Watertight expansion joint systems for traffic

Developed for bituminous layers, coatings, liquid sealants, and installation in concrete: permanent watertight vehicular traffic high loading
MIGUTAN is a comprehensive program of watertight expansion joint systems for bituminous layers, coatings, liquid sealants, and installation in concrete.

In many buildings both public and private sectors watertight expansion joint systems is of vital importance for the protection of the building. Important building parts of car parks, multi-storey car parks, underground car parks, pedestrian bridges, exhibition halls, kitchens, swimming pool areas, hospitals, sport facilities and stadiums has to be protected from water penetration.

Well planned, long lasting, 100% watertight and solid expansion joint systems are requested. The large number of requirements regarding building physics needs individual constructive solutions with partly fundamentally different types. The common feature of all MIGUTAN systems is the unique technology of an interchangeable insert, which seals on top of the surface.

MIGUA is known as the technology leader in the field of watertight expansion joint systems in Europe. MIGUTAN offers designers and architects a proven system with a large range of applications. Supplemented by a comprehensive, well designed system of intersections, end terminations and transitions MIGUTAN offers a safe solution for each single case.

Information about load capacity

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
<th>pedestrians</th>
<th>private cars</th>
<th>lorries</th>
<th>fork lift trucks</th>
<th>solid plastic tyres</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN 1072</td>
<td>DIN 1055</td>
<td></td>
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</table>

Load capacities for fork lift trucks are based on pneumatic or rubber tyres with a contact surface of 200 x 200 mm.
Range of applications

Profile for bituminous sealing layer
(long AAS sheets – Is)

Long sealing sheets are designed for the best possible connection to bituminous sealing layer. Central insert on top surface, striated stainless steel cappings and solid aluminium mounting brackets are special and important properties of our MIGUTAN system. Our FP Systems obtain a perfect sealing without perforation of the sealing elements.

Profile for floors with coatings
(short AAS sheets – ss)

Short sealing sheets ensures a perfect watertight connection to different surface protection systems (coating systems). This series has the same important properties: Central insert on top surface, striated stainless steel cappings and solid aluminium mounting brackets. Another system with stainless steel clip-on-cappings (FPL) for a cost-effective installation is available.

Profile for flexible waterproofing slurry
(MIGUTRIX sheets – XA)

This innovative MIGUA Technology with fibre fabric bonded sealing sheets ensures a perfect connection to flexible waterproofing slurry and liquid sealing, which are usually installed underneat the tiles. In conjunction with 3 different smooth central inserts for hygienic areas - antibacterial and physiologically safe. In conjunction with special cappings particularly suited for swimming pool areas.

Profile for installation in flush concrete
(anchro rods / loop anchors)

Profiles with anchor rods or loop anchors for flush installation in concrete decks with coating systems. Slideable anchor rods or loop anchors for adjustable welding to the reinforcement allow much flexibility and easy installation. Suitable for different load capacities through the use of anchor rods or loop anchors.

Index in alphabetic order

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<td>FPG 80 NI ss</td>
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</tr>
<tr>
<td>FPL 85/75 NI anchor rods</td>
<td>32</td>
</tr>
</tbody>
</table>

Series Page
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Typical uses

MIGUTAN systems have been used for more than 30 years for watertight sealing in car parks, multi-storey car parks, garages, underground parking, swimming pool areas, kitchen, pedestrian bridges, airports, etc. A large number of reference projects can be provided.

Important notes

Due to its low installation height, the height 25 mm should not be used in connection with asphalt.

Minimum joint width: Due to the shape of the central insert the following minimum joint widths have to be considered.

- 50 mm for FP 110/25 Ni
- 75 mm for FP 130/25 Ni and FP 130/35 Ni
- 95 mm for FP 155/... for heights less than 80 mm

Fixing: For the fixing of the profile height 35 mm and 45 mm in connection with long AAS-sheets, countersunk head screws MMS-F 7,5 x 80 have to be used. Distance between screws approx. 300 mm. Fixing with chem. anchors or MMS P 10 x 70 with a distance of approx. 300 mm has to be used for the following profiles:

- FP 80/25 Ni with short AAS-sheets
- Series FP .../60 S Ni

For all other profiles the distance for the fixing is 350 mm.

Cover plates: Vertical movements cannot be absorbed if stainless steel cover plates are used.

MIGUTAN in swimming pool areas: If the MIGUTAN profiles are used in swimming pool areas special stainless steel alloys, which are additionally pickled is necessary, due to the resistance to chloride ions. Such usage has to be mentioned in all specifications and inquiries.

Stainless steel cappings: The stainless steel cappings are secured to the top of the profile with screws tightened to 7 Nm torque to provide continuous constant pressure.

Installation:

Application and installation instructions will be provided on request. Please contact us. As an alternative you can download it from our website www.migua.com

Fixing by means of anchor rods or loop anchors

For fixing of the profiles on concrete slabs, additional adjusting devices can be screwed to the aluminium side plates of the profiles in our works and supplied on request.

Positive connection between each single length is achieved on site by means of connecting pins, which ensures a level and precise transition.

For weight reasons and because of the better handling, we recommend installation of the loop anchors MIGUTAN profiles with an axial separation.

For secure fixing of the profile system, the anchor rods or the loop anchors should be welded to the reinforcement. A connection joint of approx. 10 x 20 mm must be provided adjacent to each side of the stainless steel capping. This connection joint is filled with sealant, e.g. Polyurethane. The stainless steel cappings have a roughened vertical surface which will improve adhesion with a sealant. Proper and economical formation of the connection joint by using connection joint filler profile AAP 50/20.

Load capacities for fork lift trucks are based on pneumatic or rubber tyres with a contact surface of 200 x 200 mm.

Special properties

Aluminium side plates with striated aluminium mounting brackets, flexible sealing insert and long or short side sealing sheets (AAS-sheets) or fibre fabric bonded sheets on both sides. AAS-sheets are made of quality MIGUFLEX, which is non-abrasive, weather resistant, resistant against salt and waste water (hydrogen sulphide, microbes, bacteria). The AAS-sheets can be used with hot bitumen.

The profiles are provided with 300 mm wide AAS sheets on both sides, which are striated to provide best possible connection with the sealing layer to give a watertight connection in different sealing systems acc. to DIN 18195 (e.g.: bituminous sealing, etc.).

Stainless steel cappings, 2,5 mm thick, fixed by screws, provide protection for the parts of the system remaining visible and exposed after installation. These sealing sections will simultaneously apply the required pressure upon the sealing insert and AAS-sheets.

Stainless steel cappings are striated to provide skid resistance.

Flexible sealing insert is watertight-weldable, resistant to weather, benzene, fuel, oil and salt. The insert has a double-web to provide multilayered protection against water leakage.

The central sealing insert is interchangeable (even after installation) without disrupting the surface.

The central sealing insert on the top surface ensures an impermeable barrier against moisture and salt.

Continuous sealing elements ensure 100% watertightness for the whole joint system.

Test certificate: An official test certificates for watertightness and load capacity is available and can be forwarded on request.

Fireproofing

Extensive fire tests have been carried out for our Series FP 80 Ni, FP 90 Ni, FPG 90 Ni and FP 110 Ni at the MPA NRW. In accordance with test certificate and test report No. 230007088 these are approved. According to EN 13501-1 all products can be classified as fire resistant floor coverings, not burning/dripping.

Intersections and transitions can be fabricated for the most complicated joint systems. We ensure a perfect fit by taking measurements on site (complete systems including all intersections, transitions and connections will be done in our works).

Production lengths can be connected by staggering the joint in the individual aluminium profiles or by using connection pins.

