



Project References

Project References – Movable Bridges



mageba



Index

Project	Country	Installed	Products delivered	Page
Peene Bridge Wogast	Germany	1996 / 2022	Horizontal force bearings Guide bearings Spherical bearings TENZA®MAT T160 mat joint TENZA®GRIP RS-LS 100 „ULTRA“ single gap joint	3
Cirkelbroen	Denmark	2021	RESTON®SPHERICAL bearings	4
Rethe Bascule Bridge	Germany	2017	Vertical and horizontal force bearings	5
Baakenhafen Bridge	Germany	2013	LASTO®BLOCK elastomeric bearings RESTON®SPHERICAL spherical bearings TENZA®MAT mat joints	6
Jann-Berghaus Bridge	Germany	2010	TENZA®FINGER RSFD expansion joints	7
Lifting Bridge Cassarate	Switzerland	2010	LASTO®BLOCK elastomeric bearings Sliding plate construction	8

Peene Bridge Wolgast (Germany)



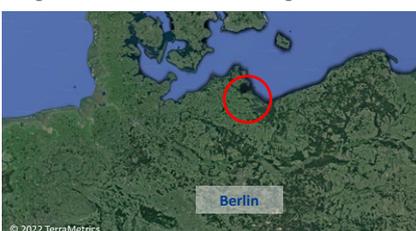
Project description

The Peene Bridge Wolgast is a combined road and rail bascule bridge over the Peene River in Wolgast. It connects the island of Usedom with Wolgast Castle Island, which is connected to the mainland of Western Pomerania via the “Schlossgraben” Bridge and a railroad bridge.

The Peene Bridge is crossed by the federal road 111 and the railroad line Züsow-Wolgast Hafen with its extension to Świnoujście Centrum.

The leaf of the bridge is 19 m wide and 42 m long. The elevated levers equipped with counterweights control the bridge’s mechanism and are visible from distance due to their height and dimensions. With the leaf open, the bridge’s navigation channel is 30 m wide.

The Peene Bridge is a road and railroad bascule bridge over the Peene River in Wolgast



© 2022 TerraMetrics

mageba scope

A total of 24 bearings were designed, manufactured, delivered, partially installed and finally approved by mageba (at that time still under the name “Sollinger Hütte”) to support the superstructures on the piers and abutments.

Among the bearings installed are four horizontal force bearings, four longitudinal guide bearings and 16 spherical bearings allowing movement in all directions.

In 2022, a refurbishment project was carried out on the expansion joints.

The existing, worn-out joints were replaced by modern singel gap joints featuring noise-reducing sinus plates as well as Tensa®MAT mat joints supplied by mageba.

In the course of this refurbishment, we also replaced the finger plates at the tip of the leaves.

Installed horizontal force bearing



Highlights & Facts

mageba products:

Type: Horizontal force bearings
 Guide bearings
 Spherical bearings
 Tensa®MAT T160 mat joint
 Tensa®GRIP RS-LS 100 „ULTRA“ single gap joint

Installation: 1996 / 2022

Structure:

City: Wolgast
 Country: Germany
 Type: Bascule bridge / Rolling lift bridge
 Completion: 1997
 Length: 256 m
 Owner: Federal Republic of Germany
 Contractor: Land Mecklenburg-Vorpommern
 Architect: Oskar Lehmann

New mat expansion joint as installed





Cirkelbroen (Denmark)



Project description

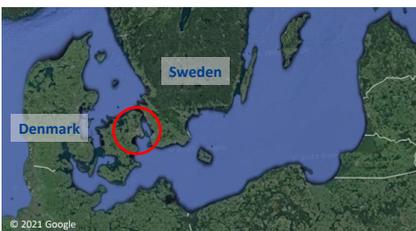
Cirkelbroen is an architecturally significant pedestrian bridge in the heart of Copenhagen city centre, opened in summer 2015.

The bridge spans approximately 40 meters over the Christianshavn Canal to connect the Applebys Plads and Christiansbro District of the city, also assisting in creating a continuous walkway along the Copenhagen Harbour.

