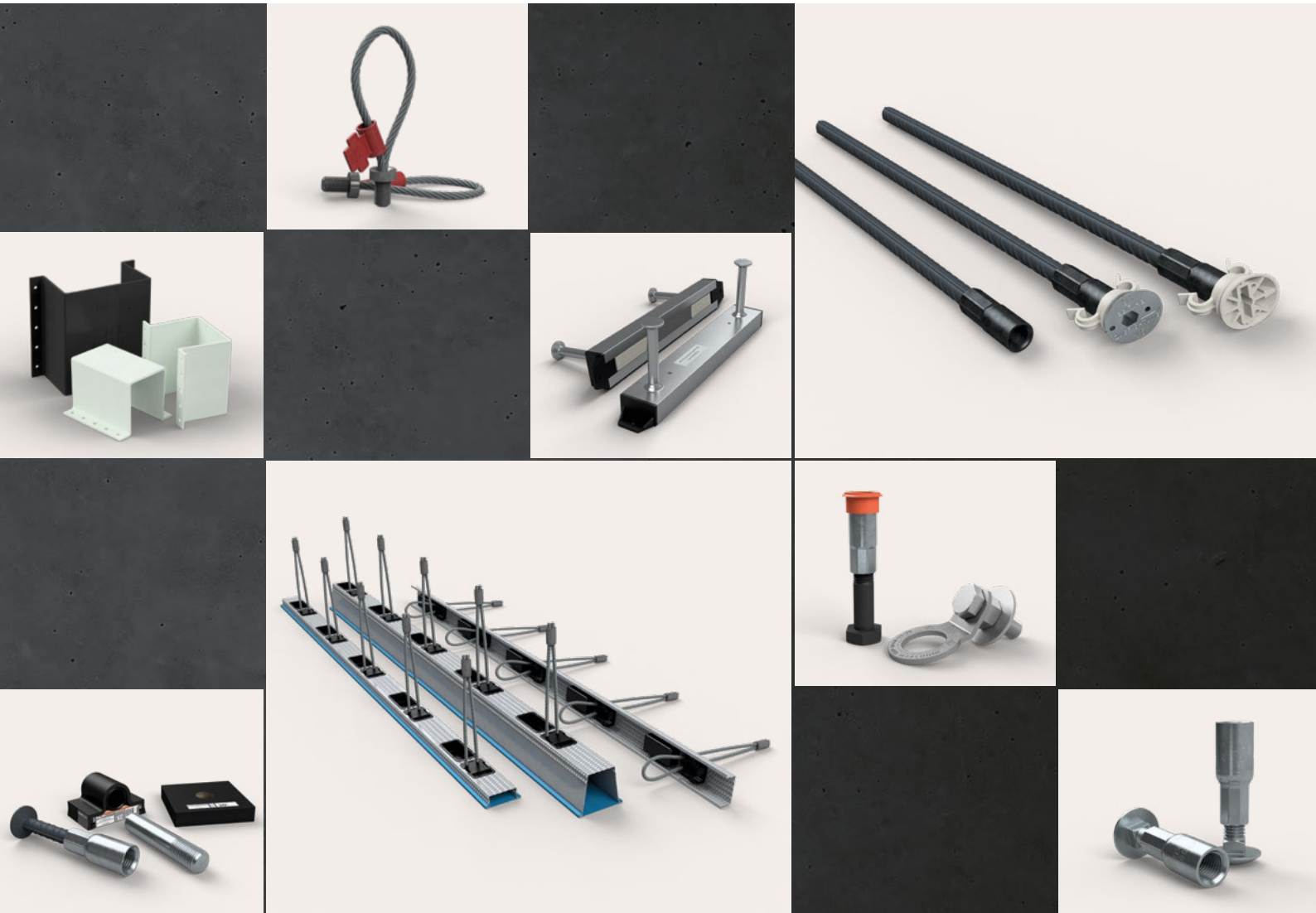


# PRODUCT OVERVIEW

## BUILDING SOLUTIONS



## Dear business partners and friends of the company,

As the CEO of the **PHILIPP**GROUP I am proud to be a part of our company's history and family. For over 50 years, our company has continuously evolved and is now a major player in the market for innovative and high quality products and services.

With over 250 employees at five locations and more than 30 international cooperation partners worldwide, we are manufacturer and supplier of products in the field of building solutions, lifting, attachment and lashing technology, hydraulics as well as hydraulic units. Numerous patents and industrial property rights reflect our innovative strength and technical know-how. Our customers appreciate not only the quality of our products, but also our excellent customer service and fast delivery.

Throughout the years, we have always focused on understanding our customers' needs and developing innovative solutions to meet them.

We are pleased that our commitment is now also underlined by the EN ISO 9001 certification. We are proud of our certifications and are continuously improving.

### **Our goals are clearly defined:**

We also remain true to our commitment to sustainability and environmental protection and are constantly looking for ways to minimize our environmental footprint.

We thank you for your interest and confidence.



Thorsten Philipp and his team



## Transport

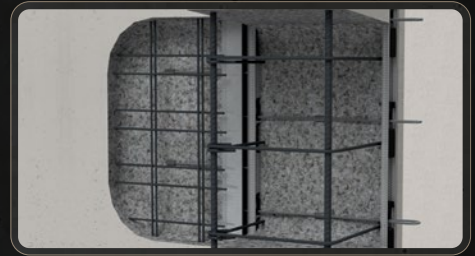
- » Threaded transport anchor system Page 16
- » Spherical head anchor system Page 46
- » Hole anchor system Page 56
- » Cast-in lifting hoops Page 62
- » Further systems Page 68



Transport

## Connection

- » Power One rail | Power Duo rails | Power Box | Power OS rail Page 74
- » Magnetic fastener for connecting rails Page 78
- » Thixo mortar | Grouting mortar Page 79
- » Thixo mortar | Grouting mortar Page 79
- » Shear dowel ESD Page 80
- » Connecting loops | Connecting rails Page 82
- » Dowelling system | Restraint dowel plate Page 83



Connection

## Facade technology

- » Sandwich panel anchor system SPA Page 84
- » Sandwich panel anchor system SA/FA Page 88
- » Connector pins | Connector stirrups | Clip-on pins Page 90
- » FT anchor Page 96
- » FT anchor Page 97



Facade

## Fixing

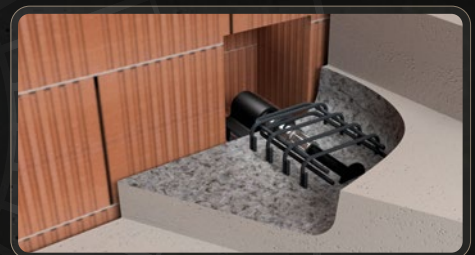
- » PB anchor | PPE Page 98
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- » Cable holder system Page 123
- » Mounting channels Page 125



Fixing

## Bearing systems with noise reduction

- » Bearing system with noise reduction TSS Page 128
- » Bearing system with noise reduction TSS Page 134
- » Noise reduction system TreDo Page 136
- » Bearing system with noise reduction TSB Page 137
- » Bearing system with noise reduction HQW Page 138
- » Sound boards Page 139
- » Stair dowel / angle Page 140



Bearing systems

## Earthing

- » Earthing sleeves Page 142
- » Earthing sleeves Page 146
- » Earthing connectors Page 147



Earthing

# SERVICES IN BUILDING SOLUTIONS

We support your project both professionally and in an advisory capacity. In this context, we provide solutions for the lifting and installation of precast concrete elements for almost any requirement. If no standards can be used for this, we react flexibly with (product) customised solutions.

## SPECIAL DESIGNS

The **PHILIPPGROUP** offers special designs in Building Solutions that are specially tailored to the needs of our customers. Each special design is developed individually and according to the specific requirements of the application. Highest precision and quality ensure that our customers' expectations are met in full.

## PRACTICAL TESTS ON SITE

We set a high value to practical tests on site in order to achieve the best possible results. Here, the customer's concepts are tested and optimised in a real environment.

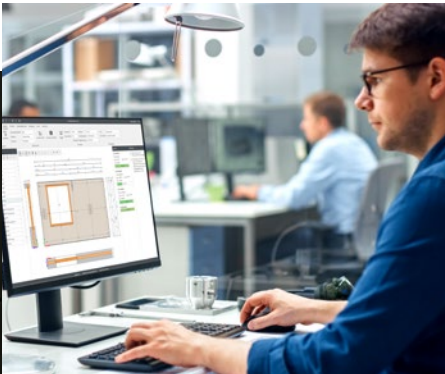
The experts from the **PHILIPPGROUP** contribute their expertise and experience to all tests. We ensure that all requirements are properly covered in our planning.

## PLANNING SUPPORT

A wide range of options are available from the **PHILIPPGROUP** as planning material:

- » latest design software
- » planning documents
- » CAD data and much more

These materials are always available at **www.philipp-group.de** and help you to plan and realize your construction projects efficiently and precisely.



## THE NEW SOFTWARE PORTAL

We are excited to introduce our brand new PHILIPP SOFTWARE LAB!

With our software centre you get:

### BETTER PERFORMANCE

Benefit from optimized and powerful tools that make your work even more efficient.

### MAXIMUM USABILITY

Our software solutions are designed to provide you with the greatest value and drive your projects forward.

Furthermore we offer practice-orientated and user-friendly software tools that make it easier for you to work with our products. Whether you need calculations for planning or helpful CAD libraries for design - we provide them to you free of charge. Detailed, product-specific Installation and Application Instructions as well as easy-to-understand animations complete our information package for planners.

## TRAININGS

With detailed training content and information materials, the **PHILIPPAKADÉMIE** enhances your knowledge and the skills of your employees from planning and production constantly. Our comprehensive trainings of the **PHILIPPAKADÉMIE** are held by our experts at the customers' premises, online or via webinar. Find out more about our current offer.

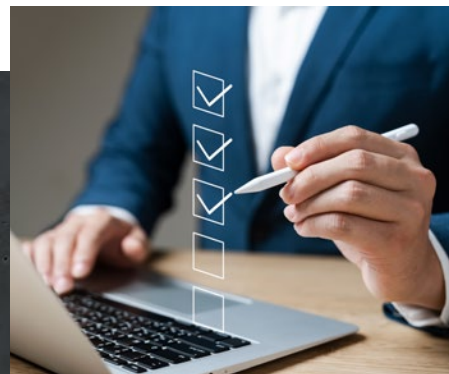


Find the latest dates under:



## APPROVALS

At the **PHILIPPGROUP** we take great care to ensure that our solutions comply with applicable standards and regulations. We often work closely with accredited notified bodies to ensure that the solutions we offer meet the high requirements. In this context, test certified structural calculations or approvals create the highest level of confidence that you can rely on the quality and safety of the products without restriction.



## PHIADUKT

With our webbased self-service portal "**PHiadukt**", we have built a digital bridge between suppliers and end customer. Being able to place orders online and check the processing status of orders in detail at any time has long been part of everyday life in the private sector, so why not in the B2B sector as well? An early warning system for possible delivery bottlenecks of certain products can avoid production disruptions and delays.



Still no access? **REGISTER NOW**



Register now - and get started right away!

We build a digital bridge between supplier and customer – transparently and at all times.

With PHiadukt the PHILIPPGROUP offers a platform that provides partners and customers with numerous solutions for the daily business in companies. We meet the needs of our customers actively and develop the platform continuously to offer more than just an online shop.

PHiadukt is based on real-time data and provides the entire product portfolio. In addition, you can configure customised wire ropes and benefit from staggered prices so that you always get the best price. Automatic notifications about changes to your order backlog keep you constantly up to date so you can react quickly and proactively.

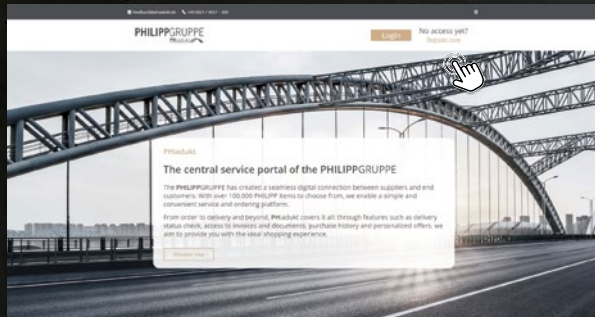
Scan the QR Code to explore all the details and find out how PHiadukt support your business.



Just two steps to your individual prices!

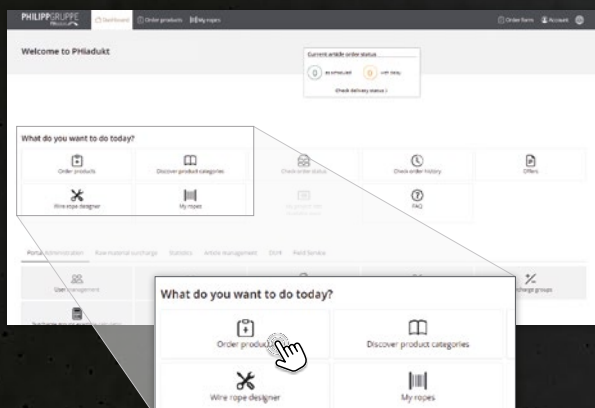
1 Not registered yet?

Request your access now!



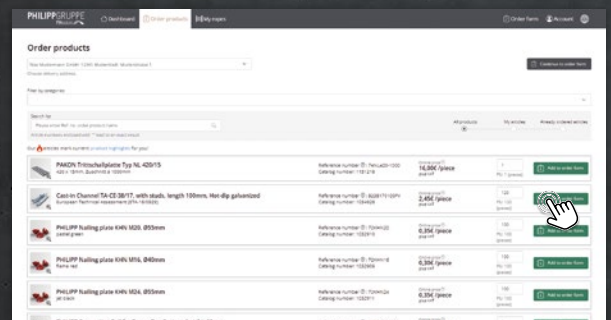
2 Quick and easy to your articles

well-directed or via the product category filter



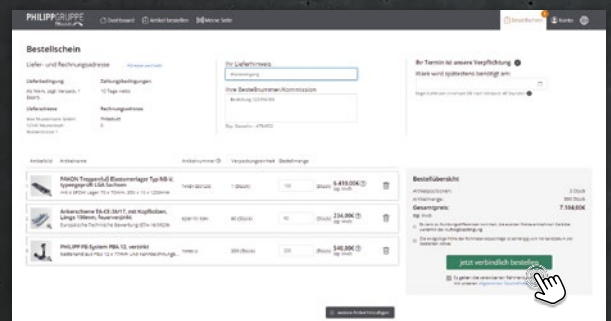
3 Your individual prices

Add article to your order form directly



4 You are just one click away from your goods

Send order



✓ Your order is complete.

The order will now be checked by PHILIPP and you will receive an order confirmation. Automatically you will be kept up to date about the progress of your order.

## A short overview of what you can expect in our PHILIPP portal



### View order status

All information about your orders, incl. invoice and delivery notes



### Check delivery status

Keep track of the dispatch and delivery status of your order so that you can plan precisely.



### Manage your offers

Your individual PHILIPPoffer Can be easily managed online, whenever you need it.



### 24/7 online ordering

More than 100.000 articles from our PHILIPP product range available online and can be ordered with one click.



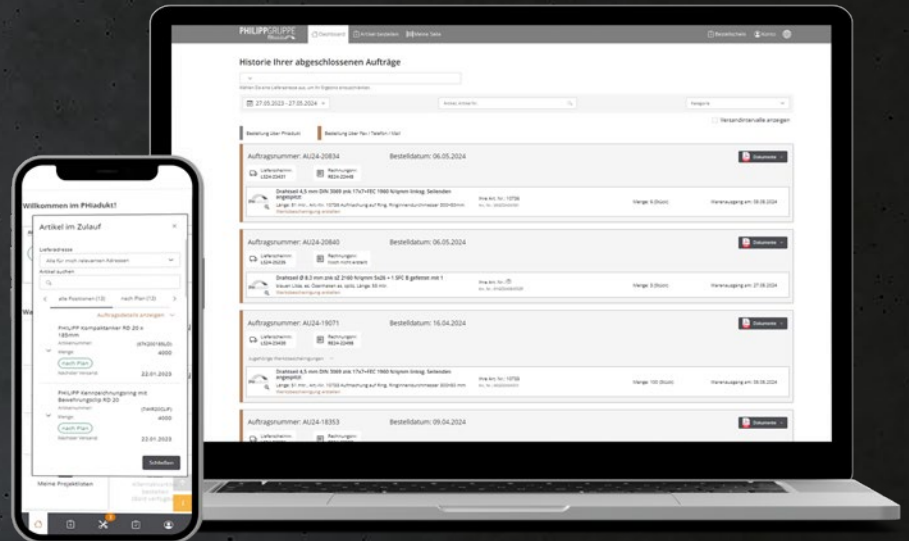
### Real-time notifications

We like to inform you about new dispatch information, reminders or other information.



### Wire rope configurator

Configure your customised wire rope online at any time and find exactly what you need.



Explore the digital world of the PHILIPPGROUP, with more than **100.000 articles** and individual services of our departments:

BUILDING SOLUTIONS



LIFTING, ATTACHMENT AND LASHING



HYDRAULIC SYSTEMS & COMPONENTS



SERVICE





### BT-Spannschloss®

The BT-Spannschloss® enables fast and precise installations as well as permanent connections of precast concrete elements. By using the BT-Spannschloss in combination with the PHILIPP PB anchor, precast elements can be connected “dry” without grouting mortar. This eliminates hardening or downtimes due to low temperatures. A connection generated with the BT-Spannschloss® is immediately fully loadable.

### Applications

- » Retaining walls for flood protection
- » Agricultural elements (e.g. biogas plants, silos)
- » Sewer and civil engineering constructions (e.g. manholes, media channels, amphibian tunnels)
- » Temporal buildings

### Advantages:

- » “Dry” screw connection
- » Without joint grouting, without special tools
- » Immediately loadable, no hardening times
- » Weather-independent mounting
- » Removable
- » Three point connection (T-connection) possible



### RubberElast®

RubberElast® is a self-adhesive, tried-and-tested squeeze joint tape and pressure-tight sealing of joints between precast elements.

### Applications

- » Hydraulic structures
- » Sewer and civil engineering constructions (e.g. manholes, media channels, amphibian tunnels)
- » Residential & commercial construction (e.g. watertight constructions)

### Advantages:

- » Water pressure-tight up to 0.5 bar
- » Processing from -10 °C up to +40 °C
- » No swelling on contact with water
- » Weather, acid, alkali and salt resistant
- » Immediately watertight after installation
- » Permanently elastic



### ThermoPin®

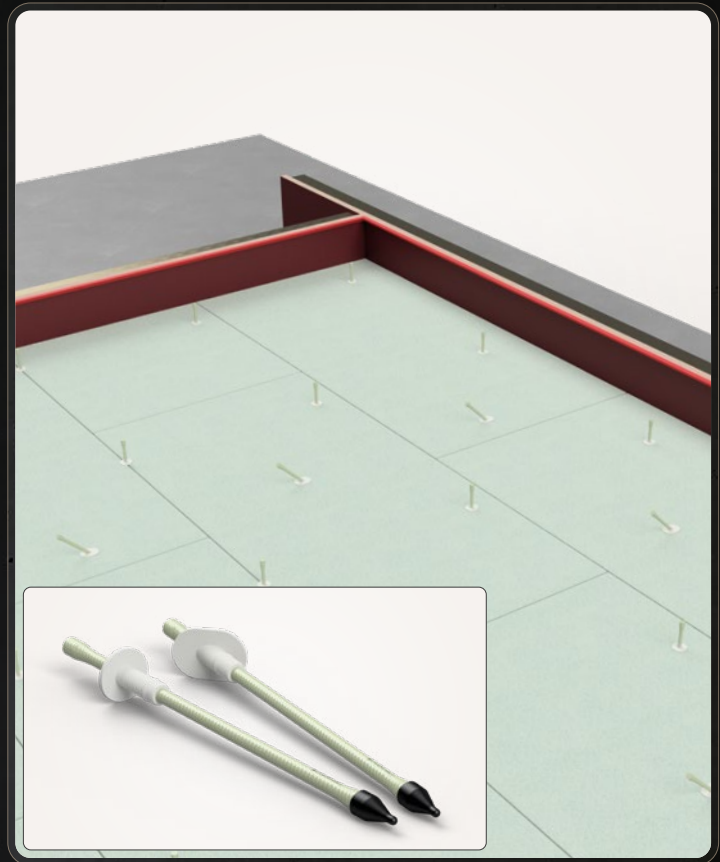
The ThermoPin® is a composite anchor made of glass fibre reinforced plastic (GRP) for sandwich panels and core-insulated double walls.

#### Applications

- » Sandwich panels
- » Core-insulated double walls

#### Advantages:

- » Cost-effective – low costs because due to quick and easy installation
- » Durable – tested resistance, even in alkaline media
- » Slim – constructions with thin layers possible



### MagFly® AP

The MagFly® AP is a patented shuttering magnet and part of BT shuttering system. Its adhesive force to mass ratio is unique as well as the foot/spring system that allows the magnet to glide over the formwork table effortlessly.

#### Applications

- » Shuttering magnet for pallet circulation as well as tilting tables
- » Formwork for walls, columns etc.

