SEALING TECHNOLOGY
For new construction and rehabilitation
PRODUCTS

Bitumen joint tapes
- **TOK® Band SK** self-adhesive ........................................ 10-13
- **TOK® Band SK Mark** self-adhesive and profiled ............ 14-15
- **TOK® Band SK Drain** for porous asphalt, self-adhesive .... 16-18
- **TOK® Band Special hot-applied** .................................. 20-21
- **TOK® Band DR** triangular, hot-applied or self-adhesive ... 22-23
- **TOK® Band T** hot-applied .......................................... 24-25

Mechanically extruded bitumen joint tape
- **TOKOMAT®** process ................................................. 26-27
- **TOK® Riegel** application system ............................. 28-29

Pouring compounds
- **TOK®-Sil Resist** hot-applied ........................................ 32-33
- **TOK®-Melt N2** ......................................................... 34-35
- **TOK®-Melt N1** ......................................................... 36-37
- **REINAU®-Plastic Resin Primer** .................................. 38
- **REINAU®-Crack Pouring Compound 1.25** ................. 38
- **REINAU®-Pavement Pouring Compound** ................... 38
- **REINAU®-SNV 164 1.2** ........................................... 39
- **REINAU®-Rail Joint Pouring Compound** .................... 39
- **MELTOMAT®** device for melting bitumen pouring compounds 39
  - cold-applied: **DENSO®-VT** ........................................ 42-43
  - sealing compound for pollution prevention
  - **DENSO® SV** ....................................................... 44-45
  - for sensor slots and similar applications
  - **DENSO®-KU** ...................................................... 46-47
  - for manhole covers and similar applications

Joint seam adhesives
- **TOK®-Plast** cold plastic compound .......................... 50-51
- **PLASTOMAT®** process ............................................ 52-53

Special products for road maintenance
- **DENSO®-EM** innovative elastomer mortar ................. 56-61
- **TOK®-Creta 45 V2.0** mineral-based repair mortar ....... 62-65
- **TOK®-Dur** coating compound .................................. 66-69
- **TOK®-Rep** road repair compound ............................. 70-71
- **TOK®-SK Rissband** self-adhesive bitumen strip ........... 72
- **TOK®-Band Special Rundstrang** bitumen round profile .. 73

Repair asphalt
- **TOK®-Fil ** conventional ........................................... 76-77
- **TOK®-Fil Aqua** reactive, fast-curing system ............... 78-79
- **TOK®-Fil PA** for porous asphalt, reactive curing ........ 80-81

Track construction
- **DENSO®-SU** rail joint products and rail embedding compounds ........................................ 84-85
- **TOK®-Melt SU** bituminous underlay pouring compound .... 86-87

Civil engineering
- **DENSO®-Gleitmittel** (Anti-Friction Compound) for use in mechanical seals on concrete pipes and manhole covers ........................................ 90-91
- **TOK®-Strip** for manhole components and special profiles made of concrete ........................................ 92-93
- **FERMADUR®-C** compression sealing .......................... 94-95
- **FERMADUR®-S** compression sealing ......................... 96-97
- **TOK®-BSW System** .............................................. 98-99
- **DENSO®-Pal** Elastomer injection-moulded parts ........ 100-101
- **GOMEX®** .......................................................... 102-103

Special products for road maintenance
- **DENSO®-EM/EM-G** .................................................. 104-106
- **TOK®-Creta 45 V2.0** ............................................... 106-107
- **TOK®-Dur** .......................................................... 108

Distributor Network

WE KEEP IT SEALED
in road-, track construction and civil engineering
<table>
<thead>
<tr>
<th>Product *</th>
<th>Product Property</th>
<th>Tested in accordance to</th>
<th>Application temperature</th>
<th>Product application</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Bitumen joint tapes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band SK DR</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band SK Mark</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band SK T</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band Special</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band Special DR</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band Special Rundstrang</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band T</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Band Kombi</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOKOMAT®-proces / TOK®-Riegel</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-hot-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Meli N1</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Meli N2</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Meli SU</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-seam adhesive &amp; Repair asphalt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Plast</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-PMS</td>
<td></td>
<td></td>
<td>+10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-PMS Aqua</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>40 (+113)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-PMS NA</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>30 (+86)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-sealing mixer &amp; coating compounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Bep</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Cure 45 V2.0</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>30 (+86)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Cure</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-cold-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-SIL Resist</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-Strip</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>35 (+95)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-SIL Soft Strip</td>
<td></td>
<td></td>
<td>✓</td>
<td>0 (-22)</td>
<td>40 (+104)</td>
</tr>
<tr>
<td>DENSOLASTIC®-cold-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-EM</td>
<td></td>
<td></td>
<td>A 60-70</td>
<td>+40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>DENSOLASTIC®-4U</td>
<td></td>
<td></td>
<td>A 65</td>
<td>+40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>DENSOLASTIC®-SU</td>
<td></td>
<td></td>
<td>A 40-60</td>
<td>+40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>DENSOLASTIC®-SV</td>
<td></td>
<td></td>
<td>D 70-75</td>
<td>+40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>DENSOLASTIC®-VY</td>
<td></td>
<td></td>
<td>A 18-20</td>
<td>+40 (+104)</td>
<td>✓</td>
</tr>
<tr>
<td>TOK®-repairing mortor &amp; coating compounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REINAP®-Pavement Pouring Compound</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>REINAP®-Quick Pouring Compound 1,25</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>REINAP®-SIL 1,2</td>
<td></td>
<td></td>
<td>+5 (+41)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
<tr>
<td>REINAP®-Sal Joint Pouring Compound</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FORMAUX®-Compression seals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMAUX®-C</td>
<td></td>
<td></td>
<td>A 90-95</td>
<td>-10 (+14)</td>
<td>50 (+122)</td>
</tr>
<tr>
<td>FORMAUX®-F</td>
<td></td>
<td></td>
<td>A 90-95</td>
<td>-10 (+14)</td>
<td>50 (+122)</td>
</tr>
<tr>
<td>DENSOLASTIC®-cold-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-Gelklebstoff</td>
<td></td>
<td></td>
<td>-10 (+14)</td>
<td>50 (+122)</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product *</th>
<th>Product characteristic</th>
<th>Joints in asphalt</th>
<th>Joints in concrete</th>
<th>Tram-construction</th>
<th>Sealing protection walls</th>
<th>Repair of real surfaces and membranes</th>
<th>Channel and shaft seals</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Bitumen joint tapes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK</td>
<td></td>
<td></td>
<td>self-adhesive</td>
<td>✓</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK Drain</td>
<td></td>
<td></td>
<td>self-adhesive, for porous asphalt</td>
<td>✓</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK DR</td>
<td></td>
<td></td>
<td>self-adhesive, triangular profile</td>
<td>✓</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK Mark</td>
<td></td>
<td></td>
<td>self-adhesive, profiled</td>
<td>✓</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band SK T</td>
<td></td>
<td></td>
<td>self-adhesive, for low temperatures</td>
<td>✓</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band Special</td>
<td></td>
<td></td>
<td>hot-applied</td>
<td>✓</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band Special DR</td>
<td></td>
<td></td>
<td>hot-applied, triangular profile</td>
<td>✓</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band Special Rundstrang</td>
<td></td>
<td></td>
<td>hot-applied, for cracks</td>
<td>✓</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band T</td>
<td></td>
<td></td>
<td>hot-applied, for low temperatures</td>
<td>✓</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Band Kombi</td>
<td></td>
<td></td>
<td>self-adhesive, for cracks</td>
<td>✓</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOKOMAT®-Verfahren / TOK®-Riegel</td>
<td></td>
<td></td>
<td>automatic setting</td>
<td>✓</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-hot-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Meli N1</td>
<td></td>
<td></td>
<td>elastic, very withstandable</td>
<td>✓</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Meli N2</td>
<td></td>
<td></td>
<td>normal withstandable, homogenous</td>
<td>✓</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Meli SU</td>
<td></td>
<td></td>
<td>energy-elastic</td>
<td>✓</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-seam adhesive &amp; Repair asphalt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Plast</td>
<td></td>
<td></td>
<td>threaded</td>
<td>✓</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-PMS</td>
<td></td>
<td></td>
<td>normal curing</td>
<td>✓</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-PMS Aqua</td>
<td></td>
<td></td>
<td>reactive curing</td>
<td>✓</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-PMS NA</td>
<td></td>
<td></td>
<td>ready-to-curing, for porous asphalt</td>
<td>✓</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-cold-applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-SIL Resist</td>
<td></td>
<td></td>
<td>horizontal and vertical usage</td>
<td>✓</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-Strip</td>
<td></td>
<td></td>
<td>self-adhesive</td>
<td>✓</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-SIL Soft Strip</td>
<td></td>
<td></td>
<td>co-resistant</td>
<td>✓</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-cold-applied</td>
<td></td>
<td></td>
<td>dynamic climable</td>
<td>✓</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-EM</td>
<td></td>
<td></td>
<td>noise reducing</td>
<td>✓</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-4U</td>
<td></td>
<td></td>
<td>for sensor- and induction loops</td>
<td>✓</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-SV</td>
<td></td>
<td></td>
<td>LAM-permission</td>
<td>✓</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-VY</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOK®-repairing mortor &amp; coating compounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REINAP®-Pavement Pouring Compound</td>
<td></td>
<td></td>
<td>polymer modified, thermoplastic</td>
<td>✓</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REINAP®-Quick Pouring Compound 1,25</td>
<td></td>
<td></td>
<td>polymer modified, thermoplastic</td>
<td>✓</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REINAP®-SIL 1,2</td>
<td></td>
<td></td>
<td>polymer modified, thermoplastic</td>
<td>✓</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REINAP®-Sal Joint Pouring Compound</td>
<td></td>
<td></td>
<td>polymer modified, thermoplastic</td>
<td>✓</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMAUX®-Compression seals</td>
<td></td>
<td></td>
<td>for UV and concrete stressed joints</td>
<td>✓</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMAUX®-C</td>
<td></td>
<td></td>
<td>for underground joints</td>
<td>✓</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DENSOLASTIC®-Gelklebstoff</td>
<td></td>
<td></td>
<td>compatible with rubber seals</td>
<td>✓</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**FIELDS OF APPLICATION**

- **TOKOMAT®/TOK®-Riegel**
  Mechanical application of bitumen joint tape ➔ P. 26

- **TOK®-Plast**
  Joint seam adhesive ➔ P. 50

- **TOK®-Crete 45 V2.0**
  Concrete repair mortar ➔ P. 62

- **DENSOLASTIC®**
  Cold poured compounds ➔ P. 40

- **TOK®-Band T**
  Bituminous joint tape for rails ➔ P. 76

- **TOK®-Rep**
  Groove repair compound ➔ P. 70

- **TOK®-Dur**
  Mechanical application setting ➔ P. 66

- **TOK®-Sil Resist**
  For slurry/liquid-manure/silage facilities ➔ P. 32

- **TOK®-Band T**
  Bituminous joint tape for rails ➔ P. 28

- **TOK®-Melt SU**
  Bituminous hot poured compounds ➔ P. 86

- **REINAU®/TOK®-Melt**
  High stable elastic synthetic ➔ P. 84

- **DENSOLASTIC®-EM/-EM-G**
  Embedding compound for rails ➔ P. 92

- **TOK®-Strip**
  Shaft sealing ➔ P. 90

- **TOK®-BSW System**
  Filling compound for rails ➔ P. 98

- **TOK®-SK Rissband, TOK®-Rundstrang**
  Self-adhesive bituminous profile strip ➔ P. 72

- **TOK®-Band**
  Bituminous joint tape for joints and seams ➔ P. 8
TOK®-Band
Bitumen joint tapes

TOK®-Band SK
Self-adhesive bitumen joint tape for joints and seams.

TOK®-Band SK Mark
Self-adhesive bitumen joint tape with protrusion profiling for joints and seams.

TOK®-Band SK Drain
Self-adhesive bitumen joint tape for joints and connections in porous asphalt road surfaces.

TOK®-Band Spezial
Hot-applied bitumen joint tape for joints and seams.

TOK®-Band DR
A bitumen joint tape in a triangular profile which is meltable or self-adhesive.

TOK®-Band T
Soft bitumen joint tape for special applications.
Preparing the joint edge

For a proper connection, a dry and clean edge as well as priming using TOK®-SK Primer is essential. According to ZTV Fug-StB, the edges must be dry, clean and solid and then the pores filled using a primer. The primer used must be the one tested in the system with the bitumen joint tape. In addition, a test report in accordance with TL/TP Fug-StB must be present. For TOK®-Band SK, the TOK®-SK Primer was developed. This is transparent, dries quickly and can be applied by hand or using a machine. In summer, the drying time of the primer is only 3 to 5 minutes which allows further processing to happen quickly.

Applying TOK®-Band SK

As soon as the primer coat has dried, the joint tape can be laid. For this, the TOK®-Band SK is simply laid with the adhesive side upwards onto the clean edge. The anti-adhesive paper should be removed immediately before applying to the edge. TOK®-Band SK is self-adhesive on one side and therefore does not need to be melted.

Press on the TOK®-Band SK

After priming the edge with TOK®-SK Primer the TOK®-Band SK is pressed onto the edge by hand with the white adhesive layer towards the edge.

In accordance with ZTV Fug-StB bitumen joint tape should be laid with a 5 mm protrusion to rolled asphalt, so that a so-called “rivet head” is produced when rolling the asphalt. This forms an additional seal on the surface and provides a clean “closure”. In cast asphalt surfaces, the joint tape is mounted flush to the edge. ZTV Fug-StB also stipulates that bitumen joint tapes must be designed so that they can deal with movements of up to 10% based on the joint width created when they are installed. The width of the joint tape must be at least 10 mm.

Application

Preparing the joint edge

For a proper connection, a dry and clean edge as well as priming using TOK®-SK Primer is essential. According to ZTV Fug-StB, the edges must be dry, clean and solid and then the pores filled using a primer.

Applying TOK®-Band SK

As soon as the primer coat has dried, the joint tape can be laid. For this, the TOK®-Band SK is simply laid with the adhesive side upwards onto the clean edge. The anti-adhesive paper should be removed immediately before applying to the edge. TOK®-Band SK is self-adhesive on one side and therefore does not need to be melted.

Press on the TOK®-Band SK

After priming the edge with TOK®-SK Primer the TOK®-Band SK is pressed onto the edge by hand with the white adhesive layer towards the edge.

In accordance with ZTV Fug-StB bitumen joint tape should be laid with a 5 mm protrusion to rolled asphalt, so that a so-called “rivet head” is produced when rolling the asphalt. This forms an additional seal on the surface and provides a clean “closure”. In cast asphalt surfaces, the joint tape is mounted flush to the edge. ZTV Fug-StB also stipulates that bitumen joint tapes must be designed so that they can deal with movements of up to 10% based on the joint width created when they are installed. The width of the joint tape must be at least 10 mm.

Application

Preparing the joint edge

For a proper connection, a dry and clean edge as well as priming using TOK®-SK Primer is essential. According to ZTV Fug-StB, the edges must be dry, clean and solid and then the pores filled using a primer. In addition, a test report in accordance with TL/TP Fug-StB must be present. For TOK®-Band SK, the TOK®-SK Primer was developed. This is transparent, dries quickly and can be applied by hand or using a machine. In summer, the drying time of the primer is only 3 to 5 minutes which allows further processing to happen quickly.

Applying TOK®-Band SK

As soon as the primer coat has dried, the joint tape can be laid. For this, the TOK®-Band SK is simply laid with the adhesive side upwards onto the clean edge. The anti-adhesive paper should be removed immediately before applying to the edge. TOK®-Band SK is self-adhesive on one side and therefore does not need to be melted.

Press on the TOK®-Band SK

After priming the edge with TOK®-SK Primer the TOK®-Band SK is pressed onto the edge by hand with the white adhesive layer towards the edge.

In accordance with ZTV Fug-StB bitumen joint tape should be laid with a 5 mm protrusion to rolled asphalt, so that a so-called “rivet head” is produced when rolling the asphalt. This forms an additional seal on the surface and provides a clean “closure”. In cast asphalt surfaces, the joint tape is mounted flush to the edge. ZTV Fug-StB also stipulates that bitumen joint tapes must be designed so that they can deal with movements of up to 10% based on the joint width created when they are installed. The width of the joint tape must be at least 10 mm.

Ordering Information & Packaging

TOK®-Band SK is delivered rolled up. The rolls are separated using silicone paper and delivered in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet (800 x 1200 mm).

Storage

Store dry, without load and protected from frost. The TOK®-Band SK can be stored in its sealed original packaging for at least 3 years from the date of manufacture under these conditions.
TOK®-Band SK – Application

The proven self-adhesive bitumen profile to seal joints / connections

Excavation
Excavation of a cable trench. Carrier and binding layers are already installed. Only the top layer is missing.

Stick on the tape
Simply press the joint tape on the prepared edge.

Pay attention to the overlap
Here ensure a protrusion of 5 mm. For cast asphalt, the protrusion is not required as it is not rolled afterwards.

Install the mix
Install the mix so that it protrudes. Finally compact it using a roller or a vibrating plate. Here, the first roller pass should be on the joint connection.

Installed tape
A clearly installed joint tape.

Finished joint connection
This is what a professionally performed joint in the top layer looks like.

Apply the pressure-sensitive adhesive
Spray the edge with pressure-sensitive adhesive, however do not spray the joint tape.

Priming
Clean and dry the joint edge. Prime using TOK®-SK Primer. Drying time approximately 3 minutes.

Lay out the TOK®-Band
Lay out the joint tape and cut to length, if necessary.

Typical damage WITHOUT using a bitumen joint tape

Expert working WITH TOK®-Band SK
**TOK®-Band SK Mark**

Self-adhesive bitumen joint tape with protrusion profiling for joints and seams in asphalt road construction.

**Description**

TOK®-Band SK Mark is a high-quality bitumen joint tape made of polymer-improved road bitumen which has excellent stretching and adhesive properties. The bitumen joint tape has a self-adhesive layer on one side as well as a protruding “nose” on the top so that it can be quickly and securely laid. It can be laid “cold”, without having to use a gas burner.

TOK®-Band SK Mark and its associated primer, TOK®-SK Primer, have been tested in accordance with the TL/TP Fug-StB and meet all the requirements of these guidelines.

**Usage**

TOK®-Band SK Mark is used to make joints in asphalt road construction. Due to its excellent material properties, permanent and sealed joints are guaranteed.

**Typical Product Properties** (Test results in accordance with TL Fug-StB)

<table>
<thead>
<tr>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point (Ring&amp;Ball method)</td>
<td>°C</td>
<td>&gt; +100 (&gt; +212)</td>
<td>≥ 100 (&gt; +194)</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>mm</td>
<td>30</td>
<td>20 – 33</td>
</tr>
<tr>
<td>Recovery</td>
<td>%</td>
<td>10 – 30</td>
<td>10 – 20</td>
</tr>
<tr>
<td>Cold bending behaviour</td>
<td>°C</td>
<td>≤ -8 (+17,6)</td>
<td>≤ -8 (+17,6)</td>
</tr>
<tr>
<td>Adhesion and strength</td>
<td>N / mm²</td>
<td>≥ 10 / ≤ 1,0</td>
<td>≥ 10 / ≤ 1,0</td>
</tr>
</tbody>
</table>

**Ordering Information & Packaging**

TOK®-Band SK Mark is delivered rolled up. The rolls are separated using silicone paper and delivered in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet (800 x 1200 mm).

<table>
<thead>
<tr>
<th>Profile [HxW]</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 x 10</td>
<td>100 74 079</td>
<td>72</td>
<td>1,350</td>
</tr>
<tr>
<td>30 x 10</td>
<td>102 02 330</td>
<td>36</td>
<td>1,080</td>
</tr>
<tr>
<td>35 x 10</td>
<td>102 02 366</td>
<td>36</td>
<td>1,080</td>
</tr>
<tr>
<td>40 x 10</td>
<td>102 02 266</td>
<td>27</td>
<td>810</td>
</tr>
<tr>
<td>50 x 10</td>
<td>102 02 203</td>
<td>27</td>
<td>810</td>
</tr>
</tbody>
</table>

**Application**

Preparation of the joint edges. The edges must be dry, clean and solid and have been treated with the prescribed primer. Preferably the edges should have been cut and not machined. For the TOK®-Band SK Mark, the primer TOK®-SK Primer must be used as it is the system with which the bitumen joint tape was tested. The primer is transparent, dries quickly and can be applied by hand or using a machine. In summer, the drying time of the primer is approximately 3 to 5 minutes, allowing further work to start quickly.

Laying the TOK®-Band SK Mark. As soon as the primer has dried, the joint tape can be laid. Before application, the joint tape is laid out with the anti-adhesive paper upwards. TOK®-Band SK Mark is self-adhesive and therefore does not need to be melted. The anti-adhesive paper should be removed just before laying, so that no contamination of the adhesive layer occurs. After the anti-adhesive paper has been removed, the joint tape is then pressed on with its adhesive layer towards the edge. According to ZTV Fug-StB, bitumen joint tapes on rolled asphalt should be laid with a 5 mm protrusion. This means that a “rivet head” is formed when the asphalt is rolled which provides an additional seal on the surface and forms a clean “closure”. TOK®-Band SK Mark simplifies the professional laying with the profiled shape of the tape. The tape is hung on the top edge of the sides so to speak. The profiled “nose” on the profile has, with the additional material, additionally the advantage that grain break-outs on the top edge of the sides after the rolling procedure can be sealed better. The “rivet head” is therefore even more pronounced. With connections which are not rolled, the conventional TOK®-Band SK without a “nose” should be used.