Cirkelbroen is a steel pedestrian bridge formed of five circular platforms that span the canal. The bridge is able to rotate approximately 90 degrees around the central platform, in order to grant boats access to the Christianshavn Canal. The rotating length of the bridge is approximately 25 m long.

Beneath the central platform, the existing bearing had become damaged due to the opening and closing of the bridge – mageba was contacted to develop a solution for replacement.

The Cirkelbroen is a pedestrian bridge in the heart of Copenhagen City Centre



mageba scope

mageba was commissioned to develop a bespoke solution for replacement of the bearing beneath the central platform, at the pivot point.

Damage to the existing bearing appeared to be due to steel-on-steel contact at the interface of rotation.

This new RESTON®SPHERICAL type KF1.8 bearing would require a vertical sliding surface, around which the bridge could rotate.

mageba was able to develop a bespoke solution, incorporating a vertical ROBO®SLIDE ring, and re-produce to the outer dimensions of the original bearing one-to-one in order that exchange could be made using the existing hole pattern.

New mageba RESTON®SPHERICAL bearing after installation, alongside the bridge hydraulics



Highlights & facts

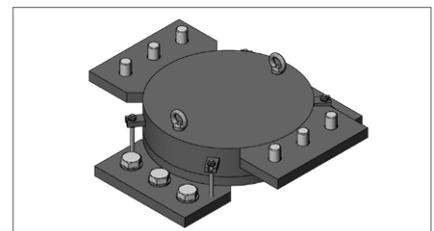
mageba products:

- Type: RESTON®SPHERICAL type KF 1.8 bearing
- Feature: ROBO®SLIDE sliding material
- Installation: 2021

Structure:

- Country: Copenhagen
- City: Denmark
- Type: Steel pedestrian bridge
- Length: 40 m
- Completion: 2015
- Owner: City of Copenhagen
- Contractor: SH Group A/S
- Architect: Olafur Eliasson

Rotation caused during bridge opening is facilitated by the RESTON®SPHERICAL bearing



Rethe Bascule Bridge (Germany)



Project description

The Rethe bascule bridge is a combined rail and road bridge in the port of Hamburg. It crosses the Rethe at its mouth into the Reiherstieg and connects Hohe Schaar with Neuohof. This bascule bridge replaced the old Rethe lift bridge in 1934, which was directly adjacent to the east and was dismantled in 2018.

The Rethe bascule bridge has a span of 104 meters and opens a navigation channel unlimited in height, and 64 meters wide. The two bascule bridges (14 m width for road, 10 m width for rail), are independent hydraulically operated double-leaf bridges.

mageba scope

The newly built Rethe Bridge in the Port of Hamburg uses specially designed bearings.

The Rethe Bridge is designed as a double-leaf bascule bridge with a leaf length of approx. 52 m each. At the tip of each leaf, the two decks are designed with a „finger“ connection, to „lock“ the deck in place such that moments and shear forces are transmitted under traffic. To realize this function, sliding bearings with a special inlet geometry (separate for vertical and horizontal loads) were provided.

The sliding material, a highly stressable modified UHMWPE, was specially installed, since the upper part of the bearing (with the sliding material) is separated from the sliding track during the folding process.

Highlights & Facts

mageba products:

Type: Vertical (8) and horizontal (4) force bearings
Installation: 2017

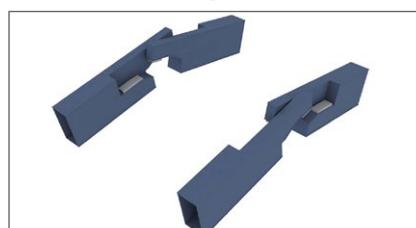
Structure:

City: Hamburg
Country: Germany
Type: Bascule bridge / Rolling lift bridge
Completion: 2017
Length: 144 m
Owner: HPA – Hamburg Port Authority
Contractor: HPA
Design: Ingenieurbüro Grassl GmbH Beratende Ingenieure Bauwesen

New Rethe Bridge in the Port of Hamburg



Schematic view of the finger lock



Support points of the finger lock





Baakenhafen Bridge (Germany)



Project description

The Baakenhafen Bridge is a 170 m long, 21 m wide and 2,300 t trapezoidal steel frame bridge with V columns. It is the largest bridge in HafenCity, which also marks the beginning of the development of eastern HafenCity.