#### Advantages:

- » No silicone necessary for sealing
- » Easy and ergonomic handling due to foot/spring system
- » Magnet perfectly matched to formwork beams
- » Best adhesive force/mass ratio



## BUILDING SOLUTIONS

- » Transport
- » Connection
- » Reinforcement
- » Facade
- » Fixing
- » Bearing system
- » Earthing
- » Formwork



## PHIADUKT

- » 24/7 product portal
- » Device management
- » Wire rope configurator
- » Order history
- » Central buying for several companies
- » Secure data transfer

PHILIPP  
GROUP

## LIFTING, ATTACHMENT & LASHING TECHNOLOGY

- » Lifting Devices
- » Lifting Equipment
- » Lashing Equipment
- » Wire Ropes and Accessoires
- » Lifting Technology
- » Personal Protective Equipment (PPE)

## HYDRAULICS & PNEUMATICS

- » Hydraulic units
- » Cylinder
- » Connecting systems
- » Valves, pumps and motors
- » Hydraulic filters and oil coolers
- » Accumulator

- » Inspection and repair service of lifting equipment
- » Hydraulic services and installations

## SERVICES

- » Building solutions seminars
- » Lifting & lashing seminars
- » Personal Protective Equipment (PPE) seminars
- » Hydraulics seminars

## PHILIPPAKADEMIE

# WE PROVIDE STRENGTH AND STABILITY IN AN EVER-CHANGING WORLD.

In order to build a bridge across all core areas, the PHILIPP GROUP has set itself the goal of offering all customers a comprehensive range of services relating to Building Solutions, Hydraulics and pneumatics as well as inspection and repair service according to German safety standards.

In the field of Building Solutions, the PHILIPP GROUP provides advice and

support in the planning resp. realisation of construction projects - from in-situ to precast concrete solutions. Here, customised solutions are developed by an experienced team of engineers and technicians.

In hydraulics, the PHILIPP GROUP offers you a wide range of products and services, including hydraulic units and connecting systems. We

have extensive experience in the design and manufacture of hydraulic components and can therefore also offer you maintenance, repair and servicing of existing systems.

For the installation of machines and systems, the PHILIPP GROUP relies on an experienced team of mechanics who actively support customers in the assembly as well as putting machines and systems into service. This is why cylinder repair is also one of our core competences.





Based on German safety standards (UVV), the PHILIPP GROUP guarantees you standard-compliant services in the form of inspections and maintenance of work equipment and machines. We have extensive knowledge and experience in the execution of those inspections (UVV) and also offer repair and maintenance work.

In summary, the PHILIPP GROUP stands for a wide range of services in all areas and focuses on high quality, reliability and flexibility in order to offer all customers the best possible value.



# CONCRETE ELEMENT RECOMMENDATION

## Possible applications for transport anchors

Transport anchor (system)	Wall (normal weight concrete)	Wall (sandwich)	Wall (masonry)	Beam
				
<b>Threaded transport anchor system</b>				
Transport anchor - straight tail (RD / SL / SR)	•			
Compact anchor (RD / SR)	•			•
Screw anchor (RD)				
Compact anchor - short (RD / SR)				
Capped end anchor long (RD)				
Capped end anchor (RD)				
Threaded transport anchor - offset (RD)		•		
Transport loop anchor (RD)				
<b>Spherical head anchor system (KK)</b>				
Spherical head transport anchor	•			
Spherical head anchor - with offset		•		
Spherical head rod anchor	•			
Spherical head transport anchor - special version				
Spherical head transport anchor - double-head				
<b>Hole anchor system (LA)</b>				
Spread anchor	•			
Two hole anchor	•			
Erection anchor - double-sided	•			
Sandwich panel anchor		•		
<b>Cast-in lifting hoops (AS)</b>				
Cast-in lifting hoop				
Cast-in lifting box	•			
Polypropylene lifting loop				
Angled loop				
<b>Further systems</b>				
Masonry wall anchors (MW)			•	
Hebefix				

Transport

Connection









Facade

Fixing

Bearing systems

Earthing

Product  
TIPi

	Girder	Slab	Bar-shaped element	Stair	Shaft	Manhole	Pipe	Garage
								
			•		•			•
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Transport
Connection
Facade
Fixing
Bearing systems
Earthing

# GANTERUD – LEVELLING

L3

L5

L5

L12

L20-3

Pro

Pro

Pro

Ref. no.	35L3	35L5	35L5PRO	35L12PRO	35L20-3PRO
Load capacity (max.)	3.0 t	5.0 t	5.0 t	12.0 t	20.0 t
Levelling force (max.)	0.5 t	0.75 t	0.75 t	2.5 t	3.0 t
Chain length (standard)	3.0 m	3.0 m	3.0 m	4.0 m	6.0 m
Release of chain wheel	No	No	Yes	Yes	Yes



## THE FUTURE OF STAIRCASE INSTALLATION

The GANTERUD L-series offers advanced levelling devices with which you can handle heavy loads precisely and safely thanks to the latest technology. Whether light or extremely heavy elements weighing up to 20 t, the L-series enables a precise alignment and handling of members of all kind.

Both the robust housing and reliable electric motor make the L-series a safe equipment that can also be used in adverse weather conditions.

Due to easy cleaning the GANTERUD L-series is very user-friendly and low-maintenance.

Contact us:

+ 49 6021 40 27-220 | @ duh@philipp-gruppe.de

Or find out more at [www.philipp-group.de](http://www.philipp-group.de)



With us you get a complete service package:

- » Consulting
- » Presentation on site
- » Rental
- » Leasing
- » Sales
- » Inspection
- » Maintenance
- » Service



## PROVEN TECHNOLOGY IN NEW APPLICATION AREAS

### Precise and fine-tuned alignment

With its reversible stroke, the L series offers maximum precision and can be exactly levelled thanks to its two speeds.

### Reliable and easy handling

Thanks to the robust housing and the IP65-rated electric drive, the GANTERUD L series is not only easy to operate in all positions, but also uncomplicated to clean.

### Optimize your productivity

With a single push of a button, members can be effortlessly aligned, thus reducing expensive crane and downtime.

### Remote Control

A user-friendly and IP67-rated remote control allows a very easy handling of the different levelling devices.

### Turning heavy elements

Release the chain wheel with the remote control and use the PRO models as a pulley. Then the chain can run freely without any resistance. If longer chain lengths are required, these are available as accessories.

### Robust and powerful

A robust and proven technology as well as a reliable electric motor ensure that the L-series can be used in all weather conditions from  $-20^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , even under difficult circumstances.

### Minimal maintenance required

In addition to a regular cleaning, you only need to pay attention to the battery charge. The charge level of the battery is visible behind a maintenance flap.

# » THREADED TRANSPORT ANCHOR SYSTEM

The different Threaded transport anchor types combine on the one hand a uniform thread system (RD or metric thread) for screwing in various lifting devices and on the other hand specific designs for many applications, especially for wall and slab-like elements.

Threaded transport anchor systems are prepared to provide individual answers to new, modern requirements such as thin element thickness, low embedment depth due to limited space, architectural precast or misalignment of the concrete element.

A wide range of accessories like lifting devices, retaining and sealing caps completes the Threaded transport anchor system comprehensively.

## Features and benefits compact

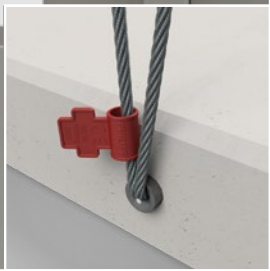
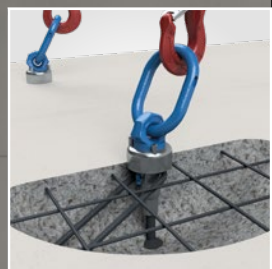
- » No parts projecting above the element's surface
- » Resistant to light soiling due to special round thread
- » Small recesses on the concrete surface (with KH system)
- » Clear colour coding for the entire system
- » Bearing capacities from 0.5 t up to 20 t
- » Save load transfer through optimized anchorage of the rebar and/or design of the anchor
- » Suitable for all lifting directions (axial, diagonal, lateral)
- » Reinforcement optimized for effectivity and economy
- » Graded versions and bearing capacities for economical use
- » Sockets are available electro-galvanised or in stainless steel



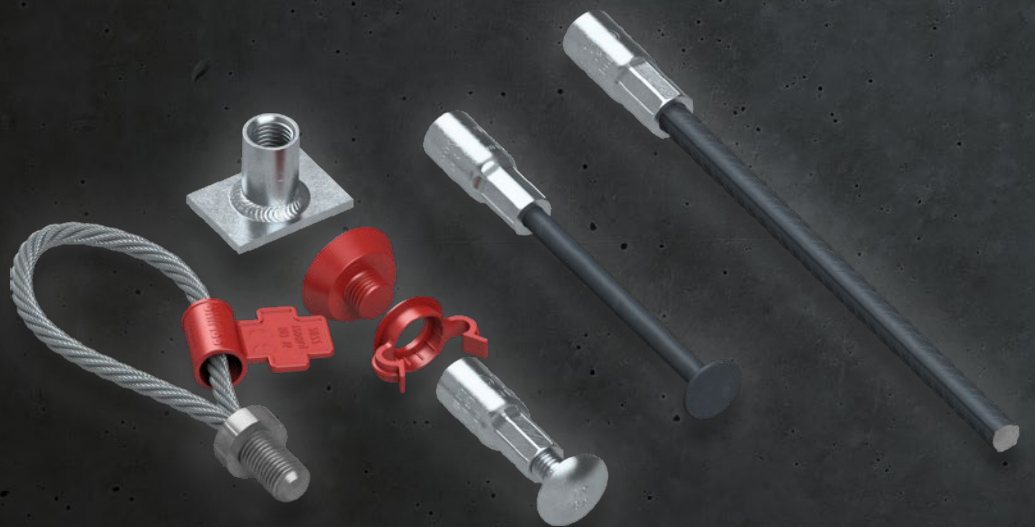




# SAFE TRANSPORT AND MOUNTING



# » THREADED TRANSPORT ANCHOR SYSTEM



# CONTENT

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Threaded transport anchor - offset   Threaded transport anchor elongation	Page 26
Threaded transport anchor - long / short wavy tail	Page 27
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<b>LIFTING DEVICES</b>	<b>Page 28</b>
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<b>ACCESSORIES</b>	<b>Page 30</b>
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Nailing plate KHN   KHN-SZ15	Page 30
Sealing caps KHN   Key for KHN system	Page 32
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Transport

Connection

Facade

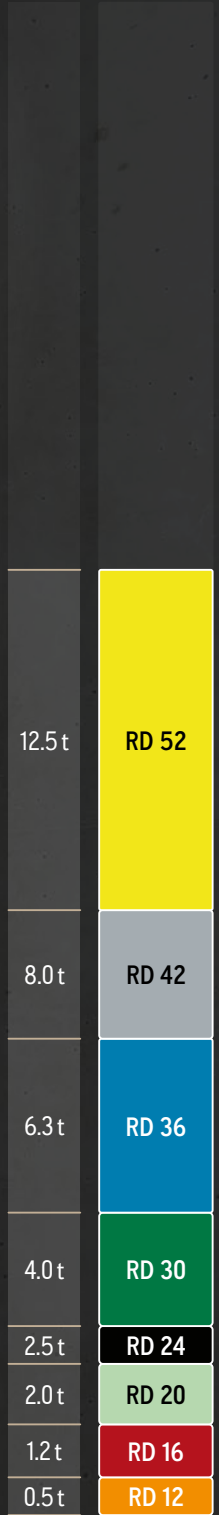
Fixing

Bearing systems

Earthing

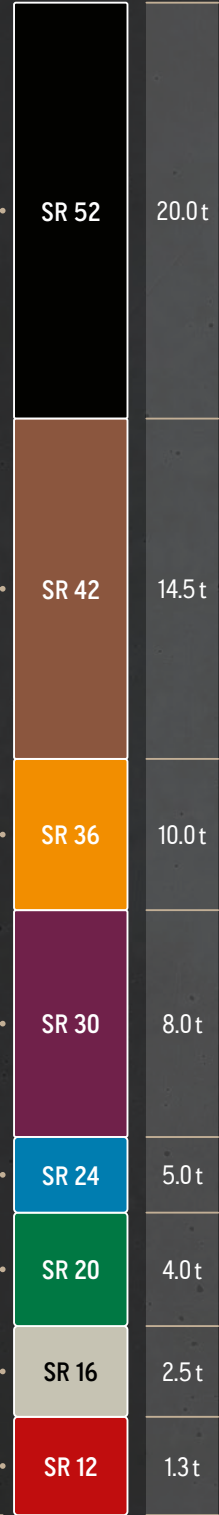
## Types, load capacities and colour code

### System RD (standard)



Example: Type RD 24 (2.5 t)

### Power System SR (high-load, right-hand thread)



Example: Type SR 16 (2.5 t)

## System RD vs Power System SR

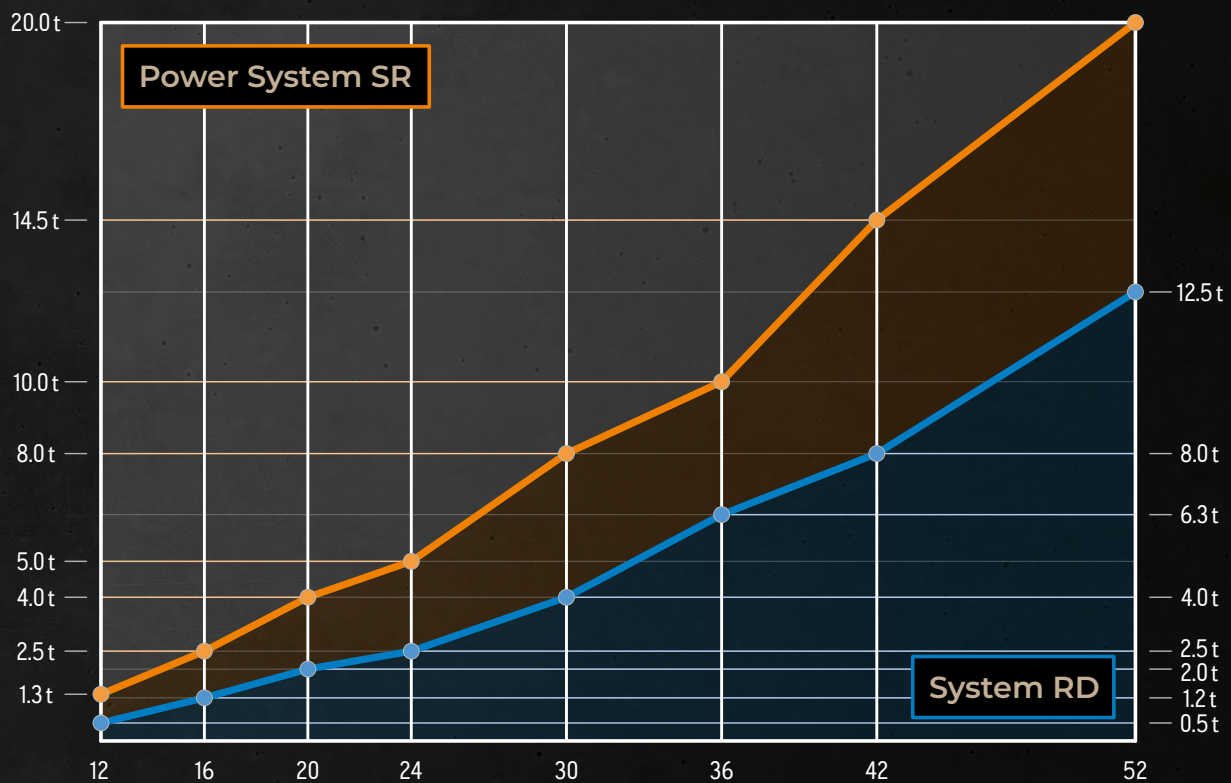
The two transport anchor systems RD and Power SR (heavy-duty, right-hand thread), which have been established on the market for many years, are characterised by the following features:

### System RD (Page 22)

- » Wide range of anchor types for many applications
- » Different lifting devices available, from simple Lifting loop with threaded end to high flexible Wirbelstar available
- » Familiar colour coding for many years
- » Low requirements for minimum and additional reinforcement
- » All safety requirements in accordance with the Machinery Directive are met (CE marking)
- » Lifting inserts are available as galvanised or stainless steel version

### Power System SR (Page 39)

- » Significantly higher load capacities compared to the standard RD system with the same load class
- » High specialised system of transport anchors, lifting devices and accessories
- » Special colour code
- » Safe lifting and mounting of big/heavy reinforced concrete elements
- » All safety requirements in accordance with the Machinery Directive are met (CE marking)
- » Easily recognisable by black chromated threaded inserts



## System RD - Threaded transport anchors

**TIP!**

Product

### Our Product TIP!

- » Universal transport anchors for a wide range of applications
  - › The Threaded transport anchor with straight tail for all wall-like elements
  - › The Compact anchor e.g. for special applications and
  - › The Screw anchor as perfect solution for slab-like elements

#### THREADED TRANSPORT ANCHOR - VERSION: SOCKET BRIGHT ZINC PLATED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	195	9.00	200	67M12
16	275	28.00	50	67M16
20	355	64.00	25	67M20
24	405	76.00	25	67M24
30	505	156.00	1	67M30
36	690	310.00	1	67M36
42	840	467.00	1	67M42
52	900	730.00	1	67M52

#### STRAIGHT TAIL

Product



System RD GV

#### VERSION: SOCKET BRIGHT ZINC PLATED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	100	6.00	200	67K120100
12	150	10.00	200	67K120150
16	130	14.00	100	67K160130
16	175	17.00	100	67K160175
20	185	34.00	50	67K200185
20	250	43.00	50	67K200250
24	200	42.00	50	67K240200
24	275	52.00	25	67K240275
30	275	105.00	25	67K300275
30	350	126.00	1	67K300350
36	334	184.00	1	67K360334
36	450	227.00	1	67K360450
42	385	273.00	1	67K420385
42	500	323.00	1	67K420500
52	550	567.00	1	67K520550
52	700	634.00	1	67K520700

#### COMPACT ANCHOR

Product



System RD GV

See page 24 for the short version of the Compact anchor used in slab-like elements



#### Sealing of Threaded transport anchors

- » Stainless steel anchor
  - (insert made of stainless steel + anchoring element made of standard reinforcing steel)
  - › optionally also possible with galvanised Threaded transport anchors

## System RD - Threaded transport anchors

- » Uncomplicated installation thanks to simple anchor geometries, no installation direction to be followed
- » Standard high load-bearing capacities with low requirements
- » High quality materials and production, documented by CE marking in accordance with the EU Machinery Directive

THREADED TRANSPORT ANCHOR - VERSION: INSERT STAINLESS STEEL (AISI 316)				
Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	195	9.00	200	75M12VA
16	275	28.00	50	75M16VA
20	355	64.00	25	75M20VA
24	405	76.00	25	75M24VA
30	505	156.00	1	75M30VA
36	690	310.00	1	75M36VA
42	840	467.00	1	75M42VA
52	900	730.00	1	75M52VA



VERSION: INSERT STAINLESS STEEL (AISI 316)				
Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	100	6.00	200	75K120100VA
12	150	10.00	200	75K120150VA
16	130	14.00	100	75K160130VA
16	175	17.00	100	75K160175VA
20	185	34.00	50	75K200185VA
20	250	43.00	50	75K200250VA
24	200	42.00	50	75K240200VA
24	275	52.00	25	75K240275VA
30	275	105.00	25	75K300275VA
30	350	126.00	1	75K300350VA
36	334	184.00	1	75K360334VA
36	450	227.00	1	75K360450VA
42	385	273.00	1	75K420385VA
42	500	323.00	1	75K420500VA
52	550	567.00	1	75K520550VA
52	700	634.00	1	75K520700VA



See page 25 for the short version of the Compact anchor used in slab-like elements

- » The cut surface of the reinforcing steel in the insert is completely sealed with a passive sealing system
- » Sealing with cast resin for permanent protection against environmental influences such as corrosion
- » Hardened thick coating with high resistance and mechanical strength

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - Threaded transport anchors

### VERSION: INSERT AND SCREW BRIGHT ZINC PLATED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	60	4.00	200	67SA12
16	80	12.00	100	67SA16
20	100	26.00	50	67SA20
24	115	41.00	50	67SA24
30	150	72.00	25	67SA30

### VERSION: SOCKET BRIGHT ZINC PLATED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
36	200	128.00	1	67K360200
42	230	282.00	1	67K420230
52	320	366.00	1	67K520320

### VERSION: ELECTRO-GALVANISED, LONG VERSION

Type (RD)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	50	5.80	200	71FL12L
16	70	16.00	100	71FL16L
20	80	31.50	50	71FL20L
24	100	46.00	50	71FL24L
30	120	90.00	25	71FL30L
36	140	149.00	1	71FL36L
42	160	231.00	1	71FL42L
52	200	394.00	1	71FL52L

Feature: additional reinforcement as straight version (no bending required anymore)

### VERSION: ELECTRO-GALVANISED

Type (RD)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	30	4.50	200	71FL12
16	35	11.00	100	71FL16
20	47	24.00	50	71FL20
24	54	33.00	50	71FL24
30	72	68.00	25	71FL30
36	84	113.00	10	71FL36
42	98	178.00	10	71FL42
52	117	288.00	1	71FL52





## System RD - Threaded transport anchors

### VERSION: INSERT STAINLESS STEEL A4 (AISI 316); SCREW BRIGHT ZINC PLATED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	60	4.00	200	75SA12VA
16	80	12.00	100	75SA16VA
20	100	26.00	50	75SA20VA
24	115	41.00	50	75SA24VA
30	150	72.00	25	75SA30VA

### SCREW ANCHOR



### VERSION: INSERT STAINLESS STEEL (AISI 316)

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
36	200	128.00	1	75K360200VA
42	230	282.00	1	75K420230VA
52	320	366.00	1	75K520320VA

### COMPACT ANCHOR - SHORT



### VERSION: STAINLESS STEEL, LONG VERSION

Type (RD)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	50	5.80	200	77FL12LVA
16	70	16.00	100	77FL16LVA
20	80	31.50	50	77FL20LVA
24	100	46.00	50	77FL24LVA
30	120	90.00	25	77FL30LVA
36	140	149.00	1	77FL36LVA
42	160	231.00	1	77FL42LVA
52	200	394.00	1	77FL52LVA

### CAPPED END ANCHOR



Feature: additional reinforcement as straight version (no bending required anymore)

### VERSION: STAINLESS STEEL

Type (RD)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	30	4.50	200	77FL12VA
16	35	11.00	100	77FL16VA
20	47	24.00	50	77FL20VA
24	54	33.00	50	77FL24VA
30	72	68.00	25	77FL30VA
36	84	113.00	10	77FL36VA
42	98	178.00	10	77FL42VA
52	117	288.00	1	77FL52VA

### CAPPED END ANCHOR



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - Threaded transport anchors

### VERSION: SOCKET BRIGHT ZINC PLATED

Type (RD)	Length (mm)	offset (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	520	50	47.50	1	67M16GK
20	550	50	101.30	1	67M20GK
24	650	50	117.00	1	67M24GK
30	750	60	221.00	1	67M30GK
36	950	60	409.00	1	67M36GK
42	1100	70	669.00	1	67M42GK
52	1480	90	1201.00	1	67M52GK

### THREADED TRANSPORT ANCHOR - OFFSET



## Plug-on plate for KHN system – Screwing was yesterday, plugging-in is today

Instead of screwing Threaded transport anchors on a Recess former as usual, there is a new plate ready for a fast plug-on.