Suitability in accordance with WHG § 19

For applications that are run according to WHG § 19, we offer individual solutions. If needed, please contact us.
### MIGUTAN

Watertight expansion joint systems

**for bituminous layer**
*(long AAS sheets)*

#### FP 80 NI ls

- **Official test certificates for watertightness available**
- Central insert with double-web to provide multilayered protection
- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Long AAS sheets on both sides with striations
- Best possible connection with the sealing layer
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust

**Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.**

**Profiles**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max.</th>
<th>Δbₜ [mm]</th>
<th>Visible width of profile</th>
<th>Total width of profile</th>
<th>Installation height h [mm]</th>
<th>Load capacity [kN]</th>
<th>Load capacity [kN]</th>
<th>Load capacity [kN]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/25 NI ls</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
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<td>–</td>
</tr>
<tr>
<td>FP 80/80 NI ls</td>
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<td>209</td>
<td>81</td>
<td>120</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>FP 80/95 NI ls</td>
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<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>97</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FP 80/115 NI ls</td>
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<td>82</td>
<td>209</td>
<td>117</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

**Fire tested Bfl-s1**
*(flame retardant) acc. to DIN EN 13501-1*
## MIGUTAN

Watertight expansion joint systems

### for bituminous layer
(long AAS sheets)

## FP 90 NI Is

- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Long AAS sheets on both sides with striations
- Best possible connection with the sealing layer
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust

### Profiles

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f\text{max}}$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $L_{\text{max}}$ [kN]</th>
<th>Load capacity $L_{\text{max}}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 90/25 NI Is</td>
<td>60</td>
<td>40 (± 20)</td>
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<td>95</td>
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<td>97</td>
<td>60</td>
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</tr>
<tr>
<td>FP 90/115 NI Is</td>
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<td>40 (± 20)</td>
<td>95</td>
<td>222</td>
<td>117</td>
<td>60</td>
<td>–</td>
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</table>

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.

Fire tested Bfl-s1 (flame retardant) acc. to DIN EN 13501-1
**FP 110 NI ls**

Central insert on top surface  
Visual inspection and replacement without disrupting the surface  
Striated stainless steel cappings ensures good skid resistance  
100% watertight by max. pressure  
Long AAS sheets on both sides with striations  
Best possible connection with the sealing layer  
Mounting brackets are made of high strength aluminium  
High loads without any risk of rust  
Official test certificates for watertightness available  
Central insert with double-web to provide multilayered protection

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<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f \text{ max}}$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity</th>
<th>Load capacity $\frac{F}{b_{f \text{ max}}}$ [kN]</th>
<th>Load capacity $\frac{F}{[\text{light mm width of wheel}]}$ [kN]</th>
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<td>FP 110/35 NI ls</td>
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<td>117</td>
<td>60</td>
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</tbody>
</table>

* Minimum joint width 50 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.

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Fire tested Bfl-s1  
(flame retardant) acc. to DIN EN 13501-1

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* Image of a watertight expansion joint system with technical specifications.
Watertight expansion joint systems

**for bituminous layer (long AAS sheets)**

**FP 130 NI Is**

- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Striated stainless steel cappings ensure good skid resistance
- 100% watertight by max. pressure
- Long AAS sheets on both sides with striations
- Best possible connection with the sealing layer
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_f$ (mm)</th>
<th>Total Movement $\Delta b_f$ (mm)</th>
<th>Visible width of profile $b_v$ (mm)</th>
<th>Total width of profile $b_t$ (mm)</th>
<th>Installation height $h$ (mm)</th>
<th>Load capacity $F$ (kN)</th>
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<td>FP 130/35 NI Is*</td>
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<td>117</td>
<td>private cars</td>
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</table>

* Minimum joint width 75 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
Striated stainless steel cappings ensures good skid resistance
100% watertight by max. pressure
Central insert on top surface
Visual inspection and replacement without disrupting the surface
Long AAS sheets on both sides with striations
Best possible connection with the sealing layer
Mounting brackets are made of high strength aluminium
High loads without any risk of rust
Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

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<th>Profile</th>
<th>Joint width max. $b_{f\text{ max}}$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F_{155}$ [kN]</th>
<th>Load capacity $F_{25}$ [kN]</th>
<th>Load capacity $F_{282}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
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<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
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</tr>
<tr>
<td>FP 155/35 NI ls*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
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<tr>
<td>FP 155/95 NI ls</td>
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<td>155</td>
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<td>97</td>
<td>private cars</td>
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<tr>
<td>FP 155/115 NI ls</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>117</td>
<td>private cars</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* Minimum joint width 95 mm
Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity.
Please ask for our advice.
**FP(G).../60 S NI ls Heavy Duty**

- **Striated stainless steel cappings ensures good skid resistance**
- **100% watertight by max. pressure**
- **Central insert on top surface**
- **Visual inspection and replacement without disrupting the surface**
- **Long AAS sheets on both sides with striations**
- **Best possible connection with the sealing layer**
- **Mounting brackets are made of high strength aluminium**
- **High loads without any risk of rust**
- **Official test certificates for watertightness available**
- **Central insert with double-web to provide multilayered protection**

---

### Profile Specifications

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f\text{max}}$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_v$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $L_{NI}$ [kN]</th>
<th>Load capacity $L_{ls}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/60 S NI ls</td>
<td>35</td>
<td>20 ($\pm$ 10)</td>
<td>82</td>
<td>201</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 80/60 S NI ls</td>
<td>35</td>
<td>16 ($\pm$ 8)</td>
<td>82</td>
<td>201</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 90/60 S NI ls</td>
<td>50</td>
<td>40 ($\pm$ 20)</td>
<td>95</td>
<td>214</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 90/60 S ls</td>
<td>50</td>
<td>20 ($\pm$ 10)</td>
<td>95</td>
<td>214</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 110/60 S NI ls</td>
<td>65</td>
<td>60 ($\pm$ 30)</td>
<td>111</td>
<td>230</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 110/60 S NI ls</td>
<td>65</td>
<td>40 ($\pm$ 20)</td>
<td>111</td>
<td>230</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 130/60 S NI ls</td>
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<td>90 ($\pm$ 45)</td>
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<td>260</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 110/60 S ls</td>
<td>90</td>
<td>20 ($\pm$ 10)</td>
<td>95</td>
<td>214</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 155/60 S NI ls</td>
<td>110</td>
<td>120 ($\pm$ 60)</td>
<td>155</td>
<td>274</td>
<td>60</td>
<td>300</td>
<td>70</td>
</tr>
</tbody>
</table>
MIGUTAN

Watertight expansion joint systems

for bituminous layer
(long AAS sheets)

FPI 145 NI Is Heavy Duty

- Long AAS sheets on both sides with striations
- Best possible connection with the sealing layer
- Central insert on top surface
  Visual inspection and replacement without disrupting the surface
- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Perfect sealing
  Special design without perforation of the sealing elements
- Mounting brackets are made of high strength aluminium
  High loads without any risk of rust

### Profile Joint width Total Visible width Total width Installation Load capacity Load capacity Load capacity
<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f\text{ max}}$ [mm]</th>
<th>Total Movement $\Delta b_{f}$ [mm]</th>
<th>Visible width of profile $b_{s}$ [mm]</th>
<th>Total width of profile $b_{t}$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F$ [kN]</th>
<th>Load capacity $k_{s}$ [kN]</th>
<th>Load capacity $k_{w}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPI 145/28 NI Is</td>
<td>50*</td>
<td>60 (± 30)</td>
<td>145</td>
<td>239</td>
<td>28</td>
<td>600</td>
<td>130</td>
<td>--</td>
</tr>
<tr>
<td>FPI 145/40 NI Is</td>
<td>100</td>
<td>60 (± 30)</td>
<td>145</td>
<td>239</td>
<td>40</td>
<td>600</td>
<td>130</td>
<td>--</td>
</tr>
<tr>
<td>FPI 145/60 NI Is</td>
<td>100</td>
<td>60 (± 30)</td>
<td>145</td>
<td>274</td>
<td>60</td>
<td>600</td>
<td>130</td>
<td>--</td>
</tr>
</tbody>
</table>