The structure was designed by London architects, Wilkinson Eyre together with engineers BuroHappold (Berlin). Three lanes are dedicated to road traffic, whilst cyclists can also easily cross the bridge on both sides of the roadway.

The middle section of the bridge is movable, in order to enable large ships to travel through Baakenhafen.

In 2014, the bridge was nominated for the German Bridge Construction Award.

mageba scope

mageba supplied the following products for this landmark bridge:

- 4 LASTO®BLOCK elastomeric bearings of the types fixed, guided-sliding and free-sliding
- 4 RESTON®SPHERICAL bearings, with high-quality ROBO®SLIDE sliding material, of the types fixed, guided-sliding and free-sliding
- 26 m of TENSA®MAT type T80 mat joint
- 53 m of TENSA®MAT type T160 mat joint

Highlights & Facts

mageba Products:

Type: LASTO®BLOCK elastomeric bearings
RESTON®SPHERICAL bearings
TENSA®MAT T80 and T160 mat joints

Installation: 2013

Structure:

City: Hamburg
Country: Germany
Type: Trapezoidal steel frame bridge with V columns

Completion: 2013

Length: 170 m

Owner: HafenCity Hamburg GmbH

Architect: Wilkinson Eyre
BuroHappold
Ingenieurbüro GmbH

The Baakenhafen Bridge is situated in Hamburg, Germany



The mat joints are shaped to fit the given vertical and horizontal bends of the Baakenhafen Bridge



The bridge's V-beam is supported by elastomeric and spherical bearings



Jann-Berghaus Bridge (Germany)



Project description

The Jann Berghaus Bridge is one of the largest bascule bridges in Central Europe, with its total length of 464 m and movable section measuring 63 m. When open, 45 meters of the deck are extended upwards, while 15 meters protrude beneath deck level.

The bridge crosses the Ems River near Leer (East Friesland) between the districts of Leerort and Bingum, next to the Ems Tunnel (A 31), which is the only permanent crossing in the lower section of the Ems and makes it an important connection between East Friesland and the Netherlands.

The bridge was named after Jann Janssen Berghaus (1870–1954), the district president of Aurich (1922–1932) and later the president of East Friesland (1945–1954).

In its current version, the Jann Berghaus Bridge has existed since the beginning of 2010.

mageba scope

During the renovation of the bridge in 2009/2010 the joints on the movable part of the structure were replaced.

mageba's TENSA®FINGER RSFD 260 cantilever finger joints with a movement capacity of up to 150 mm were installed at the tip of the leaf.

This type of finger joint consists of solid steel edge profiles which are connected to the supporting structure with steel anchors in a way that is both strong and fatigue-resistant.

Highlights & facts

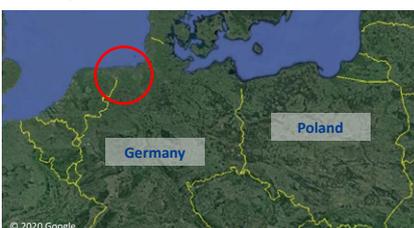
mageba products:

Type: TENSA®FINGER RSFD expansion joints
Installation: 2010

Structure:

City: Leer
Country: Germany
Type: Bascule bridge
Completion: 1995
Main span: 63 m
Length: 464 m
Owner: Wasserschiffahrtamt Ostfriesland
Contractor: Schäfer Bauten

The Jann-Berghaus Bridge is situated in Leer, Germany



Approach to the Jann-Berghaus Bridge



An installed cantilever finger joint





Lifting Bridge Cassarate (Switzerland)



Project description

Due to recurring flood situations of the Cassarate River, which runs through Lugano to its mouth in Lake Lugano, a new lift bridge was built in the village that bears the river's name.