Install the new plastic plate on the formwork (nailing or gluing), plug the transport anchor on the cone and, if necessary, fix it to the reinforcement – it couldn't be easier.

In particular for the fixation of Threaded anchors with offset this Plug-on plate is suitable. This Plug-on plate is a small but very useful addition to the wide KHN system centred around the powerful lifting device Lifty (page 30).



### VERSION: ELECTRO-GALVANISED

Type (RD)	Lv (1) (mm)	PU (pc.)	Ref. no.
12	On request (min. 40)	1	67AVL12...
16	On request (min. 55)	1	67AVL16...
20	On request (min. 65)	1	67AVL20...
24	On request (min. 75)	1	67AVL24...
30	On request (min. 105)	1	67AVL30...
36	On request (min. 110)	1	67AVL36...
42	On request (min. 135)	1	67AVL42...
52	On request (min. 180)	1	67AVL52...

(1) The elongation length Lv (please refer to Installation and Application Instruction) has to be added to the ref. no.

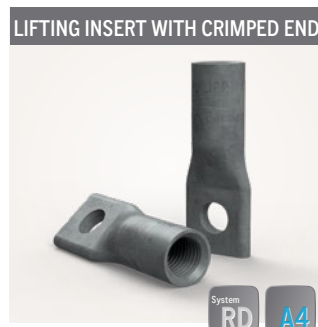
### THREADED TRANSPORT ANCHOR ELONGATION



## System RD - Threaded transport anchors

### More Threaded transport anchors for your requirements

In addition to the portfolio, we also offer further products for a wide variety of applications. Contact us and we will advise you in detail.



# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - Lifting devices

Transport

### LOAD DIRECTION: 0 - 45°, COLOUR-CODED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	155	6.00	10	69RD12
16	165	13.00	10	69RD16
20	215	26.00	10	69RD20
24	255	46.00	5	69RD24
30	300	88.00	5	69RD30
36	360	145.00	1	69RD36
42	425	216.00	1	69RD42
52	530	450.00	1	69RD52

On request also possible with M-thread

Connection

### LOAD DIRECTION: 0 - 90°, COLOUR-CODED

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	155	7.20	10	69QRD12
16	165	15.60	10	69QRD16
20	215	31.20	10	69QRD20
24	255	55.20	5	69QRD24
30	300	105.60	5	69QRD30
36	360	174.00	1	69QRD36

On request also possible with M-thread

Facade

### VERSION: BALL BEARING, FOR ALL LOAD DIRECTIONS, COLOUR-CODED

Type (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	125	0.50	1	62WS12
16	151	0.66	1	62WS16
20	158	1.54	1	62WS20
24	187	2.10	1	62WS24
30	219	3.73	1	62WS30
36	255	6.29	1	62WS36
42	256	7.12	1	62WS42
52	344	15.30	1	62WS52

On request also possible with M-thread

Fixing

### VERSION: BALL BEARING, FOR ALL LOAD DIRECTIONS, COLOUR-CODED

Type (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	125	0.64	1	62WS12KH
16	151	0.88	1	62WS16KH
20	158	1.91	1	62WS20KH
24	186	2.52	1	62WS24KH
30	219	4.28	1	62WS30KH
36	255	7.03	1	62WS36KH
42	256	8.30	1	62WS42KH
52	344	16.35	1	62WS52KH

Bearing systems

Earthing

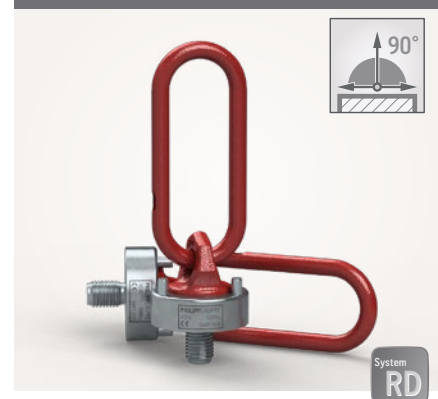
### LIFTING LOOP WITH THREADED END



### LIFTING LOOP PLUS (0 - 90°)



### WIRBELSTAR (0 - 90°)



### WIRBELSTAR KH (0 - 90°)



## System RD - Lifting devices / accessories

### LOAD DIRECTION: 0 - 90°, COLOUR-CODED

Type (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	150	0.51	1	62LI12
16	150	0.53	1	62LI16
20	162	1.05	1	62LI20
24	162	1.10	1	62LI24
30	177	2.33	1	62LI30
36	177	2.50	1	62LI36
42	218	4.75	1	62LI42
52	218	5.30	1	62LI52

On request also possible with M-thread

### LIFTY (0 - 90°)



### LOAD DIRECTION: 0 - 90°, COLOUR-CODED

Type (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	310	0.38	1	62LI12DS
16	345	0.38	1	62LI16DS
20	410	0.96	1	62LI20DS
24	435	1.04	1	62LI24DS
30	490	2.72	1	62LI30DS
36	650	4.36	1	62LI36DS
42	700	10.50	1	62LI42DS
52	800	10.50	1	62LI52DS

On request also possible with M-thread

### LIFTY DS (0 - 90°)



### LOAD DIRECTION: 0 - 90°, COLOUR-CODED

Type (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	500	0.31	1	62LI12TEX
16	500	0.31	1	62LI16TEX
20	500	0.81	1	62LI20TEX
24	500	0.81	1	62LI24TEX
30	500	1.97	1	62LI30TEX
36	500	1.97	1	62LI36TEX

### LIFTY TEX (0 - 90°)



### Lifty TEX - the textile lifting device

The Lifty TEX is the powerful combination of the well-known Lifty lifting device and a high-performance textile round sling including protective sleeve.

Suitable for all load directions, the Lifty TEX is ideal for use with light to medium-weight concrete elements that need to be "protected" during hoisting (e.g. prefab stairs).

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - accessories (system KHN)

Transport

Connection

Facade

Fixing

Bearing systems

Earthing

### VERSION: PLASTIC, COLOUR-CODED, WITH CLIP

Type (M/RD)	Colour	PU (pc.)	Ref. no.
12	Pastel orange	100	74KR12CLIP
16	Flame red	100	74KR16CLIP
20	Pastel green	100	74KR20CLIP
24	Jet black	100	74KR24CLIP
30	Emerald green	100	74KR30CLIP
36	Light blue	100	74KR36CLIP
42	Silk grey	100	74KR42CLIP
52	Sulphur yellow	100	74KR52CLIP

### VERSION: PLASTIC, CONICAL, COLOUR-CODED

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Colour	PU (pc.)	Ref. no.
12	40	10	Pastel orange	100	72KHN12
12	55	10	Pastel orange	100	72KHN12-G (1)
16	40	10	Flame red	100	72KHN16
16	55	10	Flame red	100	72KHN16-G (1)
20	55	10	Pastel green	100	72KHN20
24	55	10	Jet black	100	72KHN24
30	70	10	Emerald green	100	72KHN30
36	70	10	Light blue	100	72KHN36
42	96	12	Silk grey	50	72KHN42
52	96	12	Sulphur yellow	50	72KHN52

(1) Cannot be combined with PHILIPP Lifty (page 29)

### VERSION: PLASTIC, CONICAL, LEFT-HAND THREAD, COLOUR-CODED

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Colour	PU (pc.)	Ref. no.
12	40	10	Pastel orange	100	72KHN120G
16	40	10	Flame red	100	72KHN160G
20	55	10	Pastel green	100	72KHN200G
24	55	10	Jet black	100	72KHN240G
30	70	10	Emerald green	100	72KHN300G
36	70	10	Light blue	100	72KHN360G
42	96	12	Silk grey	50	72KHN420G
52	96	12	Sulphur yellow	50	72KHN520G

### VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	7.36	1	72KHN12STK
16	40	10	8.07	1	72KHN16STK
20	55	10	17.69	1	72KHN20STK
24	55	10	19.03	1	72KHN24STK
30	70	10	36.81	1	72KHN30STK
36	70	10	45.57	1	72KHN36STK
42	96	12	94.38	1	72KHN42STK
52	96	12	132.43	1	72KHN52STK

### MARKING RING



### PLASTIC RECESS FORMER KHN

for Lifty



### PLASTIC RECESS FORMER KHN

for Lifty



### STEEL RECESS FORMER KHN

for Lifty



## System RD - accessories (system SZ15)

VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL						
Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Adhesion (kg)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	60	8.81	1	72MAXKHN12
16	40	10	60	9.85	1	72MAXKHN16
16	55	10	100	10.33	1	72MAXKHN16-G (1)
20	55	10	100	20.21	1	72MAXKHN20
24	55	10	100	22.33	1	72MAXKHN24
30	70	10	180	36.92	1	72MAXKHN30
36	70	10	180	41.74	1	72MAXKHN36
42	96	12	180	85.92	1	72MAXKHN42
52	96	12	180	99.00	1	72MAXKHN52

(1) Cannot be combined with PHILIPP Lifty (page 29)

VERSION: PLASTIC, CONICAL, 15° DIAGONAL TENSION					
Type (M/RD)	Plate width (mm)	Plate height (mm)	Colour	PU (pc.)	Ref. no.
16	38.5	13.5	Flame red	100	72KHN16-SZ15
20	55.5	18.0	Pastel green	100	72KHN20-SZ15
24	55.5	18.0	Jet black	100	72KHN24-SZ15
30	72.5	22.5	Emerald green	100	72KHN30-SZ15
36	72.5	22.5	Light blue	100	72KHN36-SZ15
42	99.5	29.5	Silk grey	50	72KHN42-SZ15
52	99.5	29.5	Sulphur yellow	50	72KHN52-SZ15

Can be used only with Threaded transport anchor - straight tail

VERSION: GALVANISED STEEL, CONICAL, 15° DIAGONAL TENSION					
Type (M/RD)	Plate width (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	38.5	13.5	7.40	1	72KHN16-SZ15ST
20	55.5	18.0	19.30	1	72KHN20-SZ15ST
24	55.5	18.0	51.50	1	72KHN24-SZ15ST
30	72.5	22.5	44.30	1	72KHN30-SZ15ST
36	72.5	22.5	50.30	1	72KHN36-SZ15ST
42	99.5	29.5	112.00	1	72KHN42-SZ15ST
52	99.5	29.5	129.30	1	72KHN52-SZ15ST

Can be used only with Threaded transport anchor - straight tail

On request also available with magnet.



# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - accessories (system KHN)

Transport

### VERSION: FIBRATED CONCRETE, FOR GLUING IN

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12 / 16	40	10	3.50	100	72ASKHN040FB
16-G/20 / 24	55	10	4.25	50	72ASKHN055FB
30 / 36	70	10	7.40	50	72ASKHN070FB
42 / 52	96	12	19.68	25	72ASKHN096FB

Connection

### VERSION: PLASTIC, FOR PUSHING IN

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12 / 16	40	10	0.55	100	72ASKHN040
16-G/20 / 24	55	10	1.18	100	72ASKHN055
30 / 36	70	10	2.10	50	72ASKHN070
42 / 52	96	12	5.45	25	72ASKHN096

Facade

### VERSION: STAINLESS STEEL, WITH SLOT

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	7.80	1	72ASKHN12VA-S
16	40	10	8.30	1	72ASKHN16VA-S
16	55	10	16.10	1	72ASKHN16-GVA-S
20	55	10	17.50	1	72ASKHN20VA-S
24	55	10	18.40	1	72ASKHN24VA-S
30	70	10	32.60	1	72ASKHN30VA-S
36	70	10	35.60	1	72ASKHN36VA-S
42	96	12	77.00	1	72ASKHN42VA-S
52	96	12	93.30	1	72ASKHN52VA-S

Also available with hexagon socket.

Fixing

### KEY FOR PLASTIC RECESS FORMER KHN (72KHN ..)

Type	Weight (kg/pc.)	PU (pc.)	Ref. no.
12 - 52	0.39	1	72KHNS

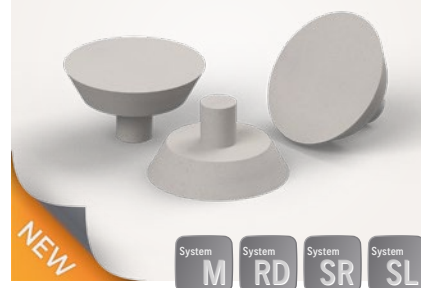
Suitable for types 12-52

Bearing systems

Earthing

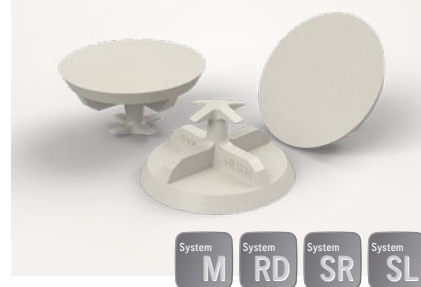
### SEALING CAP KHN (CONCRETE)

for Lifty



### PLASTIC SEALING CAP KHN

for Lifty



### STAINLESS STEEL SEALING CAP KHN

for Lifty



### KEY





## System RD - accessories (system WS)

## VERSION: PLASTIC, CONICAL, COLOUR-CODED

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Colour	PU (pc.)	Ref. no.
36	105	12	Light blue	1	72KHN36WS
42	115	15	Silk grey	1	72KHN42WS
52	135	15	Sulphur yellow	1	72KHN52WS

## PLASTIC RECESS FORMER WS

for Wirbelstar



## VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	51	10	14.00	1	72SAT12K
16	66	10	21.00	1	72SAT16K
20	80	10	34.00	1	72SAT20K
24	78	12	45.00	1	72SAT24K
30	94	12	72.00	1	72SAT30K
36	105	12	93.00	1	72SAT36K
42	115	15	142.00	1	72SAT42K
52	135	15	220.00	1	72SAT52K

## STEEL RECESS FORMER WS

for Wirbelstar



## VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	51	12	14.00	1	72SATM12K
16	66	15	26.00	1	72SATM16K
20	80	15	41.00	1	72SATM20K
24	78	15	47.00	1	72SATM24K
30	94	15	77.00	1	72SATM30K
36	105	15	102.00	1	72SATM36K
42	115	15	136.00	1	72SATM42K
52	135	15	215.00	1	72SATM52K

## MAGNETIC RECESS FORMER WS

for Wirbelstar



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - accessories (system KH)

Transport

### VERSION: PLASTIC, CONICAL, COLOUR-CODED

Type (M/RD)	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	27	0.47	100	72KH12
16	27	0.58	100	72KH16
20	27	0.73	100	72KH20
24	27	0.89	100	72KH24

Connection

### VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL

Type (M/RD)	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	27	7.00	1	72KH12STAHL
16	27	9.00	1	72KH16STAHL
20	27	9.00	1	72KH20STAHL
24	27	11.00	1	72KH24STAHL
30	48	27.00	1	72KH30STAHL
36	48	31.00	1	72KH36STAHL
42	48	39.50	1	72KH42STAHL
52	65	89.50	1	72KH52STAHL

Facade

### VERSION: STEEL, CONICAL

Type (M/RD)	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	27	5.70	1	72MAXKH12ST
16	27	6.90	1	72MAXKH16ST
20	27	8.30	1	72MAXKH20ST
24	27	10.00	1	72MAXKH24ST
30	48	28.00	1	72MAXKH30ST
36	48	31.10	1	72MAXKH36ST
42	48	44.20	1	72MAXKH42ST
52	65	89.70	1	72MAXKH52ST

Fixing

Bearing systems

Earthing

### PLASTIC RETAINING CAP KH



### STEEL RETAINING CAP KH



### MAGNETIC RETAINING CAP KH



## System RD - accessories (system KH)

### VERSION: FIBRATED CONCRETE, FOR GLUING IN

Type	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12 - 24	27	1.40	100	72AS01224FB
30 - 42	48	6.50	50	72AS03042FB

### VERSION: PLASTIC, CONCRETE GREY, SURFACE-FLUSH

Type	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12 - 24	27	0.30	100	72AS01224PLAN
30 - 42	48	0.80	100	72AS03042PLAN
52	65	1.80	100	72AS052PLAN

For retaining caps 72KH., 72KH..STAHL and 72MAXKH..ST

### VERSION: STAINLESS STEEL

Type (M/RD)	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	27	10.00	1	72AS012VA-S
16	27	10.20	1	72AS016VA-S
18	27	10.30	1	72AS018VA-S
20	27	10.40	1	72AS020VA-S
24	27	10.50	1	72AS024VA-S
30	48	35.00	1	72AS030VA-S
36	48	40.00	1	72AS036VA-S
42	48	42.00	1	72AS042VA-S
52	65	77.00	1	72AS052VA-S

### VERSION: STAINLESS STEEL, THREAD INDEPENDENT

Type	Outer Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12 - 24	27	4.30	1	72AS01224VA
30 - 42	48	17.20	1	72AS03042VA
52	65	39.70	1	72AS052VA

### SEALING CAP KH (CONCRETE)



### PLASTIC SEALING CAP KH



### STAINLESS STEEL SEALING CAP KH



### STAINLESS STEEL SEALING CAP KH



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - accessories (system KH)

### KEYS FOR RETAINING CAP KH (72KH ..)

Type	Weight (kg/pc.)	PU (pc.)	Ref. no.
12 - 24	0.34	1	67WS

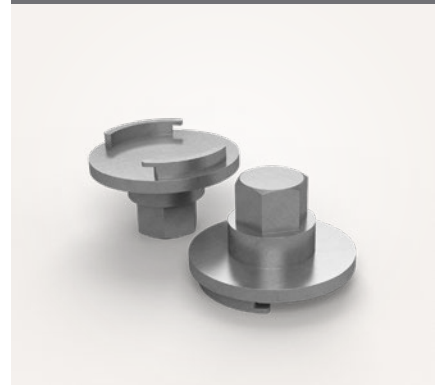
### KEY



### KEY FOR MAGNETIC RETAINING CAP KH (72MAXKH .. ST)

Type	Weight (kg/pc.)	PU (pc.)	Ref. no.
30 - 52	0.22	1	72MAXKHST-S3052

### KEY



Transport

Connection

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Fixing

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## System RD - Accessories

## VERSION: THREADED ADAPTER WELDED RESP. GLUED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Adhesion (kg)	PU (pc.)	Ref. no.
12	54	15	105	1	72MAX12SI
16	54	15	105	1	72MAX16SI
20	54	15	105	1	72MAX20SI
24	54	15	105	1	72MAX24SI
30	54	15	105	1	72MAX30SI
36	54	15	105	1	72MAX36SI

## VERSION: THREADED ADAPTER WELDED RESP. GLUED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Adhesion (kg)	PU (pc.)	Ref. no.
12	68	15	190	1	72MAX12SGI
16	68	15	190	1	72MAX16SGI
20	68	15	190	1	72MAX20SGI
24	68	15	190	1	72MAX24SGI
30	68	15	190	1	72MAX30SGI
36	68	15	190	1	72MAX36SGI

## VERSION: PLASTIC, GREY, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	50	5.0	0.70	500	72KFM12
16	50	5.0	0.75	500	72KFM16
20	50	5.0	0.95	500	72KFM20
24	50	5.0	1.00	500	72KFM24

## MAGNETIC FIXATION R/G 105



## MAGNETIC FIXATION R/G 190

for higher loads



## FIXING DISC FOR GLUING



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## System RD - Accessory

Transport

### VERSION: PLASTIC, GREY

Type (M/RD)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	0.06	100	72ASS12
16	0.14	100	72ASS16
20	0.29	100	72ASS20
24	0.38	100	72ASS24
30	0.53	100	72ASS30
36	0.73	100	72ASS36
42	0.96	100	72ASS42
52	1.33	100	72ASS52

Connection

### VERSION: PLASTIC, TRANSPARENT

Type (M/RD)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	0.07	100	72KAS12
16	0.09	100	72KAS16
20	0.14	100	72KAS20
24	0.21	100	72KAS24
30	0.40	100	72KAS30
36	0.40	100	72KAS36
42	0.63	100	72KAS42
52	0.69	100	72KAS52

Facade

### VERSION: HARDENED, FOR CLEANING DIRTY THREADS

Type (M/RD)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	4.00	1	61NAS12
16	10.00	1	61NAS16
20	18.00	1	61NAS20
24	33.00	1	61NAS24
30	63.00	1	61NAS30
36	103.00	1	61NAS36
42	146.00	1	61NAS42
52	289.00	1	61NAS52

Fixing

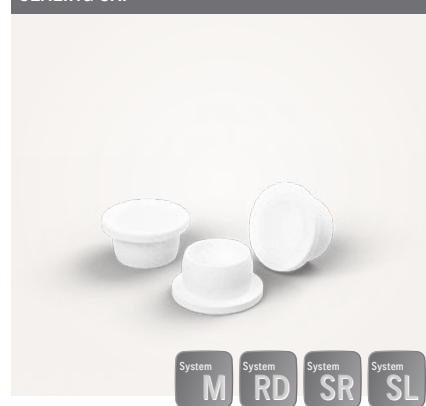
Bearing systems

Earthing

### OUTSIDE RETAINING CAP



### SEALING CAP



### CHASER SCREW



## Power System SR (increased load capacities)

VERSION: STRAIGHT, INSERT BRIGHT ZINC PLATED					
Type (SR)	Thread (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	12	300	20.00	1	67M12SR
16	16	455	44.00	1	67M16SR
20	20	480	115.00	1	67M20SR
24	24	580	153.00	1	67M24SR
30	30	750	320.00	1	67M30SR
36	36	800	425.00	1	67M36SR
42	42	1100	695.00	1	67M42SR
52	52	1200	1296.00	1	67M52SR

VERSION: SOCKET BRIGHT ZINC PLATED					
Type (SR)	Thread (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	12	130	10.00	1	67K120130SR
16	16	200	25.00	1	67K160200SR
20	20	258	65.00	1	67K200258SR
24	24	325	100.00	1	67K240325SR
30	30	400	200.00	1	67K300400SR
36	36	475	285.00	1	67K360475SR
42	42	550	456.00	1	67K420550SR

VERSION: SOCKET BRIGHT ZINC PLATED					
Type (SR)	Thread (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	16	90	18.00	1	67K160090SR
20	20	125	40.00	1	67K200125SR

### THREADED TRANSPORT ANCHOR SR



### COMPACT ANCHOR SR



### COMPACT ANCHOR SR



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## Power System SR (increased load capacities)

### VERSION: ELECTRO-GALVANISED

Type (SR)	Thread (RD)	Lv (l) (mm)	PU (pc.)	Ref. no.
12	12	On request (min. 40)	1	67AVLSR12...
16	16	On request (min. 55)	1	67AVLSR16...
20	20	On request (min. 65)	1	67AVLSR20...
24	24	On request (min. 75)	1	67AVLSR24...
30	30	On request (min. 105)	1	67AVLSR30...
36	36	On request (min. 110)	1	67AVLSR36...
42	42	On request (min. 135)	1	67AVLSR42...
52	52	On request (min. 180)	1	67AVLSR52...