* For load capacity by private cars only, the maximum joint width can be increased to 100 mm
FPG 80 NI ls smooth Insert

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection
Striped stainless steel cappings ensure good skid resistance
Smooth central insert for increased hygienic requirements
Antibacterial and physiologically safe
Central insert on top surface
Visual inspection and replacement without disrupting the surface
Mounting brackets are made of high strength aluminium
High loads without any risk of rust

Profile | Joint width max. $b_{f \text{ max}}$ [mm] | Total Movement of profile $\Delta b_{f}$ [mm] | Visible width of profile $b_{t}$ [mm] | Total width of profile $h$ [mm] | Installation Load capacity $<$ [kN] | Load capacity $> [kN]$ | Load capacity $\frac{g}{l = 	ext{width of wheel}}$ |
--- | --- | --- | --- | --- | --- | --- | --- |
FPG 80/25 NI ls | 45 | 16 (± 8) | 82 | 209 | 25 | 600 | 130 | 6,5 |
FPG 80/35 NI ls | 45 | 16 (± 8) | 82 | 209 | 35 | 600 | 130 | 6,5 |
FPG 80/45 NI ls | 45 | 16 (± 8) | 82 | 198 | 46 | 300 | 70 | – |
FPG 80/60 NI ls | 45 | 16 (± 8) | 82 | 209 | 60 | 300 | 30 | – |
FPG 80/80 NI ls | 45 | 16 (± 8) | 82 | 209 | 81 | 120 | 30 | – |
FPG 80/95 NI ls | 45 | 16 (± 8) | 82 | 209 | 97 | 60 | – | – |
FPG 80/115 NI ls | 45 | 16 (± 8) | 82 | 209 | 117 | 60 | – | – |

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
**FPG 90 NI Is smooth Insert**

**Smooth central insert for increased hygienic requirements**
- Antibacterial and physiologically safe

**Central insert on top surface**
- Visual inspection and replacement without disrupting the surface

**Striated stainless steel cappings ensures good skid resistance**
- 100% watertight by max. pressure

**Mounting brackets are made of high strength aluminium**
- High loads without any risk of rust

**Official test certificates for watertightness available**
- Central insert with double-web to provide multilayered protection

**Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. (b_{f \text{ max}}) [mm]</th>
<th>Total Movement (\Delta b_{f}) [mm]</th>
<th>Visible width of profile (b_{s}) [mm]</th>
<th>Total width of profile (b_{t}) [mm]</th>
<th>Installation height (h) [mm]</th>
<th>Load capacity (\Delta ) [kN]</th>
<th>Load capacity (\Delta ) [kN]</th>
<th>Load capacity (\Delta ) [kg/mm width of wheel]</th>
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<tbody>
<tr>
<td>FPG 90/25 NI Is</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>25</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FPG 90/35 NI Is</td>
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<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
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<td>FPG 90/45 NI Is</td>
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<td>20 (± 10)</td>
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<td>300</td>
<td>70</td>
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<tr>
<td>FPG 90/60 NI Is</td>
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<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
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<td>30</td>
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</tr>
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<td>FPG 90/80 NI Is</td>
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<td>95</td>
<td>222</td>
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<td>FPG 90/95 NI Is</td>
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<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
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<td>60</td>
<td>–</td>
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<td>FPG 90/115 NI Is</td>
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<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>117</td>
<td>60</td>
<td>–</td>
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</tr>
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Fire tested Bfl-s1 (flame retardant) acc. to DIN EN 13501-1

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**MIGUTAN**

Watertight expansion joint systems

**for bituminous layer**
- (long AAS sheets)
Watertight expansion joint systems

for bituminous layer
(long AAS sheets)

FPG 110 NI ls smooth Insert

- Striated stainless steel cappings ensure good skid resistance
- 100% watertight by max. pressure
- Smooth central insert for increased hygienic requirements
- Antibacterial and physiologically safe
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. ( b_f ) [mm]</th>
<th>Total Movement ( \Delta b_f ) [mm]</th>
<th>Visible width of profile ( b_s ) [mm]</th>
<th>Total width of profile ( b_t ) [mm]</th>
<th>Installation height ( h ) [mm]</th>
<th>Load capacity ( F_{load} ) [kN]</th>
<th>Load capacity ( F_{load} ) [kN]</th>
<th>Load capacity ( F_{load} ) [kN]</th>
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<tbody>
<tr>
<td>FPG 110/ 25 NI ls*</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>25</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>FPG 110/ 35 NI ls</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>35</td>
<td>600</td>
<td>130</td>
<td>--</td>
</tr>
<tr>
<td>FPG 110/ 45 NI ls</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>227</td>
<td>46</td>
<td>300</td>
<td>70</td>
<td>--</td>
</tr>
<tr>
<td>FPG 110/ 60 NI ls</td>
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<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>60</td>
<td>300</td>
<td>30</td>
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<td>FPG 110/ 80 NI ls</td>
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<td>40 (± 20)</td>
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<td>238</td>
<td>81</td>
<td>120</td>
<td>30</td>
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</tr>
<tr>
<td>FPG 110/ 95 NI ls</td>
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<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>97</td>
<td>60</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>FPG 110/115 NI ls</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>117</td>
<td>60</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

* Minimum joint width 50 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
**FP 80 NI ss**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_f$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_v$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F$ [kN]</th>
<th>Load capacity $W$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/25 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>25</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 80/35 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>35</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 80/45 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>198</td>
<td>46</td>
<td>300</td>
<td>70</td>
</tr>
<tr>
<td>FP 80/60 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>60</td>
<td>300</td>
<td>30</td>
</tr>
<tr>
<td>FP 80/80 NI ss</td>
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<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>81</td>
<td>120</td>
<td>30</td>
</tr>
<tr>
<td>FP 80/95 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>97</td>
<td>60</td>
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</tr>
<tr>
<td>FP 80/115 NI ss</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td>209</td>
<td>117</td>
<td>60</td>
<td>–</td>
</tr>
</tbody>
</table>

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.

- **Official test certificates for watertightness available**
- **Central insert with double-web to provide multilayered protection**
- **Central insert on top surface**
- **Visual inspection and replacement without disrupting the surface**
- **Striated stainless steel cappings ensures good skid resistance**
- **100% watertight by max. pressure**
- **Connection joint with connection joint filler profile AAP 50/20**
- **Proper and economical connection of the coating system**
- **Mounting brackets are made of high strength aluminium**
- **High loads without any risk of rust**

Fire tested Bfl-s1 (flame retardant) acc. to DIN EN 13501-1
MIGUTAN

Watertight expansion joint systems

for floors with coating systems
(short AAS sheets)

FP 90 NI ss

Central insert on top surface
Visual inspection and replacement without disrupting the surface

Striated stainless steel cappings ensures good skid resistance
100% watertight by max. pressure

Connection joint with connection joint filler profile AAP 50/20
Proper and economical connection of the coating system

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

Mounting brackets are made of high strength aluminium
High loads without any risk of rust

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity.
Please ask for our advice.
MIGUTAN

Watertight expansion joint systems

for floors with coating systems (short AAS sheets)

**FP 110 NI ss**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust
- Connection joint with connection joint filler profile AAP 50/20
- Proper and economical connection of the coating system

