

SEALING TECHNOLOGY

Road Construction and Maintenance



■ **TOK®**
Bitumen products



■ **TOKOMAT®**
Application system



■ **DENSOLASTIC®**
Cold pouring compounds



■ **REINAU®**
Hot pouring compounds



■ **FERMADUR®**
Compression seals



■ **PLASTOMAT®**
Application system

PRODUCTS

Bitumen joint tapes

- **TOK®-Band Spezial** 10-11
hot-applied
- **TOK®-Band A** 12-13
aktivatable
- **TOK®-Band SK** 14-17
self-adhesive
- **TOK®-Band SK N2** 18-19
self-adhesive, for low temperatures
- **TOK®-Band SK Mark** 20-21
self-adhesive and profiled
- **TOK®-Band SK Drain** 22-24
for porous asphalt, self-adhesive
- **TOK®-Band DR** 26-27
triangular, hot-applied or self-adhesive

Mechanically extruded bitumen joint tape

- **TOKOMAT®** 28-29
application system
- **TOK®-Riegel** 30-31
bitumen joint sealing

Pouring compounds

hot-applied and stable:

- **TOK®-Sil Resist** 34-35

hot-applied:

- **TOK®-Melt N1** 36-37
- **TOK®-Melt N2** 38-39
- **MELTOMAT®** 41
device for melting bitumen pouring compounds
- **REINAU®-Plastic Resin Primer** 40
- **REINAU®-Crack Pouring Compound 1.25** 40
- **REINAU®-Pavement Pouring Compound** 40
- **REINAU®-SNV 164 1.2** 40
- **REINAU®-N2 Plus+** 41
- **REINAU®-Rail Joint Pouring Compound** 41

cold-applied:

- **DENSOLASTIC®-KU** 44-45
for manhole covers and similar applications
- **DENSOLASTIC®-SV** 46-47
for sensor slots and similar applications
- **DENSOLASTIC®-VT** 48-49
sealing compound for pollution prevention

Joint seam adhesives

- **TOK®-Plast** 52-53
cold plastic compound
- **PLASTOMAT®** 54-55
application system

Mortars, compounds, profiles and reinforcement

- **DENSOLASTIC®-EM** 58-61
innovative elastomer mortar
- **TOK®-Crete 45 V2.0** 62-65
mineral-based repair mortar
- **TOK®-Dur** 66-69
coating compound
- **TOK®-Rep** 70-71
road repair compound
- **TOK®-SK Rissband** 72
self-adhesive bitumen strip
- **TOK®-Band Spezial Rundstrang** 73
bitumen round profile
- **TOK®-Armabit SK** 74-75
asphalt reinforcement

Repair asphalt

- **TOK®-Fill** 78-79
conventional
- **TOK®-Fill Aqua** 80-81
reactive, fast-curing system
- **TOK®-Fill PA** 82-83
for porous asphalt, reactive curing

Track construction

- **DENSOLASTIC®-SU** 86-87
rail embedding compounds
- **TOK®-Melt SU** 88-89
bituminous rail embedding compound

Civil engineering

- **DENSO®-Gleitmittel** 92-93
(Anti-Friction Compound) for use in mechanical seals on concrete pipes and manhole covers
- **TOK®-Strip** 94-95
for manhole components and special profiles made of concrete
- **FERMADUR®-C** 96-97
compression seal for UV and ozone stressed joints
- **FERMADUR®-S** 98-99
compression seal for underground joints
- **TOK®-BSW System** 100-101
joint sealing solution for protective walls
- **GOMEX®** 102-103
elastomer moulded parts
- **GOMEX®-Pal** 104-105
domestic service system

DENSO

- **The success story** 106-107
- **Corrosion Prevention** 108-109
- **Distributor Network** 110

WE KEEP IT SEALED

in road-, track construction and civil engineering



Bitumen joint tapes TOK®-Band

- TOK®-Band Spezial
- TOK®-Band A
- TOK®-Band SK
- TOK®-Band SK N2
- TOK®-Band SK Mark
- TOK®-Band SK Drain
- TOK®-Band DR
- TOKOMAT®-process
- TOK®-Riegel



Pouring compounds

- TOK®-Sil Resist
- TOK®-Melt (Typ N1 and N2)
- MELTOMAT®
- REINAU®-Plastic Resin Primer
- REINAU®-Crack Pouring Compound 1.25
- REINAU®-Pavement Pouring Compound
- REINAU®-SNV 164 1.2 N2
- REINAU®-N2 Plus+
- TOK®-Melt SU
- DENSOLASTIC®-KU, -SV, -VT



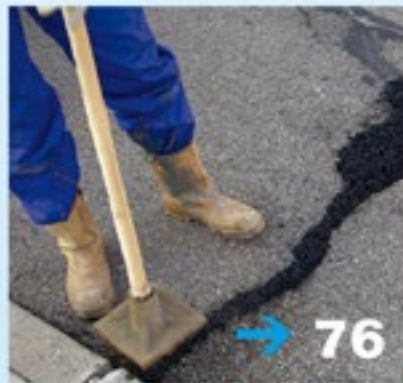
Joint seam adhesives

- TOK®-Plast
- PLASTOMAT®-process



Mortars, compounds, profiles and reinforcement

- DENSOLASTIC®-EM
- TOK®-Crete 45 V2.0
- TOK®-Dur
- TOK®-Rep
- TOK®-SK Rissband
- TOK®-Band Spezial Rundstrang
- TOK®-Armabit SK



Repair asphalt

- TOK®-Fill
- TOK®-Fill Aqua
- TOK®-Fill PA



Track construction and civil engineering

- DENSOLASTIC®-SU
- REINAU®
- DENSO®-Gleitmittel
- TOK®-Strip
- FERMADUR®-C
- FERMADUR®-S
- TOK®-BSW System
- GOMEX®
- GOMEX®-Pal

PRODUCT FINDER

Product *	Product Property			Tested in accordance to			Application temperature (environment)		Product application		Page
	strong	elastic/ stretchable	Shore hardness	ZTV Fug- StB	DIN EN 14188-1	VDV 6201	min. °C (°F)	max. °C (°F)	cold	warm	
TOK®-Bitumen joint tapes											
TOK®-Band Spezial		✓		✓			+5 (+41)	+50 (+122)		✓	10
TOK®-Band Spezial DR		✓		✓			-0 (+32)	+35 (+95)		✓	26
TOK®-Band Spezial Rundstrang		✓		✓			+5 (+41)	+50 (+122)		✓	73
TOK®-Band A		✓		✓			+5 (+41)	+35 (+95)		✓	12
TOK®-Band SK		✓		✓			+5 (+41)	+50 (+122)	✓		14
TOK®-Band SK N2		✓		✓			0 (+32)	+35 (+95)	✓		18
TOK®-Band SK Mark		✓		✓			+5 (+41)	+50 (+122)	✓		20
TOK®-Band SK Drain		✓		✓			+5 (+41)	+50 (+122)	✓		22
TOK®-Band SK DR		✓		✓			+5 (+41)	+50 (+122)	✓		24
TOK®-SK Rissband		✓		✓			+5 (+41)	+50 (+122)	✓		72
TOKOMAT® / TOK®-Riegel		✓		✓			0 (+32)	+35 (+95)		✓	28
TOK®-hot-applied											
TOK®-Melt N1		✓			✓		+5 (+41)	+50 (+122)		✓	36
TOK®-Melt N2		✓			✓		+5 (+41)	+50 (+122)		✓	38
TOK®-Melt SU		✓				✓	+5 (+41)	+50 (+122)		✓	88
TOK®-seam adhesive & Repair asphalt											
TOK®-Plast	✓						+5 (+41)	+50 (+122)	✓		52
TOK®-Fill	✓						-10 (+14)	+25 (+77)	✓		76
TOK®-Fill Aqua	✓						-10 (+14)	+45 (+113)	✓		80
TOK®-Fill PA	✓						-10 (+14)	+30 (+86)	✓		82
TOK®-repairing mortar, coating compound, reinforcement											
TOK®-Rep	✓						+5 (+41)	+50 (+122)	✓		70
TOK®-Crete 45 V2.0	✓						-10 (+14)	+30 (+86)	✓		62
TOK®-Dur		✓					+5 (+41)	+40 (+104)	✓		66
TOK®-Armabit SK		✓					+5 (+41))	+30 (+86)	✓		74
TOK®-Sealants											
TOK®-Sil Resist		✓			✓		0 (+32)	+40 (+104)		✓	34
TOK®-Strip							0 (+32)	+35 (+95)	✓		92
TOK®-BSW System		✓			✓		0 (+32)	+40 (+104)		✓	100
DENSOLASTIC®-cold-applied											
DENSOLASTIC®-EM		✓	A 65-70				+5 (+41)	+40 (+104)	✓		58
DENSOLASTIC®-KU		✓	A 65				+5 (+41)	+40 (+104)	✓		44
DENSOLASTIC®-SU		✓	A 45-85			✓	+5 (+41)	+35 (+95)	✓		86
DENSOLASTIC®-SV	✓		D 70-75				+5 (+41)	+40 (+104)	✓		46
DENSOLASTIC®-VT		✓	A 18-20				+5 (+41)	+40 (+104)	✓		48
REINAU®-hot pouring compounds											
REINAU®-Pavement Pouring Compound		✓		✓			+5 (+41)	+50 (+122)		✓	40
REINAU®-Crack Pouring Compound 1,25		✓		✓			+5 (+41)	+50 (+122)		✓	40
REINAU®-SNV 164 1.2		✓			✓		+5 (+41)	+50 (+122)		✓	41
REINAU®-N2 Plus+		✓			✓		+5 (+41)	+50 (+122)		✓	41
REINAU®-Rail Joint Pouring Compound		✓		✓			+5 (+41)	+50 (+122)		✓	41
FERMADUR®-Compression seals											
FERMADUR®-C		✓	A 30-35				-10 (+14)	+50 (+122)	✓		96
FERMADUR®-S		✓	A 30-35				-10 (+14)	+50 (+122)	✓		98
DENSO®-Lubricant											
DENSO®-Gleitmittel	✓						-10 (+14)	+50 (+122)	✓		92

*The overview shows a selection of the extensive product range without the promise of any product features. The product properties can be found in the specific product information.

Product*	Product characteristic	Product characteristic						Page
		Joints in asphalt	Joints in concrete	Tram construction	Sealing protection walls	Repair of road surfaces and runways	Channel and shaft seals	
TOK®-Bitumen joint tapes								
TOK®-Band Spezial	hot-applied	✓						10
TOK®-Band Spezial DR	hot-applied, triangular profile	✓						16
TOK®-Band Spezial Rundstrang	hot-applied, for cracks	✓						22
TOK®-Band A	activatable	✓						14
TOK®-Band SK	self-adhesive	✓						26
TOK®-Band SK N2	self-adhesive, for low temperatures	✓		✓				22
TOK®-Band SK Mark	self-adhesive, profiled	✓						24
TOK®-Band SK Drain	self-adhesive, for porous asphalt	✓						73
TOK®-Band SK DR	self-adhesive, triangular profile	✓						20
TOK®-SK Rissband	self-adhesive, for cracks	✓						72
TOKOMAT® / TOK®-Riegel	automatic extrusion	✓		✓	✓			28
TOK®-hot-applied								
TOK®-Melt N1	elastic, very stretchable	✓	✓					38
TOK®-Melt N2	normal stretchable, traversable	✓	✓					36
TOK®-Melt SU	energy-elastic			✓				88
TOK®-seam adhesive & Repair asphalt								
TOK®-Plast	thixotrope	✓(Seams)						52
TOK®-Fill	normal curing					✓		76
TOK®-Fill Aqua	reactiv curing					✓		80
TOK®-Fill PA	reactiv curing, for porous asphalt	✓				✓		82
TOK®-repairing mortar & coating compound								
TOK®-Rep	quick setting time					✓		70
TOK®-Crete 45 V2.0	all weather usage, high pressure-resistant					✓		62
TOK®-Dur	quickly ready for traffic					✓		66
TOK®-Armabit SK	According to DIN EN 15381					✓		74
TOK®-Sealants								
TOK®-Sil Resist	horizontal and vertical usage	✓	✓				✓	34
TOK®-Strip	self-adhesive						✓	94
TOK®-BSW System	uv-resistant		✓		✓			100
DENSOLASTIC®-cold-applied								
DENSOLASTIC®-EM	dynamic claimable						✓	58
DENSOLASTIC®-KU	noise reducing						✓	44
DENSOLASTIC®-SU	vibration-reducing			✓				86
DENSOLASTIC®-SV	for sensor- and induction loops	✓	✓			✓		46
DENSOLASTIC®-VT	LAU-permission	✓	✓					48
REINAU®-hot pouring compounds								
REINAU®-Pavement Pouring Compound	polymer modified, thermoplastic							40
REINAU®-Crack Pouring Compound 1,25	polymer modified, thermoplastic	✓	✓					40
REINAU®-SNV 164 1.2	polymer modified, thermoplastic	✓	✓					41
REINAU®-N2 Pus+	polymer modified, thermoplastic	✓	✓					41
REINAU®-Rail Joint Pouring Compound	polymer modified, thermoplastic			✓				41
FERMADUR®-Compression seals								
FERMADUR®-C	for UV and ozone stressed joints		✓		✓			96
FERMADUR®-S	for underground joints		✓		✓			98
DENSO®-Lubricant								
DENSO®-Gleitmittel	compatible with rubber seals						✓	92

*The overview shows a selection of the extensive product range without the promise of any product features. The product properties can be found in the specific product information.

TOK®-Sil Resist

For slurry/liquid-manure/
silage facilities

→ S. 34

Concrete

TOK®-BSW System

Joint sealing

→ S. 100

DENSOLASTIC®

Cold poured compounds

→ S. 44

TOK®-SK Rissband,

TOK®-Rundstrang

Self-adhesive bituminous
profile strip

→ S. 72

TOK®-Band

Bituminous joint tape
for joints and seams

→ S. 8

FERMADUR®

Compression seals

→ S. 96

TOK®-Crete 45 V2.0

Concrete repair mortar

→ S. 62

TOKOMAT®/TOK®-Riegel

Mechanical application of bitumen joint tape

→ S. 28

TOK®-Rep

Groove repair compound

→ S. 70

REINAU®-SNV 164 1.2

Joint pouring compound

→ S. 41

TOK®-Plast

Joint seam adhesive

→ S. 52

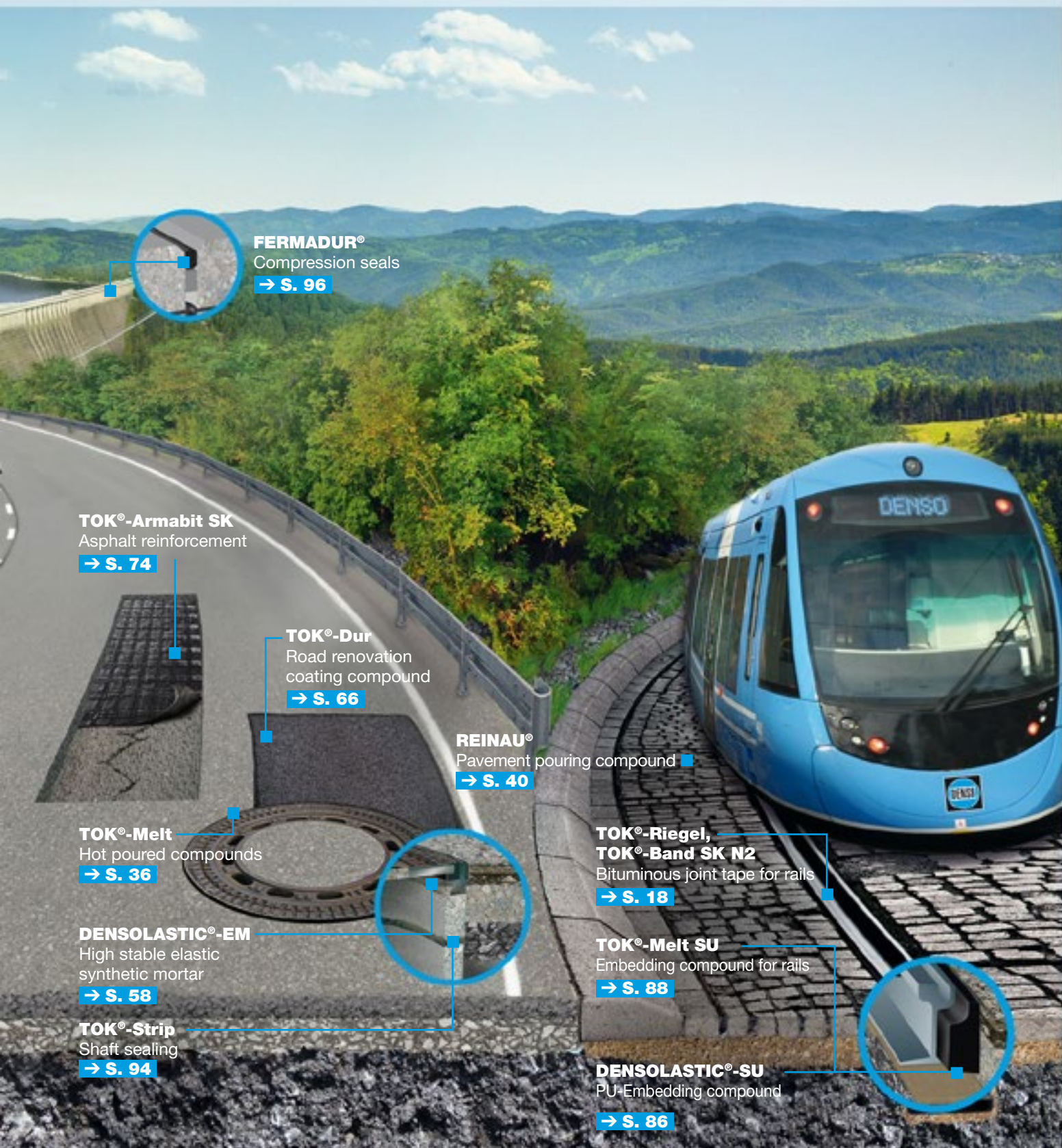
TOK®-Fill

Repair asphalt

→ S. 78

Asphalt

FIELDS OF APPLICATION



FERMADUR®
Compression seals
→ S. 96

TOK®-Armabit SK
Asphalt reinforcement
→ S. 74

TOK®-Dur
Road renovation
coating compound
→ S. 66

REINAU®
Pavement pouring compound
→ S. 40

TOK®-Melt
Hot poured compounds
→ S. 36

DENSOLASTIC®-EM
High stable elastic
synthetic mortar
→ S. 58

TOK®-Strip
Shaft sealing
→ S. 94

**TOK®-Riegel,
TOK®-Band SK N2**
Bituminous joint tape for rails
→ S. 18

TOK®-Melt SU
Embedding compound for rails
→ S. 88

DENSOLASTIC®-SU
PU-Embedding compound
→ S. 86



New TOK®-Band

From the No.1 for bitumen joint tape

**NO PRIMER REQUIRED –
FOR THE FIRST TIME EVER**



TOK®-Band SK

Successful
self-adhesive –
no primer required



TOK®-Band A

Very fast activation –
Applied in seconds

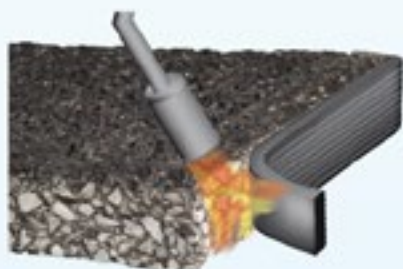


TOK®-Band SK N2

Flexible even at
very low temperatures

TOK®-Band

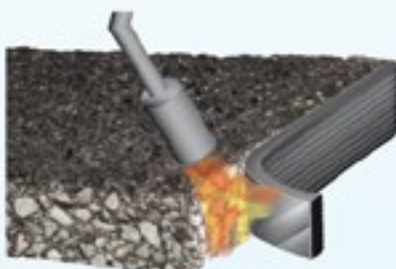
Bitumen joint tapes



→ 10

TOK®-Band Spezial

Hot applied bitumen joint tape for joints and seams.



→ 12

TOK®-Band A

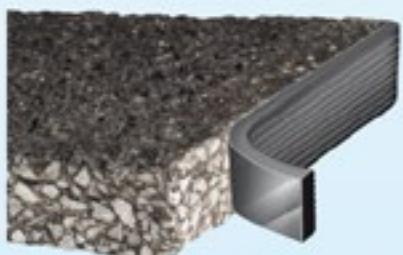
Activatable Bitumen joint tape for joints and seams in asphalt road construction.