(1) The elongation length Lv (please refer to the Installation and Application Instruction) has to be added to the ref. no.

### LOAD DIRECTION: 0 - 90°, COLOUR-CODED

Type (SR)	Thread (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	12	150	0.51	1	62LISR12
16	16	150	0.53	1	62LISR16
20	20	162	1.05	1	62LISR20
24	24	162	1.10	1	62LISR24
30	30	177	2.33	1	62LISR30
36	36	177	2.50	1	62LISR36
42	42	218	4.75	1	62LISR42
52	52	218	5.30	1	62LISR52

### LOAD DIRECTION: 0 - 90°, LEFT-HAND THREAD, COLOUR-CODED

Type (SR)	Thread (RD)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
12	12	300	0.38	1	62LISR12DS
16	16	390	1.12	1	62LISR16DS
20	20	510	2.22	1	62LISR20DS
24	24	550	2.72	1	62LISR24DS
30	30	700	5.60	1	62LISR30DS
36	36	760	7.22	1	62LISR36DS
42	42	860	10.5	1	62LISR42DS

### THREADED TRANSPORT ANCHOR ELONGATION SR



### LIFTY SR (0 - 90°)



### LIFTY SR DS (0 - 90°)





## Power System SR (increased load capacities)

VERSION: PLASTIC, COLOUR-CODED, WITH CLIP			
Type (SR)	Colour	PU (pc.)	Ref. no.
12	Flame red	100	74KR12CLIPSR
16	Silk grey	100	74KR16CLIPSR
20	Emerald green	100	74KR20CLIPSR
24	Light blue	100	74KR24CLIPSR
30	Claret violet	100	74KR30CLIPSR
36	Pastel orange	100	74KR36CLIPSR
42	Clay brown	100	74KR42CLIPSR
52	Jet black	100	74KR52CLIPSR

VERSION: PLASTIC, CONICAL, COLOUR-CODED					
Type (SR)	Thread (M)	Outer Ø (mm)	Colour	PU (pc.)	Ref. no.
12	12	40	Flame red	100	72KHN12SR
16	16	40	Silk grey	100	72KHN16SR
20	20	55	Emerald green	100	72KHN20SR
24	24	55	Light blue	100	72KHN24SR
30	30	70	Claret violet	100	72KHN30SR
36	36	70	Pastel orange	100	72KHN36SR
42	42	96	Clay brown	100	72KHN42SR
52	52	96	Jet black	100	72KHN52SR

VERSION: PLASTIC, CONICAL, 15° DIAGONAL TENSION					
Type (SR)	Plate width (mm)	Plate height (mm)	Colour	PU (pc.)	Ref. no.
16	38.5	13.5	Silk grey	100	72KHN16SR-SZ15
20	55.5	18.0	Emerald green	100	72KHN20SR-SZ15
24	55.5	18.0	Light blue	100	72KHN24SR-SZ15
30	72.5	22.5	Claret violet	100	72KHN30SR-SZ15
36	72.5	22.5	Pastel orange	100	72KHN36SR-SZ15
42	99.5	29.5	Clay brown	50	72KHN42SR-SZ15
52	99.5	29.5	Jet black	50	72KHN52SR-SZ15

### MARKING RING SR



### PLASTIC RECESS FORMER KHN SR



### PLASTIC RECESS FORMER SR SZ15

for Lifty



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# THREADED TRANSPORT ANCHOR SYSTEMS

## Power System SL (increased load capacities)

Transport

### VERSION: STRAIGHT, INSERT BRIGHT ZINC PLATED, LEFT-HAND THREAD

Type (SL)	Thread (M-LH)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	16	455	44.00	1	67M16SL
24	24	580	153.00	1	67M24SL
30	30	750	320.00	1	67M30SL
42	42	1100	695.00	1	67M42SL
52	52	1200	1296.00	1	67M52SL

### THREADED TRANSPORT ANCHOR SL



Connection

### VERSION: BRIGHT ZINC PLATED, LEFT-HAND THREAD

Type (SL)	Thread (M-LH)	Lv (1) (mm)	PU (pc.)	Ref. no.
16	16	On request (min. 55)	1	67AVL16..SL
24	24	On request (min. 85)	1	67AVL24...SL
30	30	On request (min. 105)	1	67AVL30...SL
42	42	On request (min. 135)	1	67AVL42...SL
52	52	On request (min. 175)	1	67AVL52...SL

(1) The elongation length Lv (please refer to the Installation and Application Instruction) has to be added to the ref. no.

### THREADED TRANSPORT ANCHOR ELONGATION SL



Facade

### LOAD DIRECTION: 0 - 90°, LEFT-HAND THREAD, COLOUR-CODED

Type (SL)	Thread (M-LH)	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
16	16	150	0.53	1	62LISL16
24	24	162	1.10	1	62LISL24
30	30	177	2.33	1	62LISL30
42	42	218	4.75	1	62LISL42
52	52	218	5.30	1	62LISL52

### LIFTY SL (0 - 90°)



Fixing

Bearing systems

Earthing

## Power System SL

### VERSION: PLASTIC, COLOUR-CODED, WITH CLIP

Type (SL)	Thread (M-LH)	Colour	PU (pc.)	Ref. no.
16	16	Signal blue	100	74KR16CLIPSL
24	24	Signal yellow	100	74KR24CLIPSL
30	30	Clay brown	100	74KR30CLIPSL
42	42	Salmon orange	100	74KR42CLIPSL
52	52	Emerald green	100	74KR52CLIPSL

### VERSION: PLASTIC, CONICAL, LEFT-HAND THREAD, COLOUR-CODED

Type (SL)	Thread (M-LH)	Outer Ø (mm)	Colour	PU (pc.)	Ref. no.
16	16	40	Signal blue	100	72KHN16SL
24	24	55	Signal yellow	100	72KHN24SL
30	30	70	Clay brown	100	72KHN30SL
42	42	96	Salmon orange	100	72KHN42SL
52	52	96	Emerald green	100	72KHN52SL

### MARKING RING SL



### PLASTIC RECESS FORMER SL



Transport

Connection

Facade

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# THREADED TRANSPORT ANCHOR SYSTEMS

## Transport loop system

Transport

### CONSISTS OF:

TRANSPORT LOOP, TRANSPORT LOOP ANCHOR (RD THREAD),  
CONNECTION DEVICE (HEXAGONAL SCREW WITH M THREAD) GRADE 8.8

Type [TPS]	Length [mm]	Weight [kg/100 pcs.]	PU [pc.]	Ref. no.
16	280	79.00	1	67TPSS122000
24	310	172.00	1	67TPSS154000
30	390	343.00	1	67TPSS185200
36	525	434.00	1	67TPSS206300

Connection

### TRANSPORT LOOP SYSTEM



Facade

### CONSISTS OF:

TRANSPORT LOOP, CONNECTION DEVICE (HEXAGONAL SCREW WITH M THREAD) GRADE 8.8

Type [TPS]	Length [mm]	Weight [kg/100 pcs.]	PU [pc.]	Ref. no.
16	280	66.00	1	67TPS122000S
24	310	134.00	1	67TPS154000S
30	390	242.00	1	67TPS185200S
36	525	321.00	1	67TPS206300S

Fixing

### TRANSPORT LOOP



Bearing systems

Earthing

## Transport loop system

### VERSION: SOCKET BRIGHT ZINC PLATED

Type (TPS)	Thread (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	16	95	12.00	100	67TPSA16
24	24	110	38.00	50	67TPSA24
30	30	120	101.00	25	67TPSA30
36	36	84	113.00	10	71FL36

### TRANSPORT LOOP ANCHOR



### CONNECTION DEVICE (HEXAGONAL SCREW) GRADE 8.8

Type (TPS)	Thread (M)	Length (mm)	PU (pc.)	Ref. no.
16	16	30	1	670S1630
24	24	40	1	670S2440
30	30	60	1	670S3060
36	36	80	1	670S36080V

### FIXING SCREW



Transport

Connection

Facade

Fixing

Bearing systems

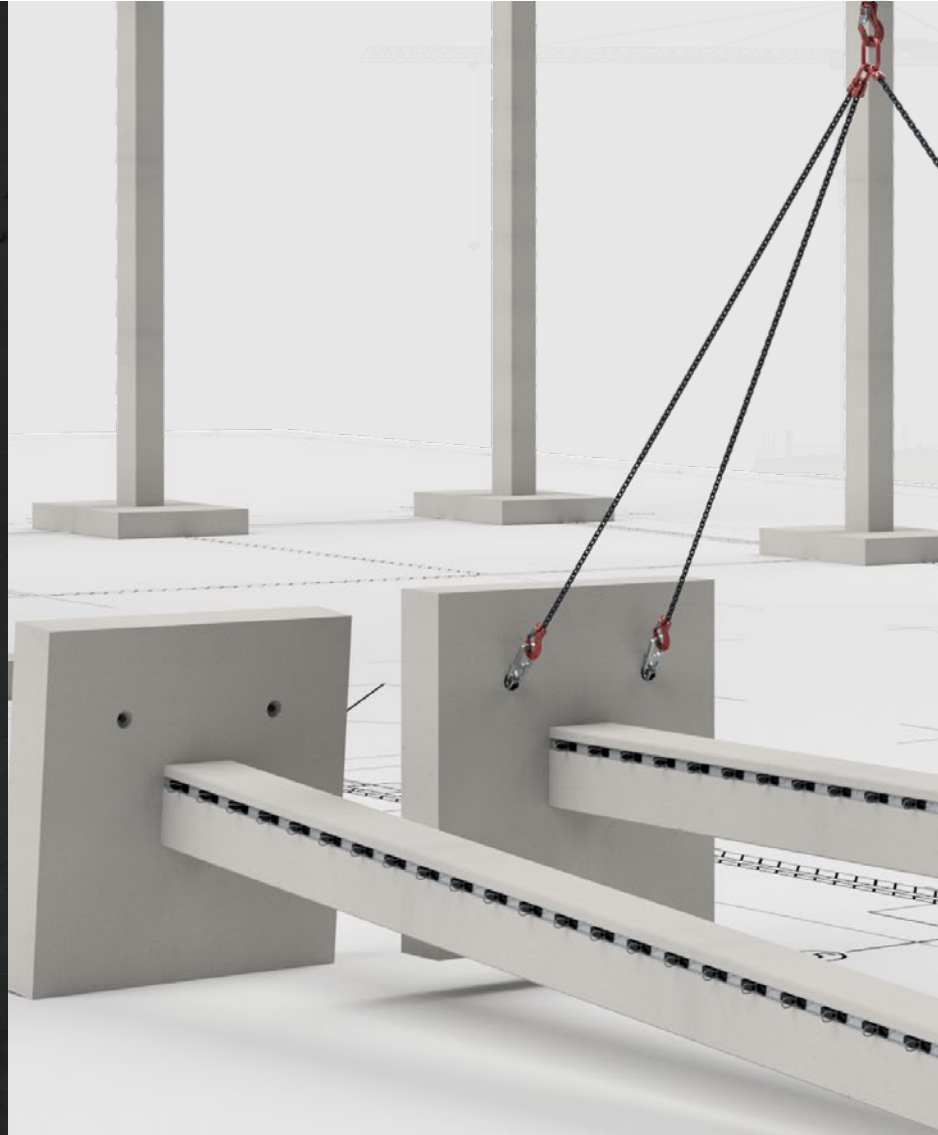
Earthing

## » SPHERICAL HEAD- TRANSPORT ANCHOR SYSTEM

Spherical head transport anchors have defined a standard for a long time, as both their geometry and handling are very simple (quick lift anchors). With the corresponding lifting device the un/coupling can be done very quick and lifting operations in all load directions are possible. They cover a wide range of applications, especially in wall-like elements and bar-shaped units as well as in slab-like elements and shafts, Spherical head transport anchors can show their strengths.

### Features and benefits compact

- » No parts projecting above the element's surface
- » Easy installation due to the rotation symmetric design
- » Quick un/coupling of the lifting device with the anchor
- » Lifting device suitable for all load directions (lateral, diagonal and axial tension)
- » Load bearing capacities up to 32 t
- » Robust, long-lasting lifting device
- » Spherical head transport anchor with offset, optimized for sandwich elements
- » Reinforcement optimized for effectivity and economy
- » Graded versions and bearing capacities for economical use

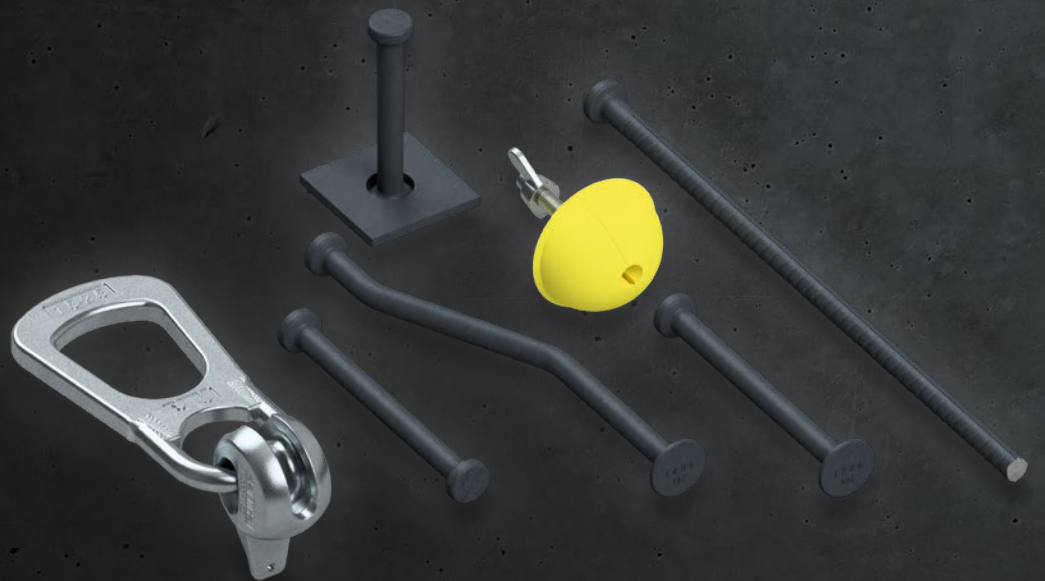


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# TRANSPORT AND MOUNTING - WITHOUT FAIL



# » SPHERICAL HEAD- TRANSPORT ANCHOR SYSTEM





# CONTENT

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# SPHERICAL HEAD TRANSPORT ANCHOR SYSTEMS

## Spherical head transport anchor

VERSION: BRIGHT				
Type (KK)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	50	5.00	300	81-013-050
1.3	65	6.00	300	81-013-065
1.3	85	7.00	200	81-013-085
1.3	120	10.00	100	81-013-120
1.3	240	17.00	100	81-013-240
2.5	45	12.00	200	81-025-045
2.5	55	13.00	200	81-025-055
2.5	65	13.00	200	81-025-065
2.5	85	16.00	100	81-025-085
2.5	100	18.00	100	81-025-100
2.5	120	20.00	100	81-025-120
2.5	140	23.00	100	81-025-140
2.5	170	26.00	100	81-025-170
2.5	280	40.00	50	81-025-280
4.0	75	28.00	50	81-040-075
4.0	100	33.00	50	81-040-100
4.0	120	37.00	50	81-040-120
4.0	150	43.00	50	81-040-150
4.0	170	46.00	50	81-040-170
4.0	210	54.00	50	81-040-210
4.0	240	61.00	25	81-040-240
4.0	340	81.00	20	81-040-340
4.0	420	110.00	20	81-040-420
5.0	55	28.00	50	81-050-055
5.0	65	31.00	50	81-050-065
5.0	75	33.00	50	81-050-075
5.0	85	34.00	50	81-050-085
5.0	95	38.00	50	81-050-095
5.0	110	42.00	50	81-050-110
5.0	120	44.00	50	81-050-120
5.0	140	50.00	50	81-050-140
5.0	160	55.00	50	81-050-160
5.0	180	59.00	50	81-050-180
5.0	240	75.00	25	81-050-240
5.0	340	99.00	20	81-050-340
5.0	480	135.00	1	81-050-480
7.5	85	62.00	25	81-075-085
7.5	95	64.00	25	81-075-095
7.5	100	67.00	25	81-075-100
7.5	120	71.00	25	81-075-120
7.5	140	78.00	25	81-075-140
7.5	165	89.00	25	81-075-165
7.5	200	102.00	20	81-075-200
7.5	300	136.00	20	81-075-300
7.5	540	221.00	1	81-075-540
7.5	680	273.00	1	81-075-680
10.0	115	91.00	20	81-100-115
10.0	120	93.00	20	81-100-120
10.0	135	100.00	20	81-100-135
10.0	150	107.00	20	81-100-150
10.0	170	119.00	20	81-100-170
10.0	200	131.00	20	81-100-200
10.0	220	142.00	20	81-100-220
10.0	250	155.00	20	81-100-250
10.0	340	201.00	10	81-100-340
10.0	680	365.00	1	81-100-680

Available also in electro-galvanised b.z.p. or hot-dip galvanised h.d.g. version.

SPHERICAL HEAD TRANSPORT ANCHOR



## Spherical head transport anchor

VERSION: BRIGHT					
Type (KK)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.	
15.0	165	201.00	1	81-150-165	
15.0	200	228.00	1	81-150-200	
15.0	300	299.00	1	81-150-300	
15.0	400	369.00	1	81-150-400	
15.0	840	700.00	1	81-150-840	
20.0	165	259.00	1	81-200-165	
20.0	200	280.00	1	81-200-200	
20.0	250	322.00	1	81-200-250	
20.0	340	402.00	1	81-200-340	
20.0	500	548.00	1	81-200-500	
20.0	1000	1092.00	1	81-200-1000	
32.0	200	586.00	1	81-320-200	
32.0	280	708.00	1	81-320-280	
32.0	320	740.00	1	81-320-320	
32.0	500	1036.00	1	81-320-500	
32.0	700	1330.00	1	81-320-700	
32.0	1200	2134.00	1	81-320-1200	

Available also in electro-galvanised b.z.p. or hot-dip galvanised h.d.g. version.

