



## Nafutekt Plus

**The durable and flexible system for joints in traffic surfaces.  
Long-term cost effectiveness.**

EXPERTISE  
BRIDGE

**MC**  
BE SURE. BUILD SURE.



## Nafutekt Plus – Long-term flexibility

**The design of joints in bridge decks has a critical effect on the performance and the service life of the bridge itself. This is especially true of decks on short-span or segmental bridges.**

Progressive deterioration of the road surface of the load-bearing concrete elements will, if allowed to continue unchecked, eventually necessitate extensive and expensive repairs.



The design of the joints on short-span or segmental bridges is a detail that has an enormous influence on the service life of the structure. A badly designed and/or poorly constructed joint will lead to leaks and the penetration of de-icing salts as the bridge undergoes dimensional changes. The dynamic loads imposed by traffic cause the damaging effects to accumulate.

**Nafutekt Plus** is an economic and effective road joint system that has a long-standing and proven track record in both new construction and the repair of damaged joints. The Nafutekt Plus system forms a durable bond between the surfacing material and the structure, and accommodates changes in length caused by dynamic loads and temperature fluctuations.

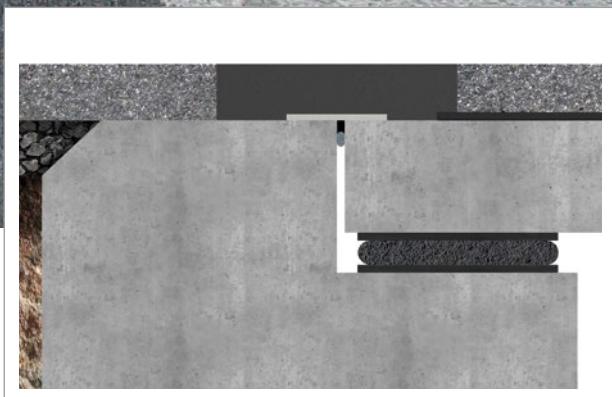


## Sustained safety and durable flexibility

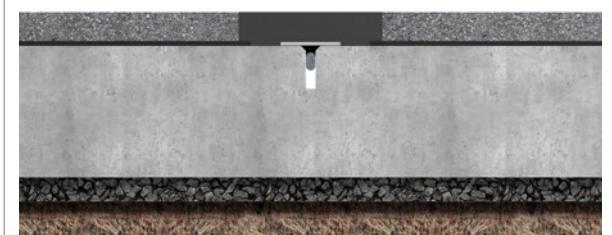
Nafutekt Plus is applied in layers using a "hot-on-hot" technique. A special, graded aggregate is heated and placed in conjunction with a hot-poured, polymer-modified bitumen. The resultant joint is durable, flexible and can withstand high dynamic loads while protecting the substrate against the ingress of water and de-icing salts. The effects on the structure of seasonal and diurnal temperature changes are fully accommodated.

### Areas of application

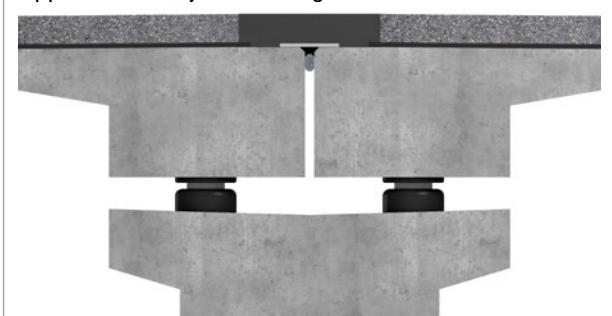
- For all new and existing expansion and deck end joints
- For sealing of hinged joint sections
- Trafficable joint sealing of segmental bridges