→ 14

TOK®-Band SK

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



→ 18

TOK®-Band SK N2

Self-adhesive and highly elastic bitumen joint tape. Ideal for use at low temperatures.



→ 20

TOK®-Band SK Mark

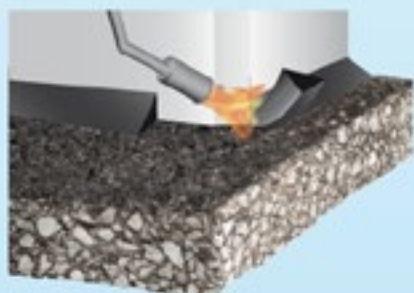
Self-adhesive bitumen joint tape with **protrusion profiling** for joints and seams in asphalt road construction.



→ 22

TOK®-Band SK Drain

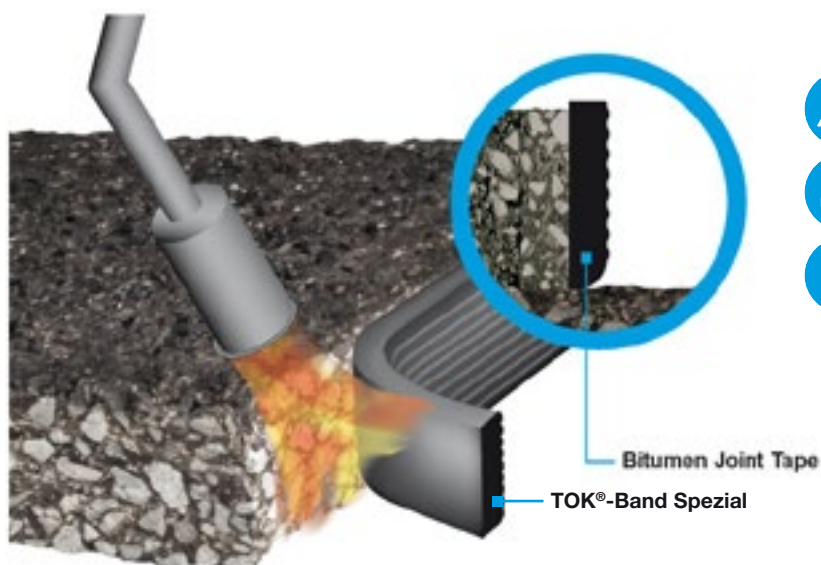
Self-adhesive bitumen joint tape for joints and connections in **porous** asphalt road surfaces.



→ 26

TOK®-Band DR

A bitumen joint tape in a **triangular profile** which is **meltable** or **self-adhesive**.



Special Advantages:



Easy to apply with burner.



Fulfills all requirements of ZTV Fug-StB 15.



Processing temperature from +5°C to +50°C (from +41°F to +122°F).

TOK®-Band Spezial

Melttable bitumen joint tape for joints and seams in asphalt road construction.

Description

TOK®-Band Spezial is a high-quality bitumen joint tape made from polymer-improved road bitumen with exceptional stretch and adhesion properties.

The smooth side of the bitumen joint tape is the side that is melted onto the joint edge. **TOK®-Band Spezial** and its primer, **CORRISOL®-Spezial**, have been tested

in accordance with TL/TP Fug-StB and meet all the requirements of these regulations.

Usage

TOK®-Band Spezial is ideal for sealing joints in asphalt road construction. In accordance with ZTV Fug-StB, it is also

used on components such as concrete curbs and gutters where hot mix is subsequently applied on top.

Thanks to its outstanding material properties, permanent and fully sealed joints are guaranteed.

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

Type of test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (+212)	> +90 (+194)
Cone penetration	0.1 mm	20 - 50	20 - 50
Recovery	%	10 - 30	10 - 30
Cold bending behaviour	°C (°F)	≤ ±0 (±32)	≤ ±0 (±32)
Dilation and adhesive strength	% / N/mm ²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0



Application

Weather conditions:

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges:

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band Spezial:

If all of the requirements for connection edges are fully satisfied, **TOK®-Band Spezial** may be applied to the edge. The primer **CORRISOL®-Spezial** must be applied to the joint edge first. In accordance with ZTV Fug-StB, only the primer that has been tested for use in conjunction with this bitumen joint tape may be used. The bitumen-based primer **CORRISOL®-Spezial** was developed specifically for use with **TOK®-Band Spezial**. In summer, the drying time of the primer is approximately 20 minutes, depending on weather conditions.

Application:

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

ZTV Fug-StB – bitumen joint tapes:

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5-mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm. In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band Spezial is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (w x d x h) 370 x 370 x 160 (or 144) mm.

30 boxes are packed on one euro pallet (800 x 1200 mm).

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
25 x 8	101 12 514	60	1.800
30 x 8	101 12 515	48	1.440
30 x 10	101 12 519	40	1.200
35 x 8	101 12 516	48	1.440
35 x 10	101 12 520	40	1.200

Profile* [HxW]	Article no.	m / box	m / pallet
40 x 8	101 13 416	36	1.080
40 x 10	101 12 521	30	900
45 x 10	101 12 461	30	900
50 x 10	101 21 777	30	900

*on request / minimum purchase 1 unmixed pallet per delivery

Storage

Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F);

do not stack anything on top of the boxes. In these conditions, **TOK®-Band Spezial** can be stored in its sealed original pack-

aging for at least three years from the date of manufacture.



Special Advantages:



Can be applied in seconds.



No primer required.



Fulfills all requirements of ZTV Fug-StB 15.



Processing temperature from +5 °C to +50 °C (from +41 °F to +122 °F).

TOK®-Band A

Bitumen joint tape with activation layer for joints and seams in asphalt road construction.

Description

TOK®-Band A is a high-quality bitumen joint tape made from polymer-improved road bitumen with exceptional stretch and adhesion properties. **TOK®-Band A** has a homogeneous full-surface coating on one side, which is largely non-adhesive at temperatures of approximately -20 °C

to +30 °C (-4 °F to +86 °F). This coating (smooth side of the bitumen joint tape) can be activated by briefly applying heat, for example using a gas burner. After activation, the coating remains highly adhesive for a long period of time, ensuring that the joint tape securely adheres to the properly prepared edge. There is no need to

apply primer. The slightly profiled (wavy) side of the bitumen tape is the side without the activatable coating. This side will later form the base for the "hot" asphalt mix. If necessary, the optional primer **TOK®-SK Primer** can be used to boost the adhesion of **TOK®-Band A** to the joint edge.

Usage

TOK®-Band A is ideal for sealing joints in asphalt road construction. In accordance with ZTV Fug-StB, it is also used on

components such as concrete curbs and gutters where hot mix is subsequently applied on top.

Thanks to its outstanding material properties, permanent and fully sealed joints are guaranteed.

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

Type of test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (+212)	> +90 (+194)
Cone penetration	0.1 mm	20 - 50	20 - 50
Recovery	%	10 - 30	10 - 30
Cold bending behaviour	°C (°F)	≤ ±0 (±32)	≤ ±0 (±32)
Dilation and adhesive strength	% / N/mm ²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0



Application

Weather conditions:

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges:

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band A:

If all of the requirements for connection edges are fully satisfied, **TOK®-Band A** may be applied to the edge without primer.

The relevant test results in accordance with TL/TP Fug-StB are available. If necessary, you can optimise the adhesion of the bitumen joint tape to the edge by applying **TOK®-SK Primer**. In accordance with ZTV Fug-StB, only the primer that has been tested for use in conjunction with this bitumen joint tape may be used. In summer, the drying time of **TOK®-SK Primer** is just 3 to 5 minutes, dependent on weather conditions, allowing further work to start quickly.

Application:

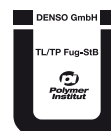
TOK®-Band A is applied to the prepared connection edge with the coated (smooth) side facing upwards. The anti-adhesive paper should be removed just before the tape is laid. The coating (smooth side) of the laid **TOK®-Band A** is then activated using a gas burner. It is sufficient to hold the flame directly over the coating for approximately 1–3 seconds. The activated side of the bitumen joint tape will now remain highly adhesive for a period of time. The length of this period may differ depending on the temperature, and will be shorter at lower

temperatures. At room temperature, the coating remains active for between 5 and 10 minutes. Once the coating has been activated, the adhesive side of the tape is immediately pressed securely onto the connection edge by hand or using a tool.

ZTV Fug-StB – bitumen joint tapes:

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5 mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm.

In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band A is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (w x d x h) 370 x 370 x 160 (or 144) mm.

30 boxes are packed on one euro pallet (800 x 1200 mm).

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
30 x 8	100 88 013	48	1.440
30 x 10	100 88 014	40	1.200
35 x 8	100 88 028	48	1.440
35 x 10	100 88 024	40	1.200
40 x 8	100 88 015	36	1.080
40 x 10	100 88 016	30	900

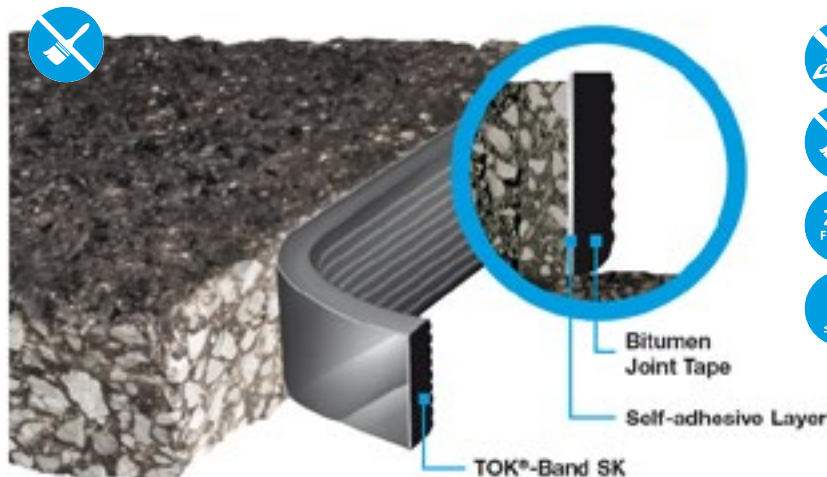
*on request / minimum purchase 1 unmixed pallet per delivery

Storage





Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F);

do not stack anything on top of the boxes. In these conditions, **TOK®-Band A** Drain can be stored in its sealed original

packaging for at least four month from the date of manufacture.



Special Advantages:

-  Cold processed – no burner required.
-  No primer required.
-  ZTV Fug-StB
Fulfills all requirements of ZTV Fug-StB 15.
-  $\leq 50^{\circ}\text{C}$
Processing temperature from $+5^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ (from $+41^{\circ}\text{F}$ to $+122^{\circ}\text{F}$).

TOK®-Band SK

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

Description

TOK®-Band SK is a high-quality bitumen joint tape made from polymer-improved road bitumen with exceptional stretch and adhesion properties. **TOK®-Band SK** has a homogeneous full-surface adhesive coating on one side (smooth side), and

can therefore be applied to "cold" joint edges quickly and safely, without the use of a gas burner. **TOK®-Band SK** can be applied without primer to properly prepared edges that are clean, dry and free of dust. The slightly profiled (wavy) side of

the bitumen tape is the side without an adhesive coating. This side will later form the base for the "hot" asphalt mix. If necessary, the optional primer **TOK®-SK Primer** can be used to boost the adhesion of **TOK®-Band SK** to the joint edge.

Usage

TOK®-Band SK is ideal for sealing joints in asphalt road construction. In accordance with ZTV Fug-StB, it is

also used on components such as concrete curbs and gutters where hot mix is subsequently applied on top.

Thanks to its outstanding material properties, permanent and fully sealed joints are guaranteed.

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

Test	Unit	Result	Requirement
Softening point (Ring&Ball method)	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	$> +100$ ($+212$)	$> +90$ ($+194$)
Cone penetration	0.1 mm	20–50	20–50
Recovery	%	10–30	10–30
Cold bending behaviour	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	$\leq \pm 0$ ($+32$)	$\leq \pm 0$ ($+32$)
Dilation and adhesive strength	% / N / mm^2	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0

Application

Weather conditions

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band SK

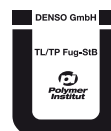
If all of the requirements for connection edges are fully satisfied, **TOK®-Band SK** may be applied to the edge without primer. The relevant test results in accordance with TL/TP Fug-StB are available. If necessary, you can optimise the adhesion of the bitumen joint tape to the edge by applying **TOK®-SK Primer**. In summer, the drying time of **TOK®-SK Primer** is just 3 to 5 minutes, dependent on weather conditions, allowing further work to start quickly.

Application

TOK®-Band SK is applied to the prepared connection edge with the adhesive layer (smooth side) facing upwards. The anti-adhesive paper should be removed just before the tape is laid. The adhesive surface (smooth side) of the laid **TOK®-Band SK** is pressed onto the connection edge by hand or using a tool.

ZTV Fug-StB 15 – bitumen joint tapes

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5-mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm. In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band SK is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (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).

Profile* [HxW]	Part no.	linear m / box	linear m / pallet
20 x 10	100 88 092	60	1.800
25 x 8	100 88 060	60	1.800
30 x 8	100 88 011	48	1.440
30 x 10	100 87 101	40	1.200
35 x 8	100 88 061	48	1.440

Profile* [HxW]	Part no.	linear m / box	linear m / pallet
35 x 10	100 77 566	40	1.200
40 x 8	100 88 012	36	1.080
40 x 10	100 87 100	30	900
45 x 10	100 88 062	30	900
50 x 10	100 88 063	30	900

*Other profile cross-sections on request

Storage

Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F); do not stack anything on top of the boxes.

In these conditions, **TOK®-Band SK** can be stored in its sealed original packaging for at least two years from the date of manufacture.

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.



Lay out the TOK®-Band

Lay out the joint tape and cut to length, if necessary.



Stick on the tape

Simply press the joint tape on the cleaned and 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.



Installed tape

A cleanly installed joint tape.



Apply the pressure-sensitive adhesive

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



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.



Finished joint connection

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

Without & **with** TOK®-Band SK

Typical damage **without**
using a **bitumen joint tape**








Expert working
with TOK®-Band SK





Special Advantages:

-  Excellent adhesion and elasticity at -10°C (14°F).
-  Cold processed – no burner required.
-  No primer required.
-  Fulfills all requirements of ZTV Fug-StB 15.
-  Processing temperature from 0 °C to 35 °C (from +32 °F to +95 °F).

TOK®-Band SK N2

High-flexibility self-adhesive bitumen joint tape for joints and seams in asphalt road construction.

Description

TOK®-Band SK N2 is a high-quality bitumen joint tape made from polymer-improved road bitumen with exceptional stretch and adhesion properties. **TOK®-Band SK N2** has a homogeneous full-surface adhesive coating on one side (smooth

side), and can therefore be applied to "cold" joint edges quickly and safely, without the use of a gas burner. **TOK®-Band SK N2** can be applied without primer to properly prepared edges that are clean, dry and free of dust. The slightly profiled (wavy) side

of the bitumen tape is the side without an adhesive coating. This side will later form the base for the "hot" asphalt mix. If necessary, the optional primer **TOK®-SK Primer** can be used to boost the adhesion of **TOK®-Band SK N2** to the joint edge.

Usage

TOK®-Band SK N2 is ideal for sealing joints in asphalt road construction applications that are subject to special or demanding requirements. One example is railway track construction, where the joints on the rails have to cope with a great deal of movement.

Thanks to its high flexibility, the tape is also ideal for use at low temperatures, where conventional bitumen joint tapes would be too stiff for easy application. When used in conjunction with **TOK®-SK Primer**, the product boasts an exceptional stretch capacity of

≥33% at -10 °C (+14 °F). Even at temperatures as low as -20 °C (-4 °F), the adhesion and elasticity requirements specified for bitumen joint tape in TL Fug-StB 15 are satisfied or exceeded.

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

Test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (+212)	> +90 (+194)
Cone penetration	0.1 mm	20 - 50	20 - 50
Recovery	%	10 - 30	10 - 30
Cold bending behaviour	°C (°F)	≤ ±0 (+32)	≤ ±0 (+32)
Dilation and adhesive strength	% / N/mm²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0



Application

Weather conditions:

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges:

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band SK N2:

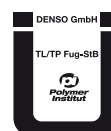
If all of the requirements for connection edges are fully satisfied, **TOK®-Band SK N2** may be applied to the edge without primer. The relevant test results in accordance with TL/TP Fug-StB are available. If necessary, you can optimise the adhesion of the bitumen joint tape to the edge, and ensure that the adhesion and stretch requirements for hot pouring compounds are met in accordance with ZTV Fug-StB 15, by also applying **TOK®-SK Primer**. In summer, the drying time of **TOK®-SK Primer** is just 3 to 5 minutes, dependent on weather conditions, allowing further work to start quickly.

Application:

TOK®-Band SK N2 is applied to the prepared connection edge with the adhesive layer (smooth side) facing upwards. The anti-adhesive paper should be removed just before the tape is laid. The adhesive surface (smooth side) of the laid **TOK®-Band SK N2** is pressed onto the connection edge by hand or using a tool.

ZTV Fug-StB 15 – bitumen joint tapes:

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5-mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm. In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band SK N2 is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (w x d x h) 370 x 370 x 160 (or 144) mm.

30 boxes are packed on one euro pallet (800 x 1200 mm).

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
25 x 8	100 88 065	60	1.800
30 x 10	100 88 020	40	1.200
35 x 8	100 88 030	48	1.440
35 x 10	100 88 019	40	1.200
40 x 8	100 88 018	36	1.080
40 x 10	100 88 017	30	900

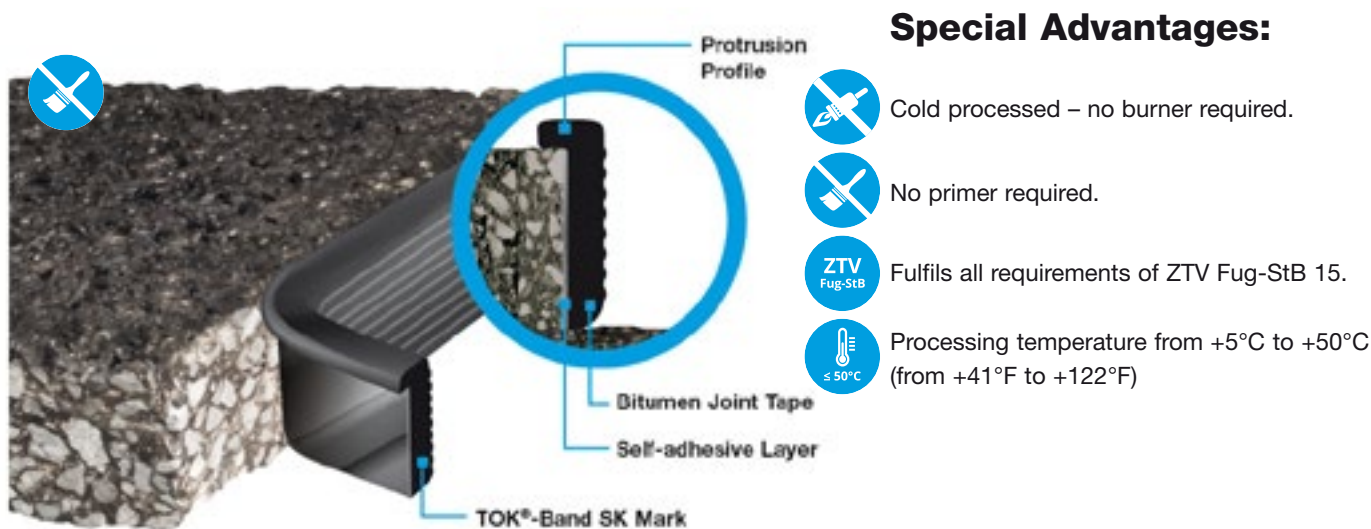
* Other profile cross-sections on request

Storage

Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F); do not stack

anything on top of the boxes. In these conditions, **TOK®-Band SK N2** can be stored in its sealed original packaging

for at least two years from the date of manufacture.



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 from polymer-improved road bitumen with exceptional stretch and adhesion properties. **TOK®-Band SK Mark** has a homogeneous full-surface adhesive coating (smooth side) on one side, as well as a protruding "nose"

on the top of the same side. This allows the tape to be affixed to "cold" joint edges quickly, safely, and at exactly the right height, without the use of a gas burner.

TOK®-Band SK Mark can be applied without primer to properly prepared edges that are clean, dry and free of dust.

The slightly profiled (wavy) side of the bitumen tape is the side without an adhesive coating. This side will later form the base for the "hot" asphalt mix. If necessary, the optional primer **TOK®-SK Primer** can be used to boost the adhesion of **TOK®-Band SK Mark** to the joint edge.