VERSION: WITH OFFSET, BLACK STEEL					
Type KK	Length (mm)	offset (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	227	50	17.00	100	81-013-227GK
2.5	268	50	41.00	50	81-025-268GK
4.0	406	60	97.00	1	81-040-406GK
5.0	466	60	134.00	1	81-050-466GK
7.5	664	70	272.00	1	81-075-664GK
10.0	664	70	364.00	1	81-100-664GK
15.0	825	80	686.00	1	81-150-825GK
20.0	986	80	997.00	1	81-200-986GK

VERSION: STRAIGHT, BLACK STEEL					
Type (KK)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.	
2.5	400	51.00	1	81-025-400ST	
2.5	520	66.00	1	81-025-520ST	
4.0	510	108.00	1	81-040-510ST	
4.0	720	150.00	1	81-040-720ST	
4.0	1150	226.00	1	81-040-1150ST	
5.0	580	151.00	1	81-050-580ST	
5.0	900	230.00	1	81-050-900ST	
7.5	750	265.00	1	81-075-750ST	
7.5	1150	419.00	1	81-075-1150ST	
10.0	870	442.00	1	81-100-870ST	
10.0	1300	650.00	1	81-100-1300ST	
15.0	1080	940.00	1	81-150-1080ST	
15.0	1550	1280.00	1	81-150-1550ST	

SPHERICAL HEAD TRANSPORT ANCHOR



SPHERICAL HEAD TRANSPORT ANCHOR



SPHERICAL HEAD ROD ANCHOR



Transport

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# SPHERICAL HEAD TRANSPORT ANCHOR SYSTEMS

## Spherical head transport anchor / lifting devices

### VERSION: BRIGHT, SPECIAL VERSION

Type (KK)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	65	8.00	1	81-013-065MA
1.3	85	8.00	1	81-013-085MA
2.5	65	13.00	1	81-025-065MA
2.5	85	16.00	1	81-025-085MA
2.5	120	21.00	1	81-025-120MA

### SPHERICAL HEAD TRANSPORT ANCHOR



### VERSION: BRIGHT

Type (KK)	Length (mm)	Plate (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
2.5	55	70×70×6	32.10	1	81-025-055FL
2.5	120	70×70×6	40.00	1	81-025-120FL
5.0	55	90×90×8	71.30	1	81-050-055FL
5.0	65	90×90×8	73.70	1	81-050-065FL
5.0	110	90×90×8	84.80	1	81-050-110FL
10.0	115	90×90×10	137.80	1	81-100-115FL

### SPHERICAL HEAD FLAT STEEL ANCHOR



### VERSION: BRIGHT, DOUBLE-HEAD

Type (KK)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
10.0	340	1.90	1	81-100-340D
15.0	400	3.69	1	81-150-400D
20.0	500	5.50	1	81-200-500D
32.0	700	12.74	1	81-320-700D

### SPHERICAL HEAD TRANSPORT ANCHOR



### VERSION: ELECTRO-GALVANISED

Type (KK)	Weight (kg/pc.)	PU (pc.)	Ref. no.
1.3	0.85	1	80-HKD-013
2.5	1.60	1	80-HKD-025
5.0	3.34	1	80-HKD-050
10.0	9.34	1	80-HKD-100
20.0	22.70	1	80-HKD-200
32.0	43.50	1	80-HKD-320

### SPHERICAL HEAD LIFTING CLUTCH



## Accessories

### VERSION: PVC, COMPLETE WITH STEEL PARTS

Type (KK)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	9.00	1	83-AKK-013
2.5	18.00	1	83-AKK-025
5.0	29.00	1	83-AKK-050
7.5	53.00	1	83-AKK-075
10.0	55.00	1	83-AKK-100
15.0	136.00	1	83-AKK-150
20.0	136.00	1	83-AKK-200
32.0	360.00	1	83-AKK-320

### RECESS FORMER



### VERSION: PVC, WITHOUT STEEL PARTS

Type (KK)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	9.00	1	83-AKO-013
2.5	11.00	1	83-AKO-025
5.0	19.00	1	83-AKO-050
7.5	38.00	1	83-AKO-075
10.0	38.00	1	83-AKO-100
15.0	109.00	1	83-AKO-150
20.0	109.00	1	83-AKO-200
32.0	310.00	1	83-AKO-320

### RECESS FORMER



### VERSION: STEEL

Type (KK)	Thread (M)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	8	1.00	1	83-SIG-013
2.5	10	1.80	1	83-SIG-025
4.0 / 5.0	10	2.60	1	83-SIG-050
7.5 / 10.0	12	3.90	1	83-SIG-100
15.0 / 20.0	12	6.30	1	83-SIG-200

### STAMPED PART WITH INTERNAL THREAD



### VERSION: STEEL

Type (KK)	Thread (M)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	8	4.00	1	83-SGS-013
2.5	10	9.00	1	83-SGS-025
4.0 / 5.0	10	10.00	1	83-SGS-050
7.5 / 10.0	12	17.00	1	83-SGS-100
15.0 / 20.0	12	23.00	1	83-SGS-200

### STAMPED PART WITH THREADED ROD



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# SPHERICAL HEAD TRANSPORT ANCHOR SYSTEMS

## Accessories

Transport

VERSION: STEEL				
Type (KK)	Thread (M)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	8	39.00	1	83-AKS-013
2.5	12	69.00	1	83-AKS-025
5.0	12	140.00	1	83-AKS-050
7.5 / 10.0	12	276.00	1	83-AKS-100

### STEEL RECESS FORMER



Connection

VERSION: RUBBER				
Type (KK)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.	
1.3	0.40	1	83-GMS-013	
2.5	0.90	1	83-GMS-025	
5.0	1.40	1	83-GMS-050	
7.5	2.20	1	83-GMS-075	
10.0	2.20	1	83-GMS-100	

### RUBBER RING

for Steel recess former (83-AKS- ... )



Facade

For 83-AKS-... (Steel recess former)

Fixing

VERSION: STEEL, MAGNETIC				
Type (KK)	Thread (M)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	8	40.00	1	83-AKM-013
2.5	10	64.00	1	83-AKM-025
5.0	10	132.00	1	83-AKM-050
7.5 / 10.0	10	269.00	1	83-AKM-100

### MAGNETIC RECESS FORMER



Bearing systems

VERSION: RUBBER				
Type (KK)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.	
1.3	0.40	1	83-GMS-013M	
2.5	0.90	1	83-GMS-025M	
5.0	1.40	1	83-GMS-050M	
7.5	2.20	1	83-GMS-075M	
10.0	2.20	1	83-GMS-100M	

### RUBBER RING

for Magnetic recess former (83-AKM- ... )



Earthing

For 83-AKM-... (Magnetic recess former)

## Accessories

VERSION: STEEL (HINGED)				
Type (KK)	Thread (M)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.3	8	36.00	1	83-AKA-013
2.5	10	67.00	1	83-AKA-025
5.0	10	104.00	1	83-AKA-050
10.0	12.0	290.00	1	83-AKA-100

CHECK GAUGE SPHERICAL HEAD LIFTING CLUTCH KK1.3 - KK32.0				
Type (KK)	Weight (kg/pc.)	PU (pc.)	Ref. no.	
1.3 - 32.0	0.70	1	80PL-SET	

### RECESS FORMER



### CHECK GAUGE

for Spherical head lifting clutch (80-HKD- ...)



Transport

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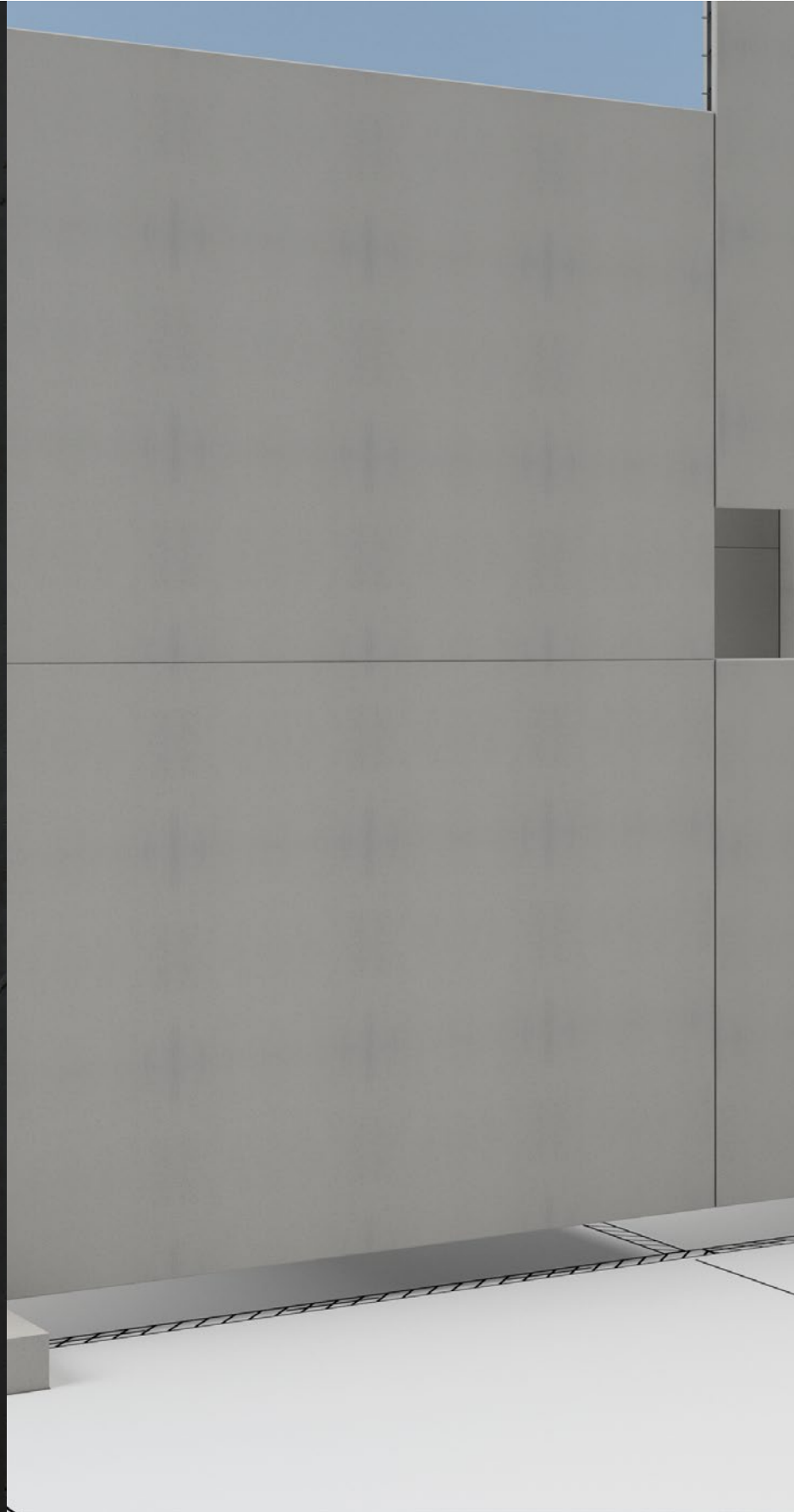
Earthing

## » HOLE ANCHOR SYSTEM

The Hole anchor system is also one of the well-established transport anchor systems and basically consists of the anchors based on flat steel and the corresponding lifting device, the Ring clutch. Usually the shape of the anchor or anchor foot reflects the different application possibilities. However, the anchor head has always a hole in which the Ring clutch fits into it perfectly. Anchors and Ring clutches allow lifting operations in all load directions.

### Features and benefits compact

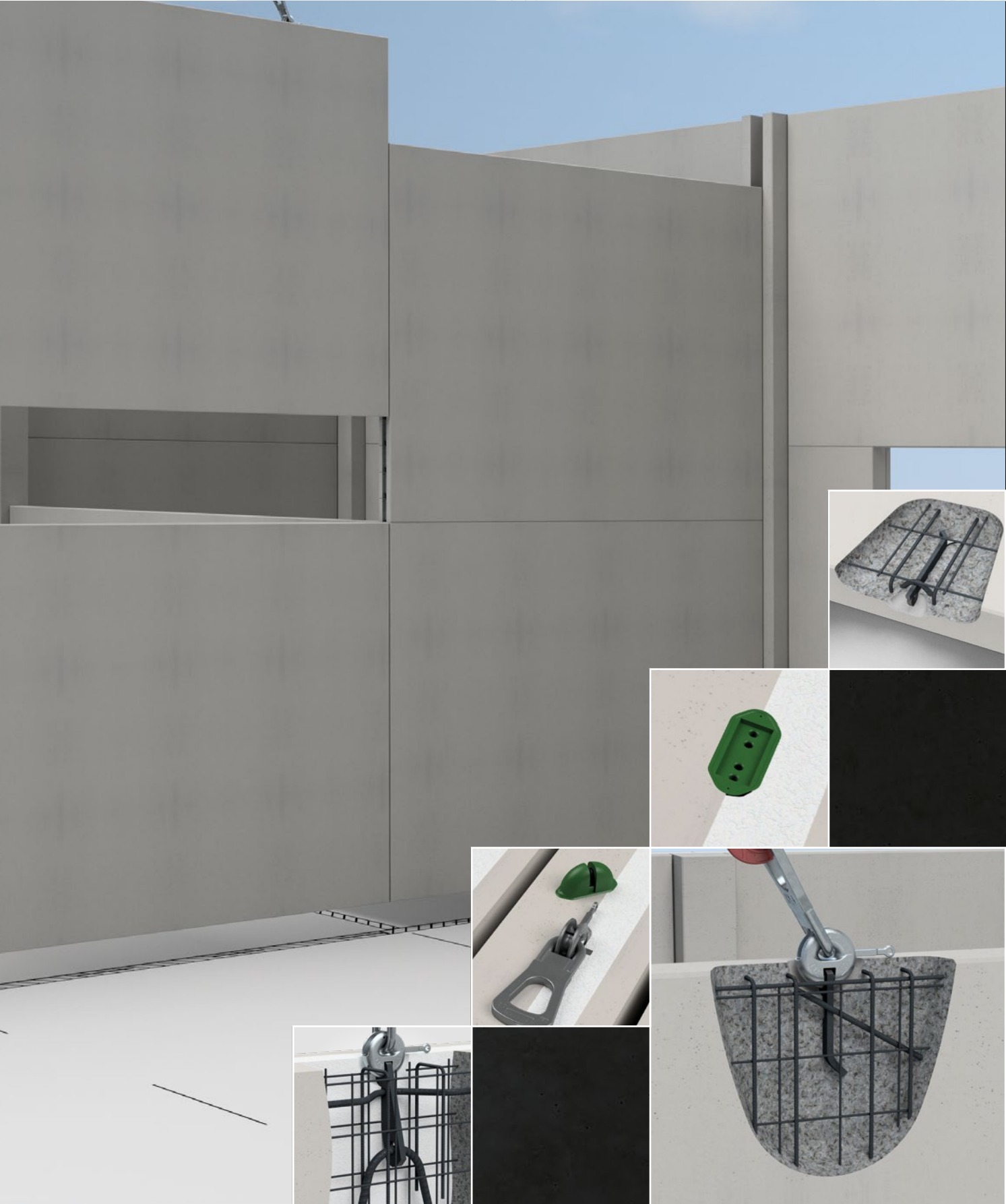
- » No parts projecting above the element's surface
- » Simple installation
- » Quick un/coupling of the lifting device with the anchor
- » Lifting device suitable for all load directions (lateral, diagonal and axial tension)
- » Load bearing capacities up to 26 t
- » Robust, long-lasting lifting device
- » Reinforcement optimized for effectivity and economy
- » Graded versions and bearing capacities for economical use





“

# TRANSPORT AND MOUNTING - WITHOUT FAIL



## » HOLE ANCHOR SYSTEM



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PVC recess former	Page 61

# HOLE ANCHOR SYSTEM

## Hole anchor

### VERSION: BRIGHT

Type (LA)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
1.4	110	0.14	100	48SA014110
2.5	150	0.30	50	48SA025150
2.5	200	0.44	50	48SA025200
2.5	250	0.55	25	48SA025250
5.0	180	0.78	25	48SA050180
5.0	240	1.05	20	48SA050240
7.5	260	1.80	1	48SA075260
7.5	300	2.11	1	48SA075300
10.0	300	2.64	1	48SA100300
10.0	370	3.26	1	48SA100370
14.0	370	3.95	1	48SA140370
14.0	460	5.33	1	48SA140460
22.0	500	7.59	1	48SA220500

### VERSION: BRIGHT

Type (LA)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
1.4	90	0.09	100	48ZA014090
2.5	90	0.17	100	48ZA025090
5.0	120	0.45	50	48ZA050120
7.5	160	0.96	25	48ZA075160
10.0	165	1.19	15	48ZA100165
14.0	240	2.56	1	48ZA140240
22.0	300	4.08	1	48ZA220300

### VERSION: BRIGHT

Type (LA)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
1.4	200	0.37	50	48AB014200
2.5	230	0.69	25	48AB025230
5.0	290	1.66	1	48AB050290
7.5	320	2.72	1	48AB075320
10.0	390	4.18	1	48AB100390
12.5	500	6.64	1	48AB125500
17.0	500	8.18	1	48AB170500
22.0	500	9.84	1	48AB220500

### SPREAD ANCHOR



### TWO-HOLE ANCHOR



### ERECTION ANCHOR, DOUBLE-SIDED



## Hole anchors / Lifting devices / Accessories

### VERSION: BRIGHT

Type [LA]	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
2.5	250	0.75	25	48SW025250
5.0	300	1.98	1	48SW050300
7.5	350	2.96	1	48SW075350
10.0	350	3.79	1	48SW100350
17.0	400	7.75	1	48SW170400

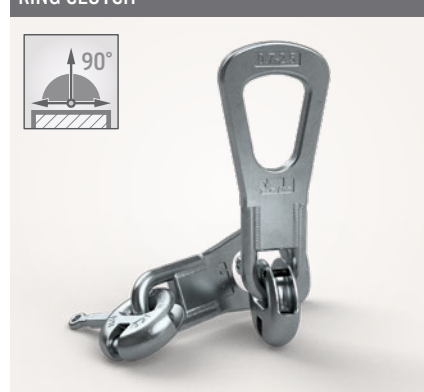
### SANDWICH PANEL ANCHOR



### VERSION: ELECTRO-GALVANISED

Type [LA]	Height (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
2.5	265	1.81	1	48RK025
5.0	330	3.54	1	48RK050
10.0	425	8.02	1	48RK100
26.0	605	30.60	1	48RK260

### RING CLUTCH



### VERSION: PLASTIC

Type [LA]	Width (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
2.5	104	0.08	1	48AKA01025
5.0	126	0.21	1	48AKA01050
10.0	188	0.59	1	48AKA01100
26.0	234	1.66	1	48AKA01260

### RECESS FORMER



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## » LIFTING HOOPS

Cast-in lifting hoops are the combination of simple designed but powerful transport anchors on the one hand and very cost-effective with the possibility of extreme high load bearing capacities on the other. The very good price/performance is further enhanced by the fact that no additional lifting device is required. From very light to very heavy precast elements up to almost 100 t per anchor the application spectrum ranges. The simplicity of the Cast-in lifting hoops and their usage as well as their enormous effectiveness are perfect for hoisting concrete units.

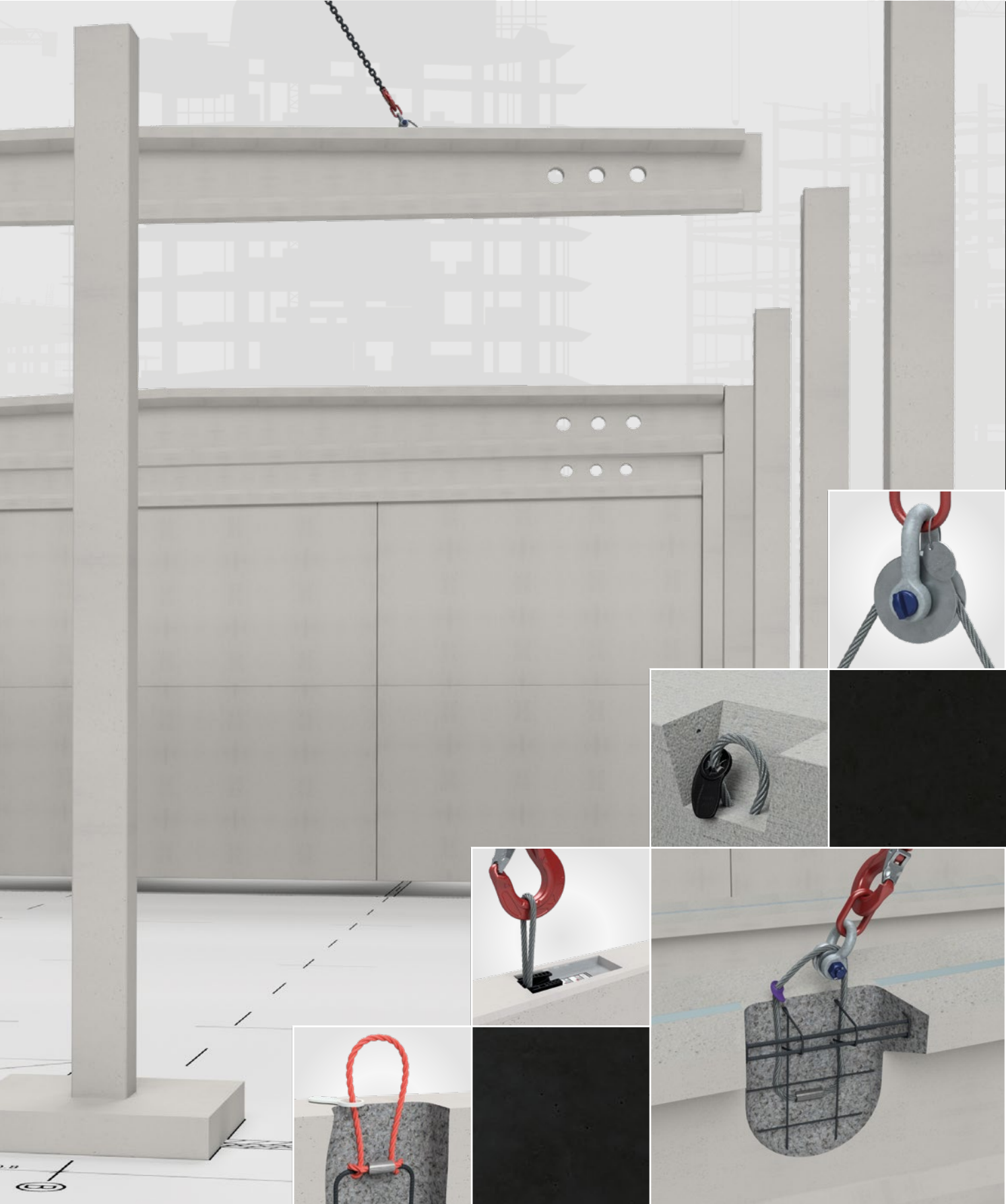
### Features and benefits compact

- » Installation without any further recess former
- » No special lifting device required
- » Very high bearing capacities depending on the element geometry possible
- » Guarantee of the correct transition radii by using long-life accessories.
- » Only for axial and diagonal tension
- » Well-priced transport anchor system