**Storage**

Store dry, without load and protected from frost.

The TOK®-Band SK Mark can be stored in its sealed original packaging for at least 3 years from the date of manufacture under these conditions.
**Description**

The patented TOK®-Band SK Drain is a high-quality bitumen joint tape made of polymer-improved road bitumen which has excellent stretching and adhesive properties. The joint tape has a self-adhesive layer on one side and therefore does not need to be laid quickly and securely “cold”, without having to use a gas burner. A heat-resistant PP mesh belt is worked into the bituminous compound which protrudes downwards by approximately 20 mm from the tape. TOK®-Band SK Drain and its associated primer, TOK®-SK Primer, have been tested in accordance with the TL/TP Fug-StB and meet all the requirements of these regulations.

**Usage**

TOK®-Band SK Drains are used to make joints in porous asphalt road surfaces. Due to its excellent material properties and the special cross-section which is water-permeable in the lower area, a permanent and sealed connection is guaranteed. In addition, due to the mesh tape, the desired water drainage functions properly below the road surface!

**Typical Product Properties (Test results dimensions in accordance with TL Fug-StB)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
<td>°C</td>
<td>≥90</td>
<td>&gt; +212°C</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>0.1 mm</td>
<td>75</td>
<td>40 - 50</td>
</tr>
<tr>
<td>Dilation and adhesive strength</td>
<td>% / % / %</td>
<td>10 / 10 / 10</td>
<td>&gt;10 / 10 / 10</td>
</tr>
<tr>
<td>Separation after thermal aging</td>
<td>%</td>
<td>10 - 30</td>
<td>10 - 30</td>
</tr>
</tbody>
</table>

**Special Advantages:**

- The world’s first self-adhesive bitumen joint tape for porous asphalt road surfaces.
- Professional connection in the upper area and water permeable in the lower area of the connecting edge.
- A further development of the proven TOK®-Band SK.
- Self-adhesive, no gas burner required for melting.

**Application**

**Preparing the joint edge**

The edges must be dry, clean and solid and treated with the right primer. The edges should be as flat as possible. Preferably, the edges should be made with a precision router to achieve a secure hold to the edge. The edges can also be cut however, if it is ensured that voids in the asphalt are not “smeared together” and that any lower sealing layer is not damaged, if present. According to ZTV Fug-StB, the corresponding primer to the joint tape must be used. For the TOK®-Band SK Drain, the primer TOK®-SK Primer must be used as this is the system with which the bitumen joint tape was tested. The primer is transparent, dries quickly and can be applied by hand or using a machine. In summer, the drying time of the primer is approximately 3 to 5 minutes, allowing further work to start quickly.

**Laying the TOK®-Band SK Drain**

As soon as the primer coat has dried, the joint tape can be laid. Before application, the joint tape is laid out with the anti-adhesive paper upwards. The joint tape is laid out with the anti-adhesive paper upwards. A further development of the proven TOK®-Band SK Drain has an adhesive layer at the top on one side and therefore does not need to be melted. The anti-adhesive paper should be removed just before laying so that no contamination gets onto the adhesive layer. After the anti-adhesive paper has been removed, the joint tape is then pressed on with its adhesive layer towards the edge. According to ZTV Fug-StB, bitumen joint tapes on rolled asphalt should be laid with a 5 mm protrusion. This means that a “rivet head” is formed when the asphalt is rolled which provides an additional seal on the surface and forms a clean “closure”.

Thanks to its cross-sectional shape, the TOK®-Band SK Drain has two distinct advantages when used in porous asphalt road surfaces:

1. Firstly, a professional connection is created in the upper area so that grain outbreaks and damage in the connection area do not occur.
2. Secondly, in the lower cross-sectional area (approximately 20 mm) the rain water can continue to drain. This means that the purpose and advantages of the porous asphalt coating remain in the area of the connection, particularly when conservation measures are needed on the surface. ZTV Fug-StB stipulates that bitumen joint tapes must be designed so that they can deal with movements of up to 10% based on the joint width created when they are installed. The width of the joint tape must be at least 10 mm.

**Ordering Information & Packaging**

TOK®-Band SK Drain is delivered rolled up. The rolls are separated using silicone paper and delivered in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet (800 x 1,200 mm).

<table>
<thead>
<tr>
<th>Profile [mm]</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 x 10*</td>
<td>100 75 505</td>
<td>19.50</td>
<td>585</td>
</tr>
<tr>
<td>40 x 10</td>
<td>100 72 506</td>
<td>19.50</td>
<td>585</td>
</tr>
<tr>
<td>45 x 10</td>
<td>100 72 507</td>
<td>19.50</td>
<td>585</td>
</tr>
<tr>
<td>50 x 10</td>
<td>100 72 508</td>
<td>19.50</td>
<td>585</td>
</tr>
<tr>
<td>55 x 10</td>
<td>100 72 509</td>
<td>19.50</td>
<td>585</td>
</tr>
</tbody>
</table>

* Other dimensions available on request
** Permeable area 15 to 20 mm

**Storage**

Store dry, without load and protected from frost. The TOK®-Band SK Drain can be stored in its sealed original packaging for at least 2 years from the date of manufacture under these conditions.
In ZTV Asphalt-StB 07 (“Additional technical terms of contract and guidelines for the construction of asphalt road surfaces”) the topic of “seams, connections” is covered in detail.

Section 3.3.3 (connections and joints, pg. 24) describes:

“ZTV Fug-StB applies, unless stipulated otherwise. Connections of road layers made of rolled asphalt to cast asphalt or to installations should be designed as joints. This does not apply to connections between asphalt road layers made of porous asphalt to installations. Connections should be designed as joints where the layers are of cast asphalt.”

Section 1.2 (definitions, pg. 11) defines:

Connections are contact surfaces between different types of asphalt with different properties (e.g. rolled asphalt / cast asphalt) between asphalt layers or layers and installations (e.g. curbstones, pavement, or similar)

Creating sealed connections to installations.

In ZTV Asphalt-StB 07 (“Additional technical terms of contract and guidelines for the construction of asphalt road surfaces”) the topic of “seams, connections” is covered in detail.

Section 3.3.3 (connections and joints, pg. 34) describes:

“ZTV Fug-StB applies, unless stipulated otherwise. Connections of road layers made of rolled asphalt to cast asphalt or to installations should be designed as joints. This does not apply to connections between asphalt road layers made of porous asphalt to installations. Connections should be designed as joints where the layers are of cast asphalt.”

Connections are contact surfaces between different types of asphalt with different properties (e.g. rolled asphalt / cast asphalt) between asphalt layers or layers and installations (e.g. curbstones, pavement, or similar)

Installing in asphalt are often damaged because no joints are created.

Joint formation at curb gutters using TOK®-Band SK or applied with the TOKOMAT®-system.

TOK®-Band SK used on hydrant and valve caps and the adjoining asphalt surface.

TOK®-Band SK used on drainage channels in asphalt surfaces.

Rivet head

The result of a professional installation is a much more pronounced protrusion forming a recognisable “rivet head” on the surface.

Primer Application of the TOK®-SK Primer

Optimal e.g. with a spray gun. Drying time approx. 5-10 minutes, depending on the weather conditions.

Compaction process

The first rolling process should be on the connection area “new to old”.

Pre-lay the roll in front of the machined edge. Caution: Roll out the tape with the adhesive area upwards, so that contamination on the adhesive side is avoided!

Joint formation at curb gutters using TOK®-Band SK or applied with the TOKOMAT®-system.

Remainder:

Paragraphs marked with a border line are “Additional technical terms of contract” within the meaning of art. 1, number 2d VOB part II – DIN 1961 if ZTV Asphalt-StB is a part of the construction contract and must therefore be done in the way described.

In accordance with ZTV Asphalt-StB 07, joints on concrete parts, covers, gutters and manhole covers must be made when the asphalt is constructed up to them.
TOK®-Band Spezial

Bitumen joint tape which can be melted for joints and seams in asphalt road construction.

**Description**

TOK®-Band Spezial is a high-quality bitumen joint tape made of polymer-improved road bitumen which has excellent stretching and adhesive properties. TOK®-Band Spezial and its associated primer, CORRISOL®-Spezial, have been tested in accordance with the TL/TP Fug-StB and meet all the requirements of these regulations.

**Usage**

TOK®-Band Spezial is used to make joints in asphalt road construction. It can also be laid on concrete curbstones and gutters. Due to its excellent material properties, permanent and sealed joints are guaranteed.

**Typical Product Properties** (*Test results in accordance with TL Fug-StB*)

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Unit</th>
<th>Result</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point (Ring&amp;Ball method)</td>
<td>°C (°F)</td>
<td>&gt; +100 (212)</td>
<td>&gt; +90 (+194)</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>0,1 mm</td>
<td>48</td>
<td>≤ 1,4</td>
</tr>
<tr>
<td>Recovery</td>
<td>%</td>
<td>60 - 38</td>
<td>≤ 0,15</td>
</tr>
<tr>
<td>Cold bending behaviour</td>
<td>°C (°F)</td>
<td>-8 (-18,4)</td>
<td>≤ +4 (+32)</td>
</tr>
<tr>
<td>Resistance and adhesive strength</td>
<td>%/N/mm²</td>
<td>50 / 1,5</td>
<td>≥ 90 / 3,0</td>
</tr>
</tbody>
</table>

**Application**

**Preparation of the joint edge:**
In accordance with the requirements of ZTV Fug-StB, the edges must be dry, clean and solid and treated with a primer. The primer used must be the one tested in the system with the bitumen joint tape. A test certificate in accordance with ZTV Fug-StB must be present for the primer. For TOK®-Band Spezial, the bituminous primer CORRISOL®-Spezial (black) was developed. In summer, the drying time is approximately 10 to 20 minutes.

**Laying the TOK®-Band Special:**
As soon as the primer has dried, the joint tape can be laid.

Before application, the joint tape is laid out with the anti-adhesive paper upwards. The anti-adhesive paper should be removed just before it is laid. The TOK®-Band Spezial can be melted using a gas burner and then pressed onto the edge of the joint.

According to ZTV Fug-StB, joint tapes on rolled asphalt should be laid with a 5 mm protrusion. This means that a "rivet head" is formed when the asphalt is rolled which provides an additional seal on the surface. The joint width must be at least 10 mm.

**Ordering Information & Packaging**

TOK®-Band Spezial is delivered rolled up. The rolls are separated using silicone paper, packaged and delivered in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet (800 x 1200 mm).

The amount per box and per pallet is dependent on the dimensions of the TOK®-Band Spezial.

**Storage**

Store the boxes dry, without load and protected from frost. The TOK®-Band Special can be stored in its sealed original packaging for at least 3 years from the date of manufacture.
TOK®-Band DR (fusible or self-adhesive)

A bitumen tape in a triangular profile which can be melted or is self-adhesive. Ideal, as an example, as a wedge to form the fillet for bitumen waterproofing sheets at corner connections.

Description

TOK®-Band DR is a high-quality bitumen joint tape made of polymer-improved road bitumen which has excellent stretching and adhesive properties.

Usage

TOK®-Band DR is used for sealing in conjunction with cast asphalt or asphalt concrete. The triangular profile is also particularly suited for use as a wedge for bitumen roofing and sealing sheets, e.g., for flashings and cappings of parking decks or on flat roofs. Due to its excellent material properties, permanent and sealed joints are guaranteed.

Typical Product Properties (Test results in accordance with TL Fug-StB)

<table>
<thead>
<tr>
<th>Test</th>
<th>Unit</th>
<th>Result</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point (Ring and Ball method)</td>
<td>°C (°F)</td>
<td>&gt; +100 (&gt; +212)</td>
<td>&gt; +90 (&gt; +194)</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>0.1 mm</td>
<td>35</td>
<td>20 - 50</td>
</tr>
<tr>
<td>Recovery</td>
<td>%</td>
<td>10 - 30</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Cold bending behaviour</td>
<td>°C (°F)</td>
<td>-9 (+15,8)</td>
<td>≤ ±0 (≤ ±32)</td>
</tr>
<tr>
<td>Tensile and adhesive strength</td>
<td>N/mm²</td>
<td>150 / 5.0</td>
<td>&gt; 10 / 1.5</td>
</tr>
</tbody>
</table>

Special Advantages:

- Tested in accordance with TLTP Fug-StB.
- Excellent quality.
- Quick and economical processing.

Application

Preparation of the connection edges: According to the requirements of ZTV Fug/StB, the edges must be dry, clean and solid and a primer must have been applied. The appropriate undercoat or primer for the joint tape is used. For the TOK®-Band DR system, the bituminous primer, CORRISOL®-Spezial (black) has been developed. For the TOK®-Band DR SK, the TOK®-SK Primer (transparent) should be used. The drying time in summer is approximately 10 - 20 minutes for CORRISOL®-Spezial and around 3 to 5 minutes for TOK®-SK Primer.

Processing TOK®-Band DR

As soon as the primer coat has dried, the joint tape can be laid. Before application, the joint tape is laid out along the edge with the anti-adhesive paper upwards. The anti-adhesive paper should be removed just before it is laid.

The melting TOK®-Band DR is melted using a gas burner until the surface is sticky. Then it is immediately pressed onto the edge of the joint. The warmed profile can be moulded into the corner areas with a spatula, or similar implement. The self-adhesive TOK®-Band DR SK does not need to be melted. It can simply be pressed onto the edges when the primer has dried.

Ordering Information & Packaging

TOK®-Band DR is delivered rolled up. The rolls are separated using silicone paper, packed and delivered in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. In each case, 30 boxes are packed on one euro pallet (800 x 1,200 mm).

The amount per box and per pallet is dependent on the cross-sectional dimension of the TOK®-Band DR.

TOK®-Band DR

Fusible TOK®-Band DR

<table>
<thead>
<tr>
<th>Profile [H x W]</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 x 20</td>
<td>101 20 035</td>
<td>30</td>
<td>310</td>
</tr>
<tr>
<td>25 x 25</td>
<td>101 20 060</td>
<td>20</td>
<td>200</td>
</tr>
<tr>
<td>30 x 30</td>
<td>101 20 073</td>
<td>14</td>
<td>140</td>
</tr>
<tr>
<td>30 x 30</td>
<td>101 20 074</td>
<td>14</td>
<td>140</td>
</tr>
</tbody>
</table>

Self-adhesive TOK®-Band SK DR

<table>
<thead>
<tr>
<th>Profile [H x W]</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 x 20</td>
<td>101 22 000</td>
<td>14</td>
<td>420</td>
</tr>
</tbody>
</table>

Storage

Store dry, without load and protected from frost. TOK®-Band DR can be stored in its sealed original packaging for at least 3 years from the date of manufacture under these conditions.
**TOK®-Band T** (fusible or self-adhesive)

The special bitumen joint tape for special applications and higher requirements.

### Description

**TOK®-Band T** is a bitumen joint tape made from polymer-improved road construction bitumen. Due to the special composition of the recipe, it has excellent elongation and adhesion characteristics particularly at low temperatures. It is available as fusible or as self-adhesive joint tape. **TOK®-Band T** and its associated primer, **TOK®-SK Primer**, have been tested in accordance with the TL/TP Fug-StB and tested as both a rail joint compound and as a fusible joint tape, they meet all the requirements of these regulations. In further tests, the requirements of TL biFug 82 for bituminous hot cast compounds are met by **TOK®-Band T**.

### Usage

**TOK®-Band T** is used to seal joints, preferably in asphalt road construction which are subjected to special and high requirements. An example is railway track construction where the joints on the rails have to deal with movements on a large scale. **TOK®-Band T** has been used by many public transport operators successfully in this application.

### Typical Product Properties (Test results in accordance with TL/TP Fug-StB)

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit (If)</th>
<th>Result</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point (ring and ball)</td>
<td>°C (°F)</td>
<td>+110 (+230)</td>
<td>≥ +85 (+185)</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>mm</td>
<td>30 - 50</td>
<td>20 - 30</td>
</tr>
<tr>
<td>Elastic recovery</td>
<td>%</td>
<td>10 - 30</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Adhesion and extensibility at -10°C (+14°F)</td>
<td>% / N/mm²</td>
<td>≥ 10 / 1,0</td>
<td>&gt; 10 / 1,0</td>
</tr>
<tr>
<td>Air-bonded behaviour</td>
<td>%</td>
<td>≥ 80</td>
<td>≥ 80</td>
</tr>
</tbody>
</table>

### Application

**Preparation of the joint edges:**

According to the requirements of ZTV Fug/StB, the edges must be dry, clean and solid and a primer must have been applied. The primer must be used which was tested in conjunction with the bitumen joint tape and for which a test certificate according to TL/TP Fug-StB is available.

For **TOK®-Band T**, **TOK®-SK Primer** is used. This is transparent and quick-drying. In summer the drying time is approximately 3 to 5 minutes.

**Laying the TOK®-Band T:**
As soon as the primer has dried, the joint tape can be laid. Before application, it is laid out with the anti-adhesive paper upwards. If the joint is fusible, the joint tape is slightly melted using a gas burner and then pressed onto the edge using a shovel or other tool.

**On rail tracks:** **TOK®-Band T** is usually installed with a small overhang which is later peeled off with a hot blade. In this way the exact position is achieved in terms of height. The underlay (binding layer) can be installed with less effort in this process as the demands for the height levelling of the base can be reduced.

According to ZTV Fug-StB, joint tapes on rolled asphalt must be laid with a 5 mm protrusion. This means that a “rivet head” is formed when the asphalt is rolled which provides an additional seal on the surface. The joint width must be at least 10 mm.

### Ordering Information & Packaging

**TOK®-Band T** is delivered rolled up. The rolls are separated using silicone paper and delivered in boxes with the dimensions (W x D x H) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet with the dimensions 800 x 1,200 mm.

The amount per box and per pallet is dependent on the profile dimensions of the tape.

<table>
<thead>
<tr>
<th>Self-adhesive TOK®-Band SK T</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 x 10</td>
<td>102 02 596</td>
<td>40</td>
<td>1,200</td>
</tr>
<tr>
<td>40 x 10</td>
<td>102 02 381</td>
<td>30</td>
<td>960</td>
</tr>
<tr>
<td>35 x 15</td>
<td>102 21 395</td>
<td>25</td>
<td>750</td>
</tr>
<tr>
<td>30 x 25</td>
<td>102 21 383</td>
<td>16</td>
<td>480</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fusible TOK®-Band T</th>
<th>Article no.</th>
<th>Linear m / box</th>
<th>Linear m / pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 x 8</td>
<td>102 02 213</td>
<td>80</td>
<td>1,800</td>
</tr>
<tr>
<td>30 x 10</td>
<td>102 02 628</td>
<td>40</td>
<td>1,300</td>
</tr>
<tr>
<td>40 x 10</td>
<td>102 02 597</td>
<td>30</td>
<td>560</td>
</tr>
<tr>
<td>50 x 20</td>
<td>102 11 230</td>
<td>13.5</td>
<td>465</td>
</tr>
<tr>
<td>30 x 40</td>
<td>102 11 669</td>
<td>7.5</td>
<td>225</td>
</tr>
<tr>
<td>50 x 30</td>
<td>101 20 684</td>
<td>9</td>
<td>270</td>
</tr>
</tbody>
</table>

### Storage

Store dry, without load and protected from frost. The **TOK®-Band T** can be stored in its sealed original packaging for at least 3 years from the date of manufacture.
Practical Solution

TOKOMAT®-process

For milled and cut edges on surface layers.

Fields of Application

Heavier demands on road construction, particularly by the noticeable increase in heavy goods vehicle traffic, inevitably lead to an increased maintenance workload on our major roads. Replacing damaged traffic lanes has become a typical construction measure of our time. The joint between the new surface layer and the existing one has to be created as a joint according to the rules of technology. Bitumen joint tapes can be used for this purpose. Milling off the traffic lane creates a milled edge with a predominantly rough surface structure. Practice has shown this! Edges of this type, however, are unsuited to the systems which have been used successfully until now:

- Cutting and pouring
- Bitumen joint tape (laid by hand) because practice has shown that the surface roughness can only be imperfectly captured.

The TOKOMAT® offers a practical solution which is ideal for edges of this type in particular. Using the innovative extrusion tool, a compound is applied on site to the pretreated (cleaned, primed) edge at the correct profile and height. The suitability of this process has been shown by drill core analyses. The process fulfilled all the requirements of ZTV Fug-StB 01 regarding fusible bitumen joint tapes. The TOK®-Riegel have been tested according to TL/TP Fug-StB, both as bitumen joint tape and as track joint pouring compound, and fulfilled all the requirements.

TOK®-Riegel

This joint compound is a bar form of the famous TOK®-Band – which has been well-known and in continuous development for decades. This soft, warm compound easily fills out even irregular rough surfaces directly on-site on the joint flange, ensuring the creation of a secure and professional joint seal.