Usage

TOK®-Band SK Mark is ideal for sealing joints in asphalt road construction. In accordance with ZTV Fug-StB, it is

also used on components such as concrete curbs and gutters where hot mix is subsequently applied on top.

Thanks to its outstanding material properties, permanent and fully sealed joints are guaranteed.

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

Test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (+212)	> +90 (+194)
Cone penetration	0.1 mm	20–50	20–50
Recovery	%	10–30	10–30
Cold bending behaviour	°C (°F)	≤ ±0 (+32)	≤ ±0 (+32)
Dilation and adhesive strength	% / N / mm ²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0



Application

Weather conditions:

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges:

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band SK Mark:

If all of the requirements for connection edges are fully satisfied,

TOK®-Band SK Mark may be applied to the edge without primer. The relevant test results in accordance with TL/TP Fug-StB are available. If necessary, you can optimise the adhesion of the bitumen joint tape to the edge by applying **TOK®-SK Primer**. In summer, the drying time of **TOK®-SK Primer** is just 3 to 5 minutes, dependent on weather conditions, allowing further work to start quickly. The profiled shape of **TOK®-Band SK Mark** makes it easier to achieve professional results with this joint tape. The tape is laid and almost "hung" along the top of the edge. Thanks to the additional material it provides, the profiled "nose" allows grain breakouts that develop on the edge tops after the rolling procedure to be sealed more effectively. The "rivet head" is therefore constructed to be even more pronounced and robust. In connections that are not rolled, the conventional **TOK®-Band SK** should be used.

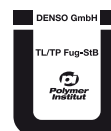
Application:

TOK®-Band SK Mark is applied to the prepared connection edge with the adhesive layer (smooth side) facing upwards.

The anti-adhesive paper should be removed just before the tape is laid. The adhesive surface (smooth side) of the laid **TOK®-Band SK Mark** is pressed onto the connection edge by hand or using a tool.

ZTV Fug-StB 15 – bitumen joint tapes:

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5 mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm. In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band SK Mark is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (w x d x h) 370 x 370 x 160 (or 144) mm.

30 boxes are packed on one euro pallet (800 x 1200 mm).

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
25 x 10	100 72 079	36	1.080
30 x 10	102 02 329	36	1.080
35 x 10	102 02 330	36	1.080
40 x 10	102 02 266	27	810
50 x 10	102 02 299	27	810

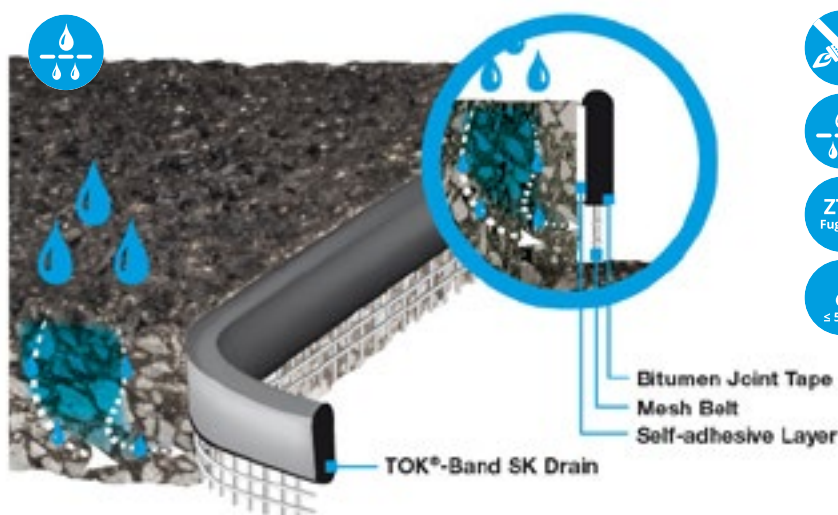
*Other dimensions available on request

Storage





Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F); do not

stack anything on top of the boxes. In these conditions, **TOK®-Band SK Mark** can be stored in its sealed original

packaging for at least two years from the date of manufacture.



Special Advantages:

-  Cold processed – no burner required.
-  Water-permeable.
-  Fulfills all requirements of ZTV Fug-StB 15.
-  Processing temperature from +5 °C to +50 °C (from +41 °F to +122 °F).

TOK®-Band SK Drain

Self-adhesive bitumen joint tape for joints and connections in porous asphalt road surfaces.

Description

TOK®-Band SK Drain is a combination of our high-quality bitumen joint tape made from polymer-improved road bitumen with exceptional stretch and adhesion properties, and a water-permeable mesh tape. **TOK®-Band SK Drain** has a homogeneous adhesive coating on one side of

the bitumen tape body, allowing it to be affixed to "cold" joint edges quickly and safely, without the use of a gas burner. A heat-resistant mesh belt is incorporated into the bitumen tape body, which protrudes approximately 20 mm from the bottom edge of the tape.

TOK®-Band SK Drain and its associated primer, **TOK®-SK Primer**, have been tested in accordance with TL/TP Fug-StB and meet all the requirements of this regulation

Usage

TOK®-Band SK Drain is used to form joints in porous asphalt road surfaces. Thanks to its excellent material properties and the special cross-section – the lower

part of which is water-permeable – a permanent and sealed connection is guaranteed.

In addition, the mesh tape ensures that water drains away easily below the road surface.

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

Test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (+212)	> +90 (+194)
Cone penetration	0.1 mm	20–50	20–50
Recovery	%²	10–30	10–30
Cold bending behaviour	°C (°F)	≤ ±0 (+32)	≤ ±0 (+32)
Dilation and adhesive strength	% / N / mm²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0



Application

Weather conditions:

In accordance with ZTV Fug-StB, bitumen joint tapes may only be applied in dry weather and when the surface temperature of the asphalt is at least +5 °C (+41 °F). At temperatures between 0 °C and +5 °C (+30 °F and +41 °F), the product may only be applied if additional measures are taken (e.g. preheating of edges).

Requirements for connection edges:

In accordance with ZTV Fug-StB, the following basic requirements apply: Edge surfaces must be solid, even and straight for the successful application of bitumen joint tape. The connection edges must be bevelled, precision-milled or cut, or assembled using ready-made components. They must be free of dirt. Rust particles on steel components must be removed. Any residual dirt left adhering to the surface must be removed with a wire brush or compressed air. The edges must be dry.

Use of TOK®-Band SK Drain:

If all of the requirements for connection edges are fully satisfied, the primer **TOK®-SK Primer** can be applied to

the edge. Once the **TOK®-SK Primer** has dried, **TOK®-Band SK Drain** can be applied to the edge. In summer, the drying time of **TOK®-SK Primer** is approximately 3–5 minutes, allowing further work to start quickly. Thanks to its special cross-sectional shape, **TOK®-Band SK Drain** has two distinct advantages when used in porous asphalt road surfaces: Firstly, the product creates a professional sealed connection in the upper area, preventing grain breakouts and damage in the connection area. Secondly, in the lower cross-sectional area (approximately 20 mm), the rain water can continue to drain. This means that the original purpose and benefits of the porous asphalt coating are retained around the connection, particularly when conservation measures are needed on the surface.

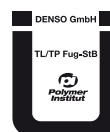
Processing:

TOK®-Band SK Drain is applied to the prepared connection edge with the adhesive layer facing upwards. The anti-adhesive paper should be removed just before the tape is laid. Once the **TOK®-SK Primer** has been applied and is dry, the adhesive side of the laid

TOK®-Band SK Drain is pressed onto the connection edge by hand or using a tool.

ZTV Fug-StB 15 – bitumen joint tapes:

In accordance with ZTV Fug-StB, bitumen joint tape must be laid with a 5 mm protrusion on rolled asphalt surface layers, 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 laid flush to the edge. The width of the joint tape must be at least 10 mm. In accordance with ZTV Fug-StB and TL Fug-StB, the quality of the material must be monitored by a third party and verified by placing an approval label on the packaging.



Ordering Information & Packaging

TOK®-Band SK Drain is supplied on rolls. The rolls are sorted by cross-section size,

separated using silicone paper and delivered in boxes measuring (w x d x h) 370 x 370 x 160 (or 144) mm.

30 boxes are packed on one euro pallet (800 x 1200 mm).

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
35 x 10**	100 75 051	40	1.200
40 x 10	102 02 558	30	900
45 x 10	102 02 567	30	900
50 x 10	102 02 568	30	900
55 x 10	100 72 555	20	600

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
40 x 15	102 02 566	19.50	585
45 x 15	102 02 390	19.50	585
50 x 15	102 02 393	19.50	585

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

Storage

Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F);

do not stack anything on top of the boxes. In these conditions, **TOK®-Band SK Drain** can be stored in its sealed original

packaging for at least two years from the date of manufacture.

TOK®-Band SK Drain – Application

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



Preparation of the edge

Preferably created using a precision router, so strong grain outbreaks are avoided and a professional edge is created for the joint tape!



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.



TOK®-Band SK Drain

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!



TOK®-Band SK Drain

Lay the tape.

Caution: Observe the tape protrusion of 5 mm! Press the tape firmly against the edge!



TOK®-Band SK Drain

Professionally laid joint tape. Above the bituminous compound, below the water permeable mesh tape.



Compaction process

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



Rivet head

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

ZTV Asphalt-StB

Creating sealed connections to installations.

In ZTV Asphalt-StB ("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) 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)



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



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



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



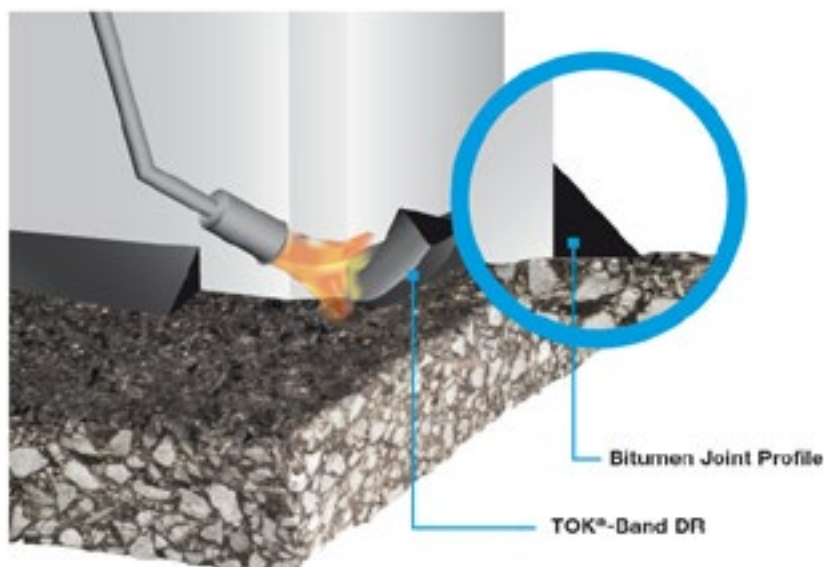
TOK®-Band SK used on drainage channels in asphalt surfaces.

Remark:

Paragraphs marked with a border line are "Additional technical terms of contract" within the meaning of art. 1 (2) 4. VOB part B – 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.



Special Advantages:

- Tested in accordance with TL/TP Fug-StB.
- Excellent quality.
- Quick and economical processing.
- Also available as a self-adhesive version.

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.

TOK®-Band DR is available as joint tape which can be melted or which is self-adhesive.

TOK®-Band DR 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 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)

Test	Unit	Result	Requirement
Softening point (Ring&Ball method)	°C (°F)	> +100 (> +212)	> +90 (> +194)
Cone penetration	0.1 mm	35	20 - 50
Recovery	%	10 - 30	10 - 30
Cold bending behaviour	°C (°F)	-9 (+15,8)	≤ ±0 (≤ ±32)
Dilation and adhesive strength	%/N/mm ²	≥ 10 / ≤ 1.0	≥ 10 / ≤ 1.0

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 **meltable 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**.

Fusible TOK®-Band DR

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
20 x 20	101 20 835	30	900
25 x 25	101 20 683	22	660
25 x 30	101 15 836	16	480
30 x 30	102 00 397	14	420
40 x 40	100 86 546	10.8	324

*Other profile dimensions also available on request

Self-adhesive TOK®-Band SK DR

Profile* [HxW]	Article no.	linear m / box	linear m / pallet
30 x 30	100 77 889	14	420

* these and further dimensions available on request.

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.





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.

TOKOMAT®

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.

Practical Solution

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 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.

The motor-driven **TOKOMAT®** is equipped with a storage shelf with which the **TOK®-Riegel** can be stored and fed to the machine while working.



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** fulfil 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 joins 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

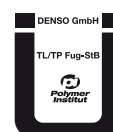
state, and fits optimally into any existing breaks.



Typical Product Properties

Properties	Unit	Results	Requirements according to TL Fug-StB as a rail joint compound
Processing temperature PT	°C (°F)	~ +80 (~ +176)	1) Manufacturer's data
Density at +25 °C (+77 °F)	g / cm ³	1.327	Manufacturer's data
Ring and ball softening point	°C (°F)	+116 (+240.8)	≥ +85 °F
Cone penetration	1 / 10 mm	50	≤ 50
Flow length	mm	0.5	Provide test value
Elastic resilience	%	12	10 - 60
Separation tendency	%	0.0	≤ 3 M-%
Falling ball test	-	fulfilled 4 of 4	at -20 °C (-4 °F), 250 cm ³ , 3 of 4
Form stability	mm	1.5	at 45 °C (+113 °F) / 24h, ≤ 4.5
Volume change after thermal ageing	%	- 0.37	Provide test value
Ring and ball softening point after thermal ageing	°C (°F)	+114 (+237.2)	Provide test value
Elastic recovery after thermal ageing	%	18	Provide test value
Dilation and adhesive strength at -10 °C (+14 °F)	mm	2	2
No ageing (Fmax)	N / mm ²	0.09	Provide test value
After ageing (Fmax)	N / mm ²	0.10	Provide test value
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 in delivery units of approx. 52-60 kg per carton.

The delivery unit per pallet is 8 cartons.

Storage

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



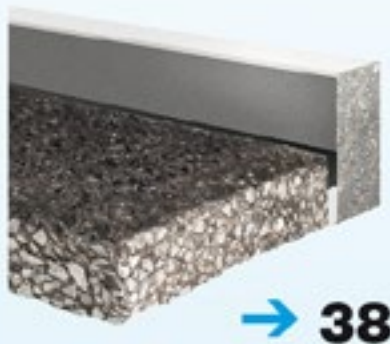
SEALANT COMPOUNDS

hot processable



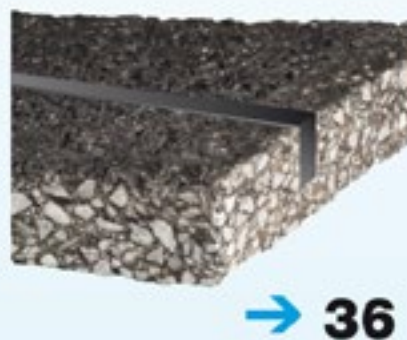
TOK®-Sil Resist

Hot-processable, stable
bituminous compound for use
in JGS (manure/slurry/silage
effluent) plants.



TOK®-Melt N1

Hot-processable, bituminous pour-
ing compound for joints in concrete
and asphalt, **Type N1** (elastic).



TOK®-Melt N2

Hot-processable, bituminous pour-
ing compound for joints in asphalt,
Type N2.



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
- REINAU®-N2 Plus+



MELTOMAT®

Mini-melter.



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 DIBt 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.

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 compound. Because of its special composition of bitumen, polymer components and other

innovative substances, this compound has exceptional properties. In particular, **TOK®-Sil Resist** stands out because of its excellent acid resistance - particularly

against fermentation acids - and because of its universal applicability in horizontal and vertical joints.

Usage

TOK®-Sil Resist is used predominantly in areas with a high requirement for chemical resistance. This is the case in JGS (manure/slurry/silage effluent) plants. In

these plants, long-term material resistance to fermentation acids and silage juice is imperative. **TOK®-Sil Resist** can be used on concrete, asphalt and steel contact

edges and has very good stretching and adhesive properties.

Typical Product Properties

Technical data	Unit	Value
Density	kg/l	approx. 1.16 (at 21 °C / 69.8 °F)
Ring and ball softening point	°C / °F	> 85 / 185
Elastic resilience	%	approx. 40 (at 21 °C / 69.8 °F)



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 $> 0^{\circ}\text{C}$ ($+32^{\circ}\text{F}$). 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 accordingly (e.g. by widening the joint gap width or by abrasion). The joints must have a minimum gap width of 10 mm and run **plane-parallel** in depth, both in floor joints and in rising walls. Exceptions may be made for wall joints in double-wall construction. The recommended joint width for joints bearing traffic is 12 to max. 15 mm. The recommended joint depth for concrete joints is at least twice the joint gap width and is also dependent on the expected change to the joint gap width. When working with concrete floor joints, ensure that neither the underfill material nor the joint sealant in the joint chamber can be pressed downwards and that contact with tyres on the road is avoided

(chamfer formation at the concrete joint edges). Appropriate measures may need to be taken against pressure load on the joints. Joints in asphalt must always be filled over the entire surface layer height. In all cases, "3-surface adhesion", i.e. adhesion of the joint sealant to the sub-surface (not to the joint edges!), must be avoided. This requires the use of an approved heat-resistant underfilling (e.g. underfill profile or silicon paper). Details on measuring the joint cross-sections and on suitable underfillings are laid out in the current **ZTV Fug-StB**. After correct edge pretreatment, the contact surfaces are primed along their whole area with **TOK®-Sil Primer** (see separate product information). In summer the air drying time is approx. 3-5 minutes. After the primer has air dried, the underfill profile is inserted into the joint.

Processing of vertical joints:

TOK®-Sil Resist is processed using special equipment technology (**SEALOMAT®**). The material bars are filled into aluminium cartridges using a special extrusion tool. Immediately after filling, the material is inserted into the vertical joint area. The material must be processed relatively quickly so that the heated compound can be easily pressed out of the gun. Compound that has cooled down too much in the cartridge can no longer be

pressed out. Once the material has been completely pressed out of the cartridge, new material can be filled into it and processed immediately and without difficulty.

Horizontal processing

TOK®-Sil Resist can also be easily inserted into horizontal joints using the cartridge. For larger amounts, a special extrusion tool can also be used for processing.

Advantages of TOK®-Sil Resist

In addition to the above-mentioned advantages of the compound as a system solution, **TOK®-Sil Resist** also has the important advantage that once applied, it can be very easily repaired if it suffers damage for any reason. In this case the damaged area is first carefully melted, e.g. with a hot air dryer; then the new compound can be applied to the prepared area and if necessary stripped down using e.g. a hot jointing iron. Thus any necessary repair work is carried out quickly and easily. The compatibility with concrete saving coating materials must be ensured.



Ordering Information & Packaging

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

	Package units	Article no.
TOK®-Sil Resist	in bar form in cartons, 30 kg per carton – 12 cartons per pallet (360 kg)	100 75 094
TOK®-Sil Primer	Bucket 5.0 l	100 88 540

Storage

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

The **TOK®-Sil Primer** can be stored for at least 3 years after date of manufacture in its unopened original packaging. Both products

must be stored in a cool and dry place and must not be exposed to direct sunlight or frost.



Special Advantages:

- Fulfils the requirements of DIN EN 14188-1, Type N1.
- Fulfils 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 %.

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
Basis	Polymer-modified bitumen
Density	approx. 1.15 g / cm ³
Application temperature	approx. +160 to +180 °C (+320 to +356 °F) (DO NOT overheat!)
Colour	black
Consumption	approx. 1.15 kg per litre of filling area
Primer on asphalt / concrete	TOK®-S Primer



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 $> +5\text{ }^{\circ}\text{C}$ ($+41\text{ }^{\circ}\text{F}$) on the structural component. At temperatures between $+2\text{ }^{\circ}\text{C}$ ($+35.6\text{ }^{\circ}\text{F}$) and $+5\text{ }^{\circ}\text{C}$ ($+41\text{ }^{\circ}\text{F}$), 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/primer

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. 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 $+30\text{ }^{\circ}\text{C}$ ($+86\text{ }^{\circ}\text{F}$); 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 filled mechanically 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

	Container form	Content	Article no.
TOK®-Melt N1	Siliconized cartons	27 kg / 24 cartons per pallet	100 722 90
TOK®-S Primer	Metal bucket	10 litres	102 02 824

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.



Special Advantages:

- Economical because of practical delivery units and exact divisibility into portions.
- Can be used as joint sealant between asphalt surfaces.
- 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.

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.