Application in a block joint in a tunnel section



Application in a joint in a segmental construction



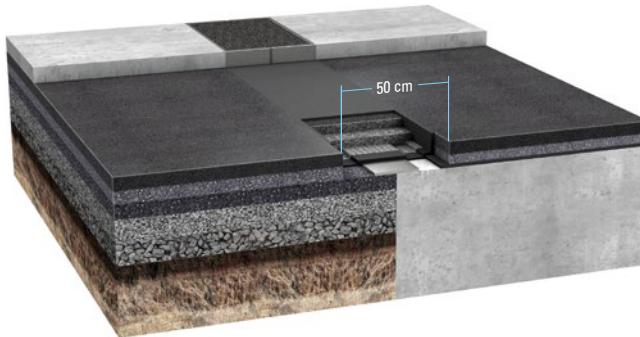
- Cost-saving application with basic equipment
- Fast application for short road closures
- Durable system means reduced expenditure for local and national highway authorities
- Guaranteed MC system solution: Nafutekt Plus – tried and tested since 1989



# Nafutekt Plus – Instilling design confidence

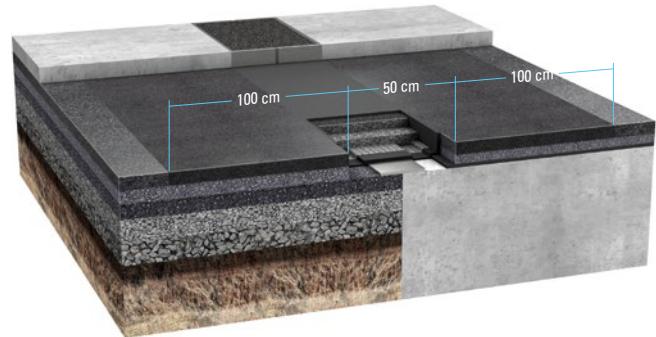
Nafutekt Plus is a tested and approved road surface joint system using polymer-modified bitumen compliant with German code ZTV-Ing. Part 8 Section 2. Nafutekt Plus forms durable, waterproof, flexible trafficable joints on bridges and load-bearing structures.

Nafutekt Plus is a more economic alternative to conventional hot-poured deck jointing systems that need frequent re-sealing. Besides providing lasting protection for the structure, Nafutekt joints give a smoother ride for motorists and cyclists. There is also a significant reduction in noise emission compared with conventional joints of uneven transition.



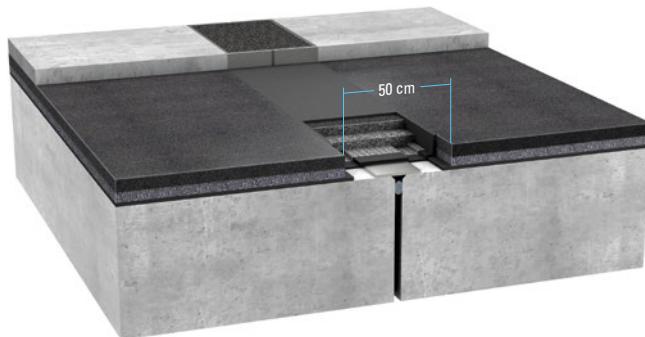
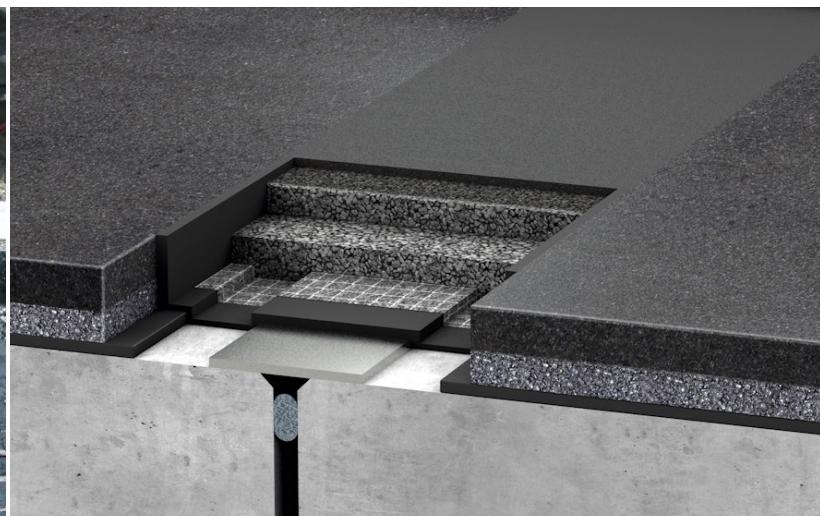
## Construction end joints in mastic asphalt coatings:

Nafutekt Plus as end joints on single-span bridges. Bituminous road and bridge surfacings are made from asphalts with less than 6 % voids.



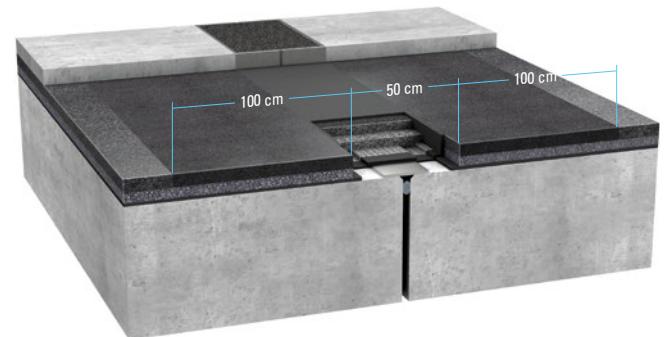
## Construction end joints in hot-rolled asphalts:

Porous road surfaces with a void volume higher than 6 % must not come directly into contact with a Nafutekt Plus joint. The insertion of a 1 m wide mastic asphalt strip on both sides of the joint is necessary.



### Construction joints for mastic asphalt surfaces:

Nafutekt Plus joints on segmental bridges with a waterproof surface.



### Construction joint for hot-rolled asphalt:

Nafutekt Plus on segmental bridges with porous road surfaces. Surfaces with a void volume higher than 6 % must not come directly into contact with a Nafutekt Plus joint. The insertion of a 1 m wide mastic asphalt strip on both sides of the joint is necessary.

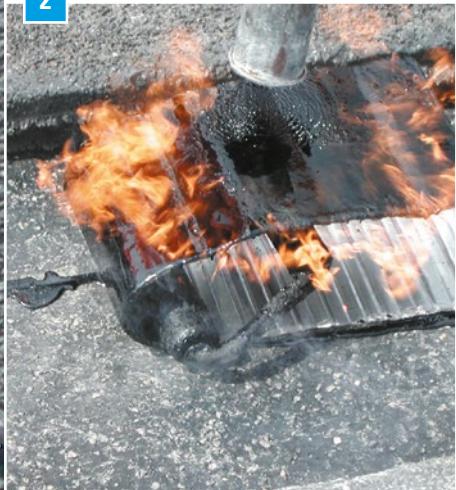
Drying the prepared joint

1



Torch-on application of bitumen sheet with stainless steel laminate

2



## Nafutekt Plus – For every application

Placing and compacting heated aggregate in 3 cm layers

6



Pouring hot Nafutekt Plus onto and into aggregate

7



Applying the hot Nafutekt Plus to joint



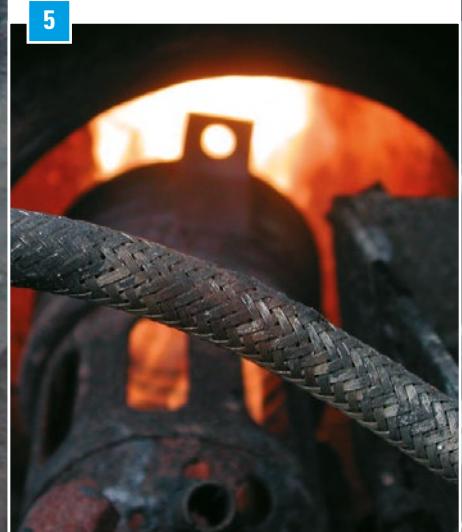
3

Laying the pre-cut, heavy-duty polyester mesh



4

Pre-heating the special aggregate to 180 °C



5

The application of Nafutekt Plus is handled exclusively by licensed expert contractors. Our contractors are well established in the field of bitumen and mastic asphalt applications.