Special Advantages:

- Practical and versatile.
- Quick and precise application of the bitumen joint tape.
- Average installation times of 10–15 m/minute.
- Also perfect for use in installations and concrete safety barriers, as per ZTV Asphalt-StB.
Special Advantages:
- Quick and economical processing, particularly on long stretches.
- Optimum joint quality provided by mechanical processing by TOKOMAT®.
- Filling out of breaks e.g. at milled edges.
- Tested in accordance with ZTV Fug-StB.

TOK®-Riegel

TOKOMAT®-processable bituminous compound for the creation and sealing of joints in asphalt surface layers.

Description

TOK®-Riegel consist of a polymer-modified, binder-containing compound. The specific composition of the raw materials and the high binder content ensure an effective and durable join. TOK®-Riegel fulfill all the requirements stipulated in ZTV Asphalt StB and ZTV Fug-StB for compounds used to create joins on asphalt layers.

Usage

TOK®-Riegel are used to create joints for asphalt road construction. Joins are created when a connection is made between asphalt layers with different properties, or asphalt layers and other materials, e.g. fitted components made of concrete or steel. The material is processed in a heated, malleable state, and fits optimally into any existing breaks.

Typical Product Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Unit</th>
<th>Results</th>
<th>Requirements according to TL Fug-StB 01 as a rail joint compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing temperature PT</td>
<td>°C</td>
<td>~ +80 (~ +176)</td>
<td>Manufacturer's data</td>
</tr>
<tr>
<td>Density at 25 °C (+77 °F)</td>
<td>g/cm³</td>
<td>1.327</td>
<td>≮ Manufacturer's data</td>
</tr>
<tr>
<td>Ring and ball softening point</td>
<td>°C</td>
<td>≮ +16 (+29.6)</td>
<td>≮ 85</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>mm</td>
<td>≮ 50</td>
<td>≮ 50</td>
</tr>
<tr>
<td>Ductility</td>
<td></td>
<td>0.0</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Ring and ball softening point after thermal ageing</td>
<td>°C</td>
<td>≮ +14 (+27.6)</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Cone penetration after thermal ageing</td>
<td>mm</td>
<td>0.0</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Volume change after thermal ageing</td>
<td>%</td>
<td>≮ 0.3</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Station and adhesive strength at -16 °C (+4°F)</td>
<td>mm</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Re-appearance (five)</td>
<td>%</td>
<td>0.0</td>
<td>Provide test value</td>
</tr>
<tr>
<td>After ageing (five)</td>
<td>%</td>
<td>0.0</td>
<td>Provide test value</td>
</tr>
</tbody>
</table>

1) TOKOMAT® temperature setting 80 °C – 100 °C (+176 °F à +212 °F)

Tested as fusible joint tape according to TL/TP Fug-StB.
Tested as track joint compound according to TL/TP Fug-StB.
Tested according to TLbitFug 82.

Application

Preparing the joint edge
Prepare the dry and clean joint edge with TOK®-SK Primer and air dry it. It is imperative to use the primer. Only use the primer recommended by us, since the TOK®-Riegel compound and the TOK®-SK Primer form a combined system.

Processing the TOK®-Riegel
The material is heated in the TOKOMAT® to a temperature of approx. +80 °C to +100 °C (+176 °F to 212 °F). TOKOMAT® is applied to the joint edge and set accordingly. The compound is then applied to the edge in the required dimensions. In areas containing breaks etc., the speed should be adjusted so that the uneven edges can be completely filled out.

Ordering Information & Packaging

TOK®-Riegel are delivered as bars weighing approx. 2 kg (26 bars) in delivery units of approx. 52 kg per carton.

The delivery unit per pallet is 8 cartons, i.e. approx. 416 kg total weight per pallet.

Storage

Cartons containing TOK®-Riegel must be stored with nothing on top of them and in a cool place in summer.
SEALANT COMPOUNDS
hot processable

TOK®-Sil Resist
Hot-processable, stable bituminous pouring compound for use in JGS (manure/sluiry/silage effluent) plants, Type N2.

TOK®-Melt N2
Hot-processable, bituminous pouring compound for joints in concrete and asphalt, Type N2.

TOK®-Melt N1
Hot-processable, bituminous pouring compound for joints in concrete and asphalt, Type N1 (elastic).

TOK®-Sil Resist
Hot-processable, stable bituminous pouring compound for use in JGS (manure/sluiry/silage effluent) plants, Type N2.

TOK®-Melt N2
Hot-processable, bituminous pouring compound for joints in concrete and asphalt, Type N2.

TOK®-Melt N1
Hot-processable, bituminous pouring compound for joints in concrete and asphalt, Type N1 (elastic).

REINAU®
Hot pouring compounds
- REINAU®-Plastic Resin Primer
- REINAU®-Crack Pouring Compound 1.25
- REINAU®-Pavement Pouring Compound
- REINAU®-SNV 164 1.2
- REINAU®-Rail Joint Pouring Compound

MELTOMAT®
Mini-melter.
Pouring compounds / hot-processable and stable of bitumen, polymer components and other pound. Because of its special composition hot-processable bitumen-based joint com-

Special Advantages:
- Stable - suitable as a system solution for horizontal and vertical joints.
- Bitumen-based and carbonate-free.
- Long-term resistance to fermentation acid and silage liquors in accordance with the DBI testing programme
- Excellent recovery capacity.
- Suitable for new construction and for maintenance – can bear loads immediately after installation and cooling.
- Ideal material behaviour for urgent repair work.
- Very good adhesion to asphalt, concrete and steel.
- Complies with DIN EN 14188-1, Type N2.

TOK®-Sil Resist

Bituminous, acid-resistant and low-carbonate joint pouring compound for horizontal and vertical application.

Description

TOK®-Sil Resist is a single-component, hot-processable bitumen-based joint com-

Usage

TOK®-Sil Resist is used predominantly in areas with a high requirement for chemi-

Typical Product Properties

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>kg/l</td>
<td>approx. 1.05 (21 °C / 70 °F)</td>
</tr>
<tr>
<td>Ring and ball softening point</td>
<td>%</td>
<td>&gt; 85 / 150</td>
</tr>
<tr>
<td>Elastic resilience</td>
<td>%</td>
<td>approx. 40 (21 °C / 70 °F)</td>
</tr>
</tbody>
</table>

Application

General remarks on implementation

As a rule, the joint compound should only be installed in dry weather and at joint edge surface temperatures of > 0 °C (32 °F). In lower-temperature conditions, special measures may have to be taken.

Preparation of the joints

The contact surfaces may be concrete, asphalt and/or steel. The contact surfaces must be dry, clean, and free of loose components and separating substances. Concrete must be at least 7 days old and have reached at least 70 % of the 28-day solidity at the time of joining. Coated surfaces may have to be pretreated accord-

Ordering Information & Packaging

TOK®-Sil Resist is delivered in bar form. The processing tools (SEALOMAT®) are available on request.

Storage

TOK®-Sil Resist can be stored for at least 3 years after date of manufacture when tightly sealed in its original carton.

www.denso.de
Special Advantages:

- Economical because of practical delivery units and exact divisibility into portions.
- Can be used as joint sealant between asphalt and concrete surfaces and between concrete slabs.
- Fulfils the requirements of TL/TP Fug-StB.
- Complies with the requirements of DIN EN 14188-part 1, type N2.

**TOK®-Melt N2**

Hot-processable bituminous pouring compound for joints in asphalt and concrete.

**Usage**

TOK®-Melt N2 delivery form has been consciously chosen to enable a particularly practical and therefore economical use of material. This advantage is particularly noticeable in smaller-surface applications, e.g. maintenance measures or small-volume construction work.

Areas of application are road surfaces and landscaping with reinforcements made of:

- asphalt
- concrete
- concrete slabs

TOK®-Melt N2 can be divided into portions and provides a solution tailored to the actual amount of material required. This removes the need for work-intensive splitting of the normally commercially available large containers. Conversely, the expense of melting too much material is avoided.

A change in the material behaviour caused by multiple melting is avoided by exact portioning.

**Typical Product Properties**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Unit</th>
<th>Lower measurement</th>
<th>Upper measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing temperature</td>
<td>°C (°F)</td>
<td>+150 to +160 (+302 to +320)</td>
<td></td>
</tr>
<tr>
<td>Density at 20°C</td>
<td>g/cm³</td>
<td>approx. 1.20</td>
<td>Maximum/minimum</td>
</tr>
<tr>
<td>Ring and ball softening point</td>
<td>°C(°F)</td>
<td>+192 (+375.6)</td>
<td>≥ 85</td>
</tr>
<tr>
<td>Cone penetration</td>
<td>1/10 mm</td>
<td>54</td>
<td>58 - 65</td>
</tr>
<tr>
<td>Elastic resilience</td>
<td>%</td>
<td>50</td>
<td>14 - 90</td>
</tr>
<tr>
<td>Volume change after thermal ageing</td>
<td>%</td>
<td>- 0.3</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Ring and ball softening point after thermal ageing</td>
<td>°C(°F)</td>
<td>+194 (+380.2)</td>
<td>Provide test value</td>
</tr>
<tr>
<td>Elastic recovery after thermal ageing</td>
<td>%</td>
<td>- 49</td>
<td></td>
</tr>
<tr>
<td>Dilatation and adhesive strength at -20°C</td>
<td>-4°F</td>
<td>S</td>
<td>≤ 0.75</td>
</tr>
<tr>
<td>Tensile after ageing (First)</td>
<td>mm</td>
<td>0.06</td>
<td>≤ 0.75</td>
</tr>
<tr>
<td>Tensile after ageing (Final)</td>
<td>mm</td>
<td>0.20</td>
<td>≤ 0.75</td>
</tr>
<tr>
<td>Flexural strength at -20°C (N/mm²)</td>
<td></td>
<td>0.34</td>
<td>≤ 0.75</td>
</tr>
<tr>
<td>Flexural strength at -20°C (N/mm²) after ageing</td>
<td></td>
<td>0.20</td>
<td>≤ 0.75</td>
</tr>
</tbody>
</table>

**Application**

Processing the joints

The joints must be clean and dry. Any dirt that has attached itself, loose material etc. must be thoroughly removed. A primer (CORRISOL®, K) is imperative as stipulated by ZTV Fug-StB.

Processing of the pouring compound

Pour a pre-calculated amount of TOK®-Melt N2 in portions into a suitable melting container (e.g. MELTOMAT®, K) and melt it at approx. +170 °C (+338 °F). Then pour the melted compound into the prepared joints using suitable pouring tools. For deeper joints, work in two stages. On traffic surfaces, do not pour as far as the upper edge of the road. TOK®-Melt N2 should be melted a maximum of twice and should not be heated above +180 °C (+356 °F); otherwise important material properties could be lost. Use an indirectly heated mixing kettle with a horizontal axle.

**Ordering Information & Packaging**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Delivery Form</th>
<th>Package Contents</th>
<th>Article No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Melt N2</td>
<td>24 cubes à 700 g / 16.8 kg per carton</td>
<td>408 cubes per pallet (336 kg)</td>
<td>181 18 476</td>
</tr>
<tr>
<td>TOK®-Melt N2</td>
<td>Carton 5.5 kg</td>
<td>80 cartons per pallet (405 kg)</td>
<td>180 72 538</td>
</tr>
<tr>
<td>TOK®-Melt N2</td>
<td>Carton 11 kg</td>
<td>40 cartons per pallet (202 kg)</td>
<td>180 72 533</td>
</tr>
<tr>
<td>TOK®-Melt N2</td>
<td>Carton 26 kg</td>
<td>15 cartons per pallet (104 kg)</td>
<td>182 09 077</td>
</tr>
<tr>
<td>CORRISOL® K</td>
<td>10 litres metal container</td>
<td>192 60 384</td>
<td></td>
</tr>
</tbody>
</table>

**Storage**

Store the carton(s) in a cool and dry place. Protect from direct sunlight. Under these conditions, TOK®-Melt N2 can be stored practically indefinitely.
TOK®-Melt N1

TOK®-Melt N1 is an elastic hot pouring compound on the basis of polymer-modified bitumen.

Description

TOK®-Melt N1 is used to cast horizontal and slightly inclined joints on concrete and asphalt road surfaces with little or no traffic load. This compound is particularly suitable for joints in bridge construction between the bridge cap and the road surface.

Typical Product Properties

- **Type**: Plasto-elastic hot pouring compound
- **Binder**: Polymer-modified bitumen
- **Density**: approx. 1.15 g/cm³
- **Application temperature**: approx. +160 to +180 °C (+320 to +356 °F) (DO NOT overheat!)
- **Consumption**: approx. 1.15 kg per litre of filling area
- **Colour**: black
- **Application temperature**: approx. +160 to +180 °C (+320 to +356 °F) (DO NOT overheat!)
- **Density**: approx. 1.15 g/cm³
- **Basis**: Polymer-modified bitumen
- **Type**: Plasto-elastic hot pouring compound

Special Advantages:
- Fulfills the requirements of DIN EN 14188-1, Type N1.
- Fulfills the requirements of the current TL/TP Fug-StB (elastic).
- Very good plasto-elastic properties.
- Type N1 joint compounds can be used for changes to the joint gap width of up to 35%.

Application

All work must be carried out in accordance with the current ZTV Fug-StB.

**Casting depth**

For hot pouring compounds, the casting depth should be 1.5 times the joint width, but at least 12 mm.

Preconditions

The road surface on which casting is to be done must be kept free of traffic while the work is being carried out. Work may only be carried out in dry weather and at a surface temperature of > +5 °C (+41 °F) on the structural component. At temperatures between +2 °C (+35.6 °F) and +5 °C (+41 °F), work can be continued if appropriate additional measures have been taken. The subsurface should be dry. Concrete should be at least 14 days old. The joint edges should be dust-free and should not contain any substances which act as separating agents. Casting should be carried out as shortly as possible before the road is opened to traffic.

Preparation of the joint gaps

If joint filling is present, it must be removed as far as the planned casting depth without harming the joint edges. Persistent remains of pouring compound do not normally impair the durability of the new pouring compound, as long as there is no incompatibility. A brushing machine should be used for cleaning. Hot air pressure tools should be used if artificial drying or pre-warming of the filling area is needed.

Insertion of the underfilling/prime

The underfill substance must be inserted deeply enough (without damage) for the necessary casting depth to be achieved. TOK®-S Primer is applied with a brush or sprayer and should form a film completely covering the edges of the filling area. No excess liquid should gather on the underfilling. The primer must be completely dried through before the joint compound is applied. The drying time is dependent on climatic conditions and can be between 30 minutes and several times this amount. If there is a longer gap between applying the primer and the compound, it may be necessary to fine-clean the joints again. The use of TOK®-S Primer is generally recommended.

Melting

Melting of the pouring compound should take place in a double-walled melting kettle with stirrer, cover and indirect heat installation. The heating process should be carried out slowly, with the first filling reaching approx. 1/3 of the total volume. The prescribed casting temperature at no point be exceeded by more than +30 °C (+86 °F); otherwise separation and/or disintegration of the pouring compound can occur. This can render the material unusable. If the compound cannot be processed the same day, the kettle should be completely emptied. Cooled TOK®-Melt N1 compound may only be melted a maximum of twice.

Joint casting

Casting machines for hot casting should have a feed pump. Normally, the joint filling area is fabricated in a single step. Depending on the filling cross-section, it is also possible to cast in two steps, whereby the surface of the first layer must not be contaminated. Casting can be done manually in exceptional cases if the construction elements are highly inaccessible or for small residual parts of the total project. The joints must be filled without air pockets. Residues must be scuffed off without impairing the adhesion to the joint edges. Superfluous material should not be removed in a hardened state.

Melting

Melting of the pouring compound should take place in a double-walled melting kettle with stirrer, cover and indirect heat installation. The heating process should be carried out slowly, with the first filling reaching approx. 1/3 of the total volume. Then more material can be added to the liquid compound. The melting temperature must be maintained with continuous stirring. The prescribed casting temperature must at no point be exceeded by more than +30 °C (+86 °F); otherwise separation and/or disintegration of the pouring compound can occur. This can render the material unusable. If the compound cannot be processed the same day, the kettle should be completely emptied. Cooled TOK®-Melt N1 compound may only be melted a maximum of twice.

Joint casting

Casting machines for hot casting should have a feed pump. Normally, the joint filling area is fabricated in a single step. Depending on the filling cross-section, it is also possible to cast in two steps, whereby the surface of the first layer must not be contaminated. Casting can be done manually in exceptional cases if the construction elements are highly inaccessible or for small residual parts of the total project. The joints must be filled without air pockets. Residues must be scuffed off without impairing the adhesion to the joint edges. Superfluous material should not be removed in a hardened state.

Ordering Information & Packaging

<table>
<thead>
<tr>
<th>Container form</th>
<th>Content</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Melt N1</td>
<td>27 kg/24 cartons per pallet</td>
<td>100.722.80</td>
</tr>
<tr>
<td>TOK®-S Primer</td>
<td>10 litres</td>
<td>102.02.840</td>
</tr>
</tbody>
</table>

Storage

Store the container upright and protect from direct sunlight. Do not stack the pallets on top of each other. It is imperative to protect opened pallets from moisture.
REINAU®-Hot Pouring Compounds

REINAU®-Plastic Resin Primer
REINAU®-Plastic Resin Primer is a single-component, polymer-modified synthetic resin solution for priming asphalt and concrete joint edges. REINAU®-Plastic Resin Primer is used as a primer on concrete and asphalt edges for REINAU®-SNV 164 (Type N2) and REINAU®-Track Joint Pouring Compound. The processing instructions stipulated in ZTV Fug-StB must be observed.

Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density at +20 °C</td>
<td>g/cm³</td>
<td>approx. 0.95</td>
</tr>
<tr>
<td>Flash point</td>
<td>°C</td>
<td>+26 (+78.8)</td>
</tr>
<tr>
<td>Colour</td>
<td></td>
<td>black</td>
</tr>
<tr>
<td>Consistency</td>
<td></td>
<td>liquid (compatible)</td>
</tr>
</tbody>
</table>

REINAU®-Crack Pouring Compound 1.25
REINAU®-Crack Pouring Compound is a hot-casting bitumen compound with plastoeelastic properties. REINAU®-Crack Pouring Compound is used primarily to close cracks in concrete or asphalt traffic-bearing surfaces. Tested in accordance with ZTV Fug-StB.

<table>
<thead>
<tr>
<th>Article no.</th>
<th>Colour</th>
<th>Density at +20 °C</th>
<th>Container</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>black</td>
<td>approx. 1.25 g/cm³</td>
<td>34 kg disposable metal container 100 72 542</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 x 17 kg disposable containers with divider 100 72 541</td>
</tr>
</tbody>
</table>

REINAU®-Pavement Pouring Compound
REINAU®-Pavement Pouring Compound is a bituminous hot pouring compound for paving stone joints. Tested in accordance with ZTV Fug-StB.

<table>
<thead>
<tr>
<th>Article no.</th>
<th>Colour</th>
<th>Density at +20 °C</th>
<th>Container</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>black</td>
<td>approx. 1.25 g/cm³</td>
<td>38 kg disposable metal container 100 72 536</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 x 19 kg disposable containers with divider 100 72 537</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 kg siliconized carton 101 20 733</td>
</tr>
</tbody>
</table>

REINAU®-SNV 164 1.2
REINAU®-SNV 164 is a hot pouring compound on the basis of polymer-modified bitumen. Complies with ZTV Fug-StB and DIN EN 1488-1. REINAU®-SNV 164 joint pouring compound Type N2 is used to cast horizontal and slightly inclined joints in concrete and asphalt traffic-bearing road surfaces.

<table>
<thead>
<tr>
<th>Article no.</th>
<th>Colour</th>
<th>Density at +20 °C</th>
<th>Container</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>black</td>
<td>approx. 1.2 g/cm³</td>
<td>32 kg disposable metal container 100 72 532</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 x 14 kg disposable container with divider 100 72 533</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28 kg siliconized carton 101 20 749</td>
</tr>
</tbody>
</table>

REINAU®-Rail Joint Pouring Compound
REINAU®-Rail Joint Pouring Compound is a plastoeelastic hot pouring compound on the basis of a polymer-modified bitumen. Tested in accordance with ZTV Fug-StB. REINAU®-Rail Joint Pouring Compound is used for track joints in paving stones both indoors and outdoors and between asphalt and tracks or concrete and tracks.

<table>
<thead>
<tr>
<th>Article no.</th>
<th>Colour</th>
<th>Density at +20 °C</th>
<th>Container</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>black</td>
<td>approx. 1.35 g/cm³</td>
<td>36 kg disposable metal container 100 72 538</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 x 18 kg disposable container with divider 100 72 539</td>
</tr>
</tbody>
</table>

MELTOMAT®
MELTOMAT® is the “piccolo” of casting kettles. It is particularly suitable for an economical melting of TOK®-Melt, the DENSOPouring compound for small-surface and small-volume construction work.

Technical data

- Net capacity: 10 l
- Heated with a propane gas burner (gas is not included in the scope of delivery)
- Weight: 28 kg

www.denso.de
SEALANT COMPOUNDS

cold processable

DENSOLASTIC®-KU
Hand-processable, permanently elastic, vibration and noise dampening pouring compound for manhole covers and similar areas.

DENSOLASTIC®-VT
Two-component, fuel resistant cold pouring compounds for joints in surfaces in accordance with the WHG (Water Resources Law).