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

Properties	Unit	FPC measured values	Requirements in accordance with TL Fug-StB as joint pouring compound
Processing temperature	°C (°F)	+160 to +180 (+320 to +356)	-
Density at RT	g / cm ³	approx. 1.20	Manufacturer's data
Ring and ball softening point	°C (°F)	+102(+215.6)	≥ 85 °F
Cone penetration	1 / 10 mm	54	50 - 100
Elastic resilience	%	59	10 - 60
Volume change after thermal ageing	%	- 0.02	Provide test value
Ring and ball softening point after thermal ageing	°C (°F)	+104(+219.2)	Provide test value
Elastic recovery after thermal ageing	%	-	49
Dilation and adhesive strength at -20 °C (-4 °F)			
Without ageing	mm	5	5
Fmax	N / mm ²	0.34	≤ 0.75
After ageing (Fmax)	mm	5	5
Fmax	N / mm ²	0.20	≤ 0.75

TOK®-Melt N2 complies with ZTV/TL Fug-StB and DIN EN 14188-1 each as type N2.

Application

Processing the joints

The joints must be clean and dry. Any dirt that has attached itself, loose material etc. must be thoroughly removed.

Apply the system-specific primer **CORRISOL®-K** to the joint flanks.

Processing of the pouring compound

Pour a pre-calculated amount of **TOK®-Melt N2** in portions into a suitable melting container (e.g. **MELTOMAT®**) 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.

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.

TOK®-Melt N2 is used to fill horizontal and slightly inclined joints. The maximum permissible gradient for the joints is 8 %.

In summer, softening of the surface is unavoidable owing to its thermo-plastic material behaviour. Sanding can reduce the risk of contamination.



Ordering Information & Packaging

Product name	Delivery form	Article no.
TOK®-Melt N2	24 cubes à 700g / 16.8 kg per carton	480 cubes per pallet (336 kg) 101 18 476
TOK®-Melt N2	Carton 5.5 kg	90 cartons per pallet (495 kg) 100 72 534
TOK®-Melt N2	Carton 11 kg	48 cartons per pallet (528 kg) 100 72 552
TOK®-Melt N2	Carton 28 kg	32 cartons per pallet (896 kg) 102 00 037
CORRISOL®-K (primer)	Metal container 10 litres	102 00 994

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.

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 con-

crete 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	Unit	
Density at +20 °C (+68 °F)	g/cm ³	approx. 0.95
Flash point	°C (°F)	+26 (+78.8)
Colour	-	yellowish / transparent
Consistency	-	liquid (sprayable)
Basis	-	polymer-modified synthetic resin solution

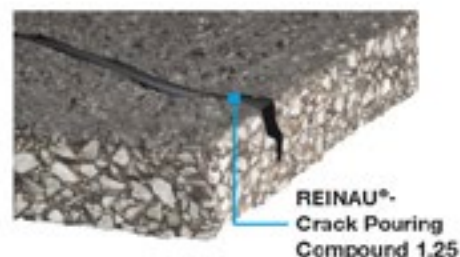


REINAU®-Crack Pouring Compound 1.25

REINAU®-Crack Pouring Compound is a hot-casting bitumen compound with plasto-elastic properties. **REINAU®-Crack Pouring** is used primarily to close cracks

in concrete or asphalt traffic-bearing surfaces. Tested in accordance with ZTV Fug-StB.

		Article no.
Colour	black	-
Density	approx. 1.25 g / cm ³	-
Container	34 kg disposable metal container	100 72 542
	2 x 17 kg disposable containers with divider	100 72 541



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.

		Article no.
Colour	black	-
Density	approx. 1.35 g / cm ³	-
Container	38 kg disposable metal container	100 72 536
	2 x 19 kg disposable containers with divider	100 72 537
	13 kg siliconized carton	101 20 733



*This product is manufactured by TIB Chemicals AG for DENSO GmbH. REINAU® is a registered trademark of TIB Chemicals AG.

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 asphalt traffic-bearing road surfaces.

		Article no.
Primer	REINAU®-plastic adhesive base	
Colour	black	-
Density	approx. 1.2 g / cm ³	-
Container	32 kg disposable metal container	100 72 532
	2 x 16 kg in twinset disposable tear-open containers	100 72 533
	28 kg carton (siliconized)	101 20 746

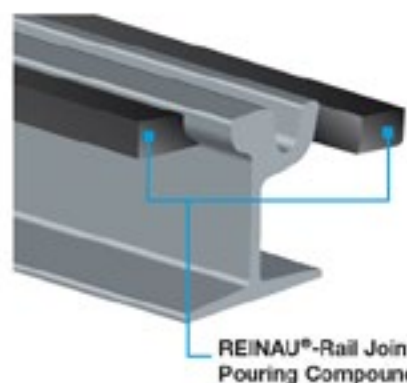


REINAU®-Rail Joint Pouring Compound

REINAU®-Rail Joint Pouring Compound is a plasto-elastic hot pouring compound on the basis of a polymer-modified bitumen. Tested in accordance with ZTV Fug-StB.

REINAU®-Track Joint Pouring Compound is used for track joints in paving stones both indoors and outdoors and between asphalt and tracks or concrete and tracks.

		Article no.
Colour	black	-
Density	approx. 1.35 g / cm ³	-
Container	36 kg disposable metal container	100 72 539
	2 x 18 kg disposable container with divider	100 72 538



REINAU®-N2 Plus+

REINAU®-N2 Plus+ is a hot pouring compound based on polymer-modified bitumen.

REINAU®-N2 Plus+ joint pouring compound is suitable for casting horizontal and slightly inclined joints in traffic-bearing road surfaces made from asphalt and, in particular, concrete.

		Article no.
Colour	black	-
Density	ca. 1.1 g / cm ³	-
Pack type	25 kg siliconised boxes	100 72 554



MELTOMAT®

MELTOMAT® is the "piccolo" of casting kettles. It is particularly suitable for an economical melting of **TOK®-Melt**, the

pouring 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)

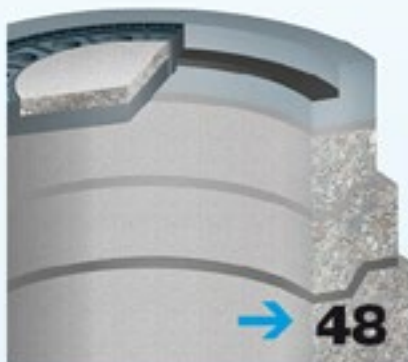
Weight: 28 kg
Article no.: 101 17 429





SEALANT COMPOUNDS

cold processable



DENSOLASTIC®-KU

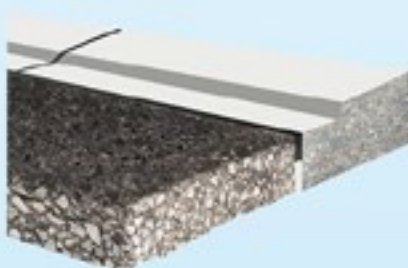
Hand-processable, permanently elastic, **vibration and noise dampening pouring compound** for manhole covers and similar areas.



→ 46

DENSOLASTIC®-SV

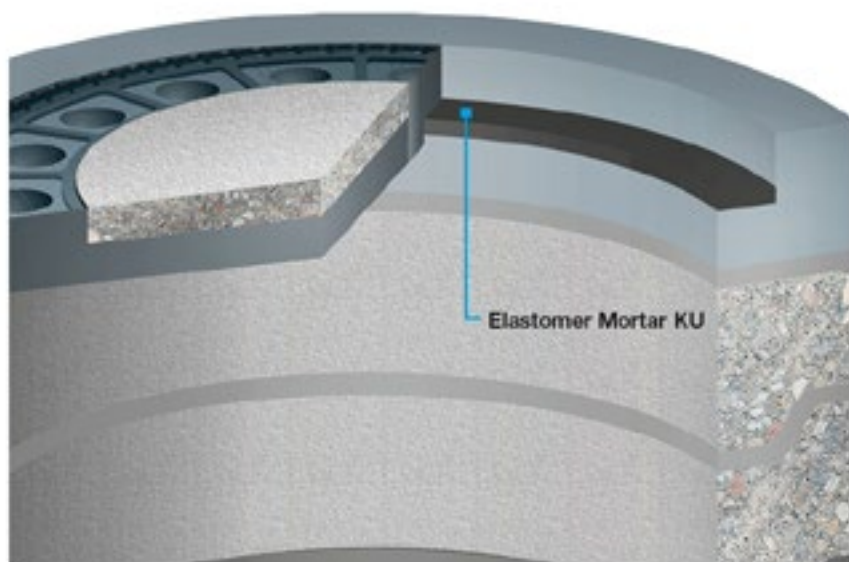
Two-component polyurethane-based **cold pouring compound** for **sensor or induction loop insertion** into concrete or asphalt road surfaces.



→ 44

DENSOLASTIC®-VT

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



Special Advantages:

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

DENSOLASTIC®-KU

A manually applied, permanently elastic, vibration and noise dampening underlay compound for manhole covers and similar areas.

Description

DENSOLASTIC®-KU consists of a pourable, two-component polyurethane-

based system and cures to be elastic. The encapsulating compound is tempo-

rarily resistant to diesel fuel as well as frost and road salt resistant.

Usage

DENSOLASTIC®-KU is used for elastic and vibration damping underlay com-

pound for road manhole covers and has a noise-reducing effect.

Typical Product Properties

DENSOLASTIC®-KU is an elastic curing, two-component plastic material based on polyurethane. The material is characterised by the following properties:

- Vibration damping
- Chemically and mechanically resistant
- Permanently elastic

- 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 10 W 40)

Ordering Information & Packaging

Product name	Container size	Article no.	Package units
DENSOLASTIC®-KU	set 0,33 kg (A+B)	102 01 271	4 sets/carton (75 carton/pallet= 300 sets)

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.

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.



Mixing

Stir component A well before processing, then add component B.



Stirring

Mix the two components with the supplied rod (approx. 60 seconds). Pot life of the material at +23 °C (+73.4 °F): approx. 4 min. The pot life reduces with increased temperatures.



Pour out

After mixing, the compound is evenly distributed on the support edge.



Allow to dry

Depending on the weather and the temperature, wait approx. 10 to 20 m until the compound has dried but has not yet cured (finger test!).



Sprinkle with talcum powder

It is recommended to sprinkle the surface with talcum powder to help prevent the cover sticking to the manhole ring.



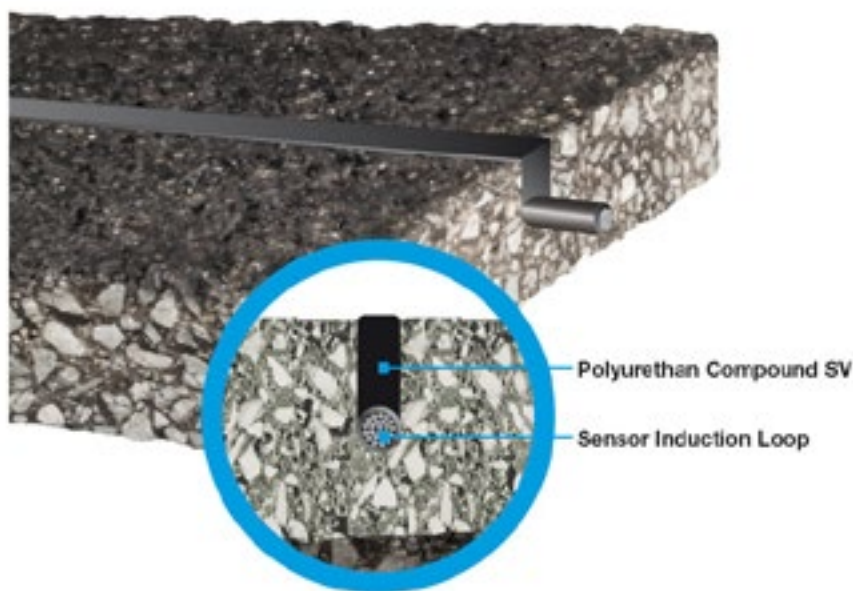
Put the cover back on.

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.



Driving over

The cover is pressed in by driving over it.



Special Advantages:

- Optimum processing viscosity.
- Homogeneous.
- Abradable.
- Quickly open for traffic after 1-2 hours, depending on the weather.
- Very good pressure transfer.
- High degree of mechanical resistance.

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))

Technical data	Unit	Value
Density A+B hardened)	kg / l	approx. 1.45
Colour	-	black (anthracite), silver available on request
Mixing ratio (A:B)	-	4:1 (parts by weight)
Pot life	minutes	5 - 8
Hardening time	hours	approx. 24
Can bear traffic after	minutes	approx. 60
Abradable after application	minutes	approx. 60
Shore D (hardened)	-	75 ±5
Water uptake (5 d at +23 °C (+73,4 °F) and 5 d at +40 °C (+140 °F))	%	< 2.0 M-% weight increase
Max. temperature after mixing (150 g of compound)	°C (°F)	approx. +65 (+149)



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 scorching 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.

After approx. 60 minutes after application (at approx. +23 °C / +73.4 °F) the solid compound can be sanded off. After approximately 24 hours (at approx. +23 °C / +73.4 °F), the solid compound is tack-free and completely hardened. The pot life and the hardening time are temperature-dependent and decrease with rising temperatures. Until hardened, the material should be well protected from moisture.

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.

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

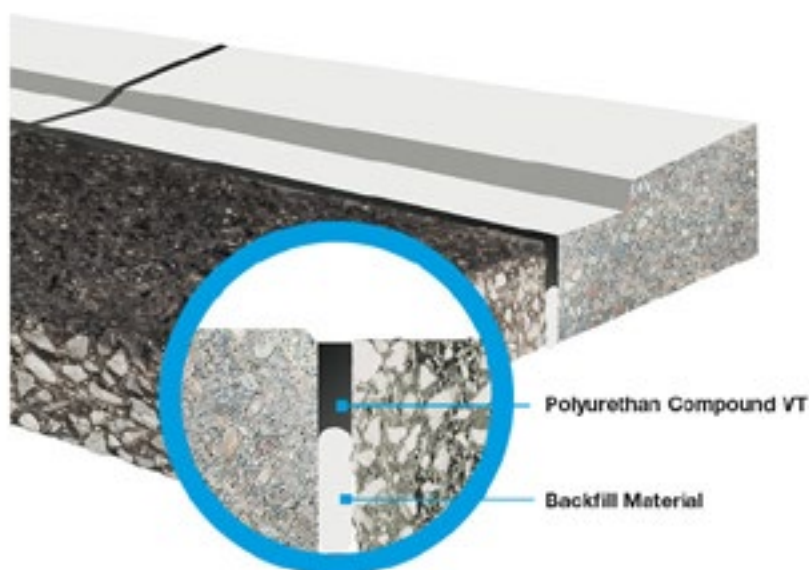
	Container size	Article no.
DENSOLASTIC®-SV	2.0 l (A+B components)	102 02 260
DENSO®-SV Primer (black)	1.0 l (one-component)	102 02 389

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.



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.



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-levelling.

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 is also suitable for

asphalt surfaces and semi-rigid coatings (e.g. "DENSIPHALT").

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

Technical data	Unit	Value
Density (A+B, hardened)	g / cm ³	approx. 1.6
Mixing ratio (A : B)	-	4 : 1 (parts by weight)
Pot life	minutes	approx. 15 (weather-dependent)
Permissible total deformation after hardening	%	25 (in relation to the joint width)
Shore hardness A	-	approx. 18
Hardening time	h	24 – 48 (weather-dependent)



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 WHG.

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 end 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 or foam, not sand or chippings) must be inserted into the joint to exclude "three-side adhesion". The back filling line must not be water-absorbent: water uptake $\leq 3\%$. It is imperative that the primer(s) stipulated by the manufacturer is/are applied to the edges along the entire area. For asphalt edges, semi-rigid surface layers, concrete edges and metal edges such as stainless steel, **DENSOLASTIC®-VT Primer** grey and black is used (see separate product information on the processing of **DENSOLASTIC®-VT Primer**). 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. Good results have been obtained with a 36 granulation paper.

Processing the sealant

Before mixing, the joint edge rims should be covered with e.g. crepe masking tape in order to avoid contamination. The masking tape should be removed again before the material hardens. Components A and B are mixed together using a special tool (e.g. drill with mixing blade Collomix WK 70) for 4 minutes with a maximum rotation speed of 500 rotations per minute (in order to mix in as little air as possible). The surface temperature of the joint is $+5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$ ($+41^{\circ}\text{F}$ to 104°F). The temperature must be $\geq +3^{\circ}\text{C}$ ($+37.4^{\circ}\text{F}$) above the dew point.

Any rising air bubbles must be removed (e.g. by painting over with a brush) before the sealant solidifies. The joint compound is non-sticky and hardened after 24 hours. The pot life and the hardening time are temperature-dependent and decrease with rising temperatures. The material must be protected from moisture until it has hardened. During application, records must be kept of the processing conditions, particularly in the case of environmental protection measures. Before insertion, the composition of the edges etc. must be inspected. After insertion, the edge adhesion in particular must be regularly inspected.



Ordering Information & Packaging

	Container size	Article no.
DENSOLASTIC®-VT	1.65 l (A+B components)	101 20 103
	5.00 l (A+B components)	101 20 104
DENSOLASTIC®-VT-S	1.65 l (A+B components)	101 20 110
DENSOLASTIC®-VT Primer (grey and black)	1.00 l each (2.0 l set)	102 01 566

DENSOLASTIC®-VT is delivered in individual containers in the components A and B. The content of the containers corre-

sponds to the mixing ratio. The required **DENSOLASTIC®-VT Primer** is delivered in 1.0 litre containers. The sealant can

also be delivered in a stable version as **DENSOLASTIC®-VT-S** (without approval).

Storage

Tightly sealed in its original container. It is imperative to avoid heating over $+40^{\circ}\text{C}$ ($+104^{\circ}\text{F}$) and frost impact at the construction site as well.

Store the container in a well-aired 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.



Joint seam adhesive

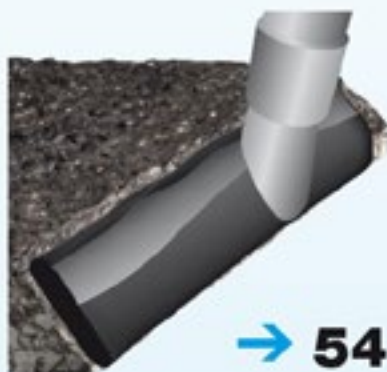
for seams in asphalt road surfaces



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TOK®-Plast

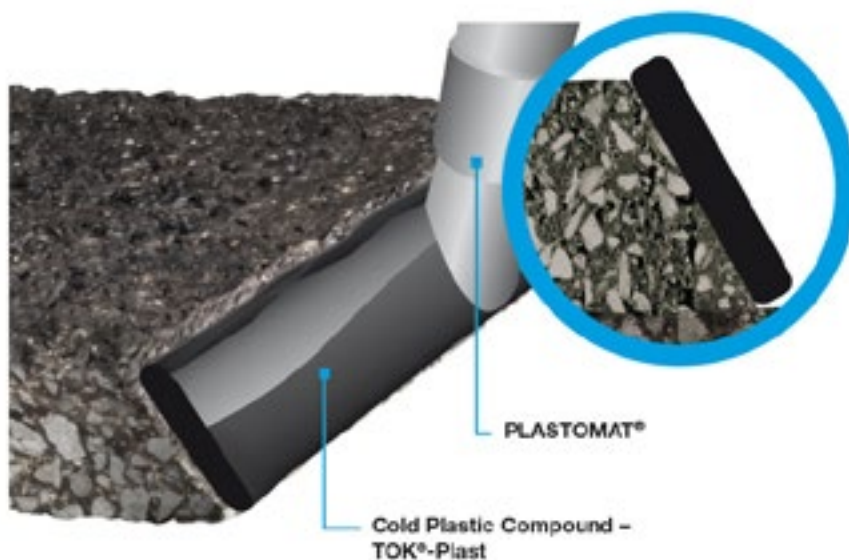
Bituminous compound for seams in asphalt road surfaces.



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PLASTOMAT®

Application system for TOK®-Plast.



Special Advantages:

- Can be applied without a primer.
- Cold application.
- High wet stability.

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.

Typical Product Properties

Technical data	
Binder	Polymer-modified bitumen
Density	approx. 1.0 g / cm ³
Solvent	White spirit
Flash point	-18 °C (-0.4 °F) (DIN 51755)
Hazard class	A 1
Mass fraction of soluble binder	40 – 60 %
Mass fraction of fillers	< 20 %
Softening point of the solid	> +120 °C (+248 °F)
Wet stability at:	
+3 °C (+37,4 °F)	Stable
+50 °C (+122 °F)	Stable

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.
- The installation of the mix is usually not time dependent on the **TOK®-Plast**

processing, it should take place on the same day when possible.