# TRANSPORT AND MOUNTING - WITHOUT FAIL



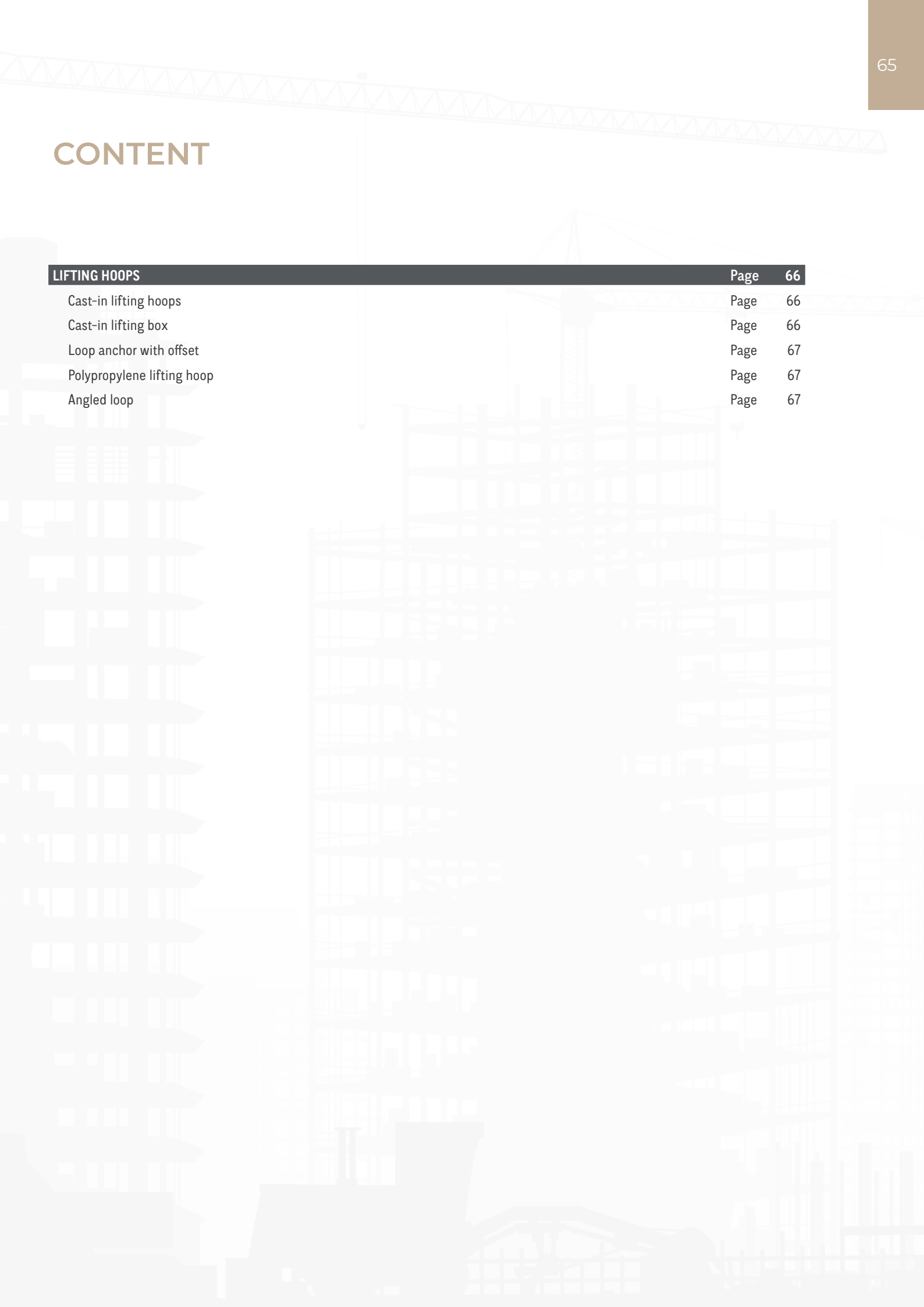
## » LIFTING HOOPS





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Cast-in lifting box	Page	66
Loop anchor with offset	Page	67
Polypropylene lifting hoop	Page	67
Angled loop	Page	67



# LIFTING HOOPS

## Lifting hoops

### VERSION: ELECTRO-GALVANISED

Type (AS)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
0.8	235	0.09	1	442008
1.2	235	0.11	1	442012
1.6	235	0.15	1	442016
2.0	270	0.22	1	442020
2.5	310	0.31	1	442025
4.0	340	0.50	1	442040
5.2	365	0.73	1	442052
6.3	380	1.00	1	442063
8.0	440	1.45	1	442080
10.0	515	2.09	1	442100
12.5	570	2.80	1	442125
16.0	605	3.95	1	442160
20.0	730	5.89	1	442200
25.0	780	8.26	1	442250
28.0	800	9.70	1	442280
32.0	880	11.10	1	442320
37.0	950	15.20	1	442370
42.0	1000	19.30	1	442420
47.0	1100	20.90	1	442470
52.0	1200	27.10	1	442520
57.0	1350	30.80	1	442570
65.0	1430	36.10	1	442650
75.0	1530	46.10	1	442750
85.0	1680	55.10	1	442850
95.0	1800	67.60	1	442950

### VERSION: ELECTRO-GALVANISED

Type (AS)	Length Loop (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
4.0	175	1.16	1	44DAH040

### CAST-IN LIFTING HOOP



### CAST-IN LIFTING BOX



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## Lifting hoops

### VERSION: ELECTRO-GALVANISED

Type (AS)	Length Loop (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
0.8	110	0.26	100	44SA06
1.2	110	0.35	100	44SA07

### LOOP ANCHOR WITH OFFSET



### POLYPROPYLENE LIFTING HOOP



Type (AS)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
0.150	220	1.90	1	43P06
0.250	220	3.20	1	43P08
0.360	260	5.60	1	43P10
0.500	290	10.00	1	43P12
0.875	330	15.50	1	43P14
1.200	370	22.00	1	43P16

### ANGLED LOOPS



### VERSION: BRIGHT

Type (AS)	Length Loop (mm)	Length leg (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.6	150	330	22.00	1	44W08150330T
2.5	150	330	34.00	1	44W10150330T
2.5	180	350	43.00	1	44W10180350T
4.0	160	380	55.00	1	44W12160380T
4.0	230	380	62.00	1	44W12230380T
5.2	230	380	84.00	1	44W14230380T

Other dimensions available on request.

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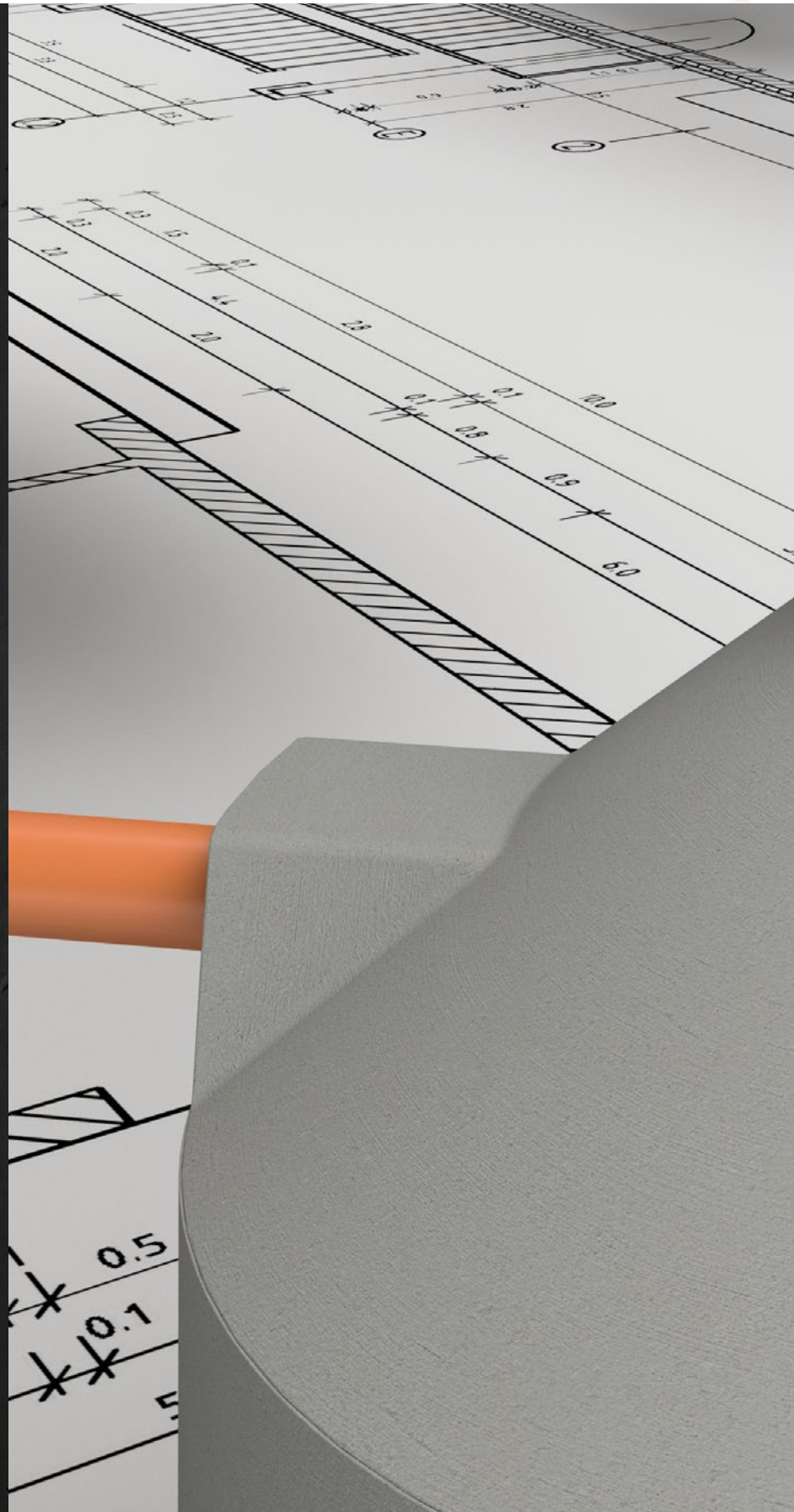
Earthing

## » FURTHER SYSTEMS

In addition to the standard range of transport anchor systems in normal concrete, there are other special systems for use in other building materials such as masonry or light-weight concrete.

### Features and benefits compact

- » Versions with integrated wire rope loop available
- » Load bearing capacities up to 4 t

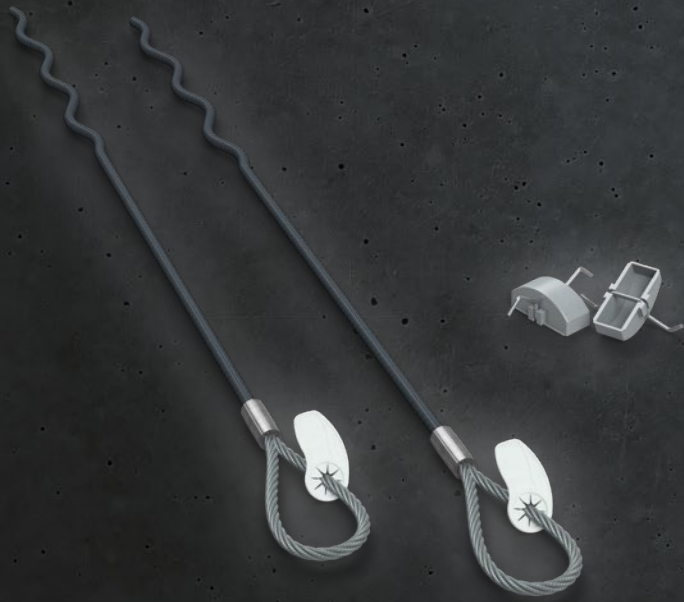




# TRANSPORT AND MOUNTING - WITHOUT FAIL

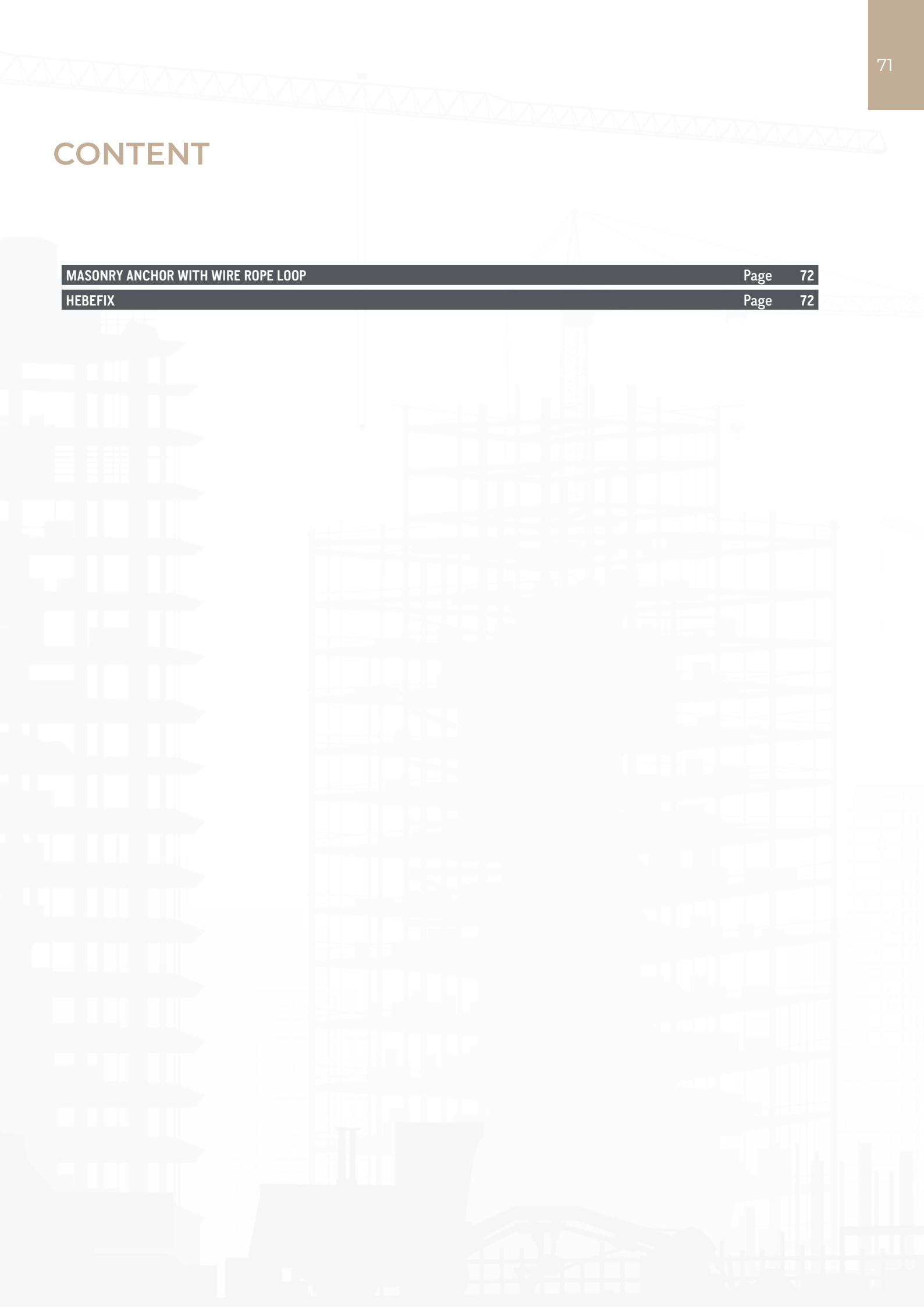


# » FURTHER SYSTEMS



# CONTENT

MASONRY ANCHOR WITH WIRE ROPE LOOP	Page 72
HEBEFIX	Page 72



## VERSION: WITH CRIMPED-ON WIRE ROPE LOOP, WAVED END

Type (MW)	Length (mm)	Rebar Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
0.9	1500	8	70.00	1	73MW081500
0.9	2500	8	130.00	1	73MW082500
1.4	2500	10	168.00	1	73MW102500
1.4	2750	10	190.00	1	73MW102750
1.4	3000	10	200.00	1	73MW103000
2.0	2500	12	242.00	1	73MW122500
2.0	2750	12	260.00	1	73MW122750
2.0	3000	12	280.00	1	73MW123000
3.1	2000	14	230.00	1	73MW142000
4.0	2300	16	260.00	1	73MW162300
4.0	2500	16	270.00	1	73MW162500

Other lengths and versions available on request.

## LOAD DIRECTION: 0 - 12.5°

Type	Length (mm)	Width (mm)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
1.5	73	29.00	35	3.20	250	73HF

## MASONRY ANCHOR



## HEBEFIX





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## » Connection technology

In the modern skeleton construction method, a wide variety of connection solutions are required and applied. The focus of the solutions listed here is mainly on vertical connections for walls to each other and to columns.

Most of the connections can be realised with our range of boxes or rails that create joints with high load bearing capacities. Here, wire rope loops serve as reinforcement, which, due to their flexibility, enable connections that are hardly possible with other connecting elements. The joints are filled with a high-strength mortar finally.

Basically, a differentiation is made between solutions for heavy static loads on the one side and constructive connections on the other. If planner require specific designed connections there are connecting systems with German approvals from DIBt, Berlin, and calculations based on Eurocode 2. All other connections can be solved easily and quickly using single connecting loops or rails.

All in all, wire rope loop systems significantly simplify the mounting and connecting of precast concrete elements due to their flexibility.

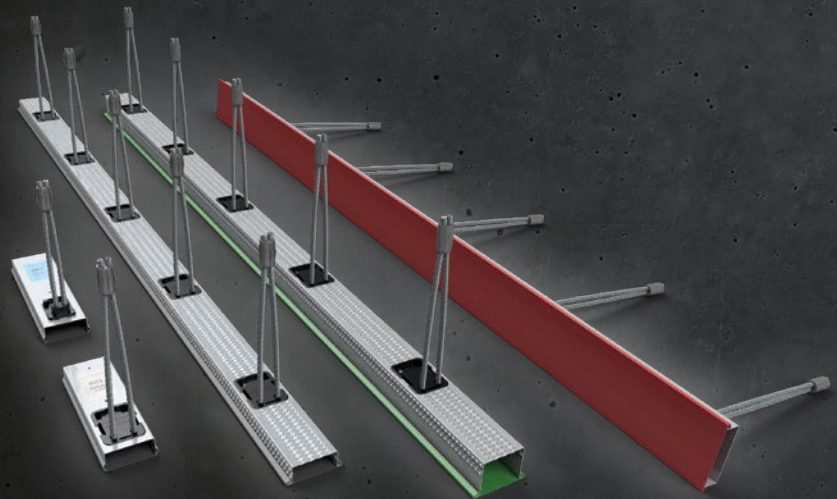




# CREATING CONNECTIONS - SAFELY



# » Connection technology



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Restraint dowel plate	Page	83

# CONNECTION TECHNOLOGY

## Connecting rail - for high forces

Transport

Length	Width	Depth	Length Loops	Number Loops	Weight	Ref. no.
(mm)	(mm)	(mm)	(mm)	(pc.)	(kg/pc.)	
1250	50	40	90	5	1.45	84PONE400905

Connection

Length	Width	Depth	Length Loops	Number Loops	Weight	Ref. no.
(mm)	(mm)	(mm)	(mm)	(pc.)	(kg/pc.)	
1250	50/70	70	90	5	2.00	84PDS700905
1250	50	20	90	5	1.35	84PDS200905

As an alternative to the plastic cover, a closure with adhesive tape is also available

Facade

Length	Width	Depth	Length Loops	Number Loops	Weight	Ref. no.
(mm)	(mm)	(mm)	(mm)	(pc.)	(kg/100 pcs.)	
220	80	25	120	2	42.00	54PB120

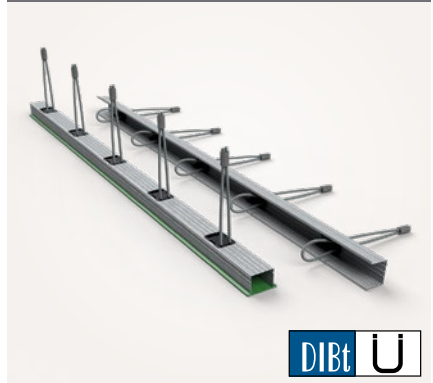
Fixing

Bearing systems

Length	Width	Depth	Length Loops	Number Loops	Weight	Ref. no.
(mm)	(mm)	(mm)	(mm)	(pc.)	(kg/pc.)	
1250	70	20	155	5	1.55	84POS201555

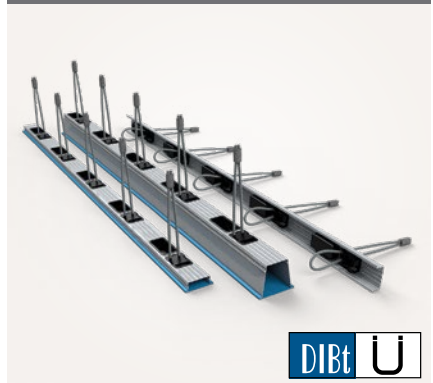
Earthing

### POWER ONE RAIL



DIBt U

### POWER DUO RAILS



DIBt U

### POWER BOX



DIBt U

### POWER OS RAIL



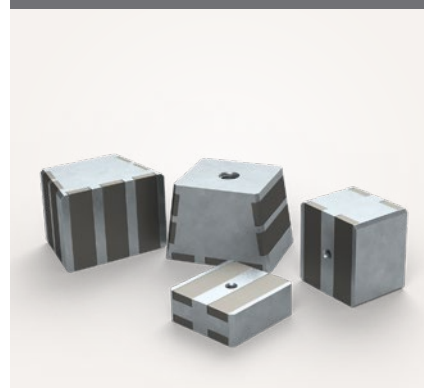
DIBt U

## Accessories / mortar

For Connecting rail Height (mm)	Adhesion (kg)	Weight (kg/pc.)	PU (pc.)	Ref. no.
20	100	0.35	1	84MAX20
40	100	0.70	1	84MAX40
70	150	1.20	1	84MAX70

POSSIBLE COMBINATIONS (RAIL / MAGNET)							Ref. no.
Power One	Connecting rails						
	Power Duo System - 70 mm	Power Duo System - 20 mm	Power OS	Rail depth 20 mm	Rail depth 40 mm	Rail depth 70 mm	
-	-	✓	✓	✓	-	-	84MAX20
✓	-	-	-	-	✓	-	84MAX40
-	✓	-	-	-	-	✓	84MAX70