DENSOLASTIC®-SV
Two-component polyurethane-based cold pouring compound for sensor or induction loop insertion into concrete or asphalt road surfaces.
Polyurethan Compound VT

DENSOLASTIC®-VT

Two-component, fuel-resistant cold pouring compound for joints in asphalt and concrete surfaces in LAU and HBV plants.

Description

The DENSOLASTIC®-VT joint sealing system consists of a two-component polyurethane-based material. The two components (A + B) are mixed at the construction site according to the mixing ratio and then inserted into the joint either directly from the bucket or using a special dispenser gun. The corresponding primer (DENSOLASTIC®-VT Primer) is imperative for application. The pouring compound hardens elastically and is self-leveling.

In accordance with the DIBt approval guidelines, the joint sealing system is resistant to gasoline, aircraft fuel, heating oil, diesel, unused motor and transmission oils, mineral acids up to 20%, inorganic lyes, watery solutions of inorganic salts, biodiesel and AdBlue (35% carbamide solution in catalysts).

Usage

DENSOLASTIC®-VT is used particularly for joints in surfaces which must be sealed in a media-resistant way according to the Water Resources Law or other regulations. DENSOLASTIC®-VT Primer is imperative for application. The pouring compound hardens elastically and is self-leveling.

Typical Product Properties (at +23 °C (+73.4 °F))

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (A+B, hardened)</td>
<td>g/cm³</td>
<td>approx. 0.9</td>
</tr>
<tr>
<td>Shrinkage (A+B, mixed)</td>
<td>%</td>
<td>approx. 0.3</td>
</tr>
<tr>
<td>Color</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Porosity (void bulk)</td>
<td>%</td>
<td>approx. 6</td>
</tr>
<tr>
<td>Hardening time</td>
<td>h</td>
<td>10</td>
</tr>
</tbody>
</table>

Special Advantages:

- Approval for LAU (storage, filling and transfer) and HBV (manufacture, treatment and usage of water-polluting substances) plants (contact surfaces: concrete, asphalt, semi-rigid surface courses and stainless steel).
- Only one primer for all contact surfaces.
- Officially proven applicability to asphalt surfaces.

Application

The instructions and regulations stipulated in approval guidelines must always be observed. Application must be carried out by a professional firm as defined by the WKG.

Measuring the joints

The measurements and distances between the joints must be measured according to the expected load and the contact surfaces. On traffic-bearing surfaces, the joints must normally not be filled up to the upper edge, to avoid tyre contact etc. which would cause undue strain. Concrete walls must always have an edge break (chamfer) in accordance with the guideline Annex. In these areas, the joint filling height should be approx. 3 - 6 mm under the joint upper edge. The width is normally between 8 mm and 20 mm, and the height of the joint filling at the contact surfaces of concrete, steel and semi-rigid coatings is between 6 mm and 12 mm. The height of the joint filling must always be approx. 0.8 - 1.0 times the joint width on these contact surfaces.

Important note:

The applicability of joint sealants in traffic-bearing asphalt surfaces subject to the Water Resources Law must always be proven. The applicability of DENSOLASTIC®-VT has been proven. This means: In these areas, the joint sealing system must be inserted over the entire surface layer height. Example: In a 4 cm-thick asphalt sealing layer, the joints must be cut 4 cm deep and must be cast 4 cm deep. The primer (DENSOLASTIC®-VT Primer) must always be applied as usual, but over the entire depth of the joint edges. A separating layer (e.g. silicon paper) must be laid on the joint bottom, so that the sealant only adheres to the edges and not to the joint bottom.

For joints with frequent media impact, e.g. at petrol stations, special processing guidelines according to the DIBt approval regulations must be observed. In general, joints in such areas must be treated as repair joints according to DIN 52 460 and regularly inspected.

Preparation of the joints (joint edges)

The best connection with the joint filling and/or primer system is provided by cut edges. The joint edges must be clean and dry. A back filling line (e.g. polyethylene foam, or not sand or chipping) must be inserted into the joint to exclude “three-side adhesion”. The back filling line must not be water-absorbent: water uptake ≤ 3%.

The applicability of joint sealants in traffic-bearing asphalt surfaces subject to the Water Resources Law or other regulations.

Ordering Information & Packaging

DENSOLASTIC®-VT Primer is delivered in 1.0 litre containers. The sealant can be delivered for at least 6 months after date of manufacture.

Storage

Tightly sealed in its original container. It is imperative to avoid heating over +40 °C (+104 °F) and frost impact at the construction site as well:

Store the container in a well-ventilated location. Under these conditions, DENSOLASTIC®-VT can be stored for at least 9 months after date of manufacture.

Under the same conditions, DENSOLASTIC®-VT Primer can be stored for at least 6 months after date of manufacture.
DENSOLASTIC®-SV

Two-component polyurethane-based cold pouring compound for sensor or induction loop insertion into concrete or asphalt road surfaces.

Description

DENSOLASTIC®-SV is a two-component polyurethane resin compound with a high final hardness level (Shore hardness D, approx. 75). The colour of the compound is black. The pre-set material consistency enables homogeneous application without cavities.

DENSOLASTIC®-SV is used to fill slits in asphalt or concrete surfaces. Embedded in the pouring compound in the slits are (piezo) sensors which are inserted into the road surface, e.g. for speed measurements. DENSOLASTIC®-SV can be used both for repairs to existing measuring points and for the creation of new ones. The primer DENSOLASTIC®-SV Primer ensures perfect adhesion to the contact edges.

Typical Product Properties (at +21 °C (+69.8 °F))

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td></td>
</tr>
<tr>
<td>Density A+B (hardened)</td>
<td>1.45 kg/l</td>
</tr>
<tr>
<td>Colour</td>
<td>black</td>
</tr>
<tr>
<td>Mixing ratio (A:B)</td>
<td>4:1 (parts by weight)</td>
</tr>
<tr>
<td>Pot life</td>
<td>5 - 8 minutes</td>
</tr>
<tr>
<td>Hardening time</td>
<td>approx. 24 hours</td>
</tr>
<tr>
<td>Can be trafficked after</td>
<td>minutes</td>
</tr>
<tr>
<td>Adhesion after application</td>
<td>minutes</td>
</tr>
<tr>
<td>Shore D (hardened)</td>
<td>75 ± 5</td>
</tr>
<tr>
<td>Water uptake</td>
<td>%</td>
</tr>
<tr>
<td>Max. temperature after mixing</td>
<td>°C/°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Advantages:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimum processing viscosity.</td>
<td></td>
</tr>
<tr>
<td>Abrasion resistant.</td>
<td></td>
</tr>
<tr>
<td>Abradable.</td>
<td></td>
</tr>
<tr>
<td>Homogeneous.</td>
<td></td>
</tr>
<tr>
<td>Very good pressure transfer.</td>
<td></td>
</tr>
<tr>
<td>High degree of mechanical resistance.</td>
<td></td>
</tr>
</tbody>
</table>

Application

Preparations before application
The cross-section of the incisions (slits) used to lay sensor technology is normally 18/25 mm (W/D). The incisions must run parallel to each other. The edges must have clean cutting edges.

Preparation of the edges
The edges must be clean and dry. Ideally, the incisions should be blown out using compressed air in order to remove the dust. Before applying the primer, the edges should be masked using masking tape or similar, to prevent contamination.

The system-matched DENSO® is applied completely over the edges when they have been prepared. DENSOLASTIC®-SV Primer black is used on asphalt edges, semi-rigid coatings and metal edges. On metal edges (particularly stainless steel), special pretreatment may be necessary. Any existing corrosion protection layer etc. must be removed. Very smooth surfaces may have to be roughened, e.g. with sandpaper.

After air drying the primer (after approx. 15-30 min.), the pouring compound can be inserted.

Processing the compound
Components A and B are mixed with a special tool (e.g. drill with mixing blade Collomix WK 70) for 1-2 min. at a rotation speed of max. 500 rotations per minute (in order to mix in as little air as possible). Ideally, Component A is applied on its own in advance. The mixed material is cast immediately afterwards. The surface temperature of the slit edges must be +5 °C to +40 °C (+41 °F to +104 °F). It is imperative to observe the dew point.

Any rising air bubbles must be removed (e.g. by painting over with a brush, or by briefly scouring with a gas burner) before the sealant solidifies. The masking tape which was applied before primer application (for visual reasons) must be removed immediately after casting.

Cleaning the tools
The tools and processing equipment can be cleaned using acetone. Already hardened material can be mechanically removed.

Ordering Information & Packaging

DENSOLASTIC®-SV is supplied with the components A and B in one box. The contents of the components A and B corresponds to the determined mixing ratio.

<table>
<thead>
<tr>
<th>Container size</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENSOLASTIC®-SV 2.0 l (A+B components)</td>
<td>102 02 260</td>
</tr>
<tr>
<td>DENSOLASTIC®-SV Primer (black) 1.0 l (one-component)</td>
<td>102 02 389</td>
</tr>
</tbody>
</table>

Storage

Tightly sealed in its original container. It is imperative to avoid heating over +40 °C (+104 °F) and frost impact at the construction site as well.

Store the containers in a well-ventilated place and do not let the material get into the ground. Under these conditions, DENSOLASTIC®-SV can be stored for at least 12 months from the date of manufacture.
DENSOLASTIC®-KU

**Description**

DENSOLASTIC®-KU consists of a pourable, two-component polyurethane-based system and cures to be elastic. The encapsulating compound is temporarily resistant to diesel fuel as well as frost and road salt resistant.

**Usage**

DENSOLASTIC®-KU is used for elastic and vibration damping underlay compound for road manhole covers and has a noise-reducing effect.

**Typical Product Properties**

- Permanently elastic.
- Easy and quick to apply.
- Reduces noise.
- Quick reopening to traffic.
- Long-term resistance to temperatures from -20 °C to +70 °C (-4 °F to +158 °F).
- Resistant to water, salt solution (10%), sodium hydroxide solution (5%) and engine oil (SAE 10W 40).

**Ordering Information & Packaging**

DENSOLASTIC®-KU is delivered in packaging unit sets 0.33 l (A + B). Each box has four containers incl. 4 stirring rods. Other order sizes are available on request. It colour is grey-black.

**Storage**

Store the closed containers at room temperature in a dry and frost-free place. Under these conditions, the material can be stored for at least 12 months from the date of manufacture.

**Special Advantages:**

- Permanently elastic.
- Easy and quick to apply.
- Reduces noise.
- Quick reopening to traffic.

---

**DENSOLASTIC®-KU – Application**

**Eliminate rattling noises quickly and easily**

- **Cleaning**: After opening the manhole cover, clean the supporting edge of any gross contamination.
- **Drying**: Finally, dry the area using a gas flame.
- **Remove any rust**: from the surface of the supporting edge with a steel brush and then wipe dry.
- **Apply the primer**: Pre-coat the support area and inside edge with DENSOLASTIC®-E Primer and let it dry (approx. 5 - 10 min).
- **Install the formwork**: On the inside edge of the cover support, apply TOK®-Band SK 25 x 8 mm with approximately 3-4 mm protrusion.
- **Allow to dry**: Depending on the weather and the temperature, wait approx. 10 to 20 min until the compound has dried but has not yet cured (finger test!).
- **Pour out**: After mixing, the compound is evenly distributed on the support edge.
- **Driving over**: The cover is pressed in by driving over it.
- **Sprinkle with talcum powder**: It is recommended to sprinkle the surface with talcum powder to help prevent the cover sticking to the manhole ring.
- **Put the cover back on**:Then replace the manhole cover. Pay attention here to the correct timing between applying the compound and placing the cover to achieve the desired effect.

---

**Pouring compounds/cold-processable**
Joint seam adhesive
and the appropriate equipment for processing

TOK®-Plast
Bituminous compound for seams in asphalt road surfaces.

PLASTOMAT®-process
Application system for TOK®-Plast.
**TOK®-Plast**

Bituminous, cold-processed compound for seams in asphalt road surfaces.

**Description**

TOK®-Plast is a solvent-containing plastic fibre reinforced compound based on a polymer-improved road bitumen. Suitable fillers lead to a viscous consistency so that there is good wet stability on the edge immediately after the application process. TOK®-Plast is one of the compounds corresponding to the regulations to connect the connecting seams of asphalt surfaces to each other (also see ZTV Asphalt-StB).

**Usage**

Seams form in asphalt road surfaces when installing mix with similar properties in lanes (longitudinal seams) as well as during longer breaks (lateral seams). The appropriately prepared seam edge is coated with TOK®-Plast in the required application quantity according to ZTV Asphalt-StB. This process, for longitudinal seams, is most commonly done mechanically using the PLASTOMAT®. For lateral seams, and similarly small-sized applications, which may also involve other asphalt layers, the application is done using a brush. Due to its good adhesive qualities, TOK®-Plast ensures a highly-durable seam quality.

**Special Advantages:**
- Can be applied without a primer.
- Cold application.
- High wet stability.

**Typical Product Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder</td>
<td>Polymer-modified bitumen</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 1.0 g / cm³</td>
</tr>
<tr>
<td>Solvent</td>
<td>White spirit</td>
</tr>
<tr>
<td>Flash point</td>
<td>-18 °C (+0.4 °F) (DIN 51755)</td>
</tr>
<tr>
<td>Inherent class</td>
<td>A 1</td>
</tr>
<tr>
<td>Mass fraction of volatiles</td>
<td>40 – 50 %</td>
</tr>
<tr>
<td>Softening point of the solid</td>
<td>&gt; +206 °C (+402 °F)</td>
</tr>
<tr>
<td>Wet stability at</td>
<td>+3 °C (+37.4 °F) Stable</td>
</tr>
<tr>
<td>+50 °C (+122 °F)</td>
<td>Stable</td>
</tr>
</tbody>
</table>

**Application**

TOK®-Plast is processed cold.
- Mechanically using the PLASTOMAT® Standard or PLASTOMAT® Mini.
- Manually with a brush or spatula.
- The joint seam is properly prepared and sealed by chamfering or using an edge roller.
- and coated with TOK®-Plast.
- A primer is not required.
- The seam edge must be dry and clean.
- The material does not flow from the edge due to the high wet stability.

**Ordering Information & Packaging**

<table>
<thead>
<tr>
<th>TOK®-Plast</th>
<th>Description</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 kg</td>
<td>Tin container with clamp-ring lid</td>
<td>101 02 511</td>
</tr>
<tr>
<td>45 kg</td>
<td>Metal bucket with clamp-ring lid</td>
<td>102 02 310</td>
</tr>
</tbody>
</table>

**Storage**

In tightly sealed original containers, TOK®-Plast can be stored indefinitely, as long as the solvent cannot escape. The details concerning the storage and handling of the material can be found in the latest safety data sheet.
Sealing seams in asphalt surfaces

Sealing seams in asphalt surfaces is an often underestimated and important work step. If this is not properly done, or if unsuitable materials are used, it can lead to avoidable and costly damage. The treatment of seams is described in detail in the applicable directives, exact definitions can be found in ZTV Asphalt-StB and ZTV Fug-StB. Here, a distinction is made between "seams" and "connections". Seams are formed at the connection between asphalt layers with similar properties. Longitudinal seams, for example, caused by the mechanical installation of lanes in the "fresh on fresh" procedure. Connections are formed at the connection of asphalt layers with different properties, e.g. when installing new mix onto an old blacktop surface in machined areas.

There are two variants specified in the regulations for the creation of seams:
- **Hot process**: where hot-processed materials are injected.
- **Coating** with cold-processed compounds.

A bitumen B 160/220, for example, is sprayed on the edges. A "cold" variant is the use of bituminous materials, such as TOK®-Plast, which is applied mechanically using a PLASTOMAT® or by hand in a prescribed thickness on the seam edge. TOK®-Plast fulfils the requirements of the regulations, the results have been documented in a test certificate by the Landesgewerbeanstalt Bayern (LGA).

The installation of cold processed plastic compounds offers very significant advantages:
- No large equipment, such as cookers, or similar, is needed.
- The plastic compound, particularly when processing mechanically using a PLASTOMAT®, is laid at a prescribed thickness and over the entire surface of the whole seam edge. The PLASTOMAT® device can also be quickly adjusted for various layer thicknesses and different edge heights.
- The plastic compound is stable and can be applied after a slight delay following the installation of the mix.

When spraying the joint edge with hot processed compounds, it cannot be guaranteed that the compound will be distributed evenly. In addition, the mixture is not stable, it can run off the edge and form a puddle on the underlay. At this point there can be an over-enrichment of the bituminous binder or bearer layer.

The ideal combination for all building site conditions.

**TOK®-Plast** is a solvent-based, synthetic fibre-reinforced compound based on a polymer-improved road construction bitumen. Suitable fillers result in a viscous consistency, to ensure excellent "wet stability" at the wall immediately following application.

Further information and downloads can be found at: www.denso.de

**PLASTOMAT®**

Application system for the preparation of seams in asphalt surface layers.

**Traffic safety and driving comfort**

Seams in surface layers are cause by laying asphalt mix with comparable properties in lanes.

The installation of cold processed plastic compounds offers very significant advantages:
- Essential for sustainability, road traffic safety and ride comfort.
- Making seams with TOK®-Plast meet the requirements of ZTV Asphalt-StB.
- TOK®-Plast also has excellent wet stability along with its other outstanding characteristics. The suitability of this process has been shown by drill core analyses.

**Practice-suited equipment**

The PLASTOMAT® range offers you suitable equipment to process TOK®-Plast in road construction.

The self-propelled PLASTOMAT® is fitted with a 4-stroke petrol engine and a gear screw pump. This produces a more even, adjustable and self-running propulsion. In this way a high level of laying performance with a uniform layer thickness is achieved with extremely simple equipment handling. Thanks to the fibre-reinforced, polymer-improved composition of the TOK®-Plast compound, a particularly high wet stability is achieved after application without additional heating being required. TOK®-Plast is supplied by a pump and fed to the distribution nozzle via a hose. Here, the coating of the seam edge is done at the correct height.

**PLASTOMAT® Models**

**Standard**

The ideal combination for all building site conditions.

**TOK®-Plast**

Suitable fillers result in a viscous consistency, to ensure excellent "wet stability" at the wall immediately following application.

**Mini**

The manoeuvrable device for tight construction sites.

**TOK®-Plast** compound complies with regulations governing the joining of bituminous surface seams to one other (see also "ZTV Asphalt-StB").

Further information and downloads can be found at: www.denso.de

---

**PLASTOMAT®** is a device which has been specially designed for the TOK®-Plast compound and suitable for use on a construction site.

Take advantage of its advantages. We strongly advise that you do not use other cold compounds available on the market with the PLASTOMAT®. Otherwise, we cannot accept any warranty claims for any damage to the equipment or poorly executed construction performance.

---

**PLASTOMAT® Models**

**Standard**

The ideal combination for all building site conditions.

**TOK®-Plast**

Suitable fillers result in a viscous consistency, to ensure excellent "wet stability" at the wall immediately following application.

**Mini**

The manoeuvrable device for tight construction sites.

**TOK®-Plast** compound complies with regulations governing the joining of bituminous surface seams to one other (see also "ZTV Asphalt-StB").

---

**PLASTOMAT®** is a device which has been specially designed for the TOK®-Plast compound and suitable for use on a construction site.

Take advantage of its advantages. We strongly advise that you do not use other cold compounds available on the market with the PLASTOMAT®. Otherwise, we cannot accept any warranty claims for any damage to the equipment or poorly executed construction performance.

---

**PLASTOMAT® Models**

**Standard**

The ideal combination for all building site conditions.

**TOK®-Plast**

Suitable fillers result in a viscous consistency, to ensure excellent "wet stability" at the wall immediately following application.

**Mini**

The manoeuvrable device for tight construction sites.

**TOK®-Plast** compound complies with regulations governing the joining of bituminous surface seams to one other (see also "ZTV Asphalt-StB").

---

**PLASTOMAT®** is a device which has been specially designed for the TOK®-Plast compound and suitable for use on a construction site.

Take advantage of its advantages. We strongly advise that you do not use other cold compounds available on the market with the PLASTOMAT®. Otherwise, we cannot accept any warranty claims for any damage to the equipment or poorly executed construction performance.
# SPECIAL PRODUCTS
for road maintenance

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description and Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENSOLASTIC®-EM/-EM-G</td>
<td>Two-component durable and permanently elastic plastic mortar for dynamically-loaded joints.</td>
</tr>
<tr>
<td>TOK®-Crete 45 V2.0</td>
<td>High early strength repair mortar for the restoration of concrete surfaces.</td>
</tr>
<tr>
<td>TOK®-Dur</td>
<td>Two-component coating compound to level out unevenness in asphalt and concrete surfaces.</td>
</tr>
<tr>
<td>TOK®-Rep</td>
<td>Innovative, two-component cold-processed repair compound. Particularly suitable for the repair of surface damage. For example, scores after a punctured tyre in porous and conventional asphalt road surfaces.</td>
</tr>
<tr>
<td>TOK®-SK Rissband and TOK®-Band Spezial Rundstrang</td>
<td>Product solutions to treat cracks in road construction.</td>
</tr>
</tbody>
</table>
DENSOLASTIC®-EM/-EM-G

Two-component durable and permanently elastic plastic mortar for dynamically-loaded joints.