- The applied edge must not be driven over by traffic.



Caution:

After application, the compound must be allowed to breath as solvents are included.

The breathing time is approx. 20-30 minutes (weather dependent). During this breathing time, the fresh compound must not come into contact with an open flame or other source of ignition. When installing the asphalt and for the application of the seam adhesive, the information in the current ZTV Asphalt-StB must be observed!

Ordering Information & Packaging

Product name	Container size	Package units	Article no.
TOK®-Plast	30 kg	14 containers per pallet (420 kg), Tin container with clamp-ring lid	101 02 511
TOK®-Plast	10 kg	45 buckets per pallet (450 kg), Metal bucket with clamp-ring lid	102 02 510

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.



PLASTOMAT®

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

Traffic safety and driving comfort

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

Impeccably produced seams in traffic surfaces made of asphalt are an absolute

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® 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.



Mini

The manoeuvrable device for tight construction sites.

TOK®-Plast

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.

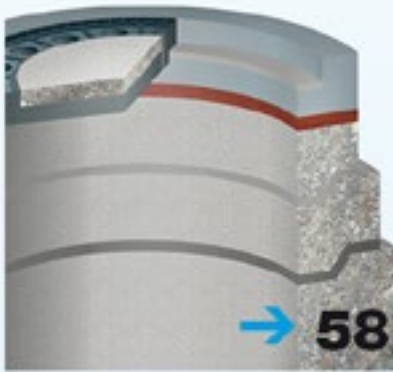
The **TOK®-Plast** compound complies with regulations governing the joining of bituminous surface seams to one other (see also "ZTV Asphalt-StB").

Model	Article no.
PLASTOMAT® Standard	101 17 434
PLASTOMAT® Mini	101 18 491



MORTARS, COMPOUNDS, PROFILES AND REINFORCEMENT

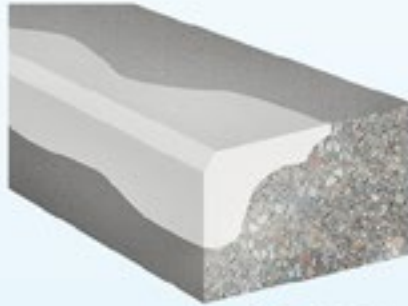
for maintenance



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DENSOLASTIC®-EM

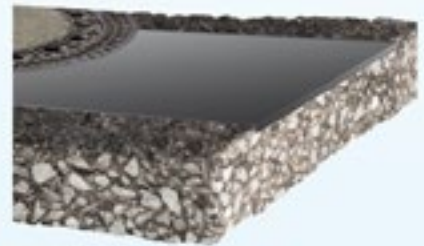
Two-component durable and **permanently elastic** plastic mortar for dynamically-loaded joints.



→ 62

TOK®-Crete 45 V2.0

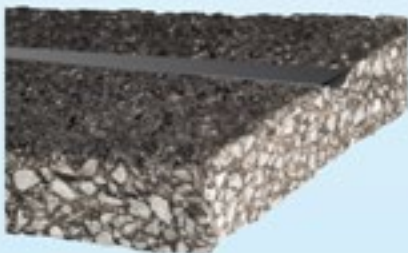
High early strength repair mortar for the restoration of concrete surfaces.



→ 66

TOK®-Dur

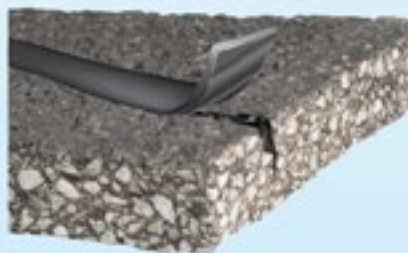
Two-component **coating compound** to level out unevenness in asphalt and concrete surfaces.



→ 70

TOK®-Rep

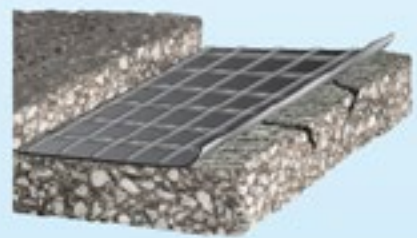
Innovative, two-component cold-processed **repair compound**. Particularly suitable for the repair of surface damage. For example, scores after a punctured tyre in porous and conventional asphalt road surfaces.



→ 72

TOK®-SK Rissband and TOK®-Band Spezial Rundstrang

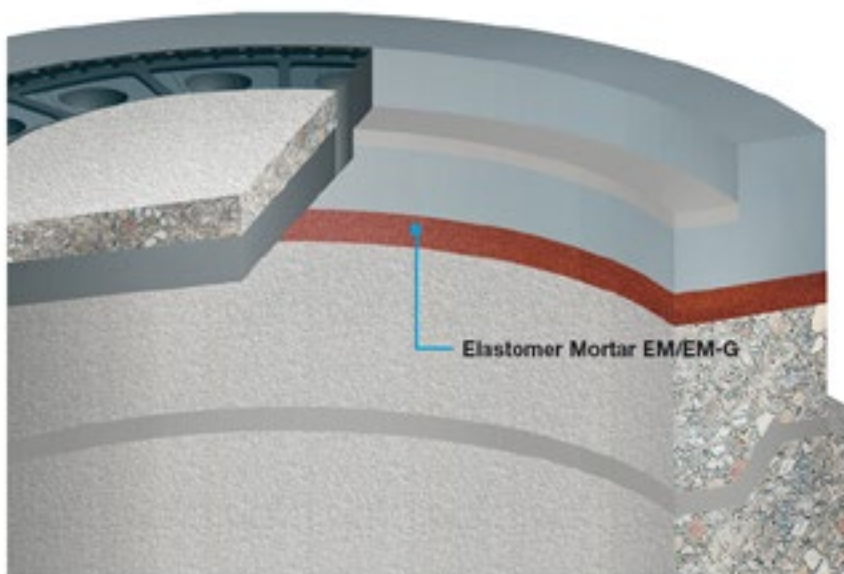
System solutions to **treat cracks** in road construction.



→ 74

TOK®-Armabit SK

Asphalt reinforcement made from a polymer-coated high-tensile fiber mesh with ultralight nonwoven fabric and a laminated bituminous sheeting – delays joint reflection cracks.



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**).

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**).

The elastomer mortar is highly stable after it hardens and permanently elastic. Official testing by independent testing laboratories have proven the excellent material properties of **DENSOLASTIC®-EM**.

Dynamic fatigue loading was examined during the tests, among other things.

DENSOLASTIC®-EM was, compared to mineral-based mortars, still in a perfect condition even after over 150,000 load cycles.

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))

Technical data	Unit	Value
Pot life (temperature-dependent)	minutes	approx. 15
Density	g / cm ³	approx. 1.10
Shore hardness A	-	60 – 80
Load capacity after installation*	hours	approx. 1
Volume change during freeze-thaw cycles	%	< 2

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

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 spacer 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 com-

ponent B. The contents of the container corresponds to the suitable mixing ratio

for components A and B. The colour is red (with black pigmentation).

Product name	Container size	Article no.	Package units
DENSOLASTIC®-EM	2.44 kg (A+B)	102 02 375	Box (255x220x190) (60 boxes/pallet)
DENSOLASTIC®-EM	7.30 kg (A+B)	102 02 416	Loose pack (42 packs/pallet)
DENSOLASTIC®-EM-G (pourable)	2.57 kg (A+B)	102 02 380	Box (255x220x190) (45 boxes/pallet)
DENSOLASTIC®-EM-G (pourable)	5.1 kg (A+B)	100 77 214	Loose pack (48 packs/pallet)
DENSOLASTIC®-E Primer	1.0 Liter	101 19 899	single packed in cartons

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.

DENSOLASTIC®-EM

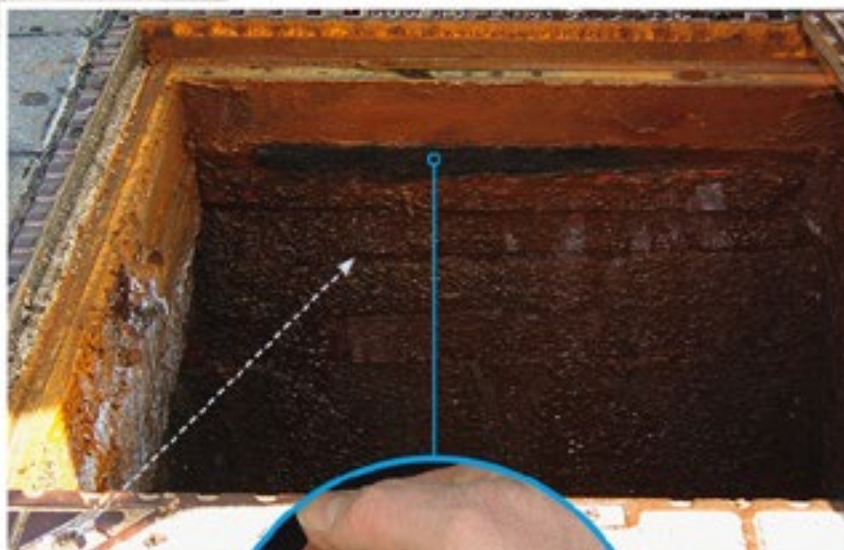
Long terms experience in praxis.



1999

Installation

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



After 15 Years

Even after heavy long-term use, 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 signifi-

cantly 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)

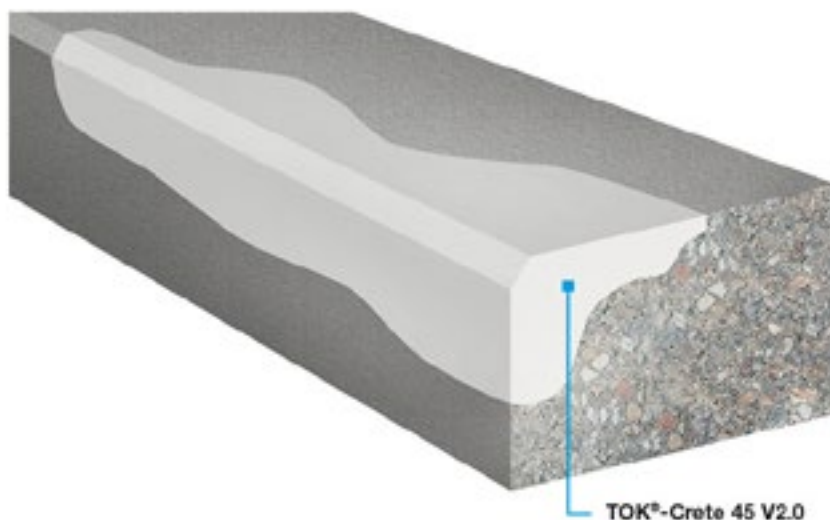
To test the creep behaviour of the material, the test prisms were loaded with constant tension over 72 hours.

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 deforma-

tion 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.



TOK®-Crete 45 V2.0

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 rehabilitation of concrete traffic surfaces with edge damage and corner breakage as well as for filling holes and large cracks.

A further application is the restoration of slotted channels in traffic surfaces.

TOK®-Crete 45 V2.0 can also be used to secure railing posts as well as for fasten-

Special Advantages:

- All-weather use.
- Tested at temperatures from -10 °C to +30 °C (+14 °F to +86 °F)
- Can be loaded after 45 minutes.
- Ideal for use where there has been edge damage.
- Very good bond strength to the substrate.



0749 - CPR

DENSO GmbH
Felderstraße 24
D-51344 Leverkusen
Germany

1001

11

40-35988-3313

EN 1504-3 :2005
Fast setting, traffic repair mortar

Compressive strength	class R4
Chloride ion content	≤ 0,05 %
Adhesive bond	≥ 2,0 MPa
Carbonation resistance	Pass
Restrained shrinkage / expansion	≥ 2,0 MPa
Elastic modulus	≥ 20 GPa
Thermal compatibility Freeze-thaw	≥ 2,0 MPa
Skid resistance	class > 40 units wet tested
Capillary Absorption	≤ 0,5 kg·m ⁻² ·h ^{0,5}
Reaction to fire	class A1
Dangerous substances	complies with 5.4



Typical Product Properties

	Unit	Result	Remarks
Mixing ratio	–	100 : 6	20 kg dry mortar with 1.2 l of water
Processing time	minutes	approx. 10 – 15	at + 23 °C(+73.4 °F)
Bulk density	kg / dm ³	approx. 2.20	at + 23 °C(+73.4 °F)
Pressure resistance after 2 hours	N / mm ²	approx. 16	at + 23 °C(+73.4 °F)
Pressure resistance after 8 hours	N / mm ²	approx. 45	at - 5 °C* (+23 °F)*
Pressure resistance after 28 days	N / mm ²	> 45	at + 23 °C(+73.4 °F)
Young's modulus after 28 days	N / mm ²	approx. 30,000	at + 23 °C(+73.4 °F)
Weathering quantity in freeze/thaw cycles	kg / m ²	< 0.1	Mean value

*) When processing guidelines are observed

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:

Particular 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 RiLi-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

Product name	Container size	Packing unit	Article no.
TOK®-Crete 45 V2.0	20 kg per bucket	24 buckets per pallet	102 00 080

Storage

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.

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 10 minutes.



Installation

It is recommended that 2 people work on larger projects so that "fresh on fresh" can always be installed.



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

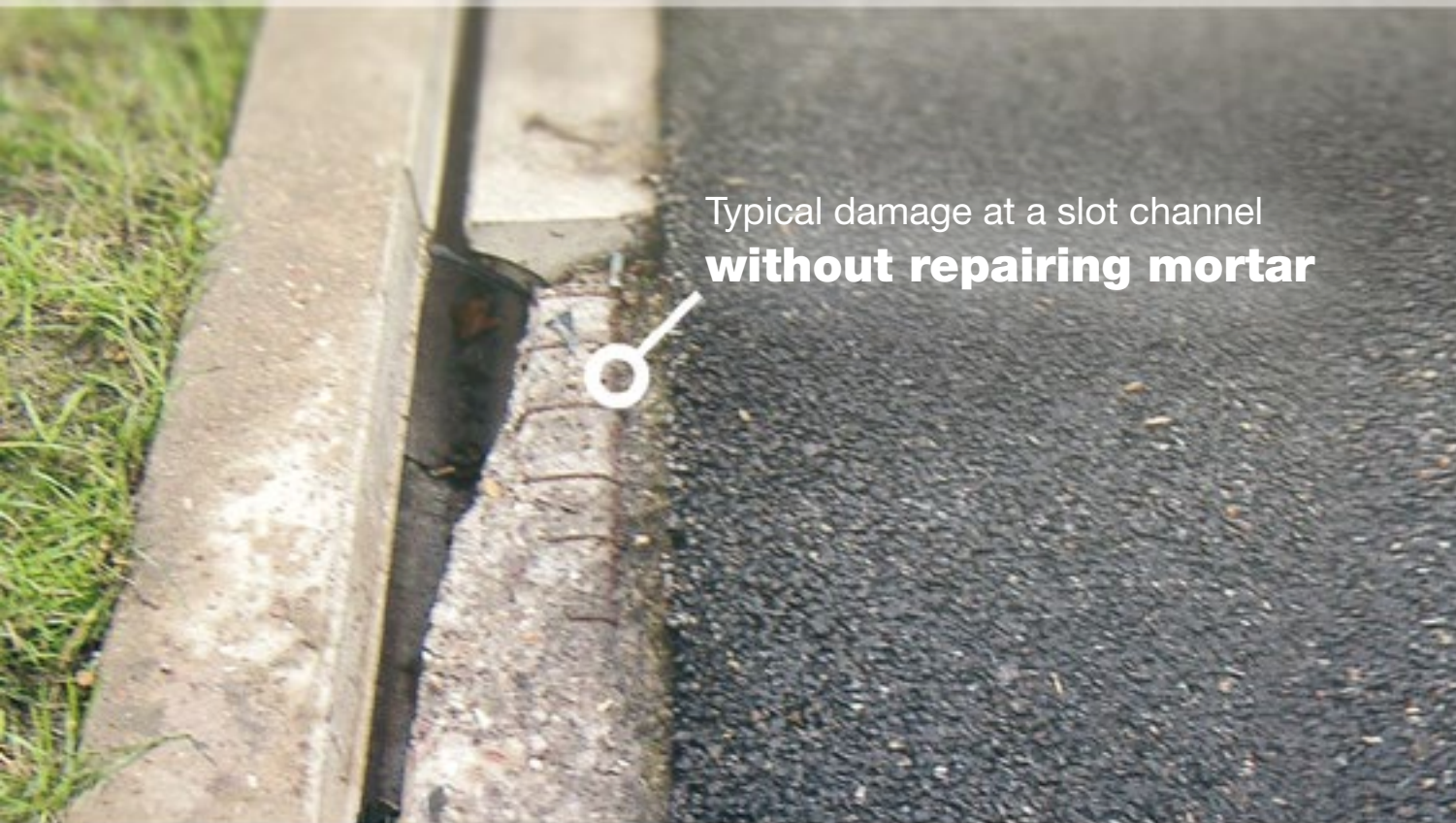
Shuttering, mix up the material, install. Wait a short period of time. Remove the shuttering.



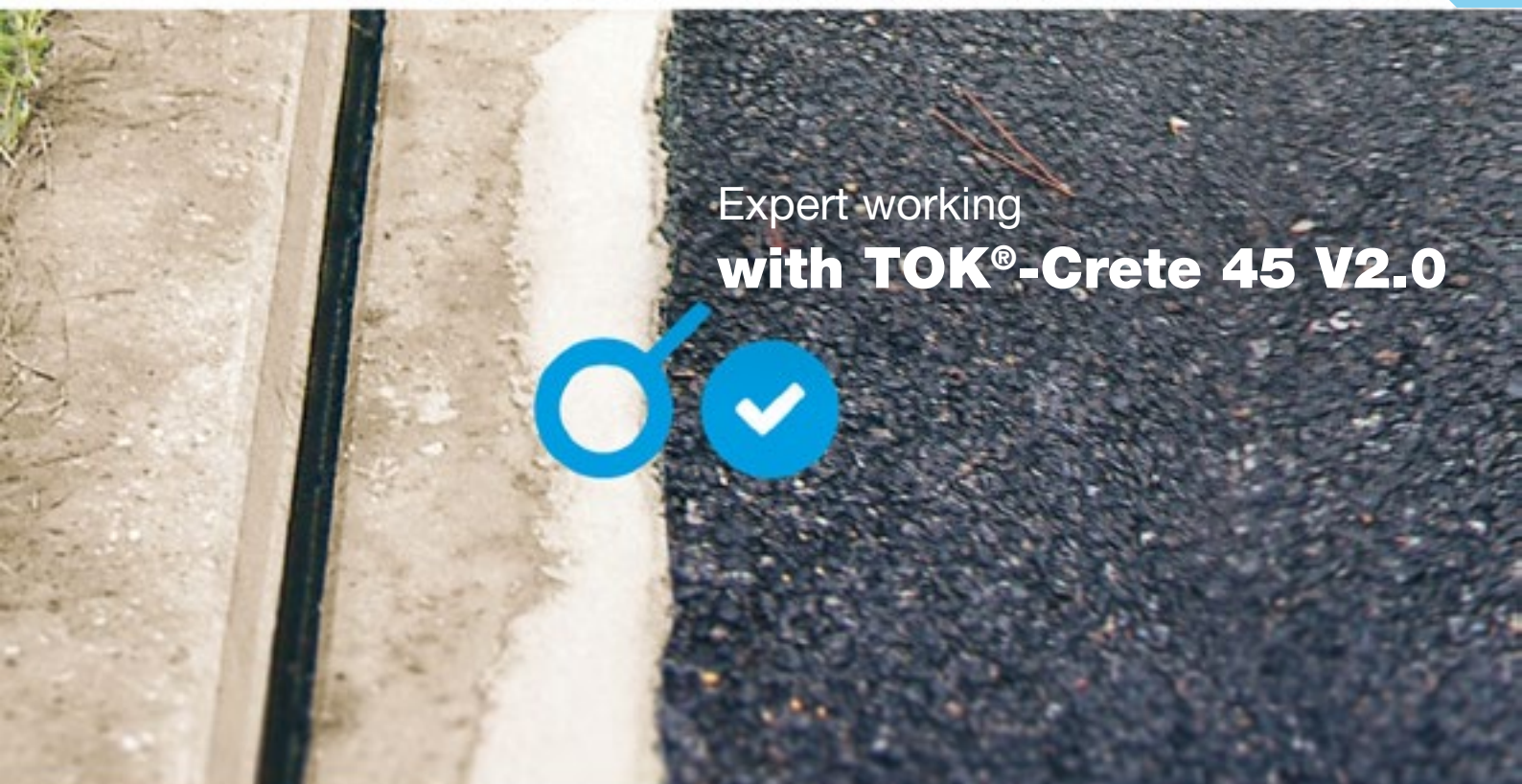
Repair is ready

Pack up. Finished.