Fire tested Bfl-s1 (flame retardant) acc. to DIN EN 13501-1

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f\text{ max}}$ [mm]</th>
<th>Total Movement $\Delta b_{f}$ [mm]</th>
<th>Visible width of profile $b_{s}$ [mm]</th>
<th>Total width of profile $b_{t}$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $L_{1}$ [kN]</th>
<th>Load capacity $L_{2}$ [kN]</th>
<th>Load capacity $L_{3}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 110/25 NI ss*</td>
<td>75</td>
<td>60 (± 30)</td>
<td>111</td>
<td>238</td>
<td>25</td>
<td>600</td>
<td>130</td>
<td>–</td>
</tr>
<tr>
<td>FP 110/35 NI ss</td>
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<td>238</td>
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<tr>
<td>FP 110/45 NI ss</td>
<td>75</td>
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<td>227</td>
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<td>–</td>
</tr>
<tr>
<td>FP 110/60 NI ss</td>
<td>75</td>
<td>60 (± 30)</td>
<td>111</td>
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<td>300</td>
<td>30</td>
<td>–</td>
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<tr>
<td>FP 110/80 NI ss</td>
<td>75</td>
<td>60 (± 30)</td>
<td>111</td>
<td>238</td>
<td>81</td>
<td>120</td>
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</tr>
<tr>
<td>FP 110/95 NI ss</td>
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<td>60 (± 30)</td>
<td>111</td>
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<td>97</td>
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<td>–</td>
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</tr>
<tr>
<td>FP 110/115 NI ss</td>
<td>75</td>
<td>60 (± 30)</td>
<td>111</td>
<td>238</td>
<td>117</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* Minimum joint width 50 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
for floors with coating systems  
(short AAS sheets)

**FP 130 NI ss**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
  - Visual inspection and replacement without disrupting the surface
- Mounting brackets are made of high strength aluminium
  - High loads without any risk of rust
- Official test certificates for watertightness available
  - Central insert with double-web to provide multilayered protection
- Connection joint with connection joint filler profile AAP 50/20
  - Proper and economical connection of the coating system

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_f$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F_{\text{max}}$ [kN]</th>
<th>Load capacity $F_{\text{max}}$ [kN]</th>
<th>Load capacity $F_{\text{max}}$ [kN]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 130/25 NI ss*</td>
<td>100</td>
<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>25</td>
<td>600</td>
<td>130</td>
<td>–</td>
</tr>
<tr>
<td>FP 130/35 NI ss*</td>
<td>100</td>
<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
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<td>FP 130/45 NI ss</td>
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<tr>
<td>FP 130/60 NI ss</td>
<td>100</td>
<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>60</td>
<td>60</td>
<td>35</td>
<td>–</td>
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<tr>
<td>FP 130/80 NI ss</td>
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<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>81</td>
<td>60</td>
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<tr>
<td>FP 130/95 NI ss</td>
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<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>97</td>
<td>private cars</td>
<td>–</td>
<td>–</td>
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<tr>
<td>FP 130/115 NI ss</td>
<td>100</td>
<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>117</td>
<td>private cars</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* Minimum joint width 75 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
### FP 155 NI ss

- **Striated stainless steel cappings ensures good skid resistance**
- **100% watertight by max. pressure**
- **Central insert on top surface**
- **Visual inspection and replacement without disrupting the surface**
- **Official test certificates for watertightness available**
- **Central insert with double-web to provide multilayered protection**
- **Mounting brackets are made of high strength aluminium**
- **High loads without any risk of rust**
- **Connection joint with connection joint filler profile AAP 50/20**
- **Proper and economical connection of the coating system**

#### Profile Joint width Max. \( \Delta b_f \) Total Movement \( b_f \) Visible width of profile \( b_s \) Total width of profile \( b \) Installation height \( h \) Load capacity \( F \) Load capacity \( F \) Load capacity \( \Delta F \) (load/mm width of wheel)

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. ( b_f ) [mm]</th>
<th>Total Movement ( \Delta b_f ) [mm]</th>
<th>Visible width of profile ( b_s ) [mm]</th>
<th>Total width of profile ( b ) [mm]</th>
<th>Installation height ( h ) [mm]</th>
<th>Load capacity ( F ) [kN]</th>
<th>Load capacity ( F ) [kN]</th>
<th>Load capacity ( \Delta F ) (load/mm width of wheel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 155/25 NI kF*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>25</td>
<td>120</td>
<td>35</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/35 NI kF*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>35</td>
<td>120</td>
<td>35</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/45 NI kF*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>271</td>
<td>46</td>
<td>60</td>
<td>35</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/60 NI kF*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>60</td>
<td>35</td>
<td>35</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/80 NI kF*</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>81</td>
<td>35</td>
<td>35</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/95 NI kF</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>97</td>
<td>private cars</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FP 155/115 NI kF</td>
<td>120</td>
<td>120 (± 60)</td>
<td>155</td>
<td>282</td>
<td>117</td>
<td>private cars</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* Minimum joint width 95 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
**MIGUTAN**

**Watertight expansion joint systems**

**for floors with coating systems**

*(short AAS sheets)*

**FP(G).../60 S NI ss Heavy Duty**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
  - Visual inspection and replacement without disrupting the surface
- Official test certificates for watertightness available
  - Central insert with double-web to provide multilayered protection
- Mounting brackets are made of high strength aluminium
  - High loads without any risk of rust
- Connection joint with connection joint filler profile AAP 50/20
  - Proper and economical connection of the coating system

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f\text{ max}}$ [mm]</th>
<th>Total Movement $\Delta b_{f}$ [mm]</th>
<th>Visible width of profile $b_{s}$ [mm]</th>
<th>Total width of profile $b_{t}$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F_{\text{load}}$ [kN]</th>
<th>Load capacity $P_{\text{load}}$ [kN/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/60 S NI ss</td>
<td>35</td>
<td>20 (± 10)</td>
<td>82</td>
<td>201</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 80/60 S NI ss</td>
<td>35</td>
<td>16 (± 8)</td>
<td>82</td>
<td>201</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 90/60 S NI ss</td>
<td>50</td>
<td>40 (± 20)</td>
<td>95</td>
<td>214</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 90/60 S NI ss</td>
<td>50</td>
<td>20 (± 10)</td>
<td>95</td>
<td>214</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 110/60 S NI ss</td>
<td>65</td>
<td>60 (± 30)</td>
<td>111</td>
<td>230</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPG 110/60 S NI ss</td>
<td>65</td>
<td>40 (± 20)</td>
<td>111</td>
<td>230</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 130/60 S NI ss</td>
<td>90</td>
<td>90 (± 45)</td>
<td>133</td>
<td>260</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FP 155/60 S NI ss</td>
<td>110</td>
<td>120 (± 60)</td>
<td>155</td>
<td>274</td>
<td>60</td>
<td>300</td>
<td>70</td>
</tr>
</tbody>
</table>

**Diagram**

- $b_{t}$
- $b_{s}$
- $b_{f\text{ max}}$
- $h$
**MIGUTAN**

Watertight expansion joint systems

for floors with coating systems
(Short AAS sheets)

---

**FPI 145 NI ss Heavy Duty**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure

Central insert on top surface
Visual inspection and replacement without disrupting the surface

Connection joint with connection joint filler profile AAP 50/20
Proper and economical connection of the coating system

Perfect sealing
Special design without perforation of the sealing elements

Mounting brackets are made of high strength aluminium
High loads without any risk of rust

---

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f \text{ max}}$</th>
<th>Total Movement $\Delta b_{f}$</th>
<th>Visible width of profile $b_{s}$</th>
<th>Total width of profile $b_{t}$</th>
<th>Installation height $h$</th>
<th>Load capacity $F_{\text{max}}$</th>
<th>Load capacity $F_{\text{max}}$ [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPI 145/28 NI ss*</td>
<td>50</td>
<td>60 (± 30)</td>
<td>145</td>
<td>239</td>
<td>28</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPI 145/40 NI ss</td>
<td>100</td>
<td>60 (± 30)</td>
<td>145</td>
<td>239</td>
<td>40</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>FPI 145/60 NI ss</td>
<td>100</td>
<td>60 (± 30)</td>
<td>145</td>
<td>274</td>
<td>60</td>
<td>600</td>
<td>130</td>
</tr>
</tbody>
</table>