Description
DENSOLASTIC®-EM consists of a two-component polyurethane-based material with a filler content. The material can be delivered as a pourable version (EM-G) or as a spatula version (EM).

Usage
DENSOLASTIC®-EM is used for joints on components which are subject to high levels of dynamic and static loading. A usage example is its use as a joint mortar in manhole construction in heavily loaded roads, particularly with truck traffic. Due to its elasticity, DENSOLASTIC®-EM is noise and vibration dampening.

Typical Product Properties (at +21 °C (+69.8 °F))

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pot life (temperature-dependent)</td>
<td>min</td>
<td>approx. 15</td>
</tr>
<tr>
<td>Density</td>
<td>g/cm³</td>
<td>approx. 1.18</td>
</tr>
<tr>
<td>Shore hardness A</td>
<td>-</td>
<td>60 – 80</td>
</tr>
<tr>
<td>Load capacity after installation*</td>
<td>N/m²</td>
<td>approx. 1</td>
</tr>
<tr>
<td>Volume change during freeze-thaw cycles</td>
<td>%</td>
<td>&lt; 2</td>
</tr>
</tbody>
</table>

*Hardening to the point where it can be loaded is highly temperature-dependent and can take longer at lower temperatures!

Special Advantages:
- Permanently elastic.
- Vibration damping.
- For highest levels of static and dynamic loads.
- High resistance against frost and deicing salt.
- Quick reopening to traffic possible.
- The material can be delivered as a pourable version (EM-G) or as a spatula version (EM).

Application

Prepare the substrate: Coat the dry and clean substrate with DENSOLASTIC®-E Primer and allow it to dry. The primer is required for example if a liquid-tight connection is required between the elastomer mortar and the contact surfaces. Before applying the support ring, or similar, the space must be installed as the mortar cannot bear a load initially. The spacer must be as elastic as the mortar, otherwise it must be removed later. The cavities left in this case must also be closed with the elastomer mortar.

Processing the DENSOLASTIC®-EM

The outside temperature and the temperature of the components must be above +5 °C (+41 °F). Pour the complete contents of the component B into the component A container and mix the combined components together thoroughly with an electric stirrer with at least 500 rpm. The stirring time for the small containers is at least 3 minutes, for the large containers, at least 4 minutes.

Use a trowel, or similar, to work the elastomer mortar quickly, for the free-flowing material, pour it in place. Before casting, place a separating film made from PE or similar between the mortar and the formwork. The processing device should then either be immediately cleaned with acetone, or mechanically cleaned once the material has hardened. At room temperature (approx. +23 °C (+73.4 °F)) sufficient hardness will have been achieved after an hour so that the traffic can normally then be released. At lower temperatures, the material takes longer to harden.

Ordering Information & Packaging

DENSOLASTIC®-EM is delivered in separate containers of component A and component B. The contents of the container correspond to the suitable mixing ratio for components A and B. The colour is red (with black pigmentation).

Storage

Tightly sealed in its original container: Avoid heating above +40 °C (+104 °F) and the effects of frost. Store containers in a well ventilated space and prevent the material from entering the ground. Under these conditions, DENSOLASTIC®-EM can be stored for at least 12 months from the date of manufacture.
**Rehabilitation of manhole joints using elastomer mortar (pourable)**

**Shaft damage**
A common sight on our roads. A sunken shaft due to the mortar joint failing.

**Lift up the manhole ring**
Lift up the shaft using a shaft lifting device.

**Adjust the height**
Adjust the height to the required height level.

**Prepare the formwork**
The tube formwork must be protected from direct contact with the casting material, e.g. using a foil sheet.

**Install the formwork**
Install the formwork in the shaft.

**Apply the pouring compound**
After mixing, cast immediately. You must ensure that the manhole ring is completely supported underneath by the pouring compound.

**The elastomer joint is finished**
Perfect undercast manhole frame. Traffic can be released after the manhole cover is replaced.

**Allow to harden**
After approximately 1 hour, the material is sufficiently hardened.

---

**Manhole shaft joint problem**
If possible, you should lift up the sunken manhole shaft using a shaft lifting device.

In this case, however, the outer edge area of the road was so damaged that it needed to be cut out.

**Apply the mortar**
Then you can begin to apply the mortar. The pot life is around 20 minutes, depending on the temperature.

**Allow to harden**
After approximately 15 minutes, any spacers used (wooden wedges in this case) must be removed. The resulting cavities must also be filled with elastomer mortar.

**The elastomer joint is finished**
After approximately 15 minutes, any spacers used (wooden wedges in this case) must be removed. The resulting cavities must also be filled with elastomer mortar.

---

**Clean the joint space**
Clean the joint space and, if necessary, prime using DENSOLASTIC®-E Primer.

**Comp. A + B**
2-component polyurethane composition.

**Mix the components:**
Then both components A and B are mixed together. For this, the contents of the component B container are added to the component A container. It is important to ensure sufficient mixing time, approximately 3 to 4 minutes.

**Apply the primer**
In the next step, all contact surfaces must be cleaned of the mortar. To guarantee a secure bond to the concrete, we recommend priming using DENSOLASTIC®-E Primer.

**Check the height**
After successful application, the manhole ring is replaced. It is important that the manhole is supported at the correct height with a spacer of a holding device, as the fresh mortar cannot support the manhole frame and it would otherwise sag.

**Holding device**
A manhole holding device can be seen in the picture which removes the need to use spacers.

**The elastomer joint is finished**
After approx. 1 hour the material is hard enough that the traffic can be released again. At lower temperatures, this can take 1.5 to 2 hours.
DENSOLASTIC®-EM

Long terms experience in praxis.

1999
Installation
Freimersdorfer Weg, Cologne
Previously, the manhole needed to be repaired twice a year as a conventional joint mortar was used.

2010
Measurement
Even after 10 years, the joint is perfect and the material hardness is still constant.

DENSOLASTIC®-EM – Advantages

Tested by the IKT (Institute for Underground Infrastructure GmbH).

Compression tests with restricted transverse strain:

Here the force-deformation behaviour of the material was tested at various temperatures and different loading rates.

Summary / practical applicability
The older the sample was, the smaller the deformation and therefore the higher the tension. The material behaved in the same way with increased material temperature and with higher loading rates. As the loading rates on the road are normally very high and intensive, the deformation in this case is also small.

Tests for shrinkage and swelling behaviour:

After 24 hours, the maximum value for swelling was approximately 0.1% and for shrinkage was approximately 0.07% after 28 days.

Summary / practical applicability
This means that the calculated value for shrinkage was significantly below the limit value for cement-bonded casting systems. For swelling, there is no limit value specified, however, the value of 0.1% is negligible. This means that the elastomer mortar does not swell or shrink after installation and the joint height remains unchanged.

Adhesion tests on coated bearing rings made of concrete:

Adhesion tests were carried out with and without primer. The mean value without primer was 0.38 N/mm², with primer 0.64 N/mm².

Summary / practical applicability
Despite the relatively poor quality of the concrete, good adhesion to the substrate could be achieved. When Primer E was used, the adhesive bond strength could even be almost doubled. Therefore, the shear forces can be absorbed as a joint is ensured between the plastic mortar and the contact surfaces.

Testing the freeze/thaw resistance with the CDF test

The mean weathering after 28 days of freeze/thaw cycles was 334 g/m² and a 95% quartile of 419 g/m² - this is significantly below the permissible limits of 1500 g/m² as the mean or 1800 g/m² for the 95% quartile.

Summary / practical applicability
Even harsh winters and enormous effects of road salt do not damage the material.

Testing prisms under cyclical loading

To test what effect the load frequency has on the deformation behaviour of the material, the test samples were subjected to cyclical loads in a fatigue testing machine.

Summary / practical applicability
Independently of the load frequency (1, 3 and 5 Hz), no significant relationship could be determined between the load frequency and the deformation. An increase in the load frequency caused no change to the deformation behaviour. The recovery of the test specimen was approximately 99% in all samples, i.e. with cyclical loading only negligible residual deformations remained.

Creep tests on prisms over 72 hours (with and without freezing pre-treatment)

To test the creep behaviour of the material, the test prisms were loaded with constant tension over 72 hours.

Summary / practical applicability
This trial simulates the case that, for example, a HGV is parked for a long period of time on a manhole cover. The samples (with and without freezing pre-treatment) had an almost identical deformation behaviour after 72 hours. After initial deformation occurred, there were only small deformations until the final deformation was reached. After the samples were removed, these recovered to approximately 99%, so that even after a creep load, only very small residual deformations remained.
Special products for road maintenance

**TOK®-Crete 45 V2.0**

High early strength repair compound for rehabilitation of concrete surfaces or highly-loaded industrial floors.

### Description

**TOK®-Crete 45 V2.0** is a single-component, hydraulically setting mortar with selected aggregates. Along with its high early strength, **TOK®-Crete 45 V2.0** has a very good resistance to freeze/thaw loading with and without de-icing agents. The traffic can be released after 45 to 60 minutes at +20 °C (+68 °F).

### Usage

The material was developed particularly for slotted channels in traffic surfaces. **TOK®-Crete 45 V2.0** can also be used to secure railing posts as well as for fastening under-floor lighting in airports. Damage in highly-loaded industrial floors can be repaired without needing to be cordoned off for long periods of time.

### Typical Product Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit Result Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young's modulus</td>
<td>N / mm² &lt; 30,000 at + 23 °C (+73.4 °F)</td>
</tr>
<tr>
<td>Compression strength</td>
<td>class R4</td>
</tr>
<tr>
<td>Adhesive bond</td>
<td>≥ 2.0 MPA</td>
</tr>
<tr>
<td>Chloride ion content</td>
<td>≤ 0.05 %</td>
</tr>
<tr>
<td>Compressive strength class</td>
<td>D-51371 Leverkusen, EN 1504-3 :2005</td>
</tr>
<tr>
<td>Restrained shrinkage /</td>
<td>≥ 2.0 MPA</td>
</tr>
<tr>
<td>Capillary Absorption</td>
<td>≤ 0.5 kg/m²/h</td>
</tr>
<tr>
<td>Skid resistance</td>
<td>class</td>
</tr>
<tr>
<td>Reaction to fire</td>
<td>class A1</td>
</tr>
<tr>
<td>Temperature stability</td>
<td>-10 °C to +30 °C (+14 to +86 °F)</td>
</tr>
<tr>
<td>Pressure resistance after 8 hours</td>
<td>N / mm² &gt; 45 at - 5 °C* (+23 °F)*</td>
</tr>
<tr>
<td>Pressure resistance after 2 hours</td>
<td>N / mm² ≥ 16 at + 23 °C (+73.4 °F)</td>
</tr>
<tr>
<td>Pressure resistance after 8 hours</td>
<td>N / mm² ≥ 45 at + 23 °C (+73.4 °F)</td>
</tr>
<tr>
<td>Processing time minutes</td>
<td>approx. 10 – 15 at + 23 °C (+73.4 °F)</td>
</tr>
<tr>
<td>Bulk density kg / dm³</td>
<td>approx. 2.20 at + 23 °C (+73.4 °F)</td>
</tr>
<tr>
<td>Temperature when processing</td>
<td>+15 to +20 °C (+59 to +68 °F)</td>
</tr>
<tr>
<td>Environmental conditions:</td>
<td>+25 °C (+77 °F):</td>
</tr>
<tr>
<td>Processing guidelines are</td>
<td>necessary. If the ambient temperature falls, the mixing time should be increased.</td>
</tr>
</tbody>
</table>
| Processing temperatures < +5 °C | +41 °F): At low temperatures, the **TOK®-Crete 45 V2.0**, water and the mixer and accessories should be pre-heated to room temperature (+15 to +20 °C (+59 to +68 °F)). At temperatures below freezing, or if the substrate is frozen, the contact surface should be additionally warmed using a heat gun, or similar. After installation, the damaged area should be protected with an insulating material for 1 to 3 hours. Processing temperatures > + 25 °C (+77 °F): Avoid direct sunlight. **TOK®-Crete 45 V2.0**, water and equipment should be held at room temperature (+15 to +20 °C (+59 to +68 °F)). If necessary, use cold water.
| Re-working: Partial follow-up treatment materials are not necessary. If **TOK®-Crete 45 V2.0** is to be given a coating, the mortar must be sufficiently dried. The compatibility of the coating and the **TOK®-Crete 45 V2.0** should be tested in advance. The recommendations for processing, boundary conditions as well as re-working according to DAfStb RLILI-SIB and ZTV-ING must be observed. |
| Occupational safety: Information about this can be found in the Safety Data Sheet. **TOK®-Crete 45 V2.0** is not a hazardous substance in the meaning of the Hazardous Substances Regulations. |

### Application

Environmental conditions: **TOK®-Crete 45 V2.0** can be processed at temperatures from -10 °C to +30 °C (+14 to +86 °F). The material’s temperature should be approximately room temperature when processing (+15 to +20 °C (+59 to +68 °F)).

Substrate preparation: Sand, dust, oil, benzene and other loose particles must be removed from the surface. The normal application thickness is between 10 and 60 mm; with individual outbreaks, up to 100 mm. The contact surface must be rough.

Preparation: Any reinforcement exposed must be pre-treated accordingly. The contact surface should be dampened with water, standing water must be avoided however. The mixing ratio of **TOK®-Crete 45 V2.0** to water is 100:6 parts by weight; i.e., 20 kg of dry mortar is mixed with 1.2 l of water. We recommend providing the required quantity of water in a separate bucket. After the dry material is added, it should be mixed until it is uniform for 2 to 3 minutes using a power mixer at medium speed. The material must be processed within approx. 10 minutes of mixing. The material installed must be immediately smoothed or contoured. Caution: Never mix up more material than can be processed in 10 minutes. If the ambient temperature falls, the mixing time should be increased. Processing temperatures < +5 °C (+41 °F): At low temperatures, the **TOK®-Crete 45 V2.0**, water and the mixer and accessories should be pre-heated to room temperature (+15 to +20 °C (+59 to +68 °F)). At temperatures below freezing, or if the substrate is frozen, the contact surface should be additionally warmed using a heat gun, or similar. After installation, the damaged area should be protected with an insulating material for 1 to 3 hours. Processing temperatures > + 25 °C (+77 °F): Avoid direct sunlight. **TOK®-Crete 45 V2.0**, water and equipment should be held at room temperature (+15 to +20 °C (+59 to +68 °F)). If necessary, use cold water.

Re-working: Partial follow-up treatment materials are not necessary. If **TOK®-Crete 45 V2.0** is to be given a coating, the mortar must be sufficiently dried. The compatibility of the coating and the **TOK®-Crete 45 V2.0** should be tested in advance. The recommendations for processing, boundary conditions as well as re-working according to DAfStb RLILI-SIB and ZTV-ING must be observed. Occupational safety: Information about this can be found in the Safety Data Sheet. **TOK®-Crete 45 V2.0** is not a hazardous substance in the meaning of the Hazardous Substances Regulations.

### Ordering Information & Packaging

**TOK®-Crete 45 V2.0** must be stored in a dry place and in airtight containers. Under these conditions, the storage time in the original packaging is at least 2 years from the date of manufacture.

### Special Advantages:

- All-weather use.
- Can be loaded after 45 minutes.
- Ideal for use where there has been edge damage.
- Very good bond strength to the substrate.

- Never mix up more material than can be processed in 10 minutes.
- If the ambient temperature falls, the mixing time should be increased.
- Processing temperatures < +5 °C (+41 °F): At low temperatures, the **TOK®-Crete 45 V2.0**, water and the mixer and accessories should be pre-heated to room temperature (+15 to +20 °C (+59 to +68 °F)). At temperatures below freezing, or if the substrate is frozen, the contact surface should be additionally warmed using a heat gun, or similar. After installation, the damaged area should be protected with an insulating material for 1 to 3 hours. Processing temperatures > + 25 °C (+77 °F): Avoid direct sunlight. **TOK®-Crete 45 V2.0**, water and equipment should be held at room temperature (+15 to +20 °C (+59 to +68 °F)). If necessary, use cold water.

- Re-working: Partial follow-up treatment materials are not necessary. If **TOK®-Crete 45 V2.0** is to be given a coating, the mortar must be sufficiently dried. The compatibility of the coating and the **TOK®-Crete 45 V2.0** should be tested in advance. The recommendations for processing, boundary conditions as well as re-working according to DAfStb RLILI-SIB and ZTV-ING must be observed. Occupational safety: Information about this can be found in the Safety Data Sheet. **TOK®-Crete 45 V2.0** is not a hazardous substance in the meaning of the Hazardous Substances Regulations.

- Never mix up more material than can be processed in 10 minutes.
- If the ambient temperature falls, the mixing time should be increased.
- Processing temperatures > + 25 °C (+77 °F): Avoid direct sunlight. **TOK®-Crete 45 V2.0**, water and equipment should be held at room temperature (+15 to +20 °C (+59 to +68 °F)). If necessary, use cold water.

Re-working: Partial follow-up treatment materials are not necessary. If **TOK®-Crete 45 V2.0** is to be given a coating, the mortar must be sufficiently dried. The compatibility of the coating and the **TOK®-Crete 45 V2.0** should be tested in advance. The recommendations for processing, boundary conditions as well as re-working according to DAfStb RLILI-SIB and ZTV-ING must be observed. **TOK®-Crete 45 V2.0** is not a hazardous substance in the meaning of the Hazardous Substances Regulations.
**TOK®-Crete 45 V2.0 – Application**

### Repairing concrete damage on an airport surface

**Airfield concrete surface**
Take-off and landing runway at Leipzig Airport

**Preparation**
The prepared surfaces should be moistened. Priming is not required.

**Mixing**
TOK®-Crete 45 V2.0 is mixed with water (20 kg = 1.2 litres of water).

**Installation**
Then install quickly as the pot life is 15 minutes.

**Smoothing**
The smoothing or removal of any excess must be done immediately. After 8 hours a compressive strength of approximately 30 N/mm² is reached.

### Repairing a slotted channel on a national highway

**Damage to the slotted channel**
Concrete chipping in a slotted channel.

**Shuttering and installation**
Shuttering, mix up the material, install. Wait a short period of time. Remove the shuttering.

**Repair is ready**
Pack up Finished.

**TOK®-Crete 45 V2.0 – Mixing**

Mixing TOK®-Crete 45 V2.0 is done by adding water (20 kg = 1.2 litres of water).

**Without or With**

**Typical damage at a slot channel WITHOUT repairing mortar**

**Expert working WITH TOK®-Crete 45 V2.0**

---

**www.denso.de**

---

Special products for road maintenance
**TOK®-Dur**

TOK®-Dur is a two-component material based on acrylic resins.

**Description**

Using TOK®-Dur, durable, abrasion-resistant and weather resistant coatings are created to cover over fine cracks or to compensate for uneven levels mainly on asphalt surfaces.

**Usage**

TOK®-Dur is a two-component special product with a reactive acrylic resin as a binder. The material is characterised by the following properties:

- High elasticity
- Low shrinkage stress
- Quick drying and good adhesion
- Good weather resistance and durability
- Good water and road salt resistance

**Special Advantages:**

- Easy to process.
- Permanent and abrasion resistant.
- Quick reopening to traffic.
- Good grip properties if sprinkled with grit.

**Application**

Substrate preparation

The substrate must be clean, dry and free of loose particles. An oil film or other adhesion-reducing substances must be removed. Asphalt surfaces with sealants are not suitable for coating with TOK®-Dur. With concrete substrates, the two-component active primer must be applied first (mixing ratio 100:3). Active primer usage approx. 150 g/m².

Processing the coating compound

The material must be stirred well before use, the powder hardener must be homogeneously mixed in at a mixing ratio of 1:100.

The material is ready for use and must not be diluted. Processing is done using a adhesive or toothed spatula. When applied in layers thicker than 5 mm, TOK®-Dur can be filled with quartz sand (grain size 0.3 to 1.5 mm) up to a proportion of 50%, for example. The application thickness should not exceed 20 mm. With thicknesses of more than 5 mm, the mixture should be applied in two work steps. To achieve a good surface grip, immediately after the material has been applied, an excess amount of coloured quartz sand, blast furnace slag, or similar, with a grain size of 0.3 to 1.5 mm should be sprinkled over the surface. The excess material can be reused.

The ambient temperature should be at least +5 °C (+41 °F). The hardening time, depending on the temperature, is approx. 1 hour. Processing devices should be immediately cleaned after work using ethyl acetate, or similar. The “normal” usage of TOK®-Dur with added quartz sand is approx. 1.5 - 2.0 kg pro m², depending on the nature of the substrate. In its pure form (without quartz sand), the usage is approx. 1.6 kg/m² per mm of coat thickness.

**Ordering Information & Packaging**

TOK®-Dur is supplied in 7.0 kg package sizes. It is coloured grey. The gloss level of the material is about “satin finish”. Other colours and package sizes are available on request. The hardener comes in powder form.

**Technical data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>approx. 1.60 g / ml</td>
</tr>
<tr>
<td>Flash point</td>
<td>approx. +10 °C(+50 °F)</td>
</tr>
<tr>
<td>Hardening time</td>
<td>approx. 15 minutes</td>
</tr>
</tbody>
</table>

**Storage**

Store the closed containers at 0 °C to +20 °C (+32 °F to +68 °F) in a dry place. Under these conditions, TOK®-Dur and the active primer can be stored for at least 12 months from the date of manufacture.
**TOK®-Dur – Application**

### Levelling off unevenness around a manhole

**Shaft damage**
After restoring the destroyed mortar joint with an elastomer mortar, the road surface is normally under the height level of the manhole ring.