Without & **with** **TOK®-Crete 45 V2.0**

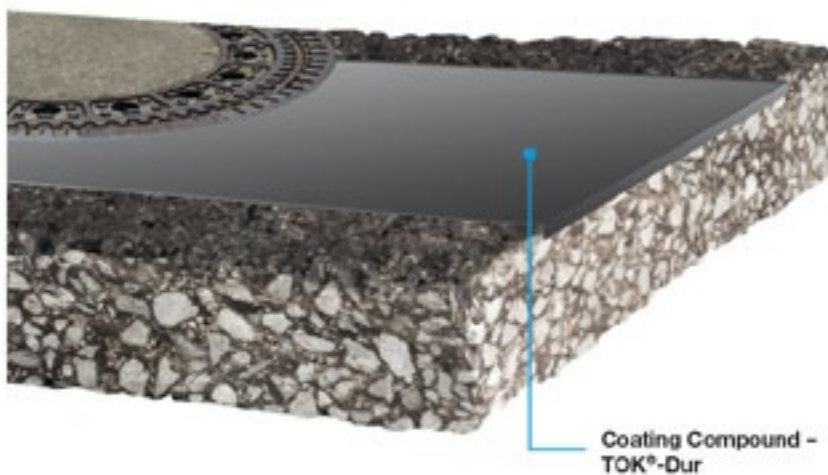


Typical damage at a slot channel
without repairing mortar



Expert working
with TOK®-Crete 45 V2.0





Special Advantages:

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

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

Typical Product Properties

Technical data	Value
Density	approx. 1.60 g / ml
Flash point	approx. +10 °C(+50 °F)
Pot life at +23 °C (+73,4 °F)	approx. 10 minutes



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.

	Packaging	Article no.
TOK®-Dur	7.0 kg / tin container	101 19 220
Active primer (for concrete surfaces)	10.0 kg / tin container	101 19 539
Hardener (powder) for TOK®-Dur	80 g	101 19 219
Hardener (powder) for active primer	SET 4 x 80 g	100 72 020

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 an approx. 1 hour wait, the masking tape can be removed.



Finished levelling layer

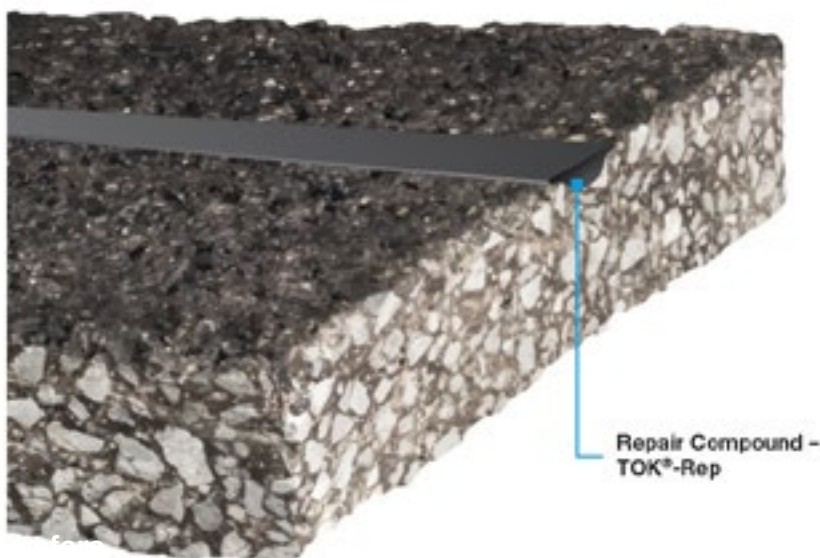
Finally the excess material used for sprinkling is swept off. Traffic can then be released.

Without & **with** TOK®-Dur

Typical damage
without using a
suitable product



Completed expert working
with TOK®-Dur



Special Advantages:

- Rapid working and material hardening – roads can be re-opened to traffic quickly.
- Good mechanical abrasion resistance.
- Very good compound adhesion to asphalt.
- Due to the material consistency, cavities in porous asphalt remain open.
- Ideal pack size – also suitable for small repairs.
- Roads can quickly be re-opened for traffic.

TOK®-Rep

Innovative, two-component cold-processed repair compound. Especially suitable for repairing surface damage – such as scoring after tyre blowouts, for example – in porous and conventional asphalt wearing courses.

Description / Usage

Incidents of mechanical damage occur over and over again, particularly in porous asphalt road surfaces. Grooving frequently occurs when tyres 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**.

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

Technical data	Value	Unit
Density (A+B, hardened)	kg / l	approx. 1.45
Colour	-	Black
Mixing ratio (A:B, parts by weight)	-	4:1
Pot life	minutes	4 to 6 minutes



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 gritting.

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.

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

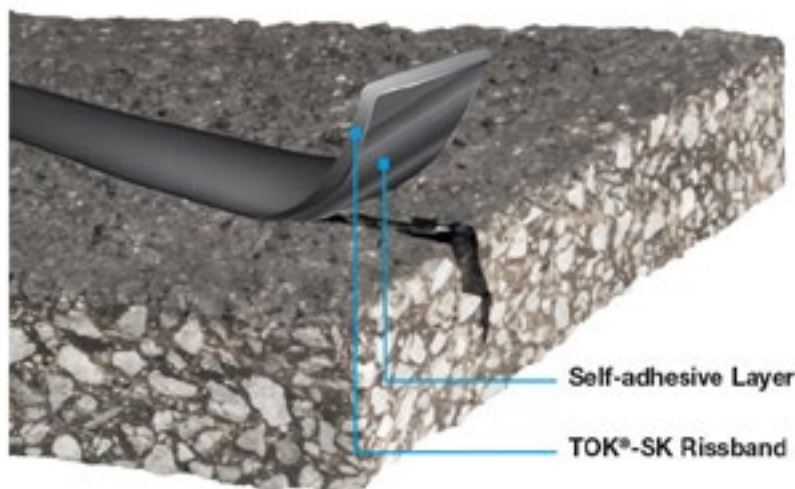
Product name	Container size	Packing unit	Article no.
TOK®-Rep	2.0 l (A+B components)	96 litres per pallet	102 02 739

Storage

TOK®-Rep should be stored sealed in its original containers. Warming the components above +40 °C (+104 °F) and the influ-

ence 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.



Special Advantages:



Cold processed – no burner required.



Fulfills all requirements of ZTV Fug-StB 15.



Processing temperature from +5 °C to +50 °C (from +41 °F to +122 °F).

TOK®-SK Rissband

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

Usage

TOK®-SK Rissband is ideal for covering cracks and open joints or seams in asphalt road surfaces. The maximum width of the

crack opening should not exceed 5 mm. The profile strip can be applied quickly and safely, without the use of a gas burner.

Damaged areas can be permanently sealed, as **TOK®-SK Rissband** is highly plastic and can be pressed into position using a roller.

Application

The asphalt surface must be clean and dry. **TOK®-SK Primer** must be applied in advance; this product improves adhesion to the base surface. In summer, the drying time of the primer is just 3 to 5 minutes, dependent on weather conditions, allowing further work to start quickly. Once the **TOK®-SK Primer** is dry, **TOK®-**

SK Rissband is applied to the crack with the adhesive layer facing down, and pressed into place using a roller or the Rissband SK Roller (size 40x4 mm only). The traffic using the road rolls the compound further into the crack. Under certain circumstances, it may be advantageous to grit **TOK®-SK Rissband** after it

has been laid – 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 carefully warm the substrate slightly.

Ordering Information & Packaging

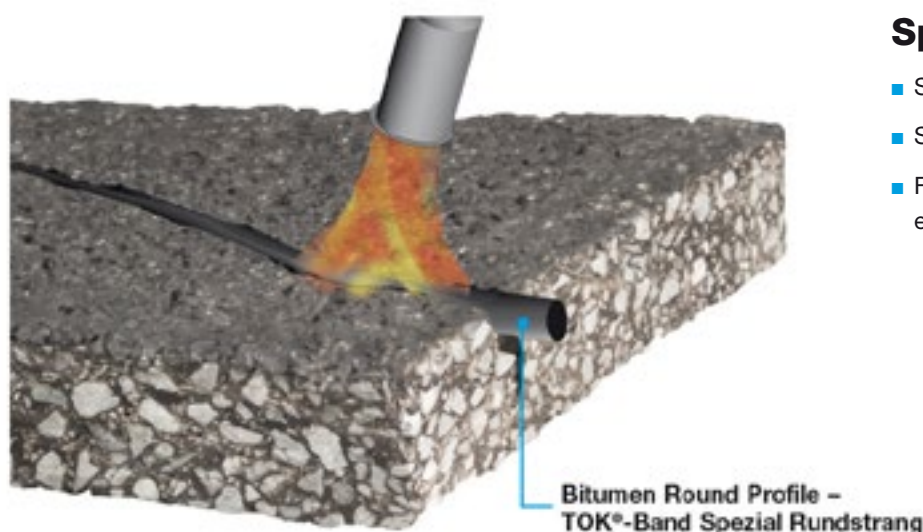
mm / width	mm / thickness	Length m	Rolls per carton	m / box	m / pallet	Article no.
35	4	23	4	92	2,760	100 79 008
40	4	23	3	69	2,070	102 00 387
60	4	23	2	46	1,380	100 71 720

Storage

Store dry and protected from frost, in normal ambient temperature conditions (ideally 15–20 °C/ 59–68 °F);

do not stack anything on top of the boxes. In these conditions, **TOK®-SK Rissband** can be stored in its sealed original

packaging for at least two years from the date of manufacture.



Special Advantages:

- Simple processing.
- Suitable to seal faulty cuts.
- For cracks in asphalt road surfaces, even with crack widths > 5 mm.

TOK®-Band Spezial Rundstrang

TOK®-Band Spezial Rundstrang (round profile) is a bitumen round profile for a variety of applications.

Description

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.
- Ideally, the installed round profile is then additionally covered using the **Rissband SK**.

Ordering Information & Packaging

mm / diameter	m / length	Rolls		m / pallet	Article no.
8	10	6	60	1.800	101 15 109
10	7	6	42	1.260	101 14 782

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.



Special Advantages:

-  High tensile strength – 100 kN/m in longitudinal and transverse directions
-  Self-adhesive on one side – Easy & fast application
-  Shelf-stable and resistant to installation damage



1021-CPR-057 / 19

DENSO GmbH
Felderstraße 24
D-51344 Leverkusen, Germany
Leverkusen plant
40-35988-3401

EN 15381 :2008
Geotextiles and geotextile-related products

Tensile strength T_{max} (EN ISO 10319)	MD 100 kN/m CMD 100 kN/m
Maximum elongation ϵ_{max} (EN ISO 10319)	MD 2.5 % \pm 0.5 CMD 2.5 % \pm 0.5

Stability (appendix B)
To be covered within 1 day of installation.

TOK®-Armabit SK

Fibreglass mesh asphalt reinforcement with ultra-light non-woven material and a laminated bitumen layer – for less cracking

Description

TOK®-Armabit SK is an asphalt reinforcement comprised of a strong polymer-coated fibreglass mesh combined with an ultra-light non-woven material and a laminated film-protected bitumen layer. The reinforcement

prevents cracks from forming and extends the service life of the road.

TOK®-Armabit SK is self-adhesive on the application side, making it easy and fast to apply the reinforcement. **TOK®-Armabit SK**

is tested and approved to EN 15381 standards. The product complies with FGSV paper no. 770 "Working paper on the use of non-woven materials, mesh and composites in asphalt road construction".

Application

TOK®-Armabit SK is used in the repair and renovation of asphalt surfaces and is designed to increase the service life of the road, and particularly of the wear layer (cover layer).

TOK®-Armabit SK is ideal for use as an asphalt layer in concrete surfaces that will be covered with asphalt. The product slows down the rate at which cracks in the concrete

joints transfer through to the asphalt. It also significantly lengthens maintenance intervals.

Typical Product Properties

Property	Typical value	Applicable standard
Colour	Black	
Fibre type	100% fibreglass, multi-filament	
Coating	Temperature-resistant modified polymer coating	
Bitumen layer	Elastomer bitumen, approx. 2 kg m ²	
Mesh width	≈ 25 x 25 mm	
Weight/surface content	≈ 2450 g/m ²	DIN EN ISO 9864
Tensile strength	Longitudinal / transverse ≥ 100 kN/m	DIN EN ISO 10319
Elongation at rated force	Longitudinal / transverse ≤ 3%	DIN EN ISO 10319

The residual strength of the mesh following installation damage testing (in accordance with DIN EN 10722) is 95%



Application

In general, the installation and application instructions (chapter 11 of the FGSV "Working paper on the use of non-woven materials, mesh and composites in asphalt road construction") apply.

Environmental conditions

TOK®-Armabit SK can be used at temperatures between 5°C and +30°C (+41°F to +86°F).

Surface preparation Sand, dust, oil, petrol and other loose particles must be removed from the surface. To ensure that **TOK®-Armabit SK** establishes full contact with the surface, the surface must be profiled before application if it is very uneven or has potholes or steep transitions. Expansion joints or large cracks must be sealed before application using a hot-processed bitumen joint compound in compliance with ZTV Fug-StB. On milled surfaces, the milling depth must not exceed 10 mm.

When using **TOK®-Armabit SK**, a binding agent must be applied in compliance with TL BE-StB; this is particularly important on concrete surfaces. The bitumen emulsion must be fully broken before the asphalt reinforcement is applied to ensure that no moisture is sealed into the layer.

Installation of the asphalt reinforcement

TOK®-Armabit SK may only be installed in dry weather and on dry surfaces.

Lay the strips side by side without any overlap, with the adhesive side facing down. After rolling out, the asphalt layer must be pressed down onto the surface to ensure good adhesion. This can be achieved using a brush or a small roller. The asphalt layer must be applied in areas of tensile stress. Around joints and cracks, ensure an installation width of 50 cm on other side of the joint or crack. In exceptional circumstances and in consultation with the client, an installation width of 25 cm on either side of the joint or crack may be sufficient.

TOK®-Armabit SK must not be driven over before the mix has been added! The asphalt mix should be added no later than one day after the installation of the asphalt layer.

If the truck delivering the mix must drive over the asphalt reinforcement, it may be necessary to chip off a grain size of 2/5 mm at a rate of 1.0 kg/m² from the material, particularly if the weather is hot. This will prevent the material from sticking to the tyres.

The truck delivering the mix must drive over the surface as carefully as possible. Avoid sudden steering movements or harsh acceleration or braking. The generally recognised rules and standards for asphalt road construction apply to the installation and compression of the mixed material.

TOK®-Armabit SK must be covered with an asphalt layer that is at least 4 cm thick (when compressed). This is the only way to ensure that the combined asphalt and asphalt reinforcement layer will be effective.

Further information can be found in the application instructions for **TOK®-Armabit SK**.

Bestellinformationen und Verpackung

Product	Unit/dimensions	Packing unit	Article number
TOK®-Armabit SK	Roll 0.5 m wide; 15.0 m long, packed in cardboard box (7.5 m ²)	30 rolls per pallet (225 m ²)	10083825
TOK®-Armabit SK	Roll 1.0 m wide; 15.0 m long, packed in cardboard box (15 m ²)	15 rolls per pallet (225 m ²)	10083824

Storage

Always store **TOK®-Armabit SK** in a clean and dry environment and in an upright position. Protect the product against direct sunlight to prevent deformation. This applies both during transport and when the product

is in storage. Where possible, use **TOK®-Armabit SK** within 12 months of the date of manufacture. **TOK®-Armabit SK** does not contain any hazardous substances as defined in the Hazardous Substances

Regulations. The product is recyclable if removed by milling to a depth of at least just below the asphalt layer.



REPAIR ASPHALT



→ 78

TOK®-Fill 2/5

Cold-worked repair asphalt
for roads and traffic areas.



→ 80

TOK®-Fill Aqua 0/5

Reactive cold-worked repair
asphalt for roads and traffic areas.



→ 82

TOK®-Fill PA 0/8

Reactive cold-worked repair
asphalt for potholes and similar
defects in **porous asphalt sur-
faces**. The water permeability
is preserved in the installation
location.



Special Advantages:

- All-weather use at temperatures from -10 °C to +25 °C (+14 °F to +77 °F) even when the substrate is damp.
- Ideal to repair potholes, can be driven on again immediately.
- Solvent and tar-free.

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

Technical data	Unit
Grain size in mm	2/5, installation thickness from 2 to 5 cm per layer
Application temperature (surroundings)	from -10 °C to +25 °C(+14 °F to +77 °F) (even with a damp substrate)
Density	approx. 2.0 g / cm ³ (when compressed)
Consumption	approx. 80 kg / m ² (compressed with 4 cm installation thickness)
Colour	black



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 compaction 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.

lar, 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

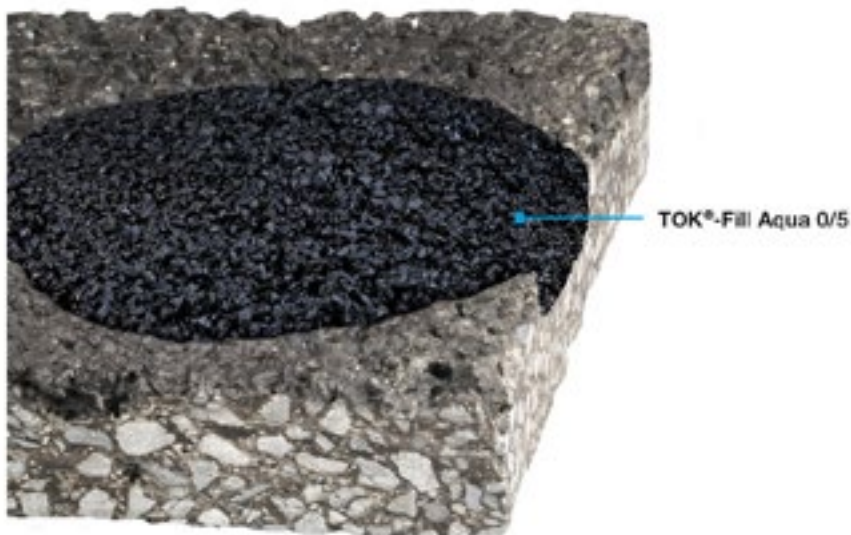
In resealable plastic buckets with 25 kg of content. 24 buckets to a pallet.

Product name	Packaging	Article no.
TOK®-Fill 2/5	25 kg per bucket, 24 buckets per pallet	102 01 356

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.



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.

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

TOK®-Fill Aqua is a high-performance mixture for minor damages to all traffic-bearing surfaces.

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 break-

ages, to fill drilled core holes after sample extraction, to remove potholes and frost

breakages, for access ramps, for levelling and for alignment of road installations.

Typical Product Properties

Technical data	Unit
Grain size in mm	0/5
Application temperature (surroundings)	from -10 °C to +25 °C (+14 °F to +77 °F) (even with a damp subsurface)
Density	approx. 2.0 g / cm ³ in its compressed state
Consumption	approx. 80 kg / m ² (compressed state with 4 cm installation thickness)
Colour	Black



Application

Subsurface

TOK®-Fill Aqua can be installed at 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 $+45^{\circ}\text{C}$ ($+14^{\circ}\text{F}$ and $+113^{\circ}\text{F}$).

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. $+15^{\circ}\text{C}$ to 20°C ($+59$ to $+68^{\circ}\text{F}$)). 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.

	Packing	Article no.
TOK®-Fill Aqua 0/5	25 kg per bucket, 24 buckets per pallet (600 kg/pallet), granulation 0 / 5	100 71 056

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.