The Nafutekt Plus system, applied by licensed contractors, guarantees a high-quality and durable joint.

For the location and contact details of our applicators, please call us on: +49 2041 101-190



8

Placing and compacting a second 3 cm layer of aggregate



9

Pouring the final layer of Nafutekt Plus



10

Application of coated 1 – 3 mm chippings, followed by sweeping-off of excess



## Nafutekt Plus GRP Board – The strong option

**Due to the constant growth in vehicle volumes and the greater loads caused by increasing heavy goods traffic, expansion joints are subject to extremely high levels of stress, especially at intersections, at traffic lights, adjacent to tunnel structures, in multi-storey car parks or wherever traffic jams or stop-and-go traffic can occur. Added to this, ever-present environmental influences and intensive solar radiation only serve to further exacerbate exposure-related deterioration.**

The unique **Nafutekt Plus GRP Board** acts as a load distribution plate, preventing deformation in asphalt pavement joints. The Nafutekt Plus GRP Board is a tested component based on glass fibre/epoxy resin and is specially designed for installation in a hot matrix.

The high installation temperatures of approx. 160 °C do not affect the stiffness and stability of the Nafutekt Plus GRP Board. As a result, the loads that occur can be permanently distributed and dissipated, such as in the wheel tracks of the main driving lane, in tight radii, in braking areas at traffic lights and even where traffic is predominantly stationary. Deformation of the Nafutekt Plus expansion joint is thus prevented.