**Masking surfaces**
Mask the surfaces to obtain a clean overall appearance.

**Mask the manhole ring**
The manhole frame should also be masked off.

**Coating compound**
Coating compound and hardener component.

**Mixing**
Stir up the coating compound. Then add the hardener and mix well. If required, fill with quartz sand somewhat to pre-fill large uneven surfaces.

**Apply**
Finally, apply the compound. It is possible to repeat the application.

**Sprinkling**
Then sprinkle the surface (e.g., blast furnace slag or coloured quartz sand) to ensure good surface grip. The colour of the sprinkling material determines the colour of the finished coating.

**Removing the masking tape**
After approx. 1 hour wait, the masking tape can be removed.

**Finished levelling layer**
Finally the excess material used for sprinkling is swept off. Traffic can then be released.

**Typical damage WITHOUT using a suitable product**

**Watertight joint**
A suitable product is applied until the joint is watertight.

**Completed expert working WITH TOK®-Dur**

**Special products for road maintenance**

www.denso.de
**Special products for road maintenance**

**Typical Product Properties (at +23 °C (+73.4 °F))**

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (A+B, hardened)</td>
<td>kg / l</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Mixing ratio (A:B, parts by weight)</td>
<td>4:1</td>
<td></td>
</tr>
<tr>
<td>Pot life</td>
<td>minutes</td>
<td>4 to 6 hours</td>
</tr>
</tbody>
</table>

**Description / Usage**

Incidents of mechanical damage occur over and over again, particularly in porous asphalt road surfaces. Growing frequently occurs when tires are damaged on HGVs and the rims are dragged over the asphalt from full speed to a complete stop. The scratches can be up to 3 cm wide and 1-3 cm deep. Such damage to the surface can have an adverse effect on traffic safety and also acts as a starting point for further serious damage to the covering layer. The newly developed TOK®-Rep now gives you the option of quickly and safely remedying such damage in order to avoid any further loss of surface quality. With porous asphalt surfaces, care must be taken to leave a sufficient porous area of the covering layer under the scoring to allow water to drain off. If the surface damage is serious enough to prevent repairs being carried out using this compound, we recommend milling off the damaged area and installing a new surface. The proper joint connections can be created using our special joint tape, TOK®-Band SK Drain.

**Application**

Preparing the damaged area:
The contact surfaces must be clean and dry. Loose particle remnants must be removed. The damaged areas (for purely aesthetic reasons) can be masked at the sides with masking tape.

Processing the compound:
Components A and B are mixed together with a stirring tool (e.g. a drill with a Collomix WK70 mixing attachment) for 1 to 2 minutes at a speed of max. 500 rpm. (add as little air as possible).

The A component should be first stirred separately. The container pairs (A+B) must be added together as they were assembled and delivered in the box, so that the required mixing ratio is observed. The mixed material is cast immediately afterwards.

The surface temperature of the asphalt must be at least +5 °C and at most max. +40 °C (+4 °F to +104 °F).

The dew point must be observed.
Any rising air bubbles must be removed (e.g. by brushing over with a brush, or by briefly playing a gas flame over it using a gas burner) before the compound solidifies. The applied compound can be pulled over with a trowel and levelled.

To achieve sufficient surface grip, it is necessary to sprinkle the compound with an excess of grit after it has been cast. For this, we recommend a grit with a PSV value (Polished Stone Value) of 40 to 60, grain size approx. 0/5. It is vital that the grit be dry when it is applied. If the grit is damp, the fresh TOK®-Rep can, under certain circumstances, foam up. After the material has been installed, depending on the weather, it must not get wet for 10 to 20 minutes after installation at +23 °C (+73.4 °F). Then the material should be protected until it hardens as much as possible from moisture.

The sides of the repair area should be removed immediately after casting and gridding.
Approx. 60 minutes after application at +23 °C (+73.4 °F), the compound is hardened so that traffic can normally then be released.

After approximately 24 hours at +23 °C (+73.4 °F) it is tack-free and completely hardened. The pot life and hardening time are temperature dependent. They shorten at higher temperatures and lengthen at lower temperatures.

Cleaning the tools:
The tools and processing equipment can be cleaned using acetone. Already hardened material can be mechanically removed.

**Ordering Information & Packaging**

TOK®-Rep is delivered as a set with components A and B in a box.
The content of the components A and B corresponds to the respective mixing ratio.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Container size</th>
<th>Packing unit</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Rep</td>
<td>2.0 l (A+B components)</td>
<td>56 litres per pallet</td>
<td>102 02 739</td>
</tr>
</tbody>
</table>

There are 48 sets (equals 96 litres) packed on a pallet.

**Storage**

TOK®-Rep should be stored sealed in its original containers. Warming the components above +40 °C (+104 °F) and the influence of frost should be avoided at all costs, even on the construction site.

TOK®-Rep can be stored for at least 12 months under these conditions.
TOK®-Band Spezial Rundstrang

**Self-adhesive Layer**

TOK®-SK Rissband

**Self-adhesive bituminous profile strip used to treat cracks in road construction.**

**Usage**

TOK®-SK Rissband is preferably used to cover cracks and open joints or seams in asphalt surfaces. The maximum width of the crack opening should not exceed 5 mm. The profile can be laid quickly and easily as it has an adhesive layer on one side. Damaged areas can be permanently closed as the Rissband can be rolled in due to its plastic properties.

**Application**

The asphalt surface must be clean and dry. It is not essential to prime the area (TOK®-SK Primer), but this significantly improves the adhesion. It is particularly recommended for "worn-out" substrates. The Rissband SK is laid in the crack with the adhesive layer downwards, and pressed in using a roller or the Rissband SK Roller (only dimensioned 40 x 4 mm). The following traffic rolls the compound further into the crack. Under certain circumstances, it may be advantageous to grit the Rissband after it has been laid. This applies, for example, when laying at very high temperatures. The ambient and component temperature should be above +10 °C (+50 °F) to guarantee a good and permanent adhesion to the substrate. At lower temperatures, if necessary, it may help to slightly warm the substrate with caution. The Rissband is not suitable for the vertical formation of seams and connections, here the minimum requirement of the profile thickness according to ZTV Fug-StB is 10 mm.

**Ordering Information & Packaging**

<table>
<thead>
<tr>
<th>mm / width</th>
<th>mm / thickness</th>
<th>Length m</th>
<th>Rolls per carton</th>
<th>m / box</th>
<th>m / pallet</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>4</td>
<td>23</td>
<td>6</td>
<td>80</td>
<td>2,760</td>
<td>101 76 806</td>
</tr>
<tr>
<td>40</td>
<td>4</td>
<td>23</td>
<td>3</td>
<td>80</td>
<td>2,870</td>
<td>102 90 307</td>
</tr>
<tr>
<td>45</td>
<td>4</td>
<td>23</td>
<td>2</td>
<td>46</td>
<td>1,980</td>
<td>103 73 720</td>
</tr>
</tbody>
</table>

**Storage**

Store dry, without load and protected from frost. Protect from direct sunlight. Under these conditions, the TOK®-SK Rissband can be stored in its closed original packaging for at least 2 years from the date of manufacture.

**Special Advantages:**

- Self-adhesive, therefore can be processed quickly and easily.
- No gas burner needed for the application.
- Solvent-free.
- Bitumen compound meets the requirements of TL/TP Fug-StB for a bitumen joint tape.

TOK®-Band Spezial Rundstrang

**Bitumen Round Profile – TOK®-Band Spezial Rundstrang**

**Self-adhesive, therefore can be processed quickly and easily.**

**Suitable to seal faulty cuts.**

**For cracks in asphalt road surfaces, even with crack widths > 5 mm.**

**Usage**

TOK®-Band Spezial Rundstrang (round profile) consists of the same material as the tried and tested bitumen joint tape, TOK®-Band Spezial. The round profile is used to seal cracks. It can be used to deal with cracks which are more than 5 mm wide. The round profile is worked into the crack as a filling. Other possible uses are the sealing of incorrect cuts in asphalt surfaces. Even "cross cuts" which are caused when cutting out rectangular sections at the corner points, can be sealed using the round profile.

**Application**

When processing TOK®-Band Spezial Rundstrang the following should be observed:

- It should always be used with a primer (TOK®-SK Primer).
- At lower temperatures, the material should be pre-warmed using a burner as it is easier to work with when warmed up.
- The material must be worked into the crack. It is not sufficient to just "place" the round profile on the crack.

**Ordering Information & Packaging**

<table>
<thead>
<tr>
<th>mm / diameter</th>
<th>m / length</th>
<th>Rolls</th>
<th>m / pallet</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>15</td>
<td>6</td>
<td>68</td>
<td>1,800</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>6</td>
<td>48</td>
<td>1,200</td>
</tr>
</tbody>
</table>

**Storage**

Store dry, without load and protected from frost. Under these conditions, the TOK®-Band Spezial Rundstrang can be stored in the sealed original packaging for at least 3 years from the date of manufacture.
TOK®-Fill 2/5
Cold-worked repair asphalt for roads and other traffic areas.

TOK®-Fill Aqua 0/5
Reactive cold-worked repair asphalt for roads and other traffic areas.

TOK®-Fill PA 0/8
Reactive cold-worked repair asphalt for potholes and similar defects in porous asphalt surfaces. The water permeability is preserved in the installation location.

REPAIR ASPHALT
**TOK®-Fill 2/5**

TOK®-Fill is a repair asphalt for filling potholes and similar imperfections in roads and other traffic areas.

**Description**

TOK®-Fill is manufactured from gravel, bitumen and special additives. This composition guarantees simple processing and lasting durability. Official testing has shown that the stability even after prolonged laying is comparable with hot-worked asphalt.

**Usage**

TOK®-Fill meets the highest load demands and can be used universally: e.g. on roads with the highest traffic loads, side streets and industrial traffic areas. In addition, TOK®-Fill is suitable for sealing the road surface after civil engineering work, as well as for road connections at level crossings (tramlines, railway crossings etc.). It can be processed even if the substrate is damp.

**Typical Product Properties**

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas size in mm</td>
<td>2/5, installation thickness from 2 to 5 cm per layer</td>
</tr>
<tr>
<td>Application temperature (partly adhering)</td>
<td>From -10 °C to +25 °C (+14 °F to +77 °F) (even with a damp substrate)</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 2.0 g / cm³ (when compressed)</td>
</tr>
<tr>
<td>Consumption</td>
<td>approx. 80 kg / m² (compressed with 4 cm installation thickness)</td>
</tr>
<tr>
<td>Colour</td>
<td>black</td>
</tr>
</tbody>
</table>

**Application**

TOK®-Fill can be applied mechanically, on smaller areas also with a shovel, on a bearing substrate. Remove loose parts before installation. With a layer thickness of more than 4 cm, the TOK®-Fill must be installed in layers. The maximum installation thickness is a total of 18 cm. TOK®-Fill should be installed with a slight excess, so that subsequent compaction occurs by the traffic. Mechanical compacting is an advantage, but not absolutely necessary. It can be processed even in wet weather (dampness or even rain) at temperatures from -10 °C to +25 °C (+14 °F to +77 °F). No water should be standing in the installation location. With falling temperatures (under +5 °C (+41 °F)), the material is a little harder and should be warmed (heated storage room) in this case so it can be more easily processed. The area repaired with TOK®-Fill does not need to be sanded over, in summer, sprinkling with quartz sand, or similar, is recommended as appropriate. It should be noted that the material is not hardened immediately after it is installed. The hardening time is temperature dependent and can take longer at higher temperatures. When used in radial areas or where point loads may occur, the installed material should only be loaded when sufficient strength has been achieved.

**Ordering Information & Packaging**

In resealable plastic buckets with 25 kg of content. 24 buckets to a pallet.

<table>
<thead>
<tr>
<th>Product name</th>
<th>Packaging</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Fill 2/5</td>
<td>25 kg per bucket, 24 buckets per pallet</td>
<td>102 01 356</td>
</tr>
</tbody>
</table>

**Storage**

In its closed original packaging, TOK®-Fill can be stored at temperatures above +5 °C (+41 °F) and without load for at least 6 months. Particularly in the summer months, do not store in direct sunlight.
TOK®-Fill Aqua 0/5

TOK®-Fill Aqua is a repair asphalt used to fill in potholes and other imperfections in roads and other traffic-bearing surfaces.

Description

It consists of a mixture of high-grade grit and sand and a polymer-modified bituminous binder with special additives.

The material dries very quickly after application.

Usage

TOK®-Fill Aqua is used to repair minor damage, road crossings, damaged paths, carriageway transitions, pipeline breakages, for access ramps, for levelling and for alignment of road installations.

Typical Product Properties

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain size in mm</td>
<td>0-5</td>
</tr>
<tr>
<td>Application temperature (partly surroundings)</td>
<td>Free: -10 °C to +25 °C (+14 °F to +77 °F) / damp: +15 °C to 20 °C (+59 to +68 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 2.0 g/cm³ at its compressed state</td>
</tr>
<tr>
<td>Consumption</td>
<td>approx. 80 kg/m² (compressed state with 4 cm installation thickness)</td>
</tr>
<tr>
<td>Colour</td>
<td>Black</td>
</tr>
</tbody>
</table>

Special Advantages:

- Applicable in all weathers, at temperatures of -10 °C to +45 °C (+14 °F to +113 °F), even when the subsurface is damp.
- Ideal for repairing potholes.
- Quick-hardening - reactive system.
- Solvent and tar-free.
- Applicable in all weathers, at temperatures of -10 °C to +45 °C (+14 °F to +113 °F), even when the subsurface is damp.

Subsurface

TOK®-Fill Aqua can be installed at any time. The area to be treated must be free from loose components and dust. The subsurface can be slightly damp. For better adhesion, the contact surfaces can be pretreated with a pressure-sensitive adhesive.

Processing conditions

Processing is possible in all weather conditions between -10 °C and +45 °C (+14 °F and +113 °F).

Installation instructions

The loose material can be easily poured into the damaged area. For optimal processing at low temperatures, the material should previously be stored at room temperature (approx. +15 °C to 20 °C (+59 to +68 °F)).

Additional heating by open flame should be avoided and is not advisable because it can damage the binder. The material is inserted slightly higher than the surface and distributed, initially without compressing the mixture. The pre-laid material is then compressed using a tamper, a light roller or a vibrating plate.

Hardening can be accelerated by moistening the mixture thoroughly and mixing it through before compression. The surface can bear a traffic load immediately after installation. In the case of extremely heavy loads, the surface should not be released for traffic until approx. 1 hour afterwards. At temperatures around freezing point, longer hardening times are to be expected.

Up to an installation thickness of approx. 4 cm, the mixture can normally be inserted in one layer, but for greater thickness we recommend inserting it in at least 2 layers for better compression and therefore greater stability.

Ordering Information & Packaging

In resealable plastic buckets with 25 kg of content. 24 buckets to a pallet.

<table>
<thead>
<tr>
<th>Packing</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Fill Aqua 0/5</td>
<td>180-71-080</td>
</tr>
</tbody>
</table>

Storage

In its sealed original packaging, TOK®-Fill Aqua can be stored for at least 18 months after date of manufacture. In the case of opened and resealed containers, the storage life may be slightly reduced. The finished mixture is not frost-sensitive.

Environment

TOK®-Fill Aqua is solvent-free and because of its composition it is completely recyclable (asphalt recycling). The binder is not water-soluble and contains no coal tar pitch and no chlorinated hydrocarbons.
TOK®-Fill PA 0/8

TOK®-Fill PA is a repair asphalt used to fill in potholes and other imperfections in open-porous asphalt surfaces. Water permeability is retained in the installation areas.

Description

- **TOK®-Fill PA** is a reactive high-performance mixture for damage in open-porous asphalt surfaces.
- The material consists of high-grade grit, grain sized crushed sand and special bitumen.
- The material dries very quickly after application. It is extremely stable and easy to process.

Usage

- **TOK®-Fill PA** can be applied anywhere where repairs in open porous asphalt “drain” or “low-noise” asphalt are required. It is particularly suitable for application in sharp-edged breaks and in potholes and drilled core holes.
- **TOK®-Fill PA** can be inserted in layers of various thickness and withstands normal traffic loads on motorways. The material can also be applied at damage areas on traffic lane installations and transition constructions.

Special Advantages:

- Water permeable - for open-porous asphalt (“OPA”) surfaces.
- Can be applied in all weathers, even at temperatures down to -10 °C (+14 °F).
- Ideal for repairing potholes.
- Quick reactive hardening.
- Solvent and tar-free.
- Recyclable.
- High degree of stability.

Application

**Subsurface**

TOK®-Fill PA can be installed at practically any time. The areas to be treated must be free from loose components and dust. The subsurface can be slightly damp. For better adhesion, the contact surfaces can be pretreated with a pressure-sensitive adhesive.

**Processing conditions**

Processing is possible in all weather conditions between -10 °C and +30 °C (+14 °F and +86 °F).

**Installation instructions**

The loose material can be easily poured out of the bucket into the place of installation. For optimal processing at low temperatures, the material should be stored at room temperature beforehand.

At temperatures around freezing point, longer hardening times are to be expected.

To a thickness of approx. 4 cm, the mixture can normally be inserted in one layer, but for greater thickness we recommend inserting it in at least 2 layers for better compression and therefore greater stability. The minimum layer thickness is 25 mm.

Additional heating of the loose mixture should be avoided at all costs and is not advisable. The material is inserted slightly higher than the surface and distributed without compressing the mixture. It should then be well moistened with water.

Moisture is needed to accelerate the reaction required for through-hardening. The pre-laid material is then compressed using a tamper, a light roller or a vibrating plate.

Approx. 2-4 hours after installation, the surface can bear a full traffic load again practically immediately.

Storage

In its sealed original packaging, TOK®-Fill PA can be stored for at least 9 months after date of manufacture.

In the case of opened and resealed containers, the storage life may be slightly reduced. The finished mixture is not frost-sensitive. The ideal storage temperature is approx. +15 °C (+59 °F) (dry). The buckets must not be exposed to direct sunlight.

Typical Product Properties

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravitation</td>
<td>0/8</td>
</tr>
<tr>
<td>Binder content</td>
<td>approx. 7 %</td>
</tr>
<tr>
<td>Density by volume</td>
<td>approx. 3.1 g/cm³</td>
</tr>
</tbody>
</table>

**Environment**

TOK®-Fill PA is solvent-free and because of its composition it is completely recyclable (asphalt recycling). The binder is not water-soluble and contains no coal tar pitch and no chlorinated hydrocarbons.

Ordering Information & Packaging

In resealable plastic buckets.

<table>
<thead>
<tr>
<th>Packing</th>
<th>Article no</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-Fill PA 0/8</td>
<td>101 71-027</td>
</tr>
</tbody>
</table>

In its sealed original packaging, TOK®-Fill PA can be stored for at least 9 months after date of manufacture.

In the case of opened and resealed containers, the storage life may be slightly reduced. The finished mixture is not frost-sensitive. The ideal storage temperature is approx. +15 °C (+59 °F) (dry). The buckets must not be exposed to direct sunlight.

**Environment**

TOK®-Fill PA is solvent-free and because of its composition it is completely recyclable (asphalt recycling). The binder is not water-soluble and contains no coal tar pitch and no chlorinated hydrocarbons.

**Environment**

TOK®-Fill PA is solvent-free and because of its composition it is completely recyclable (asphalt recycling). The binder is not water-soluble and contains no coal tar pitch and no chlorinated hydrocarbons.

**Environment**

TOK®-Fill PA is solvent-free and because of its composition it is completely recyclable (asphalt recycling). The binder is not water-soluble and contains no coal tar pitch and no chlorinated hydrocarbons.
TRACK CONSTRUCTION PRODUCTS

DENSOLASTIC®-SU
Elastic after hardening, two-component rail bedding compound based on PU. Vibration damping and noise reducing. Tested according to VDV notice 6201 “Bedding for rails”.

TOK®-Melt SU
Plasto-elastic hot pouring compound based on polymer-modified bitumen. Tested in accordance with ZTV Fug-StB.

TOK®-Riegel (TOKOMAT®-process)
Bitumen joint tape extrusion, approved according to ZTV Fug-StB.

TOK®-Band T
Special bitumen joint tape for use on rails, can be matted or self-adhesive. Tested in accordance with ZTV Fug-StB.

REINAU®-Rail Joint Pouring Compound
Plasto-elastic hot pouring compound based on polymer-modified bitumen. Approved according to ZTV Fug-StB.
**DENSOLASTIC®-SU**

An elastic hardening, vibration damping sealing compound for rails and similar applications, which can be worked by hand or mechanically.

**Description**

DENSOLASTIC®-SU consists of a pourable, two-component polyurethane-based system that cures into an elastic material. DENSOLASTIC®-SU has short-term resistance to diesel fuel, and is also frost- and road salt-resistant.

**Uses**

DENSOLASTIC®-SU 45 is used in particular as an elastic and vibration-damping embedding compound for grooved rails and full web rails. The material is suitable for lighter traffic loads or in applications where systems needs improved spring performance (e.g. as an embedding compound for plant components).