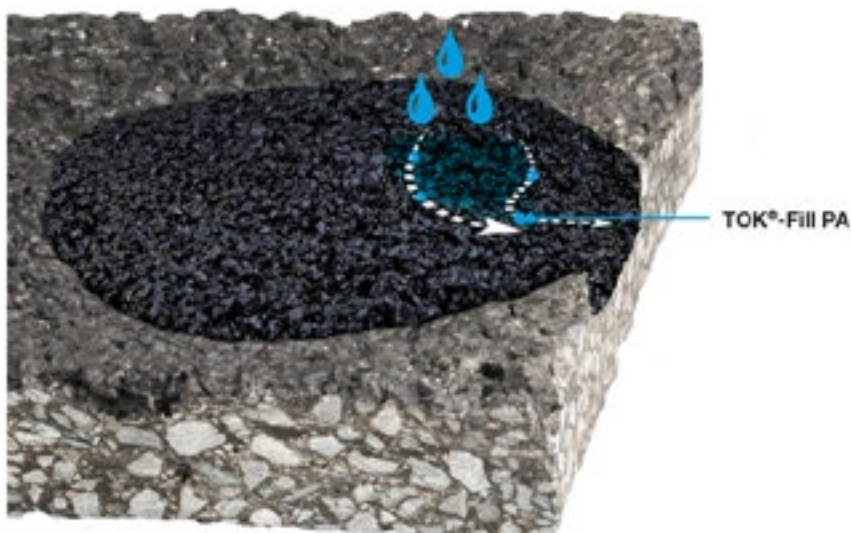
The finished mixture is not frost-sensitive.

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 con-

tains no coal tar pitch and no chlorinated hydrocarbons.



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.

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.

Typical Product Properties

Technical data	Unit
Granulation	0/8
Binder content	approx. 7 %
Density by volume	approx. 2.1 g / cm ³
Cavity content	Dependent on the degree of compression and on the installation thickness (at 25 mm thickness > 16 %)
Marshall parameters	after 4 hours (+23 °C (+73.4 °F) / 50% relative humidity) stability 8 kN / flow value 5.5 mm after 20 hours (+23 °C (+73.4 °F) / 50% relative humidity) stability 12.5 kN / flow value 5.5 mm after 4 hours (+60 °C (+140 °F) / in a water-bath) stability 6 kN / flow value 3.6 mm



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.

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.

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.

At vertical milled edges, before applying **TOK®-Fill PA**, we recommend forming the joint connecting edge, e.g. with our **TOK®-Band SK Drain**.

Ordering Information & Packaging

In resealable plastic buckets.

	Packing	Article no
TOK®-Fill PA 0/8	25 kg per bucket, 24 buckets per pallet (600 kg/pallet), granulation 0 / 8	100 71 057

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.

Environment

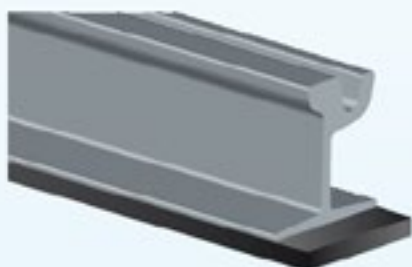
TOK®-Fill PA is solvent-free and because of its composition it is completely recy-

clable (asphalt recycling). The binder is not water-soluble and contains no coal tar

pitch and no chlorinated hydrocarbons.



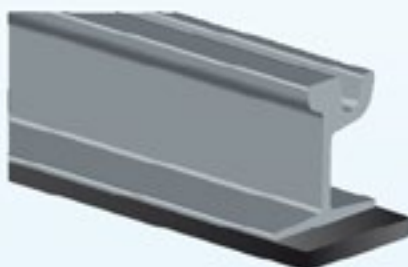
TRACK CONSTRUCTION PRODUCTS



→ 86

DENSOLASTIC®-SU

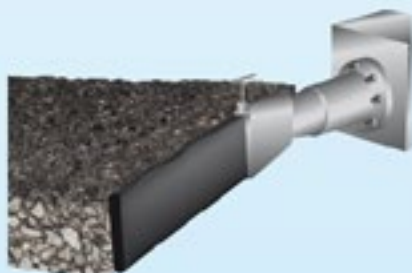
Elastic after hardening, two-component pouring compound based on PU. Vibration damping and noise reducing.



→ 88

TOK®-Melt SU

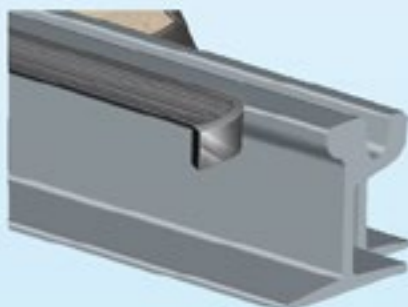
Plasto-elastic hot pouring compound based on polymer-modified bitumen.



→ 26

TOK®-Riegel (TOKOMAT®)

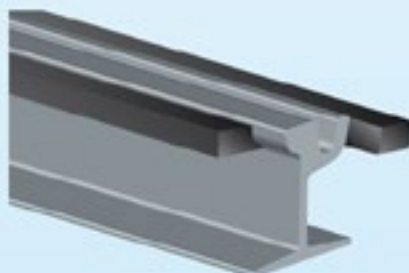
Bitumen joint tape extrusion, approved according to ZTV Fug-StB.



→ 18

TOK®-Band SK N2

High flexible self-adhesive, bitumen joint tape.








→ 39

REINAU®-Rail Joint Pouring Compound

Plasto-elastic hot pouring compound based on polymer-modified bitumen. Approved according to ZTV Fug-StB.



Special Advantages:

-  Permanently elastic and vibration damping.
-  Easy to apply.
-  Tested according to VDV notice 6201.
-  Chemically and mechanically resistant.
-  For numerous fields of application e.g. rails, mooring bollards and fitting foundations (sliding feet).

DENSOLASTIC®-SU

DENSOLASTIC®-SU is a vibration and noise-damping, permanently elastic pouring compound used for railways and platforms in urban areas. DENSOLASTIC®-SU also reliably protects the foundations and fixtures of bollards and gate valves, which are subject to mechanical and corrosive loads.

Description

DENSOLASTIC®-SU consists of a pourable, two-component polyurethanebased system that cures into an elastic material.

DENSOLASTIC®-SU has short-term resistance to diesel fuel, and is also frost- and road salt-resistant.

Available in 3 different hardness types:

- A 45 ± 5
- A 65 ± 5
- A 85 ± 5

Uses

DENSOLASTIC®-SU 45 is ideal for use as an elastic and vibration-damping pouring compound for grooved rails and filled section rails as well as for mooring bollards and fitting foundations (sliding feet). The material is suitable for light railway transportation or when

greater deflection is required in the system (e.g. as a pouring compound for machine components). DENSOLASTIC®-SU 45 is used in pipeline construction as an isolation layer in valve foundations and in port construction as a protective mass for bollards.

DENSOLASTIC®-SU 65 and - 85 are used as an elastic and vibration-dampening 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)
- Resistant to water, saline solution (10%), sodium hydroxide solution (5%) and engine oil (SAE 10 W 40)
- Short-term resistance to diesel fuel (only SU 45)
- Electrically insulating according to VDV Notice 6201



Application

Subsurface preparation

The subsurface should be dry. Any oil or grease film present must be removed if permanent joining of the material to the contact area is desired. Dust and other soiling must be removed, as must water, ice or snow. An application of **DENSOLASTIC®-E Primer** can be used to improve bond strength on concrete and steel.

Preparing the material

DENSOLASTIC®-SU 45:

Mixing ratio A : B = 100 : 16 (weight),
A : B = 100 : 8.8 (volume).

DENSOLASTIC®-SU 65:

Mixing ratio A : B = 100 : 24 (weight),
A : B = 100 : 13 (volume).

DENSOLASTIC®-SU 85:

Mixing ratio A : B = 100 : 40 (weight),
A : B = 100 : 25 (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 2-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 premixing). 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

	Value	DENSOLASTIC®-SU 45		DENSOLASTIC®-SU 65		DENSOLASTIC®-SU 85	
Pot life	minutes	4 to 6		4 min.		4 to 5	
Density (cured)	kg / l	0.72 (A+B component)		0.78 (A+B component)		ca. 0.88 (A+B component)	
Shore hardness A	-	45 ± 5	DIN 53 505	65 ± 5	DIN 53 505	85 ± 5	DIN 53505
Tear strength	N / mm²	1.6	ISO R 527	3.5	ISO R 527	> 4.0	ISO R 527
Elongation after fracture	%	170	ISO R 527	200	ISO R 527	> 100	ISO R 527

Ordering Information and Packaging

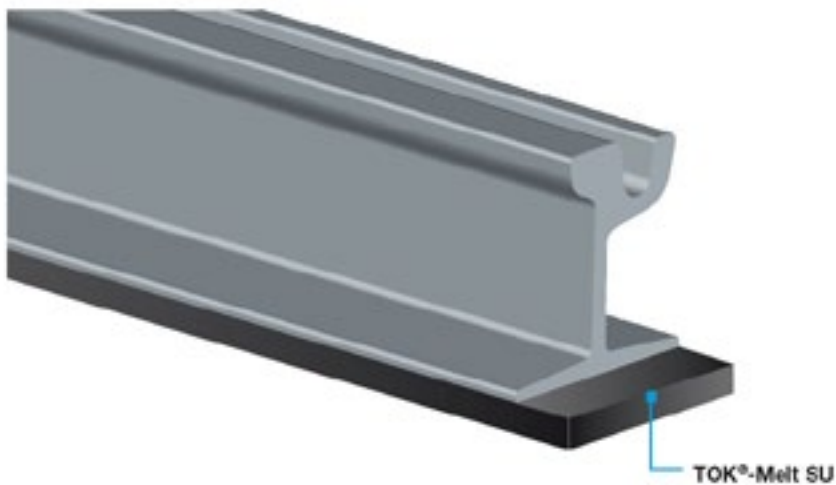
Productname	Container size	Article no.	Packaging uses
DENSOLASTIC®-SU 45	SET 7.55 kg (A+B)	100 75 036	Individual container, 29 sets/pallet
DENSOLASTIC®-SU 45	SET 160 kg (A+B)	100 75 037	1 tub A comp., 1 can B comp.
DENSOLASTIC®-SU 65	SET 7.44 kg (A+B)	100 75 038	Individual container, 29 sets/pallet
DENSOLASTIC®-SU 65	SET 153 kg (A+B)	100 75 039	1 tub A comp., 1 can B comp.
DENSOLASTIC®-SU 85	SET 7.10 kg (A+B)	100 75 040	Individual container, 26 sets/pallet
DENSOLASTIC®-SU 85	SET 183 kg (A+B)	100 75 041	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.



Special Advantages:

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

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

to 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

Type	Hot-poured-compound
Base	Bitumen
Viscosity	Solid (temperature-dependent thermoplastic)
Density	1.5 g/cm ³ (approx.)
Pouring temperature	+200 to +210 °C (+392 to +410 °F) (approx.) Do not overheat compound!
Colour	Black



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 the track at daytime temperatures of over +20° C (+68 °F). This reduces the possibility of track movement/longitudinal positional change on the installed embedding compound due to thermal expansion.

■ The embedding space near the rail footing should be confined using a barrier of masonry mortar or concrete (for example). The use of a mortar or concrete barrier enables precipitation water to be blown out as necessary; sand barriers (e.g.) have proven unsuitable here. The barrier edge should be approx. 15 mm higher than the rail footing to be embedded.

■ Following installation of each embedding compound layer, the space is to be blown clean using compressed air, taking care to ensure the removal of loose detritus and any water present.

Rail application/embedding:

Rail embedding should be carried out in dry weather wherever possible. The embedding compound must not be installed during rain or with standing water under the rail. The building structure should have a surface temperature of at least +5°C (+41°F). The rail footing is embedded to a thickness of 3.5 to 6 cm using hot pouring. Application involves installing two layers.

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 re-used concrete bedding – is avoided.

■ Direct heat transfer into the rail and the setting time of the compound are each reduced/shortened by approx. 50%.

The material installed in the first pour serves to fix the hardwood underlay in place: these are then protected against any permanent yet unnoticed positional changes due to tram operation between the end of the day and the start of the night shift. It also ensures a shortened cooling- off time for the individual layers. This, in turn, ensures a more rapid return to service for the track for urban railway traffic. The embedding compound must have the prescribed temperature for installation. If the working temperature is much lower than required, flow properties suffer and the compound does not completely fill the rail footing to be embedded. There is thus a danger of cavity formation. The embedding compound should preferably be installed from one side – if tracks are banked, from the side with the lower rail footing position. The first pour should result in a thickness of approx. 60% of the total height to be installed.

After the first layer has cooled (warm to the touch), the "final pour" can then be carried out.

The "final pour" should fill material to the upper edge of the rail footing. If shrink settling occurs, another pour will become necessary.

Once embedded, the rails should be covered as soon as possible using the appropriate top material (track covering).

Ordering Information & Packaging

Container type	Content	Pallet	Article no.
Cardboard container	35 kg	24 boxes/pallet	100 77 803

Storage/Container Disposal

Store the container upright in a dry place that is not exposed to direct sunlight.

Under these conditions, **TOK®-Melt SU**

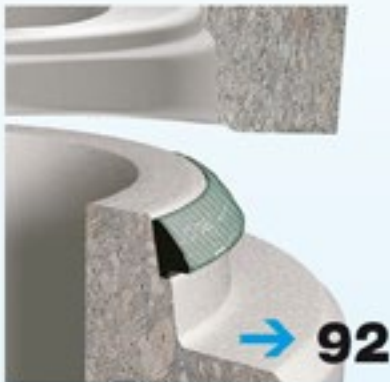
can be stored practically indefinitely.

The disposal of empty (no drips, scraped out, no powder) white or metal sheet con-

tainers is via **KBS**; emptied plastic and paper/card containers are disposed of via **Interseroh**.

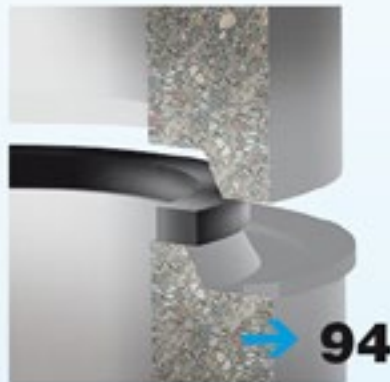


CIVIL ENGINEERING



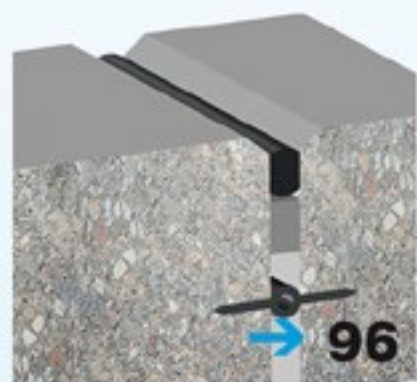
DENSO®-Gleitmittel

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



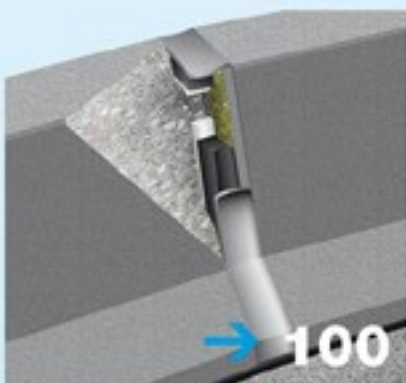
TOK®-Strip

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



FERMADUR®

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.



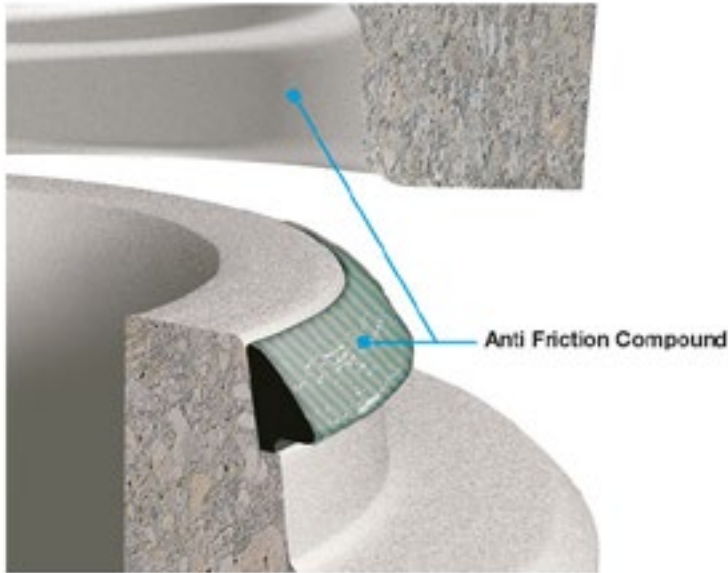
GOMEX®

Elastomer moulded parts and elastomer/metal moulded parts with a diverse range of applications in industry and technology.



GOMEX®-Pal

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



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.

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

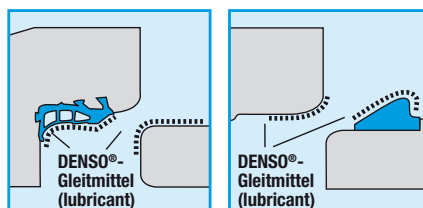
steel-reinforced concrete pipes. Due to its biodegradability, the lubricant has no negative impact on the service life of the seal, as demanded by DIN EN 681-1 at point 4.1.1.

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.

DIN	with 1 kg of lubricant, approximately the following can be laid
300	12 pipes
400	9 pipes
500	7 pipes
600	5 pipes
700	5 pipes
800	4 pipes
900	4 pipes
1000	3 pipes
1200	3 pipes



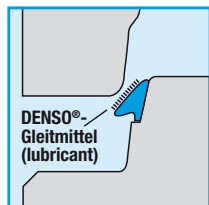
Application - placement of manhole rings

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.

DIN	with 1 kg of lubricant, approximately the following can be laid
1000	7 manhole rings
1200	3 manhole rings
1500	2 manhole rings



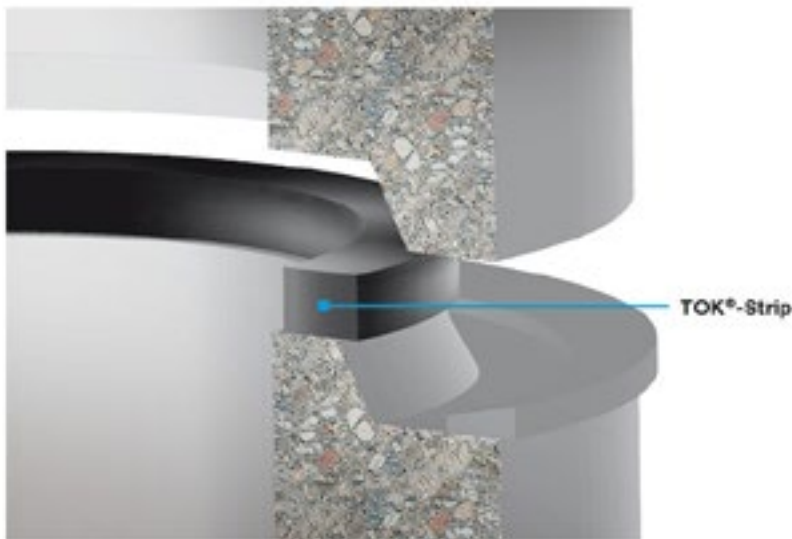
Storage

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.

	Container size	Article no.	Package units
DENSO®-Gleitmittel (lubricant)	Bucket, 5.0 kg	101 17 625	90 buckets per pallet (450 kg)
DENSO®-Gleitmittel (lubricant)	Bucket, 3.0 kg	100 75 082	144 buckets per pallet (432 kg)



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).

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 bitu-

men, 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.

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

Technical data	Unit	Value
Colour	-	Black
Density	g /cm ³	approx. 1.32
Elastic resilience	%	> 10
Dimensional stability (+45 °C (+113 °F), 24 h)	mm	≤ 2
Ring and ball softening point	°C (°F)	> +110 (+230)



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 dimen-

sions (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.

Product name	Profile [HxW]	Article no.	Contents	Shape cross-section
TOK®-Strip	20 x 20 mm	100 75 033	Box with 5 rolls, each 5.0 m, 750 m per pallet	
TOK®-Strip	25 x 25 mm	100 75 032	Box with 4 rolls, each 4.40 m, 528 m per pallet	
TOK®-Strip	30 x 30 mm	100 75 034	Box with 4 rolls, each 3.20 m, 384 m per pallet	
TOK®-Strip*				 ...