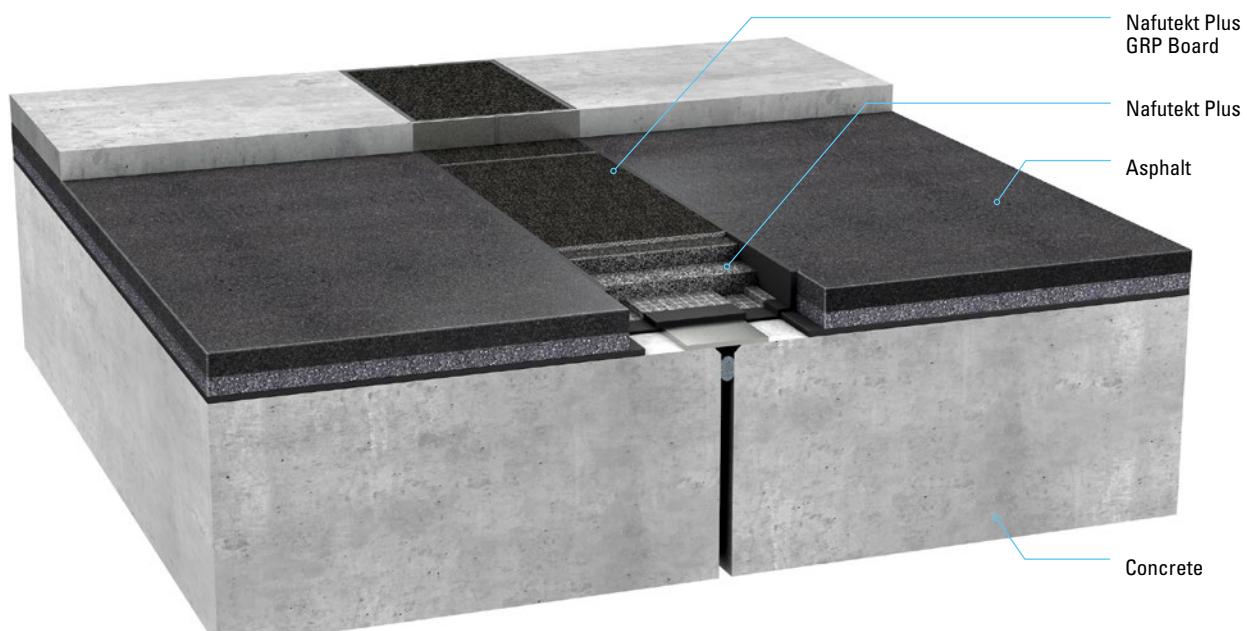


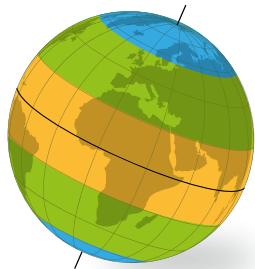


## Installation adapted to the road surface

The Nafutekt Plus GRP Board is individually manufactured and adapted for the job in hand and can be further cut and adjusted to the conditions encountered on site. A wide range of the most common bedding chippings is available, and these can be colour-matched if required, e.g. for use in car parks.

The Nafutekt Plus GRP Board is available in different thicknesses and lengths, depending on your needs. The Nafutekt GRP Board is installed hot-in-hot in the second layer of the Nafutekt Plus system instead of the usual grit. During installation, an approx. 2 cm wide joint is left all around the board which is filled with Nafutekt Plus.





## Three variants – One for each climate zone

There is great variety not just in the types of structure requiring asphalt road joints and joint sealants but also in the climate zones in which they are located.

So it is good to know that the Nafutekt Plus range includes versions ideally adapted to each climate type, each one offering the same technical properties and the same load-bearing capacity.

The primary benefit: The application system and the technical equipment required remain identical, with only the product variant being adapted to the respective climatic conditions.





**Whether in Europe, South America, Africa or in the cold regions of Eastern Europe:**  
 Expansion and end joints constructed with Nafutekt Plus in asphalt decks and roadways are quick to install, durable, flexible and quiet.

| Properties                       | Note / Standards | Unit     | Nafutekt Plus | Nafutekt Plus TR | Nafutekt Plus arctic grade |
|----------------------------------|------------------|----------|---------------|------------------|----------------------------|
| Softening point. ring & ball     | DIN EN 1427      | [°C]     | 94            | 105              | 109                        |
| Cone penetration                 | DIN EN 13880-2   | [0.1 mm] | 60            | 32               | 70                         |
| Needle penetration               | DIN EN 1426      | [0.1 mm] | 70            | 45               | -                          |
| Elasticity and adhesion          |                  | [mm]     |               |                  |                            |
| at - 20 °C Nafutekt Plus         |                  |          | > 5           |                  |                            |
| at -10 °C Nafutekt Plus Tropical |                  |          |               | > 5              |                            |
| at -30 °C Nafutekt Plus arctic   |                  |          |               |                  | > 5                        |
| Density                          |                  | [g/cm³]  | 1.1           | 1.38             | 1.09                       |
| Flow length at 60 °C. 5 h        |                  | [mm]     | 0.4           | 0.1              | 0.1                        |
| Substrate temperature (min.)     |                  | [°C]     | > + 5         | > + 5            | > 0                        |
| Application temperature          |                  | [°C]     | 165-195       | 165-195          | 160-180                    |
| Ash content                      | DIN EN 52005     | [%]      | 10            | 40               | < 20                       |
| Binder content                   | DIN 1996 - 6     | [%]      | 90            | 60               | > 60                       |
| Elastic return                   | ASTM D3583       | [%]      | 45            | 38               | 62                         |

## Nafutekt Plus

**A proven system, installed  
by competent applicators,  
that instils design confidence**

The Nafutekt Plus system is exclusively installed by MC-Bauchemie's specially selected and trained licensees.

Call MC-Bauchemie to find out where your nearest licensed applicator is located.

- For sealing road joints
- Ideal for both new constructions and the repair of trafficable joints

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