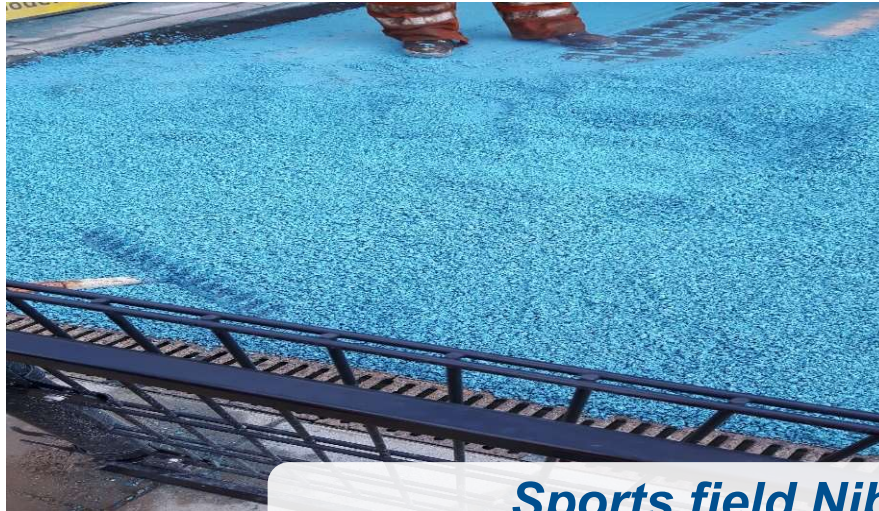


Project in Slovakia





Track Record



Sports field Nibbixwoud (2018)
90 tons of SEALOFLEX® Color Bright





Track Record



Shiraz Airport Iran (2017)

Runway – supply of 1.400 tons of SEALOFLEX® PMB 5-50





Track Record



Riga Airport, Latvia (2014)
Run- and taxiways – supplied 1000 tons PMB and 100 tons emulsions



Track Record



Highway A15, The Netherlands (2013 – 2016)
Supply of **SEALOFLEX® PMB OPA 8+**



Track Record



New Delhi F1 track (2011)





Track Record

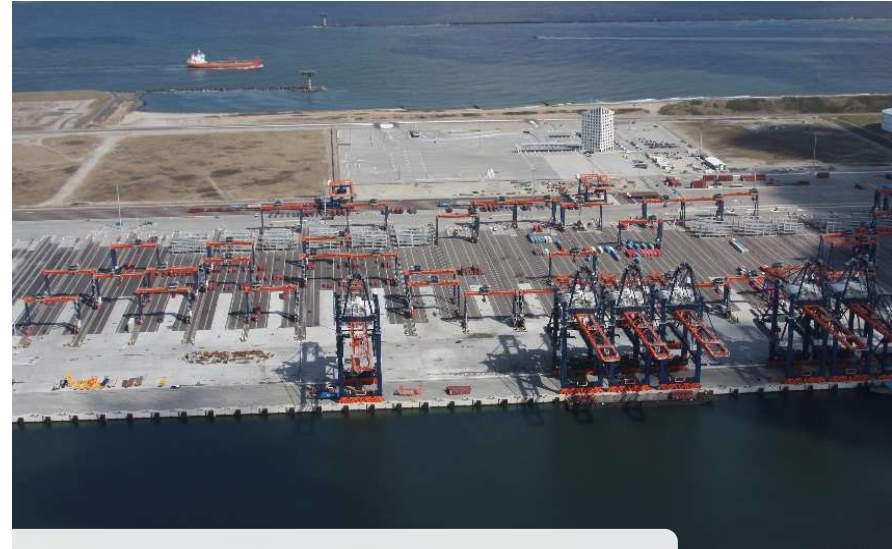


Track Record



***Malta International Airport (2007/2008)
Rehabilitation of runway & construction of a taxiway loop***

Track Record



CTA Container Terminal Altenwerder Hamburg (2003)





Track Record



Schiphol Airport Amsterdam (1991)

Run- and taxiways – applied 1.000.000 tons of SEAL FLEX® PMA (PG82-22)

Track Record





SOLVES PAVEMENT CHALLENGES

www.sealoflexbitumen.com



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