In case of flooding, the Cassarate Fula bridge can be raised by up to 1.6 meters. The required hydraulics and the bridge centering system are located in a shaft under the bridge. Once the road is closed off, the bridge can be raised using the control system. The load-holding and lowering brake valves are located directly on the cylinders, thus providing the mechanical safety. The bridge can stop at any height without the risk of accidental lowering.

mageba scope

To allow bridge movements of up to 30 mm, mageba supplied two sliding plate expansion joints in lengths of 13 m and 24 m. The joints are attached to the substructure of the bridge and build the transition between road and bridge in normal condition. In the event of high water, the bridge will be lifted together with a part the joint structures.

Additionally, mageba supplied special deformation bearings allowing movements in any direction with movement limitation, based on the LASTO®BLOCK type NBa elastomeric bearings. On its upper part the elastomer block is fixed to the bridge deck and can be raised from the substructure when the bridge is lifted.

Highlights & Facts

mageba products:

Type: LASTO®BLOCK
elastomeric bearings
type NBa
Sliding plate
expansion joint

Installation: 2010

Structure:

City: Lugano
Country: Switzerland
Type: Lifting bridge
Completion: 2010
Length: 20 m
Owner: City of Lugano
Contractor: Geo Edil SA, Lugano
Engineer: Passera & Associati,
Lugano

The road bridge with lifting function is located in Cassarate in the canton of Ticino



The specially designed elastomeric bearings and the lifting device with 4 hydraulic pistons



The sliding plate construction is fixed to the bridge substructure



engineering connections® – since 1963



■ Locations
○ Representatives

mageba headquarters



SWITZERLAND

mageba sa
Trafostrasse 1
8180 Bülach
Tel. +41 44 872 40 50
info.ch@mageba-group.com

mageba-group.com

[LinkedIn](#) [YouTube](#)

Locations

AUSTRALIA

mageba (Australia) Pty Ltd
Eastern Creek, Sydney
Tel. +61 2 8188 5850
info.au@mageba-group.com

CZECH REPUBLIC

mageba CS s.r.o.
Brno
Tel. +420 541 233 042
info.cz@mageba-group.com

MEXICO

mageba Mexico - Tec. Est. S.A.
Querétaro
Tel. +52 442 388 6600
info.latam@mageba-group.com

SOUTH KOREA

mageba (Korea) Co., Ltd.
Anyang
Tel. +82 31 389 2020
info.kr@mageba-group.com

USA

mageba North America Corp.
New York City
Tel. +1 917 522 2044
info.us@mageba-group.com

AUSTRIA

mageba gmbh
Wels
Tel. +43 7242 46991
info.at@mageba-group.com

GERMANY

mageba gmbh
Göttingen
Tel. +49 551 389 04 0
info.de@mageba-group.com

PHILIPPINES

mageba (Philippines) Rep. Of.
Taguig City
Tel. +65 6977 7048
info.ph@mageba-group.com

SWITZERLAND

mageba sa
Cugy
Tel. +41 21 731 07 10
info.ch@mageba-group.com

CHINA

mageba (Shanghai) Co., Ltd.
Shanghai
Tel. +86 21 5740 7637
info.cn@mageba-group.com

HUNGARY

mageba Hungary Kft.
Nyírtelek
Tel. +36 42 210 424
info.hu@mageba-group.com

SINGAPORE

mageba (Singapore) PTE. LTD.
Singapore
Tel. +65 6977 7048
info.sg@mageba-group.com

TÜRKIYE

mageba Yapı Sanayi ve Ticaret A.Ş.
Çayırova / Kocaeli
Tel. +90 262 658 23 80
info.tr@mageba-group.com

CHINA

mageba (Shengzhou) Co., Ltd.
Shengzhou
Tel. +86 21 5740 7637
info.cn@mageba-group.com

INDIA

mageba bridge products Pvt. Ltd.
Kolkata
Tel. +91 33 229 00 250
info@mageba.in

SLOVAKIA

mageba Slovakia s.r.o.
Košice
Tel. +421 905 577 196
info.sk@mageba-group.com

UNITED ARAB EMIRATES

mageba sa (DMCC Branch)
Dubai
Tel. +971 4 561 3775
info.ae@mageba-group.com

mageba
mageba-group.com