* For load capacity by private cars only, the maximum joint width can be increased to 100 mm

---

* *FPI 145/60 NI ss* is the heavy-duty version optimized for high load capacities.*

---

**Diagram:**

- $b_f$: Joint width
- $b_s$: Visible width of profile
- $b_t$: Total width of profile
- $\Delta b_f$: Total Movement
- $h$: Installation height
- $F_{\text{max}}$: Load capacity

---

*For load capacity by private cars only, the maximum joint width can be increased to 100 mm.*
MIGUTAN

Watertight expansion joint systems

for floors with coating systems
(short AAS sheets)

FPG 80 NI ss smooth Insert

Striated stainless steel cappings ensures good skid resistance
100% watertight by max. pressure

Smooth central insert for increased hygienic requirements
Antibacterial and physiologically safe

Central insert on top surface
Visual inspection and replacement without disrupting the surface

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

Mounting brackets are made of high strength aluminium
High loads without any risk of rust

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity.
Please ask for our advice
**MIGUTAN**

**Watertight expansion joint systems**

**for floors with coating systems**
(Short AAS sheets)

**FPG 90 NI ss smooth Insert**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Smooth central insert for increased hygienic requirements
- Antibacterial and physiologically safe
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust
- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection

**Fire tested Bfl-s1**
(Fire retardant) acc. to DIN EN 13501-1

---

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width ( b_f ) max [mm]</th>
<th>Total Movement ( \Delta b_f ) [mm]</th>
<th>Visible width of profile ( b_s ) [mm]</th>
<th>Total width of profile ( b_t ) [mm]</th>
<th>Installation height ( h ) [mm]</th>
<th>Load capacity ( \text{Load capacity} ) ( 1 ) [kN]</th>
<th>Load capacity ( 2 ) [kN]</th>
<th>Load capacity ( 2 ) [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPG 90/25 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>25</td>
<td>600</td>
<td>130</td>
<td>4,3</td>
</tr>
<tr>
<td>FPG 90/35 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>35</td>
<td>600</td>
<td>130</td>
<td>4,3</td>
</tr>
<tr>
<td>FPG 90/45 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>211</td>
<td>46</td>
<td>300</td>
<td>70</td>
<td>–</td>
</tr>
<tr>
<td>FPG 90/60 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>60</td>
<td>300</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>FPG 90/80 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>81</td>
<td>120</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>FPG 90/95 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>97</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FPG 90/115 NI ss</td>
<td>60</td>
<td>20 (± 10)</td>
<td>95</td>
<td>222</td>
<td>117</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity.
Please ask for our advice.
**FPG 110 NI ss smooth Insert**

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Smooth central insert for increased hygienic requirements
- Antibacterial and physiologically safe
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Mounting brackets are made of high strength aluminium
- High loads without any risk of rust
- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection

### Profiles and Specifications

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. (b_{f \text{ max}}) [mm]</th>
<th>Total Movement (\Delta b_f) [mm]</th>
<th>Visible width of profile (b_s) [mm]</th>
<th>Total width of profile (b_t) [mm]</th>
<th>Installation height (h) [mm]</th>
<th>Load capacity (F_{\text{max}}) [kN]</th>
<th>Load capacity (F_{\text{max}}) [kN]</th>
<th>Load capacity (F_{\text{max}}) [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPG 110/25 NI ss*</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>25</td>
<td>600</td>
<td>130</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/35 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>35</td>
<td>600</td>
<td>130</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/45 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>227</td>
<td>46</td>
<td>300</td>
<td>70</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/60 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>60</td>
<td>300</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/80 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>81</td>
<td>120</td>
<td>30</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/95 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>97</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>FPG 110/115 NI ss</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td>238</td>
<td>117</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

* Minimum joint width 50 mm

Profiles with an installation height from 60 mm upwards can be adjusted to higher load capacity. Please ask for our advice.
FPL 85/27 NI

Central insert on top surface
Visual inspection and replacement without disrupting the surface
Stainless steel clip-on-cappings, made of spring steel
Easy and cost saving assembly
100% watertight
In connection with a coating system and a connection joint
MultiHole mounting bracket
for secure fixing
Connection joint with connection joint filler profile AAP 110/23
Proper and economical connection of the coating system

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_f$ [mm]</th>
<th>Total Movement $\Delta b_T$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Total width of profile $b_t$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F$ [kN]</th>
<th>Load capacity $F$ [kN]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPL 85/27 NI</td>
<td>50</td>
<td>40 (± 20)</td>
<td>85</td>
<td>214</td>
<td>27</td>
<td>300</td>
<td>70</td>
</tr>
</tbody>
</table>
**FPSG 68 ES smooth Insert**

- **Smooth central insert for increased hygienic requirements**
- Antibacterial and physiologically safe
- **Central insert on top surface**
- Visual inspection and replacement without disrupting the surface
- **100% watertight**
- In connection with a coating system and a connection joint
- **Solid metal design**
- High load capacity (Heavy duty) up to 600 kN
- **Flexible use**
- Sub-construction can be adapted acc. to requirements

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max.</th>
<th>Total Movement Δb</th>
<th>Visible width of profile b</th>
<th>Total width of profile b</th>
<th>Installation height h</th>
<th>Load capacity</th>
<th>Load capacity</th>
<th>Load capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPSG 68/25 ES</td>
<td>25</td>
<td>10 (± 5)</td>
<td>68</td>
<td>218</td>
<td>25</td>
<td>600</td>
<td>130</td>
<td>12,5</td>
</tr>
<tr>
<td>FPSG 68/30 ES</td>
<td>25</td>
<td>10 (± 5)</td>
<td>68</td>
<td>218</td>
<td>30</td>
<td>600</td>
<td>130</td>
<td>12,5</td>
</tr>
<tr>
<td>FPSG 68/35 ES</td>
<td>25</td>
<td>10 (± 5)</td>
<td>68</td>
<td>218</td>
<td>35</td>
<td>600</td>
<td>130</td>
<td>12,5</td>
</tr>
<tr>
<td>FPSG 68/40 ES</td>
<td>25</td>
<td>10 (± 5)</td>
<td>68</td>
<td>218</td>
<td>40</td>
<td>600</td>
<td>130</td>
<td>12,5</td>
</tr>
</tbody>
</table>

Intersections and end terminations can be fabricated according to requirements.
The installation should be done by experienced companies.
Other versions as well as individual advice on request.

The system can be installed **with** and **without** connection joint.
With connection joint and in connection with a coating system 100% watertightness is possible.
Material: medium-affected: alloy 304 or 316 Ti
Sub-construction: choosable
for flexible waterproofing slurry (MIGUTRIX sheets)

FP(G) ... /... NI XA MIGUTRIX

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure

Further development for liquid membranes/waterproofing slurry
Fibre fabric bonded sheets for excellent bonding properties

Central insert on top surface
Visual inspection and replacement without disrupting the surface

Official test certificates for watertightness available
Central insert with double-web to provide multilayered protection

Mounting brackets are made of high strength aluminium
High loads without any risk of rust

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_{f,\text{max}}$ [mm]</th>
<th>Total Movement $\Delta b_{f}$ [mm]</th>
<th>Visible width of profile $b_{s}$ [mm]</th>
<th>Total width of profile $b_{t}$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $\frac{F}{A}$ [kN]</th>
<th>Load capacity $\frac{F}{A_{\text{wheel}}}$ [kN]</th>
<th>Load capacity $\frac{F}{A_{\text{wheel}}}$ [kN]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>80/...NI XA</td>
<td>45</td>
<td>20 (± 10)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPG</td>
<td>80/...NI XA</td>
<td>45</td>
<td>16 (± 8)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td>90/...NI XA</td>
<td>60</td>
<td>40 (± 20)</td>
<td>95</td>
<td></td>
<td></td>
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<td>FPG</td>
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<td>60</td>
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<td>95</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>FP</td>
<td>110/...NI XA</td>
<td>75</td>
<td>60 (± 30)</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FPG</td>
<td>110/...NI XA</td>
<td>75</td>
<td>40 (± 20)</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td>130/...NI XA</td>
<td>100</td>
<td>90 (± 45)</td>
<td>133</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPG</td>
<td>130/...NI XA</td>
<td>100</td>
<td>60 (± 30)</td>
<td>133</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td>155/...NI XA</td>
<td>120</td>
<td>120 (± 30)</td>
<td>155</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For load capacity of the profile please refer to the corresponding profile with short AAS sheets.