### MAGNETIC FASTENER



POSSIBLE COMBINATIONS (RAIL/MORTAR)					
	BETEC® Mortar		Grouting mortar EuroGrout® (Varix)	P&T Mortar Thixo mortar EuroGrout® (Universalfüller)	Grouting mortar EuroGrout® (EuroGrout 04)
	Grouting mortar	Thixo mortar			
Power One rail	✓	-	-	-	-
Power Duo rail	✓	✓	✓	✓	✓
Power Box	-	-	-	-	✓
Power OS	No mortar necessary (in-situ concrete min. C25/30)				
<b>Mortar can be ordered at:</b>					



**GCP Germany GmbH**  
**BETEC® Mörtelsysteme Essen**

Alte Bottroper Straße 64  
45356 Essen, Germany  
Phone: +49 201 86 147-0  
Fax: +49 201 61 94 75  
info.betec@gcpat.com  
www.gcpat.de



**P&T Technische Mörtel GmbH & Co. KG**

Abt. Auftragsbearbeitung  
Bataverstraße 84  
41462 Neuss, Germany  
Phone: +49 2131 56 69-0  
Fax: +49 2131 56 69-22  
info@eurogrout.de  
www.eurogrout.de

## Single shear dowel ESD

## ESD SET CONSISTS OF A DOWEL (S690) AND A STAINLESS STEEL SLEEVE

Type	Dowel		Sleeve		Ref. no.
	Dimension (mm)	Material	Length (mm)	Material	
ESD N + ESD E	ø16 × 220	A4	145	A2	43ESD16E
ESD N + ESD E	ø20 × 260	A4	165	A2	43ESD20E
ESD N + ESD E	ø22 × 280	A4	175	A2	43ESD22E
ESD N + ESD E	ø25 × 310	A4	190	A2	43ESD25E
ESD N + ESD E	ø27 × 330	A4	200	A2	43ESD27E
ESD N + ESD E	ø30 × 360	A4	215	A2	43ESD30E
ESD N + ESD E	ø35 × 410	A4	240	A2	43ESD35E

## ESD SET: DOWEL (S690) AND STAINLESS STEEL SLEEVE

Type	Dowel		Sleeve		Ref. no.
	Dimension (mm)	Material	Length (mm)	Material	
ESD N + ESD EQ	ø16 × 220	A4	145	A2	43ESD16EQ
ESD N + ESD EQ	ø20 × 260	A4	165	A2	43ESD20EQ
ESD N + ESD EQ	ø22 × 280	A4	175	A2	43ESD22EQ
ESD N + ESD EQ	ø25 × 310	A4	190	A2	43ESD25EQ
ESD N + ESD EQ	ø27 × 330	A4	200	A2	43ESD27EQ
ESD N + ESD EQ	ø30 × 360	A4	215	A2	43ESD30EQ
ESD N + ESD EQ	ø35 × 410	A4	240	A2	43ESD35EQ

## ESD SET: DOWEL (S690) AND STAINLESS STEEL SLEEVE WITH REINF. RING (VR)

Type	Dowel		Sleeve		Ref. no.
	Dimension (mm)	Material	Length (mm)	Material	
ESD N + ESD EQ VR	ø16 × 220	A4	145	A2	43ESD16EQVR
ESD N + ESD EQ VR	ø20 × 260	A4	165	A2	43ESD20EQVR
ESD N + ESD EQ VR	ø22 × 280	A4	175	A2	43ESD22EQVR
ESD N + ESD EQ VR	ø25 × 310	A4	190	A2	43ESD25EQVR
ESD N + ESD EQ VR	ø27 × 330	A4	200	A2	43ESD27EQVR
ESD N + ESD EQ VR	ø30 × 360	A4	215	A2	43ESD30EQVR
ESD N + ESD EQ VR	ø35 × 410	A4	240	A2	43ESD35EQVR

## ESD SET: DOWEL (S690) AND PLASTIC SLEEVE

Type	Dowel		Sleeve		Ref. no.
	Dimension (mm)	Material	Length (mm)	Material	
ESD N FV + ESD K	ø16 × 220	A4	145	PE	43ESD16K
ESD N FV + ESD K	ø20 × 260	A4	165	PE	43ESD20K
ESD N FV + ESD K	ø22 × 280	A4	175	PE	43ESD22K
ESD N FV + ESD K	ø25 × 310	A4	190	PE	43ESD25K
ESD N FV + ESD K	ø27 × 330	A4	200	PE	43ESD27K
ESD N FV + ESD K	ø30 × 360	A4	215	PE	43ESD30K
ESD N FV + ESD K	ø35 × 410	A4	240	PE	43ESD35K

## LONGITUDINALLY ADJUSTABLE



## LONGITUDINALLY AND LATERALLY ADJUSTABLE



## LONGITUDINALLY AND LATERALLY ADJUSTABLE



## ESD SET, LONGITUDINALLY ADJUSTABLE





## Single shear dowel ESD

### ESD (S690) IN STAINLESS STEEL (SS316) VERSION

Type	Diameter (mm)	Length (mm)	Ref. no.
ESD N VA	ø 16	220	43ESD16
ESD N VA	ø 20	260	43ESD20
ESD N VA	ø 22	280	43ESD22
ESD N VA	ø 25	310	43ESD25
ESD N VA	ø 27	330	43ESD27
ESD N VA	ø 30	360	43ESD30
ESD N VA	ø 35	410	43ESD35

### ESD (S690), STAINLESS STEEL



### ESD (S690) IN HOT-DIP GALVANISED VERSION

Type	Diameter (mm)	Length (mm)	Ref. no.
ESD N FV	ø 16	220	43ESD16FV
ESD N FV	ø 20	260	43ESD20FV
ESD N FV	ø 22	280	43ESD22FV
ESD N FV	ø 25	310	43ESD25FV
ESD N FV	ø 27	330	43ESD27FV
ESD N FV	ø 30	360	43ESD30FV
ESD N FV	ø 35	410	43ESD35FV

### ESD (S690), HOT-DIP GALVANISED



### ESD (S355) IN STAINLESS STEEL (SS316) VERSION

Type	Diameter (mm)	Length (mm)	Ref. no.
ESD N VA S 355	ø 16	220	43ESD16-S355
ESD N VA S 355	ø 20	260	43ESD20-S355
ESD N VA S 355	ø 22	280	43ESD22-S355
ESD N VA S 355	ø 25	310	43ESD25-S355
ESD N VA S 355	ø 27	330	43ESD27-S355
ESD N VA S 355	ø 30	360	43ESD30-S355
ESD N VA S 355	ø 35	410	43ESD35-S355

### ESD (D355), STAINLESS STEEL



### ESD (S355) IN HOT-DIP GALVANISED VERSION

Type	Diameter (mm)	Length (mm)	Ref. no.
ESD N FV S 355	ø 16	220	43ESD16-S355FV
ESD N FV S 355	ø 20	260	43ESD20-S355FV
ESD N FV S 355	ø 22	280	43ESD22-S355FV
ESD N FV S 355	ø 25	310	43ESD25-S355FV
ESD N FV S 355	ø 27	330	43ESD27-S355FV
ESD N FV S 355	ø 30	360	43ESD30-S355FV
ESD N FV S 355	ø 35	410	43ESD35-S355FV

### ESD (D355), HOT-DIP GALVANISED



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# CONNECTION TECHNOLOGY

## Connecting rail - constructive

### VERSION: METAL

Loop length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
80	18.00	100	54VSM080
100	19.00	100	54VSM100
120	20.00	100	54VSM120

### CONNECTING LOOP



### WIDTH OF RAIL: 50/70 mm, RAIL LENGTH: 1250 mm

Depth (mm)	Length Loops (mm)	Number Loops (pc.)	Weight (kg/pc.)	Ref. no.
70	100	5	2.00	84VS701005
70	100	3	1.80	84VS701003
70	100	2	1.70	84VS701002

### CONNECTING RAILS



### WIDTH OF RAIL: 50 mm, RAIL LENGTH: 1250 mm

Depth (mm)	Length Loops (mm)	Number Loops (pc.)	Weight (kg/pc.)	Ref. no.
20	80	5	1.10	84VS200805
20	80	3	0.90	84VS200803
20	80	2	0.80	84VS200802
20	100	5	1.10	84VS201005
20	100	3	0.90	84VS201003
20	100	2	0.80	84VS201002
20	120	5	1.10	84VS201205
20	120	3	0.90	84VS201203
20	120	2	0.80	84VS201202
40	80	5	1.20	84VS400805
40	80	3	0.95	84VS400803
40	80	2	0.85	84VS400802
40	100	5	1.20	84VS401005
40	100	3	0.95	84VS401003
40	100	2	0.85	84VS401002
40	120	5	1.20	84VS401205
40	120	3	0.95	84VS401203
40	120	2	0.85	84VS401202

### CONNECTING RAILS



Other rail dimensions, also without loops, on request.  
Rail widths 60 and 85 mm on request.

## Dowelling system / Restraint dowel plate

VERSION: PLASTIC				
Dimension (mm)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Concrete pocket holder</b>				
oval 50 × 80	20	1.38	300	72TH
<b>Concrete pocket</b>				
oval 50 × 80	150	8.28	170	72DT



VERSION: PLASTIC				
for rebar Ø (mm)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Rebar pocket holder</b>				
Ø20	30	0.45	1000	72HH20
Ø25	40	0.75	220	72HH25
Ø28	40	0.85	180	72HH28
<b>Rebar pocket</b>				
Ø20	180	4.70	100	72DH20
Ø25	190	6.40	100	72DH25
Ø28	200	6.90	100	72DH28



SET CONSISTS OF ONE RESTRAINT DOWEL PLATE AND ONE FIXING (DOWEL)					
Bolt (mm)	Height (mm)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
<b>Version: bright</b>					
Ø20	150	260	0.80	1	72LDS220
<b>Version: primed</b>					
Ø20	150	260	0.80	1	72LDS220GR
<b>Version: hot-dip galvanised</b>					
Ø20	150	260	0.80	1	72LDS220FV



RESTRAINT DOWEL PLATE					
Bolt (mm)	Height (mm)	Length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
<b>Version: bright</b>					
Ø20	150	260	0.77	1	72LD220
<b>Version: primed</b>					
Ø20	150	260	0.77	1	72LD220GR
<b>Version: hot-dip galvanised</b>					
Ø20	150	260	0.77	1	72LD220FV



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## » Facade technology

The appearance of many prefabricated buildings is essentially characterised by the look of their facades. Very often, these precast concrete elements are produced in the fairly economical sandwich technology, which includes a load-bearing layer, a visible facing layer and thermal insulation in between.

The non-load bearing facing layer is connected to the load bearing layer through the insulation by anchors made of stainless steel. These form a system of load bearing anchors and pins that transfer horizontal and vertical forces into the load-bearing layer.

Both the SPA system and SA/FA system are two well-established, long-time tested and state of the art solutions for sandwich elements. For all these types of anchoring devices German approvals based on the latest standards are available. For the design of the entire portfolio of anchoring devices a free and user-friendly software, so-called PHacade, is available (see [www.philipp-software.de](http://www.philipp-software.de)).

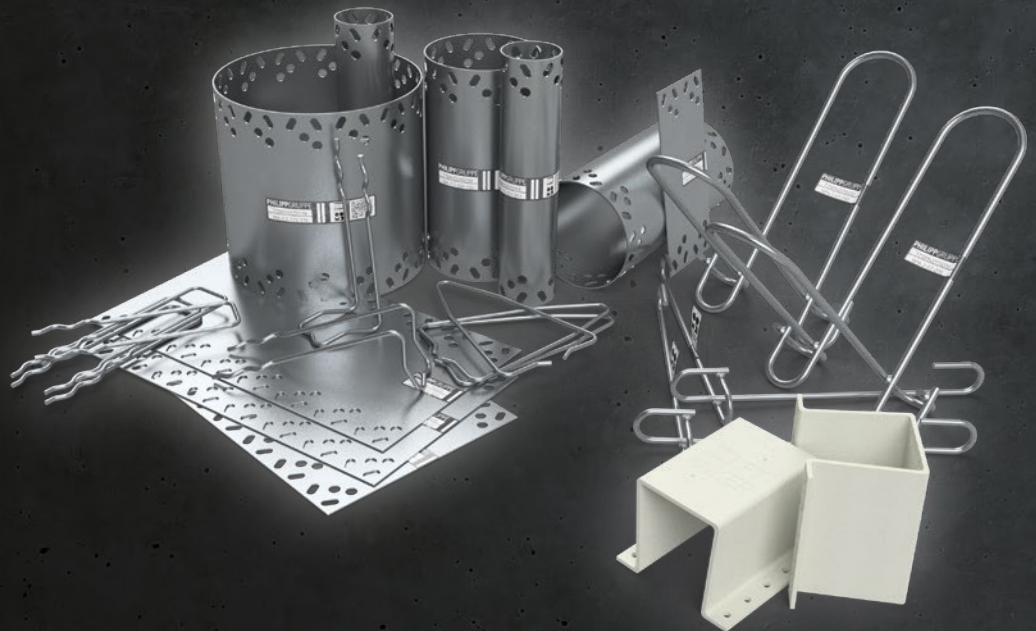


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# IMPRESSIVE FAÇADES NEED LOAD-BEARING ANCHORING DEVICES!



# » Facade technology



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## Sandwich panel anchor system

## VERSION: STAINLESS STEEL SS316, TYPE SPA-1

Diameter (mm)	Anchor height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
5.0	160	9.50	100	77SPA1050160
5.0	180	11.00	1	77SPA1050180
5.0	200	12.50	1	77SPA1050200
5.0	220	13.30	1	77SPA1050220
5.0	240	14.20	1	77SPA1050240
5.0	260	15.10	1	77SPA1050260
6.5	160	18.00	100	77SPA1070160
6.5	180	20.00	100	77SPA1070180
6.5	200	21.00	100	77SPA1070200
6.5	220	23.00	100	77SPA1070220
6.5	240	24.00	75	77SPA1070240
6.5	260	26.00	50	77SPA1070260
6.5	280	27.90	1	77SPA1070280
6.5	300	29.30	1	77SPA1070300
6.5	320	30.80	1	77SPA1070320
8.0	180	31.90	1	77SPA1080180
8.0	200	34.10	75	77SPA1080200
8.0	220	35.00	75	77SPA1080220
8.0	240	37.00	1	77SPA1080240
8.0	260	40.00	50	77SPA1080260
8.0	280	42.00	1	77SPA1080280
8.0	300	44.00	40	77SPA1080300
8.0	320	46.00	1	77SPA1080320
8.0	340	50.00	1	77SPA1080340
8.0	360	52.30	1	77SPA1080360
8.5	180	35.70	1	77SPA1090180
8.5	200	38.30	1	77SPA1090200
8.5	220	41.70	1	77SPA1090220
8.5	240	41.70	1	77SPA1090240
8.5	260	46.80	1	77SPA1090260
8.5	280	49.70	1	77SPA1090280
8.5	300	52.00	1	77SPA1090300
8.5	320	54.50	1	77SPA1090320
8.5	340	57.10	1	77SPA1090340
8.5	360	59.70	1	77SPA1090360
8.5	380	62.20	1	77SPA1090380
8.5	400	64.80	1	77SPA1090400
10.0	220	60.30	1	77SPA1100220
10.0	240	63.90	1	77SPA1100240
10.0	260	67.50	1	77SPA1100260
10.0	280	71.00	1	77SPA1100280
10.0	300	74.60	1	77SPA1100300
10.0	320	75.00	1	77SPA1100320
10.0	340	79.00	1	77SPA1100340
10.0	360	83.00	1	77SPA1100360
10.0	380	88.80	1	77SPA1100380
10.0	400	92.30	1	77SPA1100400
10.0	420	95.90	1	77SPA1100420
10.0	440	99.50	1	77SPA1100440

Other dimensions available on request.

## LOAD BEARING ANCHOR SPA-1



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## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316 / A4, TYPE SPA-2				
Diameter (mm)	Anchor height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
5.0	160	18.00	1	77SPA2050160
5.0	180	20.00	40	77SPA2050180
5.0	200	22.00	1	77SPA2050200
5.0	220	24.30	1	77SPA2050220
5.0	240	26.10	1	77SPA2050240
5.0	260	27.80	1	77SPA2050260
6.5	160	31.00	50	77SPA2070160
6.5	180	34.00	40	77SPA2070180
6.5	200	37.00	30	77SPA2070200
6.5	220	40.00	25	77SPA2070220
6.5	240	43.00	20	77SPA2070240
6.5	260	46.00	20	77SPA2070260
6.5	280	50.60	1	77SPA2070280
6.5	300	53.50	1	77SPA2070300
6.5	320	56.50	1	77SPA2070320
8.0	180	54.80	1	77SPA2080180
8.0	200	59.30	30	77SPA2080200
8.0	220	61.00	25	77SPA2080220
8.0	240	66.00	20	77SPA2080240
8.0	260	70.00	12	77SPA2080260
8.0	280	75.00	1	77SPA2080280
8.0	300	79.00	1	77SPA2080300
8.0	320	83.00	1	77SPA2080320
8.0	340	91.10	1	77SPA2080340
8.0	360	95.60	1	77SPA2080360
8.5	180	62.10	1	77SPA2090180
8.5	200	67.30	1	77SPA2090200
8.5	220	72.40	1	77SPA2090220
8.5	240	77.50	1	77SPA2090240
8.5	260	82.70	1	77SPA2090260
8.5	280	87.80	1	77SPA2090280
8.5	300	92.90	1	77SPA2090300
8.5	320	98.10	1	77SPA2090320
8.5	340	103.20	1	77SPA2090340
8.5	360	108.40	1	77SPA2090360
8.5	380	113.50	1	77SPA2090380
8.5	400	118.60	1	77SPA2090400
10.0	220	102.10	1	77SPA2100220
10.0	240	109.40	1	77SPA2100240
10.0	260	116.40	1	77SPA2100260
10.0	280	123.50	1	77SPA2100280
10.0	300	130.70	1	77SPA2100300
10.0	320	133.00	1	77SPA2100320
10.0	340	140.00	1	77SPA2100340
10.0	360	147.00	1	77SPA2100360
10.0	380	159.10	1	77SPA2100380
10.0	400	166.20	1	77SPA2100400
10.0	420	173.20	1	77SPA2100420
10.0	440	180.50	1	77SPA2100440

Other dimensions available on request.

### LOAD BEARING ANCHOR SPA-2



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## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 1.5 mm

Height (mm)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
150	80	13.30	1	77FA15150080
150	120	20.00	1	77FA15150120
150	160	26.60	1	77FA15150160
150	200	33.30	1	77FA15150200
150	240	39.90	1	77FA15150240
150	280	46.60	1	77FA15150280
150	320	53.20	1	77FA15150320
150	360	59.90	1	77FA15150360
150	400	66.50	1	77FA15150400
175	80	15.70	1	77FA15175080
175	120	23.60	1	77FA15175120
175	160	31.40	1	77FA15175160
175	200	39.30	1	77FA15175200
175	240	47.10	1	77FA15175240
175	280	55.00	1	77FA15175280
175	320	62.80	1	77FA15175320
175	360	78.00	1	77FA15175360
175	400	78.00	1	77FA15175400
200	80	18.10	1	77FA15200080
200	120	27.20	1	77FA15200120
200	160	36.20	1	77FA15200160
200	200	45.30	1	77FA15200200
200	240	54.30	1	77FA15200240
200	280	63.40	1	77FA15200280
200	320	72.40	1	77FA15200320
200	360	81.50	1	77FA15200360
200	400	90.50	1	77FA15200400
225	80	20.50	1	77FA15225080
225	120	30.80	1	77FA15225120
225	160	41.00	1	77FA15225160
225	200	51.30	1	77FA15225200
225	240	61.50	1	77FA15225240
225	280	71.80	1	77FA15225280
225	320	82.00	1	77FA15225320
225	360	92.30	1	77FA15225360
225	400	102.50	1	77FA15225400
260	80	23.90	1	77FA15260080
260	120	35.80	1	77FA15260120
260	160	47.70	1	77FA15260160
260	200	59.70	1	77FA15260200
260	240	71.60	1	77FA15260240
260	280	83.50	1	77FA15260280
260	320	95.40	1	77FA15260320
260	360	107.40	1	77FA15260360
260	400	119.30	1	77FA15260400

LOAD-BEARING ANCHOR FA



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## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 2.0 mm				
Height (mm)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
150	80	17.70	1	77FA20150080
150	120	26.60	1	77FA20150120
150	160	35.50	1	77FA20150160
150	200	44.30	1	77FA20150200
150	240	53.20	1	77FA20150240
150	280	62.10	1	77FA20150280
150	320	70.90	1	77FA20150320
150	360	79.80	1	77FA20150360
150	400	88.70	1	77FA20150400
175	80	20.90	1	77FA20175080
175	120	31.40	1	77FA20175120
175	160	41.90	1	77FA20175160
175	200	52.30	1	77FA20175200
175	240	62.80	1	77FA20175240
175	280	73.30	1	77FA20175280
175	320	83.70	1	77FA20175320
175	360	94.20	1	77FA20175360
175	400	104.70	1	77FA20175400
200	80	24.10	1	77FA20200080
200	120	36.20	1	77FA20200120
200	160	48.30	1	77FA20200160
200	200	60.30	1	77FA20200200
200	240	72.40	1	77FA20200240
200	280	84.50	1	77FA20200280
200	320	96.50	1	77FA20200320
200	360	108.60	1	77FA20200360
200	400	120.70	1	77FA20200400
225	80	27.30	1	77FA20225080
225	120	41.00	1	77FA20225120
225	160	54.70	1	77FA20225160
225	200	68.30	1	77FA20225200
225	240	82.00	1	77FA20225240
225	280	95.70	1	77FA20225280
225	320	109.30	1	77FA20225320
225	360	123.00	1	77FA20225360
225	400	136.70	1	77FA20225400
260	80	31.80	1	77FA20260080
260	120	47.70	1	77FA20260120
260	160	63.60	1	77FA20260160
260	200	79.50	1	77FA20260200
260	240	95.40	1	77FA20260240
260	280	111.30	1	77FA20260280
260	320	127.30	1	77FA20260320
260	360	143.20	1	77FA20260360
260	400	159.10	1	77FA20260400