DENSOLASTIC®-SU 65 and - 85 are used as an elastic and vibration-damping embedding compound for grooved rails and full web rails.

**Typical Product Properties**

- Vibration-reducing
- Chemically and mechanically resistant
- Permanently elastic in vibration testing, zero material damage had been observed after 5 million load cycles
- Long-term resistance to temperatures from -20 °C to +70 °C (-4 °F to +158 °F)
- Beständig gegen Wasser, Kochsalzlösung (10%), Natronlauge (5%) und Motoröl (SAE 10 W 40)
- Short-term resistance to diesel fuel (only SU 45)
- Electrically insulating according to VDV Notice 6201

**Special Advantages:**

- Permanently elastic, vibration-damping.
- Chemically and mechanically resistant.
- Resistant versus diesel fuel, frost- and road salt-resistant (short-term).
- Tested according to VDV Notice 6201.
- Can be worked by hand or mechanically.

**Application**

Preparing the material

DENSOLASTIC®-SU 45: Mixing ratio A : B = 100 : 16 (weight), A : B = 100 : 8.8 (volume).


Ensure that component A has been stirred thoroughly through before working. Following this step, the entire contents of component B are added. The components must be carefully mixed using a slowly rotating mixer (max. 500 rpm) for about 60–70 seconds. Any material adhering to the sides must be cleaned off and mixed with the rest.

For rapid, high-quality preparation, a mechanical method is best, using a 3-component dosing machine. The air and subsurface temperature should be between -5 °C (+32 °F) and +35 °C (+95 °F). The material temperature should be approximately +15 °C (+59 °F) during working. The material’s pot life also depends on the ambient temperature. At room temperature, a pot life of 4 minutes can be assumed (incl. time for pre-mixing). The pot life decreases for higher temperatures. The material is tack-free after 2 hours and fully load-bearing after 24 hours. If it becomes necessary to scuff off the projecting edge of the embedding material to be flush with the rail footing, this needs to be done as soon as possible after embedding.

**Typical Technical Material Parameters**

- **Pot life:** 4 to 5 min. 4 min. 4 to 5 min.
- **Density (cured):** 0.72 kg / l (A+B component) 0.78 kg / l (A+B component) ca. 0.88 kg / l (A+B component)
- **Shore hardness A:** 45 ± 5 DIN 53 505 65 ± 5 DIN 53 505 85 ± 5 DIN 53 505
- **Tear strength:** 1,6 N / mm² ISO R 527 3,5 N / mm² ISO R 527 > 4,0 N / mm² ISO R 527
- **Elongation after fracture:** 170 % ISO R 527 200 % ISO R 527 > 100 % ISO R 527

**Ordering Information and Packaging**

**DENSOLASTIC®-SU 45**

- **Container size:** SET 183 kg (A+B) 100 75 037 1 tub A comp., 1 can B comp.
- **Article no.:** 100 75 037
- **Packaging unit:** 1 tub A comp., 1 can B comp.

**DENSOLASTIC®-SU 65**

- **Container size:** SET 7,10 kg (A+B) 100 75 036 Individual container, 29 sets/pallet
- **Article no.:** 100 75 036
- **Packaging unit:** 1 tub A comp., 1 can B comp.

**DENSOLASTIC®-SU 85**

- **Container size:** SET 7,55 kg (A+B) 100 75 035 Individual container, 29 sets/pallet
- **Article no.:** 100 75 035
- **Packaging unit:** 1 tub A comp., 2 cans B comp.

**Storage**

Store unopened product in original pack in a dry place at room temperature. The material must not be exposed to frost or direct sunlight. Under these conditions, the material can be stored for at least 12 months from the date of manufacture.

**Uses**

- **DENSOLASTIC®-SU 45**
  - Use for lighter traffic loads or in applications where systems needs improved spring performance (e.g. as an embedding compound for plant components).

- **DENSOLASTIC®-SU 65 and - 85**
  - Use as an elastic and vibration-damping embedding compound for grooved rails and full web rails.

**Technical Material Parameters**

- **Density (cured):** 0,72 kg / l (A+B component) 0,78 kg / l (A+B component) ca. 0,88 kg / l (A+B component)
- **Shore hardness A:** 45 ± 5 DIN 53 505 65 ± 5 DIN 53 505 85 ± 5 DIN 53 505
- **Tear strength:** 1,6 N / mm² ISO R 527 3,5 N / mm² ISO R 527 > 4,0 N / mm² ISO R 527
- **Elongation after fracture:** 170 % ISO R 527 200 % ISO R 527 > 100 % ISO R 527

**Application**

Preparing the material

DENSOLASTIC®-SU 45: Mixing ratio A : B = 100 : 16 (weight), A : B = 100 : 8.8 (volume).


Ensure that component A has been stirred thoroughly through before working. Following this step, the entire contents of component B are added. The components must be carefully mixed using a slowly rotating mixer (max. 500 rpm) for about 60–70 seconds. Any material adhering to the sides must be cleaned off and mixed with the rest.

For rapid, high-quality preparation, a mechanical method is best, using a 3-component dosing machine. The air and subsurface temperature should be between -5 °C (+32 °F) and +35 °C (+95 °F). The material temperature should be approximately +15 °C (+59 °F) during working. The material’s pot life also depends on the ambient temperature. At room temperature, a pot life of 4 minutes can be assumed (incl. time for pre-mixing). The pot life decreases for higher temperatures. The material is tack-free after 2 hours and fully load-bearing after 24 hours. If it becomes necessary to scuff off the projecting edge of the embedding material to be flush with the rail footing, this needs to be done as soon as possible after embedding.

**Typical Technical Material Parameters**

- **Pot life:** 4 to 5 min. 4 min. 4 to 5 min.
- **Density (cured):** 0.72 kg / l (A+B component) 0.78 kg / l (A+B component) ca. 0.88 kg / l (A+B component)
- **Shore hardness A:** 45 ± 5 DIN 53 505 65 ± 5 DIN 53 505 85 ± 5 DIN 53 505
- **Tear strength:** 1,6 N / mm² ISO R 527 3,5 N / mm² ISO R 527 > 4,0 N / mm² ISO R 527
- **Elongation after fracture:** 170 % ISO R 527 200 % ISO R 527 > 100 % ISO R 527

**Ordering Information and Packaging**

**DENSOLASTIC®-SU 45**

- **Container size:** SET 183 kg (A+B) 100 75 037 1 tub A comp., 1 can B comp.
- **Article no.:** 100 75 037
- **Packaging unit:** 1 tub A comp., 1 can B comp.

**DENSOLASTIC®-SU 65**

- **Container size:** SET 7,10 kg (A+B) 100 75 036 Individual container, 29 sets/pallet
- **Article no.:** 100 75 036
- **Packaging unit:** 1 tub A comp., 1 can B comp.

**DENSOLASTIC®-SU 85**

- **Container size:** SET 7,55 kg (A+B) 100 75 035 Individual container, 29 sets/pallet
- **Article no.:** 100 75 035
- **Packaging unit:** 1 tub A comp., 2 cans B comp.

**Storage**

Store unopened product in original pack in a dry place at room temperature. The material must not be exposed to frost or direct sunlight. Under these conditions, the material can be stored for at least 12 months from the date of manufacture.
**TOK®-Melt SU**

TOK®-Melt SU is a hard elastic, hot-pouring compound based on bitumen.

### Description

**TOK®-Melt SU** is a bituminous embedding compound with high stability and surface compression strength. Based on its hard elasticity, TOK®-Melt SU has vibration damping properties, providing a uniform bearing surface for tram tracks – which also helps to minimize noise production.

### Typical Product Properties

<table>
<thead>
<tr>
<th>Type</th>
<th>Hot-poured compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>Bitumen</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Solid (temperature-dependent thermoplastic)</td>
</tr>
<tr>
<td>Density</td>
<td>1.6 g/cm³ (approx.)</td>
</tr>
<tr>
<td>Pouring temperature</td>
<td>+280 to +290 °C (+548 to +554 °F) (approx.) (Do not overheat compound)</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
</tbody>
</table>

### Application

- **Heating the compound**
  - TOK®-Melt SU must only be heated in melting kettles equipped with a mixer and thermometer. Ensure the product is heated slowly to the working temperature. With simple bitumen heaters without a mixer, there is danger of overheating the compound. This will result in a deterioration or even destruction of the polymers and fillers added to stabilize and enhance the products. The heating of the embedding compound should take place only in kettles that have been cleaned beforehand – i.e. cleaned of burned-on residues. The various sealing compound types must not be mixed together by accident.

- **Preparatory work on the rail to embedding**:
  - Establish a fixed track mounting, i.e. underlay the rail with hardwood wedges or steel plates to prevent accidental rail movement downwards.
  - Anchor the rail to the substructure with anchor rods (track anchors) to prevent accidental rail movement upwards.
  - For pieces of track about 4 or more spans in length (60–70 m), rail gaps should be left to permit steel expansion of approx. +20 °C (+68 °F). This reduces the possibility of track movement/longitudinal positional change on the installed embedding compound due to thermal expansion.

- **Benefits of the two-layer embedding procedure** are as follows:
  - Steam bubbles – caused solely during the first pour due to the moisture contained in concrete – can escape.
  - Different shrinkage settling resulting from different embedding heights – especially due to changes in track height on reused concrete bedding – is avoided.

- **Ordering Information & Packaging**

<table>
<thead>
<tr>
<th>Container type</th>
<th>Content</th>
<th>Pallet</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid container</td>
<td>55 kg</td>
<td>24 boxes/pallet</td>
<td>108 77 805</td>
</tr>
</tbody>
</table>

### Storage/Container Disposal

Store the container upright in a dry place that is not exposed to direct sunlight. Under these conditions, TOK®-Melt SU can be stored practically indefinitely. The disposal of empty (no drips, scraped out, no powder) white or metal sheet containers is via KBS; emptied plastic and paper/card containers are disposed of via Interseroh.

### Special Advantages:

- Meets the requirements of VDV notice 6201, “Bedding for rails”.
- Vibration-damping.
- High softening point.

### Tokus and Don'ts

- Do not overheat compound!
- Do not mix different compound types.
- Store container in a dry place, not exposed to direct sunlight.
- Refrigerate and any water present.
- Keep to the prescribed temperature for installation.
- Use a barrier to fix the hardwood underlay in place. The embedding compound must be allowed to cool for a sufficient time before traffic.
- Do not expose to direct sunlight.
- Do not mix different compound types.
CIVIL ENGINEERING

DENSO®-Gleitmittel
Is a semi-solid compound for use on mechanical seals in concrete pipes and manhole components.

TOK®-Strip
Bitumen and butyl-rubber based plastic, self-adhesive on one side seal for manhole components and special profiles made of concrete.

FERMADUR®-C & S
Compressions seals made of chloroprene rubber (CR) for UV and ozone stressed joints or styrene butadiene-rubber (SBR) for underground joints.

TOK®-BSW System
Bitumen-based, weather-resistant joint compound system for creating permanent seals on joints in concrete protective walls.

DENSO®-Pol
Sealing system consisting of casing tubes and elastomer O-rings for cable and pipeline building entry points.

GOMEX®
Elastomer moulded parts and elastomer/metal moulded parts with a diverse range of applications in industry and technology.
DENSO®-Gleitmittel (lubricant)

DENSO®-Gleitmittel (lubricant) is a semi-solid compound for use on mechanical seals in concrete pipes and manhole components.

Description

DENSO®-Gleitmittel (lubricant) consists of a composition of organic materials and inorganic fillers. By applying the lubricant on rubber seals and concrete surfaces, such as is required in sewer construction, the excellent material consistency and shear strength means you get a simple and component-protecting merging of spigot and socket, even possible on rough concrete surfaces. As the organic components are biodegradable, there is also a high degree of environmental compatibility provided.

Important information for practical use

In accordance with DIN EN 1610, a compatible lubricant for the components and seals is to be supplied by the pipe and manhole manufacturer. The lubricant which DENSO has developed is the result of decades of research and practical experience. Thanks to its special composition, DENSO®-Gleitmittel (lubricant) is designed to exactly meet the requirements for laying concrete and steel-reinforced concrete pipes. Due to its biodegradability, the lubricant has no negative impact on the service life of the seal, as demanded by DIN EN 681-1 at point 4.1.1.

Special Advantages:

- Can be used in cold, heat and rain. Usage temperature range from -10 °C to +50 °C (+14 °F to +122 °F).
- Optimum lubrication even with rough surfaces.
- Environmentally friendly, biodegradable.
- Material compatibility – in accordance with DIN EN 681-1 – with rubber seals.

Application - laying of pipes

DENSO®-Gleitmittel (lubricant) is applied to the concrete sliding surface in the sleeve or on the spigot, it is best to use a glove for this. An additional smearing of the concrete on the spigot end is not normally required, it does however help minimise the installation force.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Number of pipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>12 pipes</td>
</tr>
<tr>
<td>400</td>
<td>9 pipes</td>
</tr>
<tr>
<td>500</td>
<td>7 pipes</td>
</tr>
<tr>
<td>600</td>
<td>5 pipes</td>
</tr>
<tr>
<td>700</td>
<td>5 pipes</td>
</tr>
<tr>
<td>800</td>
<td>4 pipes</td>
</tr>
<tr>
<td>900</td>
<td>4 pipes</td>
</tr>
<tr>
<td>1000</td>
<td>3 pipes</td>
</tr>
<tr>
<td>1200</td>
<td>3 pipes</td>
</tr>
</tbody>
</table>

Application - placement of manhole rings

DENSO®-Gleitmittel (lubricant) is applied to the inside of the manhole sleeve (integrated shaft seal) covering it well. It is best to use a glove for this. An additional smearing of the concrete on the spigot end is not normally required, it does however help minimise the installation force.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Number of manhole rings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>7 manhole rings</td>
</tr>
<tr>
<td>1200</td>
<td>3 manhole rings</td>
</tr>
<tr>
<td>1500</td>
<td>2 manhole rings</td>
</tr>
</tbody>
</table>

Storage

Store DENSO®-Gleitmittel (lubricant) in a dry and frost-free location. Under the specified storage conditions in closed, original packages, and stored in a hall (not open to the elements), it can be stored for at least 5 years from the date of manufacture. Small amounts of liquid which form on the surface do not affect the quality and can easily be mixed in again.

<table>
<thead>
<tr>
<th>Container size</th>
<th>Article no.</th>
<th>Package units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucket 5.0 kg</td>
<td>101 17 820</td>
<td>98 buckets per pallet (450 kg)</td>
</tr>
<tr>
<td>Bucket 3.0 kg</td>
<td>101 75 802</td>
<td>148 buckets per pallet (432 kg)</td>
</tr>
</tbody>
</table>
TOK®-Strip

Bitumen and butyl-rubber based plastic, self-adhesive on one side seal for manhole components and special profiles made of concrete.

Description

TOK®-Strip is a plastic seal for manhole components and special profiles made of concrete. Due to the combination of bitumen, butyl-rubber and other innovative components, as well as the self-adhesive, one-sided coating, the seal profile fits to the existing geometries, compensates for any unevenness of the component and adheres very well to the contact surfaces.

Usage

TOK®-Strip is mainly used in sewer construction. Wherever, for different reasons, elastomer profiles cannot be used, for example, tight seals can be created using TOK®-Strip. The various cross-sectional dimensions of the profile permit its use in many areas, e.g. as a joint seal for manhole components placed on top of each other or many other special profiles made of concrete, such as troughs and covers or similar components for example.

Special Advantages:

- Very good sealing effect and simple processing.
- Helps to compensate for unevenness in the finished parts.
- High water and chemical resistance.
- Self-adhesive on one side – very good adhesion to concrete.
- Solvent-free.
- Withstands water pressure of up to 0.5 bar.
- Can be used from -15 °C (+5 °F) to +40 °C (+104 °F).

Application

Preparation of the substrate and installation of the seal tape:
The contact surfaces must be solid, clean, dry and free of any form of separating substances. To achieve better adhesion, we recommend pre-treating the contact surfaces with TOK®-SK Primer. This is a plastic resin-based primer (see separate product information). The primer is applied on all the surfaces using a brush or with a sprayer. The drying time in summer is approximately 3 to 5 minutes. After the primer has dried, the tape with the selected cross-section is applied. Here it is important to note that the sealing tape is placed without being stretched in its length. At the contact ends, the tapes must be placed on each other with a scarf joint so that a tight compression can be achieved. The sealing tape can be applied at ambient temperatures of -15 °C (+5 °F) up to +40 °C (+104 °F). At temperatures below +5 °C (+41 °F), we recommend that the tape is stored in a temperature range above +15 °C (+59 °F) before it is installed.

Mounting: The components must be centrally aligned to ensure even pressure on the TOK®-Strip. The compression of the seal should be between 30 % and 50 %. The tape thickness must not be less than 10 mm. The sealing tape is not designed to transfer vertical loads. This must be achieved using a spacer or an additional mortar joint.

Ordering Information & Packaging

TOK®-Strip is delivered rolled up. The rolls are separated using silicone paper and packed in boxes with the dimensions (w x d x h) 370 mm x 370 mm x 160 (or 144) mm. 30 boxes are packed on one euro pallet.

TOK®-SK Primer is supplied in 5.0 L containers.

Storage

Store dry, without load and protected from frost.

Under these conditions, TOK®-Strip can be stored in its sealed original packaging for at least 24 months from the date of manufacture.

Technical data

Typical Product Properties (at +21 °C (+69.8 °F))

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td></td>
<td>Black</td>
</tr>
<tr>
<td>Density</td>
<td>g/cm³</td>
<td>approx. 1.30</td>
</tr>
<tr>
<td>Elastic resilience</td>
<td>%</td>
<td>&gt; 10</td>
</tr>
<tr>
<td>Dimensional stability</td>
<td>mm</td>
<td>≤ 2</td>
</tr>
<tr>
<td>Ring and half softening point</td>
<td>°C/°F</td>
<td>&gt; +110 (+ +230)</td>
</tr>
</tbody>
</table>

Further dimensions and profile cross-sections are available on request.
FERMADUR®-C

FERMADUR®-C is a compression seal made of chloroprene rubber (CR) for UV and ozone stressed joints.

**Description**

FERMADUR®-C is a sealing profile made of vulcanised, cellular rubber with a closed-cell smooth surface and circular cross-section. FERMADUR®-C seals joints by restoring forces which are created by the deformation of the sealing profile when it is installed in the joint. It is not necessary to glue the joint edges. FERMADUR®-C can therefore be processed in summer and winter, in rain and snow independently of the weather conditions. Even with leaky joints under constant water pressure, FERMADUR®-C can be installed and is effective immediately.

**Usage**

The FERMADUR®-C system can be used in new construction and in rehabilitation. Typical usage areas are in sealing working and expansion joints in particular in civil engineering and in bridge building at the caps and the central longitudinal joints.

**Special Advantages:**
- Can be installed at almost any weather conditions.
- No primer or adhesive is needed.
- Quick and professional installation by trained personnel.
- Withstands water pressure of up to 1.0 bar.

**Typical Product Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength</td>
<td>N/mm²</td>
<td>&lt; 3</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>%</td>
<td>&gt; 150</td>
</tr>
<tr>
<td>Recovery tension (15 min. at +23 °C (+73.4 °F), 35 % deformation)</td>
<td>N/mm²</td>
<td>0.20 – 0.40</td>
</tr>
<tr>
<td>Pressure deformation remaining after 24 hr storage at +70 °C (+158 °F)</td>
<td>%</td>
<td>≤ 27</td>
</tr>
</tbody>
</table>

The water pressure resistance of the installed FERMADUR®-C profile was tested under the supervision of MPA Dortmund on a DN 1800 pipe connection. The test was done without a factory-fitted sleeve seal and without the compression seal profile being supported from the rear. The installation and design specifications were in line with the manufacturer’s instructions and done by a trained specialist company. It was determined that, under these conditions, a water pressure resistance of up to 1.0 bar could be achieved. A corresponding test report is available.

**Application**

Important requirements for the sealing effect of FERMADUR®-C are the minimum and total deformation. The joint to be sealed must therefore be exactly measured and surveyed. When determining the profile, the component movements and the expected changes to the joint width and the water pressure acting on the joint must be taken into account. In addition, the structural design of the joint and the surface of the components, in accordance with DIN 18 540, sheet 1: “Internal joint surfaces must run parallel to a depth of D=2xW”. In the area of the joint, the concrete must be so impermeable to water that no water circulation can occur at the expected water pressure. In addition, the joint edges must be even and clean and may not have any break-outs and blowholes to a depth of twice the joint width. If necessary, improvements to the concrete or mortar can be made using silification or impregnation. The usage temperature lies between -5 °C and +50 °C (+23°F and +122°F). Connection points and crossing points are connected or glued using SICOMET 8300. The adhesive must be stored in a cool place (also at the construction site).

The FERMADUR®-C can be installed by hand or using a machine. The joint gap width should not be less than 15 mm or more than 35 mm.

The sealing work using FERMADUR®-C profiles may only be done by well-trained and experienced specialist staff. The processing is normally done by contractors whose staff have been trained by DENSO GmbH.

**Material Resistance**

Resistance against chemical and physical influences.