The connection of our fibre fabric bonded MIGUTRIX-sheets to the flexible waterproofing slurry / liquid membrane has to be tested for each application.

Installation example of series MIGUTRIX in combination with liquid membrane.
Profile FPG 90/25 NI XA with fiber fabric bonded sheets (Installation on screed)
MIGUTAN with structural stainless steel cover plates

FP…/…APF

Structural stainless steel cover plate
good skid resistance acc. to official test certificate

Surface for special requirements
Caroplan, Bigpoint, Oval-Matt, Sand, Cross hatch

Mounting brackets are made of high strength aluminium
High loads without any risk of rust

Special optical appearance
For highest demands

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. ( b_{f \text{ max}} ) [mm]</th>
<th>Total Movement ( \Delta b_f ) [mm]</th>
<th>Visible width of profile ( b_s ) [mm]</th>
<th>Total width of profile ( b_t ) [mm]</th>
<th>Installation height ( h ) [mm]</th>
<th>Load capacity ( F ) [kN]</th>
<th>Load capacity ( A ) [kN]</th>
<th>Load capacity ( W ) [kg/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 90/25 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>FP 90/35 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>FP 90/45 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>49</td>
<td>49</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>FP 90/60 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>FP 90/80 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>84</td>
<td>84</td>
<td>84</td>
<td>84</td>
</tr>
<tr>
<td>FP 90/95 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>FP 90/115 APF</td>
<td>60</td>
<td>40 (± 20)</td>
<td>98</td>
<td>222</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

All MIGUTAN systems can be supplied with the mentioned stainless steel cover plate; Technical data including load capacities can be supplied on request.

The cover plates are available for all types of insert, different load capacities and different kind of vehicles. Please ask for our assistance.
MIGUTAN

Watertight expansion joint systems

for flush installation in concrete decks with coating systems (anchor rods / loop anchors)

FP(G).../90 B NI anchor rods

- Striated stainless steel cappings ensures good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Designed for additive floors / precast concrete slabs
- Slidable anchor rods for adjustable welding to the reinforcement
- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection
- Connection joint with connection joint filler profile AAP 50/20
- Proper and economical connection of the coating system

<table>
<thead>
<tr>
<th>Profile</th>
<th>Fixing</th>
<th>Joint width max. ( b_f ) [mm]</th>
<th>Total Movement ( \Delta b_f ) [mm]</th>
<th>Visible width of profile ( b_s ) [mm]</th>
<th>Installation height ( h ) [mm]</th>
<th>Load capacity ( P ) [kN]</th>
<th>Load capacity ( \frac{1}{h} ) [kN/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/90 B NI with anchor rods</td>
<td>21</td>
<td>((20 \pm 10))</td>
<td>82</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FPG 80/90 B NI with anchor rods</td>
<td>21</td>
<td>((16 \pm 8))</td>
<td>82</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FP 90/90 B NI with anchor rods</td>
<td>34</td>
<td>((40 \pm 20))</td>
<td>95</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FPG 90/90 B NI with anchor rods</td>
<td>34</td>
<td>((20 \pm 10))</td>
<td>95</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FP 110/90 B NI with anchor rods</td>
<td>50</td>
<td>((60 \pm 30))</td>
<td>111</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FPG 110/90 B NI with anchor rods</td>
<td>50</td>
<td>((40 \pm 20))</td>
<td>111</td>
<td>91</td>
<td>300</td>
<td>70 –</td>
<td></td>
</tr>
<tr>
<td>FP 130/90 B NI with anchor rods</td>
<td>74</td>
<td>((90 \pm 45))</td>
<td>133</td>
<td>91</td>
<td>120</td>
<td>35 –</td>
<td></td>
</tr>
<tr>
<td>FPG 155/90 B NI with anchor rods</td>
<td>94</td>
<td>((120 \pm 60))</td>
<td>155</td>
<td>91</td>
<td>120</td>
<td>35 –</td>
<td></td>
</tr>
</tbody>
</table>
### Watertight expansion joint systems

**FP(G).../90 B NI loop anchors**

- Striated stainless steel cappings ensure good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Official test certificates for watertightness available
- Central insert with double-web to provide multilayered protection
- Connection joint with connection joint filler profile AAP 50/20
- Proper and economical connection of the coating system
- Designed for additive floors / precast concrete slabs
- Slidable loop anchors for adjustable welding to the reinforcement

<table>
<thead>
<tr>
<th>Profile</th>
<th>Fixing</th>
<th>Joint width max.</th>
<th>Total Movement</th>
<th>Visible width of profile</th>
<th>Installation height</th>
<th>Load capacity</th>
<th>Load capacity</th>
<th>Load capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP 80/90 B NI with loop anchors</td>
<td>21</td>
<td>20 (± 10)</td>
<td>82</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>FPG 80/90 B NI with loop anchors</td>
<td>21</td>
<td>16 (± 8)</td>
<td>82</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>FP 90/90 B NI with loop anchors</td>
<td>34</td>
<td>40 (± 20)</td>
<td>95</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>FPG 90/90 B NI with loop anchors</td>
<td>34</td>
<td>40 (± 20)</td>
<td>95</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>FP 110/90 B NI with loop anchors</td>
<td>50</td>
<td>60 (± 30)</td>
<td>111</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>FPG 110/90 B NI with loop anchors</td>
<td>50</td>
<td>40 (± 20)</td>
<td>111</td>
<td>100</td>
<td>600</td>
<td>130</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>FP 130/90 B NI with loop anchors</td>
<td>74</td>
<td>90 (± 45)</td>
<td>133</td>
<td>100</td>
<td>300</td>
<td>70</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>FP 155/90 B NI with loop anchors</td>
<td>94</td>
<td>120 (± 60)</td>
<td>155</td>
<td>100</td>
<td>300</td>
<td>75</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of watertight expansion joint systems](image)
for flush installation in concrete decks with coating systems (anchor rods / loop anchors)

**FPI 145 B NI anchor rods**

- Striated stainless steel cappings ensure good skid resistance
- 100% watertight by max. pressure
- Central insert on top surface
  - Visual inspection and replacement without disrupting the surface
- Connection joint with connection joint filler profile AAP 60/20
  - Proper and economical connection of the coating system
- Perfect sealing
  - Special design without perforation of the sealing elements
- Designed for additive floors / precast concrete slabs
  - Anchor rods for welding to the reinforcement

<table>
<thead>
<tr>
<th>Profile</th>
<th>Fixing</th>
<th>Joint width max. $b_f$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F$ [kN]</th>
<th>Load capacity $F$ [kN]</th>
<th>Load capacity $F$ [light/mm width of wheel]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPI 145/90 B NI</td>
<td>with anchor rods 118</td>
<td>(60 ± 30)</td>
<td>145</td>
<td>92</td>
<td>300</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
for flush installation in concrete decks with coating systems (anchor rods / loop anchors)

**FPL 85/75 B NI anchor rods**

- Central insert on top surface
- Visual inspection and replacement without disrupting the surface
- Connection joint with connection joint filler profile AAP 110/23
- Proper and economical connection of the coating system
- 100% watertight
- In connection with a coating system and a connection joint
- Stainless steel clip-on-cappings, made of spring steel
- Easy and cost saving assembly
- Designed for additive floors / precast concrete slabs
- Slidable anchor rods for adjustable welding to the reinforcement