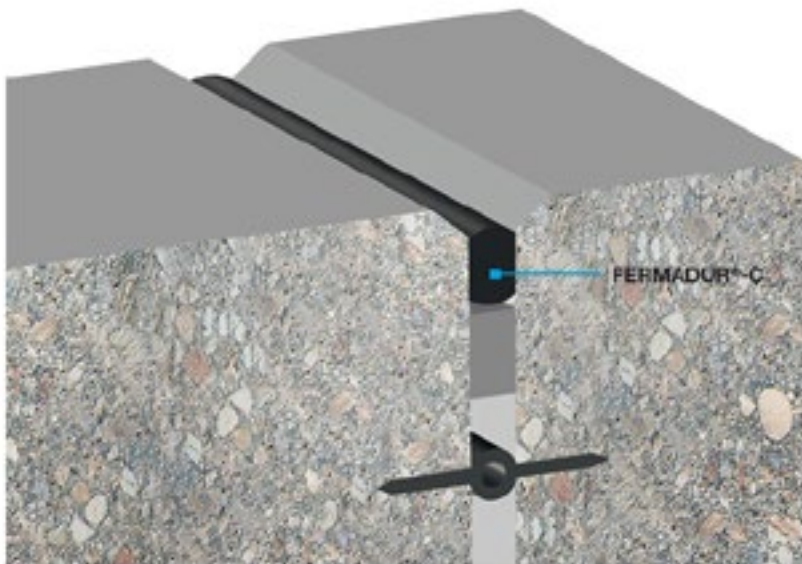
* Further dimensions and profile cross-sections are available on request.

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.



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.

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 cre-

ated 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 on:

- Sewage treatment plants
- Locks
- Swimming pools
- Factory-made elements
- In bridge building at the caps and the central longitudinal joints

FERMADUR®-C is widely used in industry for collecting pools, basins, filling stations and storage areas for drinking-water hazardous substances as a joint seal.

Typical Product Properties

Properties	Unit	Value
Tensile strength	N/mm ²	≥3
Elongation at break	%	≥150
Recovery tension (15 min. at +23 °C (+73.4 °F) 25 % deformation)	N/mm ²	0.20 – 0.40
Pressure deformation remaining (after 24 hr storage at +70 °C (+158 °F))	%	≤ 27

The water pressure resistance of the installed **FERMADUR®-C** Profil 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 $D=2 \times W$ ". 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 silicification 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

Limited resistance to:

- Petroleum spirit
- Mineral and fuel oil

- Alcohol

Unstable in the long run to:

- Organic solvents (e.g. toluene, ethyl acetate)

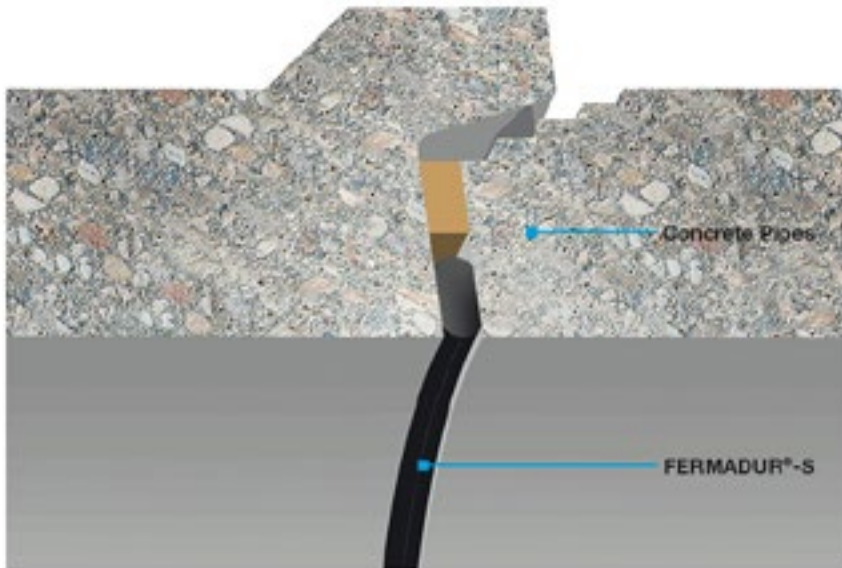
For particular loads, we ask that you contact us and indicate the chemical name.

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.



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.

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.

FERMADUR®-S 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®-S** 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®-S** can be installed and is effective immediately.

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 Product Properties

Properties	Unit	Value
Tensile strength	N/mm ²	≥3
Elongation at break	%	≥350
Recovery tension (15 min. at +23 °C (+73.4 °F), 25 % deformation)	N/mm ²	0.20 – 0.40
Pressure deformation remaining (after 24 hr storage at +70 °C (+158 °F))	%	≤ 20

The water pressure resistance of the installed **FERMADUR®-S** Profil 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®-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 $D=2 \times W$ ". 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 silicification 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 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.

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

Limited resistance to:

- Petroleum spirit
- Mineral and fuel oil

- Alcohol Unstable in the long run to:
- Organic solvents (e.g. toluene, ethyl acetate)

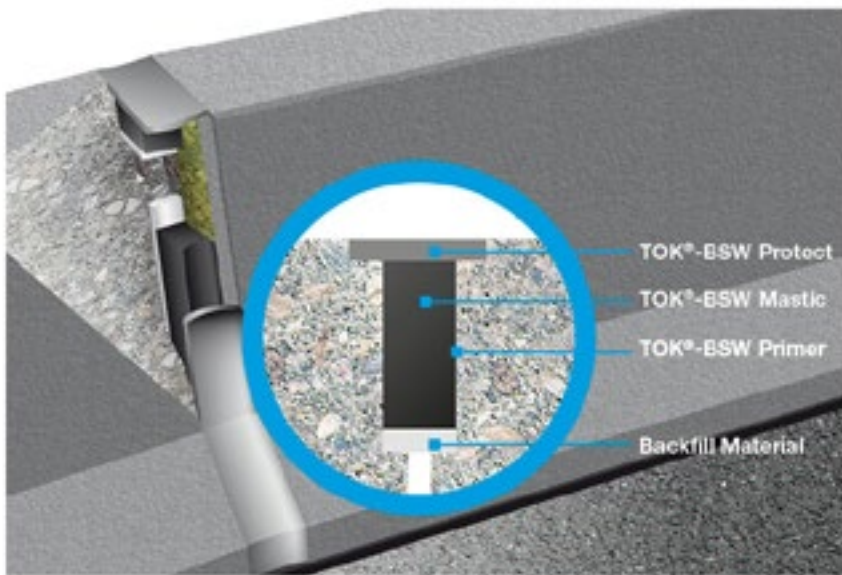
For particular loads, we ask that you contact us and indicate the chemical name.

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.



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**.

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.

System Overview / Functional Diagram

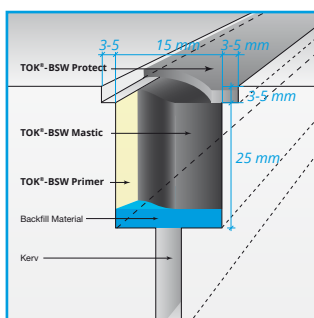


Diagram not to scale.



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 70% of its 28-day 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 subsurface (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 cartridges (600 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 then proceed immediately.

The sealant ends approx. 3 mm before the outer edge of the concrete, to leave enough space for the protective layer.

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 nozzle technology on 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: Reworking

The system offers a major advantage when carrying out minor repair work. In this case, existing compound can be non-destructively heated, covered with new compound and then trowelled smooth.

Renovation work

TOK®-BSW can also be utilized for renovation work on existing joints.

Here, the same general preconditions 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

Product name	Colour	Article no.	Packaging units
TOK®-BSW Primer	clear	100 77 800	Bucket 5.0 l
TOK®-BSW Mastic	black	100 77 203	Supplied in bar form in boxes, 30 kg/box and 12 boxes per pallet (360 kg)
TOK®-BSW Protect	grey-brown	100 77 702	Supplied in bar form in boxes, 30 kg/box and 12 boxes per pallet (360 kg)

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 manu-

facture 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.



Special Advantages:

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

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.



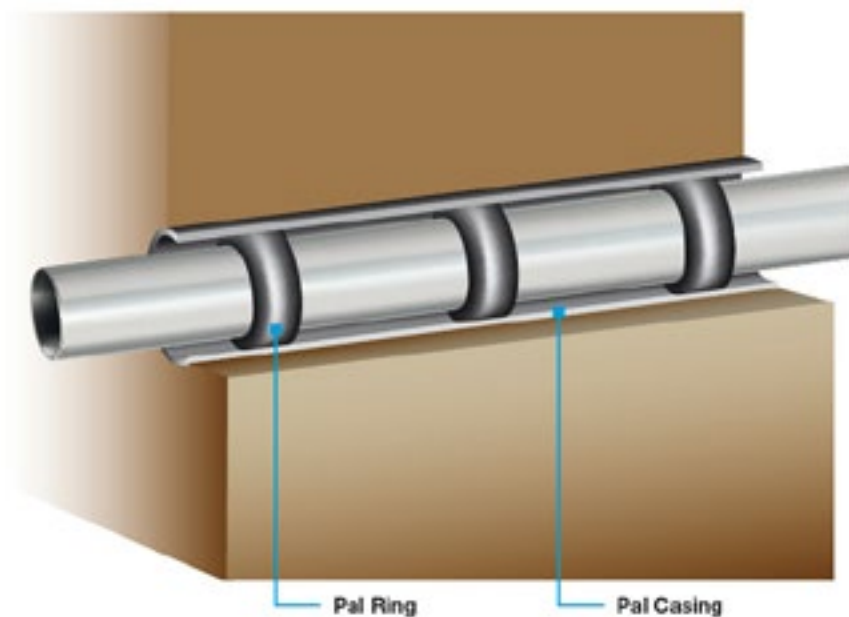
Typical Product Properties

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

Molded part dimensions	Unit	Typical value
Maximum part size	mm	approx. 540 x 570
Minimum part weight	g	approx. 10
Maximum part weight	g	approx. 1400

Ordering Information & Packaging

Information about pack sizes is available on request.



Special Advantages:

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

GOMEX®-Pal

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

Discription

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

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

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

The **GOMEX®-Pal** is a rugged, durable filler pipe made from PVC-U. A special rough surface structure ensures optimal adhesion to the mortar.

Application

The **GOMEX®-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 **GOMEX®-Pal Rings**.

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

2. The second **GOMEX®-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 **GOMEX®-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)



Typical Product Properties

Characteristic	Unit	Typical value
Compressive strength versus gas and water, GOMEX®-Pal System	bar	≤ 5.0
Compression set (24 h, +70 °C (+158 °F)) GOMEX®-Pal Ring	%	< 20
Recovery tension	N / mm ²	0.2 to 0.4
Working temperature	°C (°F)	-10 to +50 (+14 to +68)
Operating temperature	°C (°F)	-35 to +50 (-31 to +68)

Bedarfsliste

Service pipe type	Inch	Nominal size DN	Outer diameter (mm)	Nominal size GOMEX®-Pal Sleeve	GOMEX®-Pal Ring (diameter (mm) – average circumferential length (cm)) = type
Plastic pipe			32	50	12 - 13
			40	60	16 - 16
			50	80	22 - 20
			63	0	12 - 22
			75	100	18 - 28
Steel pipe	1	25	32	50	12 - 13
	1 ¼	32	42	60	12 - 16
	1 ½	40	48	80	22 - 20
	2	50	60	80	14 - 22
	2 ½	65	76	100	18 - 28
PE-jacketed steel pipe	1	25	38	60	16 - 16
	1 ¼	32	46	80	24 - 20
	1 ½	40	52	80	22 - 20
	2	50	64	80	12 - 22
	2 ½	65	80	100	14 - 28
Electricity cable			22.5 to 25	40	12 - 10
			25.5 to 27	50	17 - 12
			27.5 to 32	50	14 - 12
			32.5 to 37	50	12 - 13
			37.5 to 42	60	16 - 16
			42.5 to 47	80	24 - 20
			47.5 to 52	80	22 - 20
			52.5 to 57	80	18 - 21
			57.5 to 63	80	14 - 22
			63.5 to 70	100	24 - 28

Ordering Information & Packaging

	Type	Number of rings per box
GOMEX®-Pal Ring	12 - 13	100
	12 - 22	40
	14 - 10	140
	14 - 12	100
	14 - 28	24
	16 - 13	100
	16 - 16	70
	17 - 12	100
	18 - 21	40
	18 - 28	24
	22 - 20	40
	22 - 26	24
	24 - 20	20

	Length (mm)	Ø 40 mm	Ø 50 mm	Ø 60 mm	Ø 70 mm	Ø 80 mm	Ø 100 mm
GOMEX®-Pal Pipe Sleeve	400,450,530,600,1000	35	50	35	25	20	12

Additional dimensions available on request.

ADVANCED IN SEALING.



History

A story of success

Over the past century, DENSO Group Germany has built a reputation founded on experience, quality and reliability in corrosion prevention and innovative sealing technology. Just a few years after the company was founded in 1922 in Berlin, DENSO Group Germany revolutionised corrosion prevention across the world with DENSO

Redefining corrosion prevention

14/07/1927: "Schade's plastic protective tape" is patented and goes down in history as the fledgling company's first invention. The "DENSO tape" (Petrolatum tape) is the world's first passive corrosion prevention solution for pipes and pipelines and over the coming decades, the name becomes a generic synonym for all types of protective pipe tape.

From the Spree to the Rhine

1946: After the destruction of the company's original premises during the Second World War, the company reforms in Leverkusen.

The proximity of the new site to BAYER AG and the Rhine river provides the inspiration for new inventions – and an efficient transport route.

1922



Rising in the midst of collapse

14/11/1922: The company is founded in Berlin under the name Chemieprodukte GmbH. Against the backdrop of a post-war 1920s Germany that is suffering famine, hyperinflation and unemployment, the company lays the foundations for its future "Made in Germany" story of success.

1927



A name for success

1927: The "DENSO" name is registered. The name comes from the Latin word "densus", which means "to seal".

1929



Customer satisfaction as a catalyst for success

1929: The company wins Berlin's municipal gas authority, or Berliner Städtische Gaswerke AG (GASAG), as its first customer. Many national and increasing numbers of international municipal authorities and pipeline operators follow suit: Stadtwerke München (the Munich municipal authority), Ruhrgas AG Essen and the Blackstone Gas Company in the USA are all impressed by the new technology.

1946



1952



TOK®-Band: A flexible and stable channel solution

1952: TOK®-Band – a ready-made malleable tape solution for channel sealing – is invented. Up until this point, the only sealing methods available used hot casting or filler. However, these solutions produced a seal that was too rigid, leading to the seal breaking whenever the pipe moved in the ground.



tape, its very first invention. When the company premises were destroyed during the Second World War, the firm relocated its headquarters to a new site on the banks of the Rhine river. The company did not let this setback damage its inventive and entrepreneurial spirit, as testified by the countless corrosion

prevention and sealing technology innovations it rolled out over the following years. Today, DENSO Group Germany is a global group of companies that, in spite of its international reach, still strives to deliver sustainable custom solutions and provide personal service to its customers.

DENSOLEN®:

Preserving value with three-ply tape

1973: DENSO Group Germany invents the world's first co-extruded three-ply tape for welding connections on pipes and pipelines. A brand new cold-application technology is used to fuse the layers of the tape together, creating a hose-type permanent seal.

1973



1977



DEKOTEC®:

Rapid application – permanent seal

2006: DEKOTEC® heat shrinkable sleeves featuring innovative hot-melt and mastic technology are launched. The product line is known for its outstanding quality and simple, fast application.

2006



2014



TOK®-Band:

Improve the proven – Develop new ones

2017: For the very first time no priming is necessary before applying TOK®-Band. The activatable TOK®-Band A can be processed within seconds.

2017



TOK®-Band: Taking quality to the roads

1977: The world's first bitumen joint tape for joints and seams in asphalt road construction is invented. The TOK®-Band name quickly becomes a synonym for all bitumen joint tapes.

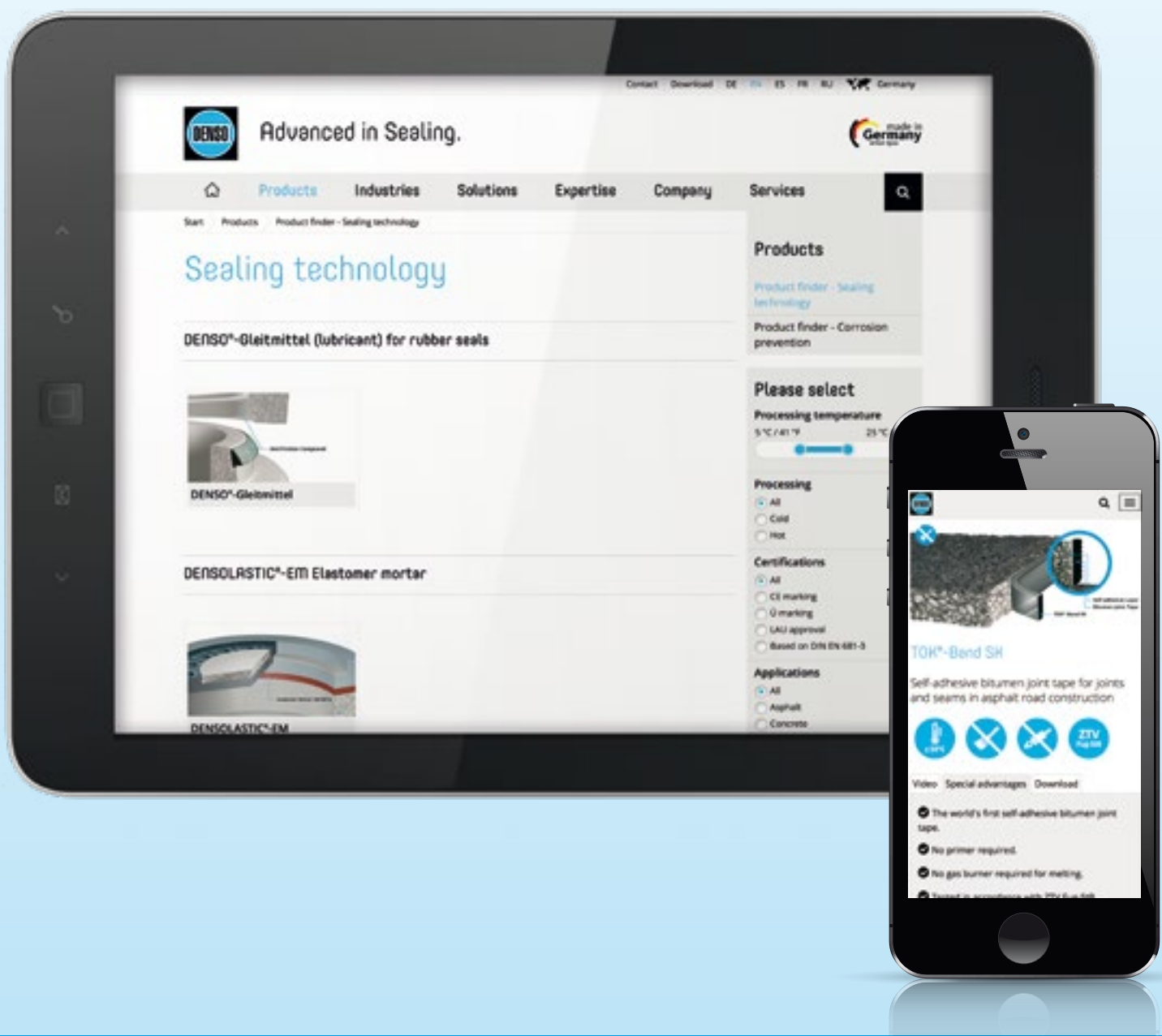
TOK®-Sil Resist:

A new product for new partners

2014: The world's first joint sealant for biogas plants and liquid manure, slurry and silage effluent plants provides an effective, permanent seal at the critical point – the intersection between horizontal and vertical joints. The invention of TOK®-Sil Resist is of particular interest to operators of biogas plants.

DENSO ONLINE

Please find further information about our products and the innovative product finder on our homepage www.denso-group.com



CORROSION PREVENTION

another part of our expertise

The brochure "Corrosion Prevention" can also be downloaded from www.denso-group.com.



■ **DENSO®**
Petrolatum tapes and mastics



■ **VivaxCoat®**
Coating system for moist surfaces



■ **DENSOLEN®**
PE/Butyl-tapes and mastics



■ **DENSOLID®**
Polyurethane coatings



■ **DEKOTEC®**
Heat shrinkable sleeves



■ **DENSIT®**
Insulation and sealing tapes



■ **MarineProtect™**
Jetty pile protection



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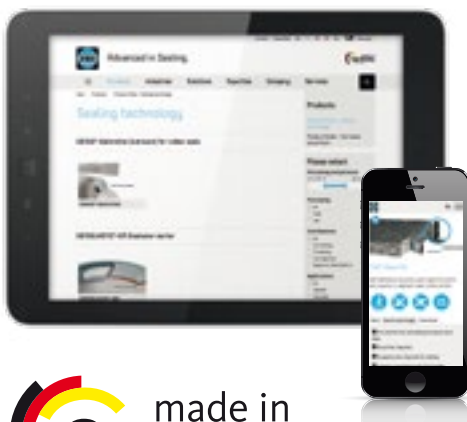
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