- Resistant to:
  - Waste water in a range from pH 2 to pH 12
  - Dilute acids and alkalis
  - Chlorinated water
  - Detergents
  - Weathering
  - Petroleum spirit
  - Mineral and fuel oil
  - Alcohol

Unstable in the long run to:
- Organic solvents (e.g. toluene, ethyl acetate)
For particular loads, we ask that you contact us and indicate the chemical name.

**Ordering Information & Packaging**

The profile diameters start at 10 mm and are available in various diameters up to 54 mm. The delivery is in bundles with individual lengths of 5 m to 15 m, depending on the diameter of the profile. The colour is black. To glue the profiles together, SICOMET 8300 cyanoacrylate adhesive is used, this is supplied in 50 g units.
FERMADUR®-S

FERMADUR®-S is a compression seal made of styrene butadiene-rubber (SBR) for underground joints.

Description

FERMADUR®-S is a sealing profile made of vulcanised, cellular rubber with a closed-cell smooth skin and a circular cross-section.

Usage

The FERMADUR®-S system can be used in new construction and in rehabilitation.

Typical areas of application are the sealing of working and expansion joints particularly in civil engineering however only for joint designs which are not exposed to direct UV or ozone stresses.

Typical Advantages:

- Can be installed at almost any weather conditions.
- No primer or adhesive is needed.
- Quick and professional installation by trained personnel.
- Withstands water pressure of up to 1.0 bar.

Special Advantages:

- Can be installed at almost any weather conditions.
- No primer or adhesive is needed.
- Quick and professional installation by trained personnel.
- Withstands water pressure of up to 1.0 bar.

Application

Important requirements for the sealing effect of FERMADUR®-S are the minimum and total deformation. The joint to be sealed must therefore be exactly measured and surveyed. When determining the profile, the component movements and the expected changes to the joint width and the water pressure acting on the joint must be taken into account. In addition, the structural design of the joint and the surface of the components, in accordance with DIN 18 540, sheet 1: “Internal joint surfaces must run parallel to a depth of D=2xW”. In the area of the joint, the concrete must be so impermeable to water that no water circulation can occur at the expected water pressure. In addition, the joint edges must be even and clean and may not have any breaks and blowholes to a depth of twice the joint width. If necessary, improvements to the concrete or mortar can be made using silicification or impregnation.

Resistance against chemical and physical influences.

Resistant to:

- Chlorinated water
- Detergents
- Weathering
- Petroleum spirit
- Mineral and fuel oil

Limited resistance to:

- Chlorinated solvents (e.g. toluene, ethyl acetate)
- Alcohol

For particular loads, we ask that you contact us and indicate the chemical name.

Material Resistance

Resistance against chemical and physical influences.

Resistant to:

- Waste water in a range from pH 2 to pH 12.
- Dilute acids and alkalis

Limited resistance to:

- Chlorinated water
- Detergents
- Weathering

Material Resistance

Resistance against chemical and physical influences.

Resistant to:

- Waste water in a range from pH 2 to pH 12.
- Dilute acids and alkalis

Limited resistance to:

- Chlorinated water
- Detergents
- Weathering

Modern Design

The water pressure resistance of the installed FERMADUR®-S Profi was tested under the supervision of MPA Dortmund on a DN 1800 pipe connection. The test was done without a factory-fitted sleeve seal and without the compression seal profile being supported from the rear. The installation and design specifications were in line with the manufacturer’s instructions and done by a trained specialist company.

The usage temperature lies between -5 °C and +50 °C (+23 °F and +122 °F). Connection points and crossing points are connected or glued using SICOMET 8300. The adhesive must be stored in a cool place (also at the construction site). The adhesive is only used as an installation aid during the installation.

The FERMADUR®-S can be installed by hand or using a machine. The joint gap width should not be less than 15 mm or more than 35 mm. The sealing work using FERMADUR®-S profiles may only be done by well trained and experienced specialist staff. The processing is normally done by contractors whose staff have been trained by DENSO GmbH.

Ordering Information & Packaging

The profile diameters start at 10 mm and are available in various diameters up to 54 mm. The delivery is in bundles with individual lengths of 5 m to 15 m, depending on the diameter of the profile. The colour is black. To glue the profiles together, SICOMET 8300 cyanoacrylate adhesive is used, this is supplied in 50 g units.

Typical Product Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength</td>
<td>N/mm²</td>
<td>≥3</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>%</td>
<td>≥350</td>
</tr>
<tr>
<td>Recovery tension (15 min. at +23 °C)</td>
<td>N/mm²</td>
<td>0.20 - 0.40</td>
</tr>
<tr>
<td>Pressure deformation remaining (after 24 hr at +70 °C)</td>
<td>%</td>
<td>≤ 20</td>
</tr>
</tbody>
</table>
TOK®-BSW System

System consisting of bituminous joint compound and weather-resistant protective layer for the permanent sealing of joints in concrete safety barriers.

Description

The TOK®-BSW System is a joint sealing system for joints in concrete safety barriers. The system consists of individual components perfectly matched to one another. TOK®-BSW Primer as the primer for the joint compound, TOK®-BSW Mastic, a high-performance, modified bituminous compound, and TOK®-BSW Protect, an extremely weather-resistant, highly-modified bituminous compound. These compounds have been successfully deployed for many years in comparable products and have established a solid reputation in the industry as durable protection systems.

Usage

The TOK®-BSW System is typically used for joint sealing in concrete safety barriers. A combination of an elastic filling material and a weather-resistant protective layer ensures the level of safety necessary for a durable and highly functional joint sealing in safety-conscious applications.

Special Advantages:
- Component-matched system.
- Long-lasting and weather-resistant.
- UV- and ozone-resistant.
- Simple to work with.
- The joint compound meets the requirements of DIN EN 14188 Part 1, type N2.
- For new construction and renovation work.

Application

General instructions

As a rule, the joint compound should only be installed in dry conditions and where joint surface temperatures are at least 0 °C (+32 °F). The maximum surface temperature should not exceed +40 °C (+104 °F).

Preparing the joints

The concrete must be dry, clean, and free from loose parts or release agents. Concrete must be at least 7 days old and have attained at least 75% of its 28 days compressive strength at the time of jointing. Coated surfaces must be pre-treated.

In accordance with ZTV FRS, the recommended joint width is 10 mm. We recommend a joint width of 15 mm. Joint flanges must run exactly parallel to one another. In accordance with ZTV Fug-StB, the recommended joint depth for concrete joints is at least 1.5x the joint gap width and is also dependent on expected changes in the joint gap width. We recommend a joint fill depth of 25 mm.

In all cases, “three-surface adhesion”, i.e. bonding of the joint sealant to the sub- surface (and not to the joint flanges) must be avoided. In addition, an appropriate heat-resistant lining must be used in accordance with ZTV Fug-StB (e.g. silicone paper or cord seal, etc.). Further details about measuring joint cross-sections and about suitable linings can be obtained by consulting ZTV Fug-StB.

Application of TOK®-BSW Primer

Following the proper and correct pretreatment of the flanges, TOK®-BSW Primer is applied across all contact surfaces. In summer, the air drying time is approx. 3-5 minutes. After the primer has air-dried, the lining is inserted into the joint.

Installation of TOK®-BSW Mastic

The application of TOK®-BSW Mastic involves the use of specialized equipment. The material bars are filled into cartridge (800 ml) by an extrusion machine. Immediately after filling, the sealant material is then inserted into the vertical joints. The material must be worked relatively quickly, so that the heated compound can be easily pressed out of the cartridge.

Once the material has been completely pressed out of the cartridge, new material can easily be filled and work can proceed immediately. The sealant ends approx. 3 mm before the outer edge of the concrete, to leave enough space for the protective layer.

Reworking

TOK®-BSW can also be utilized for renovation work on existing joints. Here, the same general prerequisites apply as for new construction work. Renovation work must ensure that all residues of old joint fillers have been removed and joint widths must be widened to at least 15 mm.

Ordering Information & Packaging

<table>
<thead>
<tr>
<th>Product name</th>
<th>Colour</th>
<th>Article no.</th>
<th>Packaging units</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOK®-BSW Primer</td>
<td>clear</td>
<td>190.77.566</td>
<td>0.5 l can, 4 cans per box (2 l filled)</td>
</tr>
<tr>
<td>TOK®-BSW Mastic</td>
<td>black</td>
<td>190.77.703</td>
<td>Supplied in bar form in boxes, 20 kg/bag and 12 boxes per pallet (240 kg)</td>
</tr>
<tr>
<td>TOK®-BSW Protect</td>
<td>grey-brown</td>
<td>190.77.766</td>
<td>Supplied in bar form in boxes, 30 kg/bag and 12 boxes per pallet (360 kg)</td>
</tr>
</tbody>
</table>

Storage

TOK®-BSW Primer can be stored for at least 3 years from the date of manufacture in its unopened original packaging. TOK®-BSW Mastic can be stored for at least 3 years from the date of manufacture when tightly sealed in its original packaging. TOK®-BSW Protect can be stored for at least 3 years from the date of manufacture when tightly sealed in its original packaging. All products in the system must be stored in a cool and dry place, and must not be exposed to direct sunlight or frost.

Installation of TOK®-BSW Protect

To provide additional protection, the TOK®-BSW Mastic joint filler receives a layer of TOK®-BSW Protect. This compound is also installed using the same type of equipment that was used to process the TOK®-BSW Mastic.

Only the nozzles technology in the cartridge gun is different – to ensure that the compound can be applied so it is flush to the surface of the concrete barrier.

Further benefits of the TOK®-BSW System:

Renovation

TOK®-BSW can also be utilized for renovation work on existing joints. Here, the same general prerequisites apply as for new construction work. Renovation work must ensure that all residues of old joint fillers have been removed and joint widths must be widened to at least 15 mm.

www.denso.de
DENSO®-Pal

Sealing system comprised of elastomer roll rings and pipe sleeves for cable and pipeline masonry bushings.

Discription

DENSO®-Pal is a sealing system for wall penetrations for pipelines and cables. The DENSO®-Pal system comprises the DENSO®-Pal and the DENSO®-Pal. The DENSO®-Pal is made of a high-quality elastomer material with a cellular structure.

With its high restoring force, the DENSO®-Pal ensures a reliable seal for the wall penetrations.

The DENSO®-Pal is available in many practical sizes for all common nominal sizes of domestic service ducting.

Application

The DENSO®-Pal Pipe Sleeve is first bonded to the wall material with a suitable mortar. Sealing of the service pipe or cable is achieved by using 3 DENSO®-Pal Rings.

1. The first DENSO®-Pal Ring is inserted over the service pipe or cable and rotated away from the pipe end to a distance matching the length of the DENSO®-Pal Pipe Sleeve.

2. The second DENSO®-Pal Ring is inserted over the pipe end. The service pipe is then pushed through the pipe sleeve until approx. 60–70 mm protrudes from the opposite side (typically, this will be the basement side).

3. The third DENSO®-Pal Ring is inserted over the pipe end that was pushed through the wall and the pipe then pulled back until all three rings are in position between the pipe sleeve and service pipe.

Note that national legislation and regulatory frameworks must be observed for all work on wall penetrations. Wall penetrations are a topic covered in the following standards and guidelines:

- DIN 18012 (house service connection facilities)
- DIN 1988 (water)
- VDE 0100 (low-voltage electrical installations)
- VDE 0800 (telecommunications)

Special Advantages:

- Wide range of types.
- Simple, rapid installation.
- Excellent sealing efficiency and durability.
- No curing reaction.
- No liquid components.
- Solvent-free.

Typical Product Properties

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Unit</th>
<th>Typical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive strength versus gas and water, DENSO®-Pal System</td>
<td>bar</td>
<td>≤ 5.0</td>
</tr>
<tr>
<td>Compressive set (at 45 °C) of DENSO®-Pal Ring</td>
<td>%</td>
<td>≤ 30</td>
</tr>
<tr>
<td>Recovery tension</td>
<td>N/m²</td>
<td>0.2 to 0.4</td>
</tr>
<tr>
<td>Working temperature</td>
<td>°C (°F)</td>
<td>-15 to 50 (+5 to +120)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>°C (°F)</td>
<td>-35 to 50 (-31 to 122)</td>
</tr>
</tbody>
</table>

Bedarfsliste

<table>
<thead>
<tr>
<th>Service pipe type</th>
<th>Nominal size</th>
<th>Outer diameter (mm)</th>
<th>Service pipe type</th>
<th>Nominal size</th>
<th>Outer diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic pipe</td>
<td>32</td>
<td>50</td>
<td>Plastic pipe</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>100</td>
<td></td>
<td>50</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>8</td>
<td></td>
<td>63</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>100</td>
<td></td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>25</td>
<td></td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>1 1/4</td>
<td>32</td>
<td></td>
<td>1 1/4</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>1 1/2</td>
<td>40</td>
<td></td>
<td>1 1/2</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2 1/4</td>
<td>40</td>
<td></td>
<td>2 1/4</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2 1/2</td>
<td>50</td>
<td></td>
<td>2 1/2</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60</td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>1 1/8</td>
<td>65</td>
<td></td>
<td>1 1/8</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>1 1/4</td>
<td>70</td>
<td></td>
<td>1 1/4</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>1 1/2</td>
<td>80</td>
<td></td>
<td>1 1/2</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>2 1/2</td>
<td>80</td>
<td></td>
<td>2 1/2</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>2 1/4</td>
<td>80</td>
<td></td>
<td>2 1/4</td>
<td>80</td>
</tr>
</tbody>
</table>

Ordering Information & Packaging

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of rings per box</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 - 13</td>
<td>180</td>
</tr>
<tr>
<td>13 - 22</td>
<td>48</td>
</tr>
<tr>
<td>14 - 10</td>
<td>140</td>
</tr>
<tr>
<td>14 - 12</td>
<td>150</td>
</tr>
<tr>
<td>14 - 16</td>
<td>24</td>
</tr>
<tr>
<td>16 - 13</td>
<td>180</td>
</tr>
<tr>
<td>16 - 16</td>
<td>70</td>
</tr>
<tr>
<td>17 - 12</td>
<td>180</td>
</tr>
<tr>
<td>18 - 21</td>
<td>48</td>
</tr>
<tr>
<td>18 - 26</td>
<td>24</td>
</tr>
<tr>
<td>20 - 20</td>
<td>48</td>
</tr>
<tr>
<td>20 - 24</td>
<td>24</td>
</tr>
<tr>
<td>20 - 28</td>
<td>24</td>
</tr>
</tbody>
</table>

Additional dimensions available on request.
GOMEX®

Elastomer-and elastomer-metal-composite molded parts for a wide range of industrial and technical applications.

Description

For over 30 years, GOMEX® has stood for the very highest quality in complex molded parts made from elastomers and metal-elastomer composites. Our modern injection molding machines offer a wide choice of molds and feedstock materials. This enables us to comply with a wide variety of requirements for mechanical properties and working temperatures, as well as resistances to chemicals and weathering.

The development of the component molds and selection of the optimum elastomer formulation is completed in close collaboration with our customers. Finishing work such as deburring and component assembly is completed by our trained personnel to ensure maximum quality for the finished component. Our specialist range comprises GOMEX® molded parts made from metal-elastomer composites. The specialized processing techniques used make additional assembly work unnecessary while ensuring molded parts offer resilience and durability far superior to those from other joining technologies.

As a result of these product characteristics, GOMEX® molded parts have been successfully used for many years in applications such as sieve cleaning balls for abrasives, valve seals, buffers, sealing cuffs, bellows, etc., etc.

Special Advantages:
- Complex molded parts to customer specifications.
- Wide choice of elastomer materials.
- Metal-elastomer composites offering outstanding stability.
- Outstanding quality.

Typical Product Properties

<table>
<thead>
<tr>
<th>Elastomer materials (selection)</th>
<th>Special properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rubber (NR)</td>
<td>High resilience, offers excellent stability versus dynamic loads</td>
</tr>
<tr>
<td>Styrene butadiene rubber (SBR)</td>
<td>Good thermal stability, good resistance to inorganic acids and bases</td>
</tr>
<tr>
<td>Ethylene propylene diene monomer (EPDM) rubber</td>
<td>Good UV stability, good resistance to weathering</td>
</tr>
<tr>
<td>Nitrile-butadiene rubber (NBR)</td>
<td>Good stability versus oil, good gas tightness</td>
</tr>
<tr>
<td>Fluoro-elastomer polymer (FPM)</td>
<td>Very good resistance to chemicals, very good thermal resistance</td>
</tr>
<tr>
<td>Acrylic-based elastomer (AEM/ACE)</td>
<td>High resistance to oxygen and ozone</td>
</tr>
</tbody>
</table>

Molded part dimensions

<table>
<thead>
<tr>
<th>Unit</th>
<th>Typical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>approx. 540 x 570</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 10</td>
</tr>
<tr>
<td>Maximum part weight</td>
<td>approx. 1400</td>
</tr>
</tbody>
</table>

Ordering Information & Packaging

Information about pack sizes is available on request.
ADVANCED IN SEALING.

1922 Company founded in Berlin

1927 Invention of DENSO® Binde (petrolatum binding), which was the world’s first passive corrosion protection for pipelines. Patent granted on 14 July 1927.

1946 Reconstruction after complete destruction in World War II.

1952 TOK®-Band to seal sewers was developed.

1958 DENSIT® Band – the first butyl-rubber sealing tape was introduced.

1967 The first co-extruded three-layer tape, DENSOLEN®/S40 for welded joints was invented.

1972 Patenting of the first plastic mortar, DENSOLASTIC®-EM, for road construction.

1984 TOKOMAT® was invented for mechanical extrusion of bitumen joint tapes to make secure connections/joints in road construction.

1987 Introduction of TOK®-Band Special for joints and seams in asphalt road construction.

1996 Invention of TOK®-Sil Resist joint compound for SMS plants (slurry, manure, silage effluent - silos). An innovative system which meets the highest requirements for chemical resistance and, as a global first, can be used for horizontal and vertical joints.

1997 DENSOLASTIC®-TL, the polyurethane filler compound for corrosion protection for weld seams was introduced.

1999 The special repair compound, TOK®-Rep was developed by DENSO for grooves in porous asphalt surfaces.


2008 Bitumen-based, weather-resistant joint compound system for creating permanent seals on joints in concrete protective walls.

2009 VivaxCoat® on the market - the advanced Corrosion prevention system for wet surfaces, a disconnection of the line is not necessary.

2010 Bitumen-based, weather-resistant joint compound system for creating permanent seals on joints in concrete protective walls.

2012 MarineProtect™, an innovative protection system for jetties, piers, cargo bridges and offshore areas was introduced.  

2013 Introduction of TOK®-Sil Resist joint compound for SMS plants (slurry, manure, silage effluent - silos). An innovative system which meets the highest requirements for chemical resistance and, as a global first, can be used for horizontal and vertical joints.

2016 ADVANCED IN SEALING.
Please find further information about our corrosion prevention products and the innovative Product finder on our Homepage: www.denso.de

DENSO ONLINE

CORROSION PREVENTION
another part of our expertise

The brochure about “Corrosion prevention” can be ordered at info@denso.de.

DENSO®
Petrolatum Tapes and Mastics

VivaxCoat®
Coating System for Moist Surfaces

DENSOLEN®
PE/Butyl-Tapes and Mastics

DENSOLID®
Polyurethane Coatings

DENSIT®
Insulation and Sealing Tapes

MarineProtect™
Jetty Pile Protection

DEKOTEC®
Heat-Shrinkable Sleeves

DENSONA®
Verarbeitungsgeräte

VivaxCoat®
Heat Shrinkable Coatings for Moist Surfaces

DENSOMAT®
Anwendungskonzepte
Corrosion Prevention and Sealing Technology

can be obtained from the following companies of the DENSO Group Germany:

DENSO GmbH
P.O. Box 150120
51344 Leverkusen / Germany
Phone +49 214 2602-0
Fax +49 214 2602-217
www.denso.de
info@denso.de

DEKOTEC GmbH
P.O. Box 150120
51344 Leverkusen / Germany
Phone +49 214 2602-0
Fax +49 214 2602-217
www.dekotec.de
info@dekotec.de

DENSO Dichtungstechnik GmbH & Co. KG
Bahnhofstrasse 36
5502 Hunzenschwil / Switzerland
Phone +41 43 3662244
Fax +41 43 3662243
www.denso-kor.ch
info@denso-kor.ch

DENSO Quimica S.A.U.
Apdo. Correos 18 Yunque, 9-11 Nave 12A
28760 Tres Cantos (Madrid) / Spain
Phone +34 91 8064254
Fax +34 91 8040068
www.densoquimica.com
info@densoquimica.com

Imbema DENSO N.V./S.A.
Industrieweg 25
9420 Erpe-Mere / Belgium
Phone +32 53805172
Fax +32 53807436
www.imbemadenso.be
info@imbema.be

Van Kaam KTL
Rechte Tocht 11
1507 EZ Zaandam / The Netherlands
Phone +31 75 6314841
Fax +31 75 6356261
www.kaamktl.nl
info@kaamktl.nl

Our product information, application recommendations and other product related documents are made for your convenience only. Since many installation factors are beyond our control, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection therewith.

All information contained in this document is to be used as a guide and does not constitute a warranty of specification. The information contained in the document is subject to change without notice. For this reason, no liability can be accepted for inaccurate advice or any failure to provide advice. The legal relationship shall be governed by German law.