### Profile Specifications

<table>
<thead>
<tr>
<th>Profile</th>
<th>Joint width max. $b_f$ [mm]</th>
<th>Total Movement $\Delta b_f$ [mm]</th>
<th>Visible width of profile $b_s$ [mm]</th>
<th>Installation height $h$ [mm]</th>
<th>Load capacity $F_1$ [kN]</th>
<th>Load capacity $F_2$ [kN]</th>
<th>Load capacity $F_3$ [kN]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPL 85/75 B NI</td>
<td>40</td>
<td>40 ($\pm$ 20)</td>
<td>85</td>
<td>75</td>
<td>300</td>
<td>70</td>
<td>–</td>
</tr>
</tbody>
</table>

---

![Diagram of anchor rod installation](image-url)
Notes
The system
long AAS sheets

MIGUTAN systems
1 = Aluminium mounting bracket
2 = Spacer
3 = MIGUFLEX AAS sheets
4 = MIGUFLEX sealing insert
5 = Stainless steel capping
6 = Stainless steel cross recessed
countersunk head screws
7 = Nylon washer
8 = Wedge flange
9 = Stable base (Solid floorspace)
10 = Non-shrinkage mortar
    (e.g. Epoxy mortar, PPC-mortar),
suitable for the given load

Application and installation instructions will be provided
on request. Please contact us. As an alternative you can
download it from our website www.migua.com
The system
short AAS sheets
Transitions FP 90
Examples
Transitions FP 90 Examples
Available Inserts FP / FPG

- Central Insert FP 80
- Central Insert FP 90
- Central Insert FP 110
- Central Insert FP 130
- Central Insert FP 155
- Central Insert FPG 80
- Central Insert FPG 90
- Central Insert FPG 110
Profile connections

Example FP 90/80 NI

Example FP 90/25 NI

Example FP 90/90 B NI
## Terminations / Intersections

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A 1</strong></td>
<td><strong>A 2</strong></td>
<td><strong>B</strong></td>
</tr>
<tr>
<td><img src="image1" alt="A 1 diagram" /></td>
<td><img src="image2" alt="A 2 diagram" /></td>
<td><img src="image3" alt="B diagram" /></td>
</tr>
</tbody>
</table>

| **C right** | **C left** | **D right** |
| ![C right diagram](image4) | ![C left diagram](image5) | ![D right diagram](image6) |

| **D left** | **E right** | **E left** |
| ![D left diagram](image7) | ![E right diagram](image8) | ![E left diagram](image9) |

| **F right** | **F left** | **G 1** |
| ![F right diagram](image10) | ![F left diagram](image11) | ![G 1 diagram](image12) |
Terminations / Intersections

G 2

H 1 right

H 1 left

H 2 right

H 2 left

I 1 right

I 1 left

I 2 right

I 2 left

J 1 right

J 1 left

J 2 right
Terminations / Intersections
Terminations / Intersections

P right
(Angle supplied by others)

P left
(Angle supplied by others)

P 1 right
(Angle supplied by others)

P 1 left
(Angle supplied by others)

Q right

Q left

R

S

T right

T left

U

U 1
<table>
<thead>
<tr>
<th>V right</th>
<th>V left</th>
<th>W right</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>W left</th>
<th>W 1 right</th>
<th>W 1 left</th>
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</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>W 2 right</th>
<th>W 2 left</th>
<th>W 3 right</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>W 3 left</th>
<th>X right</th>
<th>X left</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
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</tbody>
</table>
# Terminations / Intersections

<table>
<thead>
<tr>
<th>X 1 right</th>
<th>X 1 left</th>
<th>Y</th>
</tr>
</thead>
</table>

The illustrated terminations/intersections A–Z are a selection of possible solutions only. We are able to fabricate watertight terminations/intersections for each joint run.

## Standard Intersections

<table>
<thead>
<tr>
<th>Flat angle, short AAS sheets</th>
<th>T-Piece, long AAS sheets</th>
<th>Cross, short AAS sheets</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Upstand, short AAS sheets</th>
<th>Upstand, long AAS sheets</th>
<th>Slope end</th>
</tr>
</thead>
</table>
Please consider the following using version E2 or E3:

If the joint is adjacent to a column or a wall, two prefabricated horizontal intersections will be required at each edge (see drawing). This ensures that the profile covers the centreline of the joint in the area exposed to traffic.

Such intersections, however, are not necessary, if the distance between column/wall and the centreline of the joint is approx. 60 mm. In this case, it is only necessary to prefabricate a welded connection within the AAS-sheets at each edge of the column/wall.
Column-/Wall-Connections
FPI - with short AAS sheets
for floors with coating systems

E 3-Version: FPI 145/90 B NI E 3

E 4-Version: FPI 145/28 NI E 4
### Column-/Wall-Connections

FPI - with short AAS sheets for floors with coating systems

#### Technical information

**Corner Version**

<table>
<thead>
<tr>
<th>Profile</th>
<th>E 2</th>
<th>E 3</th>
<th>E 4</th>
<th>E 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP(G) 80 Ni</td>
<td>b_b</td>
<td>b_t</td>
<td>b_b</td>
<td>b_t</td>
</tr>
<tr>
<td>FP(G) 90 Ni</td>
<td>96</td>
<td>159</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FP(G) 110 Ni</td>
<td>109</td>
<td>172</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FP 130 Ni</td>
<td>147</td>
<td>210</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FP 155 Ni</td>
<td>169</td>
<td>232</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| FP(G) 80/90 B Ni | -   | -   | 92  | 223 | 56  | -   |
| FP(G) 90/90 B Ni | -   | -   | 105 | 236 | 69  | -   |
| FP(G) 110/90 B Ni | -   | -   | 121 | 252 | 85  | -   |
| FP 130 B Ni     | -   | -   | 143 | 264 | 129 | -   |
| FP 155 B Ni     | -   | -   | 165 | 296 | 107 | -   |

| FPI 145/28 Ni  | 159 | 206 | -   | -   | 101 | 148 |
| FPI 145/40 Ni  | 159 | 206 | -   | -   | 101 | 148 |
| FPI 145/60 Ni  | 159 | 224 | -   | -   | 101 | 166 |
| FPI 145/90 B Ni | -   | -   | 155 | 302 | 101 | 249 |
| FPL 85/27 Ni   | -   | -   | -   | -   | 69  | 134 |
| FPL 85/75 B Ni | -   | -   | 98  | 144 | 69  | 173 |

---

**Image:** E 4-Version: FPI 145/90 B Ni E 4

**Diagram:**

- b_b
- b_t
- h_t
Technical information

Column-/Wall-Connections
FP - with long AAS sheets for bituminous layer

The illustrated vertical cover flashing is to be supplied by others.

**E 2-Version:**
or Column-/Wall-Connections in connection with the profiles
- FP(G) 80 NI
- FP(G) 90 NI
- FP(G) 110 NI
- FP 130 NI
- FP 155 NI

**E 5-Version:**
for Column-/Wall-Connections in connection with the profiles
- FP(G) 80 NI
- FP(G) 90 NI
- FP(G) 110 NI
- FP 130 NI
- FP 155 NI
Technical information

Column-/Wall-Connections
FP - with short AAS sheets
for floors with coating systems

E 3 and E 4-Versions:
for Column-/Wall-Connections
in connection with the profiles
- FP(G) 80/90 B NI
- FP(G) 90/90 B NI
- FP(G) 110/90 B NI
- FP 130/90 B NI
- FP 155/90 B NI

58 mm
**Column-/Wall-Connections**

**E 4-Version:**
for Column-/Wall-Connections in connection with the profiles
- FP(G) 80 NI
- FP(G) 90 NI
- FP(G) 110 NI
- FP 130 NI
- FP 155 NI

Please consider the following using version E2 or E3:

If the joint is adjacent to a column or a wall, two prefabricated horizontal intersections will be required at each edge (see drawing). This ensures that the profile covers the centreline of the joint in the area exposed to traffic.

Such intersections, however, are not necessary, if the distance between column/wall and the centreline of the joint is approx. 40 mm. In this case, it is only necessary to prefabricate a welded connection within the AAS-sheets at each edge of the column/wall.
Installation examples

Cover plates

The following illustrated installation examples have to be in accordance with their structural conditions individually reviewed and determined for each case. We do not show the functional layers. They have to be determined according to the relevant on-site situation.

All illustrated coating systems are surface protection system OS 11 or OS 13 in accordance with Instructions “protection and repair of concrete structures”, dated 1990 and as amended in 2001.

For all other surface protection systems please contact us.

Stainless Steel cover plate AP 800 with cross-grinding surface In connection with the profiles of the series FP(G) 90 NI
If stainless steel cover plates are used, absorbing of vertical movement is not possible.

Stainless Steel cover plate APG 800 with smooth surface (other surfaces on request) In connection with the profiles of the series FP(G) 80, FP(G) 90 NI, FP(G) 110 NI, FP 130 NI and FP 155 NI
If stainless steel cover plates are used, absorbing of vertical movement is not possible.
Installation examples
Cover plates

Examples: FP 90/25 NI with “toothed” cover plate APS

Example with APS cover plate:
FPG 90/35 NI APS
Installation examples
Small heights

Installation Example FP 90/25 NI: MIGUTAN expansion joint system with short AAS sheets
In connection with hardened paving or asphalt without waterproofing layer

Installation Example FP 80/25 NI: MIGUTAN expansion joint system with short AAS sheets
In connection with hardened paving or asphalt without waterproofing layer

Installation Example FP 90/25 NI: MIGUTAN expansion joint system with short AAS sheets on concrete slab (no recess)
Installation examples
Small heights

Installation Example: MIGUTAN expansion joint system with long AAS sheets and aluminium plates, prefabricated in our factory for large joints

Installation Example: MIGUTAN expansion joint system with long AAS sheets installed below earth
Installation examples
Large height

Installation Example: MIGUTAN expansion joint system with long AAS sheets for large installation heights
Installation examples
Insitu - concrete

Installation Example: MIGUTAN expansion joint system with short AAS sheets in connection with additive floors / precast concrete slabs
Installation examples

Various

Installation Example FPG 90/100 NI XA: MIGUTAN expansion joint system with MIGUTRIX fibre fabric bonded sheets in connection with liquid membranes / flexible waterproofing slurry

Installation Example: MIGUTAN expansion joint system with long AAS sheets in connection with thermal insulation
Installation examples
Various

Installation Example FP 90/25 NI: MIGUTAN expansion joint system with short sheets
Connection joint filled with flexible coating

Installation Example: MIGUTAN expansion joint system with long AAS sheets and special wall connection
Installation Example FP 160/100 NI: MIGUTAN expansion joint system with APG cover plate for large joint width and big movement capacity (105 mm (+ 65 – 40 mm))

Installation Example: Combined MIGUTAN expansion joint system FP …/45 NI with long AAS sheets and FP …/25 NI with short AAS sheets with APG cover plate for large joint width
Municipal indoor pool, Plauen, Germany

Multi storey car park Citti Park, Lübeck, Germany – FP90

Multi storey car at main railway station, Berlin, Germany

Shopping Mall Citti Park, Kiel, Germany – FS 110; ESF 10; FS 75; STD 100

Stadium BayArena, Leverkusen, Germany – FP 90

Airport, Nürnberg, Germany – FP 90; FP 115

Multi storey car park Beusselstreet, Berlin, Germany
Illustrations of applications

1. Airport Cologne-Bonn, Germany – FP 90
2. Multi storey car park Weiterstadt, Germany – FP 90
3. Spreebogenpark, Berlin, Germany
4. Shopping Mall Elbe Park, Dresden, Germany
5. FMZ Brunnenstraße, Berlin, Germany
6. Lessing Bridge, Berlin, Germany
7. Multi storey car park, Lübeck, Germany
8. State Fair, Stuttgart, Germany – FPI 145
9. Bridge Renovation, Ellenburg, Germany
10. Multi storey car park Erfurt Stadium, Germany
Multi storey car park, Chemnitz, Germany

Multi storey car park Toyota, Cottbus, Germany

Car park at Shopping Mall, Dresden, Germany

Multi storey car park Weiterstadt, Germany – FP 115
Konsum, Leipzig, Germany – FP 90/25

Multi storey car park, Berlin-Marzahn, Germany

Bus Service Station, Mainz, Germany – FP 90

Railway station Adlershof, Berlin, Germany – FP 90

Multi storey car park, Annaberg, Germany – FP 90

New Airport BBI, Berlin, Germany – FP 90 BNI

Beecken, Germany – FP 90

BNI RA Tübingen, Germany – FP 90
MIGUA.
Market leader in Europe for more than 50 years.

MIGUA is completely focused on expansion joint systems. Leading architects, designers and general contractors specify our products for national and international projects. We will gladly provide you with a list of references, on request. MIGUA expansion joint systems are used from Abu Dhabi to Zurich providing protection, functionality and architectural excellence on a permanent basis.

They are used in many different building types, e.g. shopping malls, airports, exhibition halls, hospitals, industrial plants, storage facilities, car parks and pedestrian bridges. It is our passion to be innovative, to supply perfect quality and to develop solutions according to customer requirements.

Technology. Innovative from experience.

Competence does not appear by chance. More than 10 million metres of MIGUA movement joint systems have, over decades, been installed worldwide to the satisfaction of architects, designers, builders and owners. We are leaders in technological development in Europe as witnessed by numerous patents and test certificates.

MIGUA engineers are, on an ongoing basis, designing and developing new profiles with enhanced characteristics which lead to time and cost saving installations. Through the use of special materials safety features are improved and stringent performance tests are conducted on all new products.

Quality. Made in Germany.

MIGUA products combine optimum solutions with excellence in design, high quality materials and safety features which are supported by our standard warranties. Quality makes the pre-condition for product safety. That is why MIGUA develop and manufacture in Germany. Only products on the highest standard achieve the necessary durability and allow required warranties.

Due to this reason MIGUA is able to offer such warranties.

Beyond the technical quality of our products the main target of the MIGUA quality management is the utmost satisfaction of our customers. Each operation and work step is described and will be recorded. From the first idea through research and development up to successful market launch. Just this makes MIGUA successful.
Solutions. Which work.

By ensuring the technical quality of our products MIGUA can attain its primary goal of complete customer satisfaction. We understand the expectations of our customers, and how to exceed them.

This requires a strong commitment for special requests and solutions. MIGUA is prepared for it – from the beginning. We are always available for your questions or giving advice to find the solution our customers need. Our products are supported by a national network of technical experts, close cooperation with our world-wide partners and an experienced international export team.

MIGUA offers the perfect solution for your project.
MIGUA offers a comprehensive product portfolio of expansion joint covers and systems with outstanding features.

Increasing architectural requirements as well as new construction materials and processes demand optimized expansion joint systems. For this reason, MIGUA is your experienced partner since we offer more than 600 different profiles for a wide range of applications.

Our product range covers 5 application orientated product groups as detailed below. In addition to standard profiles our R&D engineers provide highly sophisticated solutions for special or non-standard applications.

MIGUA provides solutions for extraordinary challenges.

**MIGUTEC**
Expansion joint profiles

**MIGUTRANS**
Heavy duty expansion joint systems

**MIGUTAN**
Watertight expansion joint systems for traffic

**MIGUPREN**
Watertight expansion joint systems for roofs

**MIGUMAX**
Earthquake resistant expansion joint systems