### LOAD-BEARING ANCHOR FA



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## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 2.0 mm

Height (mm)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
280	80	34.40	1	77FA20280080
280	120	51.60	1	77FA20280120
280	160	68.70	1	77FA20280160
280	200	85.90	1	77FA20280200
280	240	103.10	1	77FA20280240
280	280	120.30	1	77FA20280280
280	320	137.50	1	77FA20280320
280	360	154.70	1	77FA20280360
280	400	171.90	1	77FA20280400
300	80	36.90	1	77FA20300080
300	120	55.40	1	77FA20300120
300	160	73.90	1	77FA20300160
300	200	92.30	1	77FA20300200
300	240	110.80	1	77FA20300240
300	280	129.30	1	77FA20300280
300	320	147.70	1	77FA20300320
300	360	166.20	1	77FA20300360
300	400	184.70	1	77FA20300400
320	80	39.50	1	77FA20320080
320	120	59.20	1	77FA20320120
320	160	79.00	1	77FA20320160
320	200	98.70	1	77FA20320200
320	240	118.50	1	77FA20320240
320	280	138.20	1	77FA20320280
320	320	158.00	1	77FA20320320
320	360	177.70	1	77FA20320360
320	400	197.50	1	77FA20320400
360	80	44.60	1	77FA20360080
360	120	66.90	1	77FA20360120
360	160	89.20	1	77FA20360160
360	200	111.50	1	77FA20360200
360	240	133.90	1	77FA20360240
360	280	156.20	1	77FA20360280
360	320	178.50	1	77FA20360320
360	360	200.80	1	77FA20360360
360	400	223.10	1	77FA20360400

LOAD-BEARING ANCHOR FA



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 3.0 mm				
Height (mm)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
225	80	41.00	1	77FA30225080
225	120	61.50	1	77FA30225120
225	160	82.00	1	77FA30225160
225	200	102.50	1	77FA30225200
225	240	123.00	1	77FA30225240
225	280	143.50	1	77FA30225280
225	320	164.00	1	77FA30225320
225	360	184.50	1	77FA30225360
225	400	205.00	1	77FA30225400
260	80	31.80	1	77FA30260080
260	120	47.70	1	77FA30260120
260	160	63.60	1	77FA30260160
260	200	79.50	1	77FA30260200
260	240	95.40	1	77FA30260240
260	280	111.30	1	77FA30260280
260	320	127.30	1	77FA30260320
260	360	143.20	1	77FA30260360
260	400	159.10	1	77FA30260400
280	80	34.40	1	77FA30280080
280	120	51.60	1	77FA30280120
280	160	68.70	1	77FA30280160
280	200	85.90	1	77FA30280200
280	240	103.10	1	77FA30280240
280	280	120.30	1	77FA30280280
280	320	137.50	1	77FA30280320
280	360	154.70	1	77FA30280360
280	400	171.90	1	77FA30280400
300	80	36.90	1	77FA30300080
300	120	55.40	1	77FA30300120
300	160	73.90	1	77FA30300160
300	200	92.30	1	77FA30300200
300	240	110.80	1	77FA30300240
300	280	129.30	1	77FA30300280
300	320	147.70	1	77FA30300320
300	360	166.20	1	77FA30300360
300	400	184.70	1	77FA30300400
320	80	39.50	1	77FA30320080

### LOAD-BEARING ANCHOR FA



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## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 3.0 mm

Height (mm)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
320	120	59.20	1	77FA30320120
320	160	79.00	1	77FA30320160
320	200	98.70	1	77FA30320200
320	240	118.50	1	77FA30320240
320	280	138.20	1	77FA30320280
320	320	158.00	1	77FA30320320
320	360	177.70	1	77FA30320360
320	400	197.50	1	77FA30320400
360	80	66.90	1	77FA30360080
360	120	100.04	1	77FA30360120
360	160	133.90	1	77FA30360160
360	200	167.30	1	77FA30360200
360	240	200.80	1	77FA30360240
360	280	234.20	1	77FA30360280
360	320	267.70	1	77FA30360320
360	360	301.20	1	77FA30360360
360	400	334.60	1	77FA30360400

LOAD-BEARING ANCHOR FA



Transport

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Earthing

## Sandwich panel anchor system

VERSION: STAINLESS STEEL SS316, MATERIAL THICKNESS 1.5 mm				
Height (mm)	Diameter (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
175	51	31.00	1	77MA15175051
175	76	45.00	1	77MA15175076
175	102	63.00	1	77MA15175102
175	127	77.00	1	77MA15175127
175	153	93.00	1	77MA15175153
175	178	107.00	1	77MA15175178
175	204	124.00	1	77MA15175204
175	229	141.00	1	77MA15175229
175	255	153.00	1	77MA15175255
175	280	162.00	1	77MA15175280
200	51	35.00	1	77MA15200051
200	76	55.00	1	77MA15200076
200	102	71.00	1	77MA15200102
200	127	90.00	1	77MA15200127
200	153	110.00	1	77MA15200153
200	178	122.00	1	77MA15200178
200	204	145.00	1	77MA15200204
200	229	158.00	1	77MA15200229
200	255	176.00	1	77MA15200255
200	280	197.00	1	77MA15200280
225	51	39.00	1	77MA15225051
225	76	60.00	1	77MA15225076
225	102	80.00	1	77MA15225102
225	127	101.00	1	77MA15225127
225	153	119.00	1	77MA15225153
225	178	139.00	1	77MA15225178
225	204	160.00	1	77MA15225204
225	229	175.00	1	77MA15225229
225	255	197.00	1	77MA15225255
225	280	213.00	1	77MA15225280
260	51	47.00	1	77MA15260051
260	76	69.00	1	77MA15260076
260	102	95.00	1	77MA15260102
260	127	118.00	1	77MA15260127
260	153	140.00	1	77MA15260153
260	178	163.00	1	77MA15260178
260	204	183.00	1	77MA15260204
260	229	213.00	1	77MA15260229
260	255	237.00	1	77MA15260255
260	280	259.00	1	77MA15260280
300	51	54.00	1	77MA15300051
300	76	55.00	1	77MA15300076
300	102	66.00	1	77MA15300102
300	127	84.00	1	77MA15300127
300	153	99.00	1	77MA15300153
300	178	187.50	1	77MA15300178
300	204	212.00	1	77MA15300204
300	229	236.50	1	77MA15300229
300	255	264.00	1	77MA15300255
300	280	293.00	1	77MA15300280

### LOAD-BEARING ANCHOR SA



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

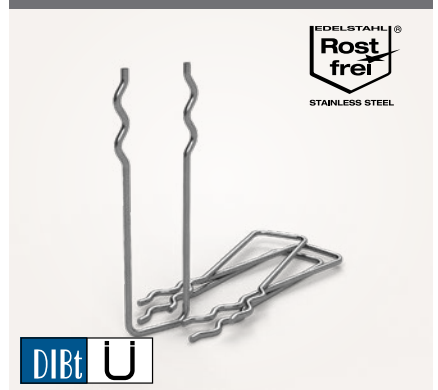
## Sandwich panel anchor system

VERSION: STAINLESS STEEL A4 / SS316

Diameter	Length	Weight			PU	Ref. no.
		VN	VB	AN		
(mm)	(mm)	(kg/100 pcs.)			(pc.)	
4	160	3.60	4.10	4.80	250	77_40160
4	180	4.00	4.50	5.20	250	77_40180
4	200	4.40	4.90	5.60	250	77_40200
4	220	4.80	5.30	6.00	250	77_40220
4	240	5.20	5.70	6.40	250	77_40240
4	250	5.40	5.90	6.60	250	77_40250
4	260	5.60	6.30	7.00	250	77_40260
4	280	6.00	6.70	7.40	250	77_40280
4	300	6.40	7.10	7.80	250	77_40300
4	320	6.80	7.50	8.20	-	77_40320
4	340	7.20	7.90	8.60	-	77_40340
4	360	7.60	8.30	9.00	-	77_40360
4	380	8.00	8.70	9.40	-	77_40380
4	400	8.40	9.10	9.80	-	77_40400
5	180	6.20	7.10	8.30	250	77_50180
5	200	6.90	7.70	8.90	250	77_50200
5	220	7.60	8.30	9.50	250	77_50220
5	240	8.30	8.90	10.10	250	77_50240
5	250	9.00	9.50	10.40	250	77_50250
5	260	9.70	10.10	11.00	250	77_50260
5	280	10.40	10.70	11.60	250	77_50280
5	300	11.10	11.30	12.20	250	77_50300
5	320	11.80	11.90	12.80	200	77_50320
5	340	12.50	12.50	13.40	200	77_50340
5	360	13.20	13.10	14.00	200	77_50360
5	380	13.90	13.70	14.60	-	77_50380
5	400	14.60	14.30	15.20	-	77_50400
5	420	15.30	14.90	15.80	-	77_50420
5	440	16.00	15.50	16.40	-	77_50440
5	460	16.70	16.10	17.00	-	77_50460
5	480	17.40	16.70	17.60	-	77_50480
5	500	18.10	17.30	18.20	-	77_50500
6	200	10.10	11.40	13.30	-	77_60200
6	220	11.00	12.30	14.20	-	77_60220
6	240	11.90	13.20	15.10	-	77_60240
6	250	12.80	13.65	15.55	-	77_60250
6	260	13.70	14.55	16.45	-	77_60260
6	280	14.60	15.45	17.35	-	77_60280
6	300	15.50	16.35	18.25	150	77_60300
6	320	16.40	17.25	19.15	150	77_60320
6	340	17.30	18.15	20.05	150	77_60340
6	360	18.20	19.05	20.95	150	77_60360
6	380	19.10	19.95	21.85	150	77_60380
6	400	20.00	20.85	22.75	150	77_60400
6	420	20.90	21.75	23.65	-	77_60420
6	440	21.80	22.65	24.55	-	77_60440
6	460	22.70	23.55	25.45	-	77_60460
6	480	23.60	24.45	26.35	-	77_60480
6	500	24.50	25.35	27.25	-	77_60500
6	520	25.40	26.25	28.15	-	77_60520

Please add the pin type to the reference number

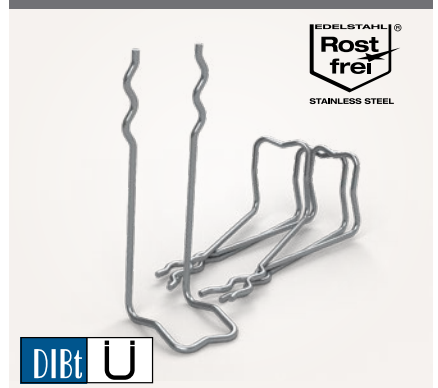
## CONNECTOR PIN (VN)



## CONNECTOR STIRRUP (VB)



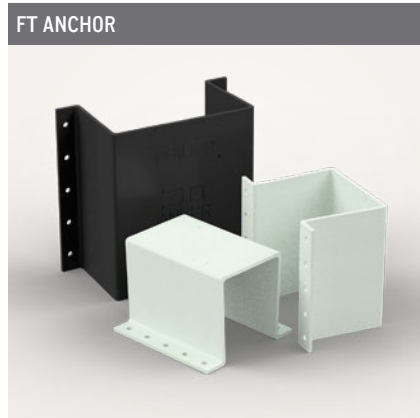
## CLIP-ON PIN (AN)





## FT anchor

VERSION: PLASTIC			
Width (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
60	8.00	80	77FTA060
80	10.00	60	77FTA080
120	16.00	72	77FTA120



### ThermoPin®

ThermoPin® is a composite anchor made of glass fibre reinforced plastic (GRP) for sandwich panels and core-insulated double walls.

#### Applications

- » Sandwich panels
- » Core-insulated double walls

#### Advantages:

- » Cost-effective – low costs due to quick and easy installation
- » Durable – tested resistance, even in alkaline media
- » Slim – constructions with thin layers possible



Transport

Connection

Facade

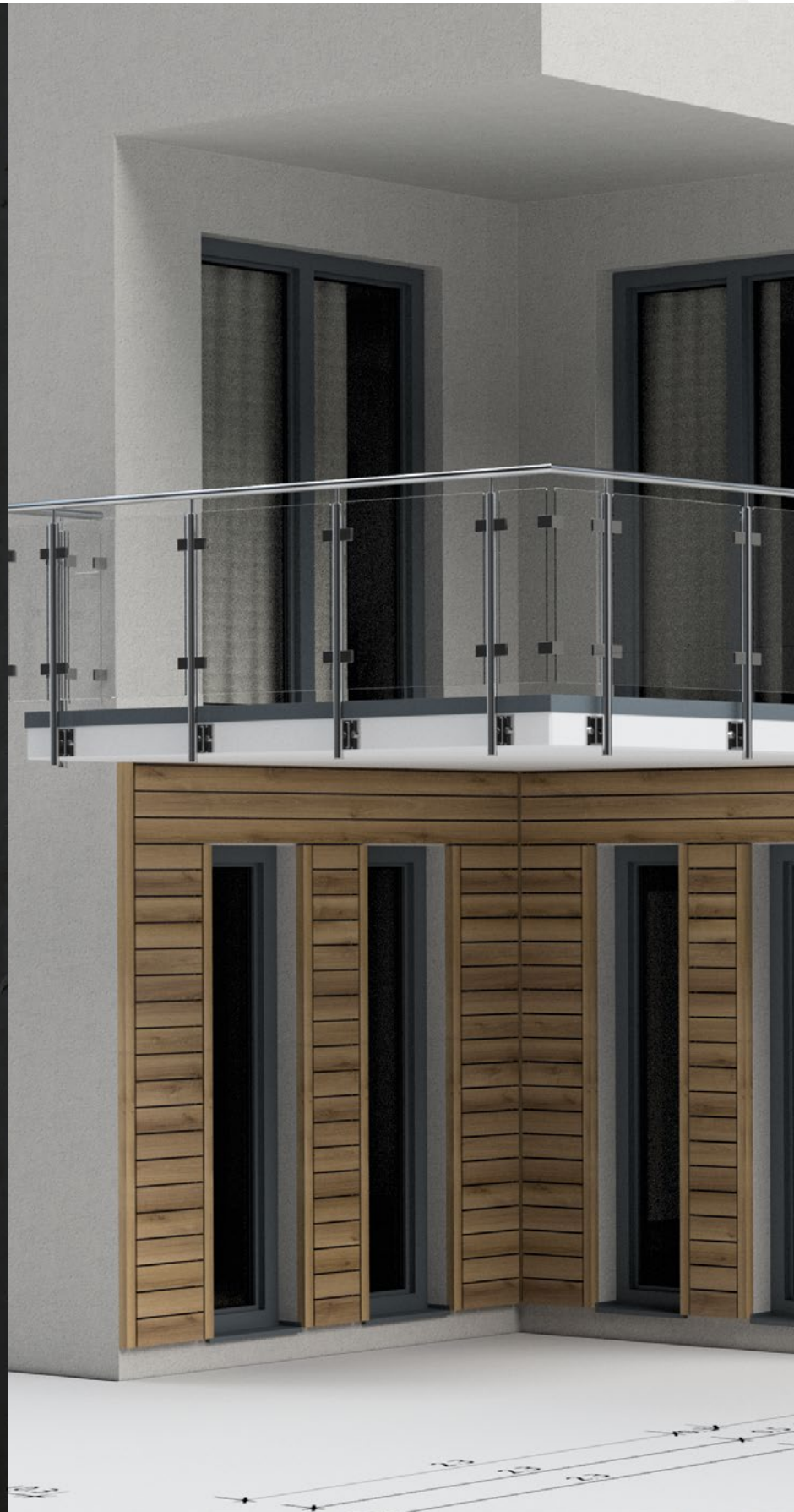
Fixing

Bearing systems

Earthing

## » Fixing technology

Fixations play a major role besides connections in prefabricated construction. This is because elements often have to be attached directly to prefabricated parts like panels, slabs or beams, and this as simply and quickly as possible to reduce mounting costs. Prefabricated fixing points with high load-bearing capacities offer ideal conditions for this compared to retrofitted solutions.

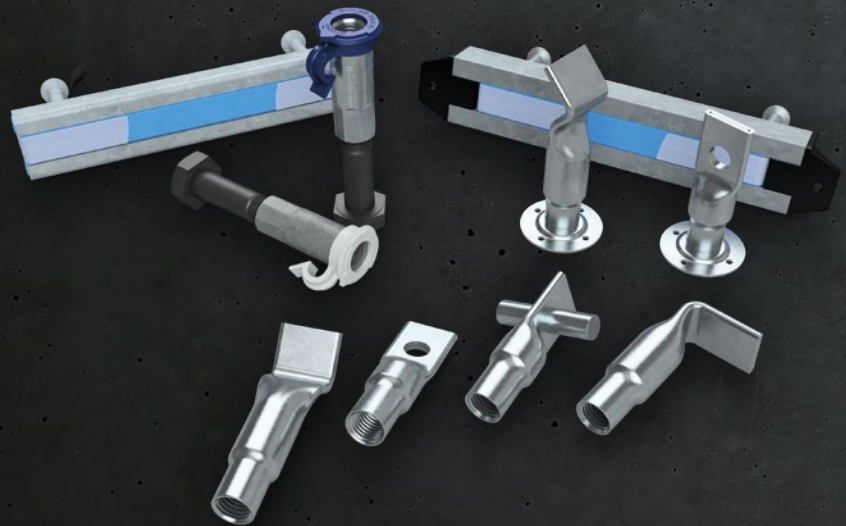


“

# FIXING SOCKETS THAT “HOLD” WHAT THEY PROMISE



# » Fixing technology



# CONTENT

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# PHILIPP PB ANCHOR IN COMBINATION

with single anchor point EAP-SPAR-11-35 from company INNOTECH® for personal protective equipment against falls (PPE)

This combination is suitable for the following personal protective systems in accordance with EN 363:2018:

- » Restraint system
- » Fall arrest system
- » Rescue system



## Your advantages

- » No drilling / gluing on site
- » System tested for up to three persons (incl. one first-aiders)
- » Suitable for all load directions
- » Universally applicable
- » Small edge distances

Transport

Connection

Facade

Fixing

Bearing systems

Earthing



with the Spanschloss® from company B.T. Innovation  
for a permanent connection of prefabricated concrete elements



#### What does this product offer?

With the BT-Spanschloss® concrete elements can be connected without any additional materials or accessories. The joint can be fully loaded immediately without any curing time and therefore saves a considerable amount of time and money compared to other known systems.

#### Your advantages

- » Approved "dry" screw connection without joint grouting, so no hardening or downtimes
- » Immediately fully loadable and removable at any time
- » Weather-independent mounting without special tools
- » Three-point connection (T-connection) possible



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## PB anchor

## VERSION: SOCKET GALVANISED INCL. MARKING RING

Type (RD)	Length (mm)	Weight S(kg/100 pcs.)	PU (pc.)	Ref. no.
12	77	9.00	200	70PBS12
16	115	24.00	100	70PBS16
20	155	49.00	50	70PBS20
24	201	89.00	50	70PBS24
30	250	171.00	25	70PBS30

## VERSION: SOCKET STAINLESS STEEL INCL. MARKING RING

Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	77	9.00	200	70PBS12VA
16	115	24.00	100	70PBS16VA
20	155	49.00	50	70PBS20VA
24	201	89.00	50	70PBS24VA
30	250	171.00	25	70PBS30VA

## VERSION: STEEL, BRIGHT ZINC PLATED, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	6.6	50	72AS12PBA
16	40	10	5.8	50	72AS16PBA
20	55	10	12.7	50	72AS20PBA
24	55	10	11.6	50	72AS24PBA
30	70	10	20.2	50	72AS30PBA

## VERSION: STAINLESS STEEL, CONICAL

Type (M/RD)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	6.6	50	72AS12PBAVA
16	40	10	5.8	50	72AS16PBAVA
20	55	10	12.7	50	72AS20PBAVA
24	55	10	11.6	50	72AS24PBAVA
30	70	10	20.2	50	72AS30PBAVA

## PB SYSTEM



## PB SYSTEM



## PB ADAPTER PLATE



## PB ADAPTER PLATE



Transport

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## PPE

VERSION: SET INCL. MARKING RING				
Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Version: socket bright zinc plated</b>				
16	115	24.00	100	70PBS16EAP
<b>Version: insert stainless steel (AISI 316)</b>				
16	115	24.00	100	70PBS16VAEAP

SINGLE ATTACHMENT POINT M16 WITH FLEXIBLE ANCHORAGE EYE				
Type (RD)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.	
16	0.24	1	70EAPM16	

VERSION: STAINLESS STEEL, INCL. MARKING RING				
Type (RD)	Height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
16	55	0.96	1	70PSA16VAFL-EAP

SINGLE ATTACHMENT POINT M16 WITH FLEXIBLE ANCHORAGE EYE				
Type (RD)	Length (mm)	PU (pc.)	Ref. no.	
16	150 - 500	1	70POINTM160_---	

Required length has to be added to the ref. no. (e.g. 70POINTM160300)

## PB ANCHOR WITH MARKING RING



## EAP-SPAR-11-35



## CAPPED END ANCHOR



## EAP-POINT-16



Transport

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## Fixing sockets

## VERSION: ELECTRO-GALVANISED

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
120	6	35	0.50	3000	6801206035
150	6	40	0.73	3000	6801206040
200	8	40	1.00	1500	6801208040
250	8	50	1.30	1000	6801208050
300	10	40	1.20	1000	6801210040
350	10	50	2.00	1000	6801210050
500	12	60	3.90	500	6801212060
600	12	70	4.60	400	6801212070
700	16	70	7.00	250	6801216070
800	16	80	7.90	250	6801216080
1000	16	100	10.40	100	6801216100
1200	16	120	12.80	100	6801216120
1250	20	100	19.00	100	6801220100
1400	20	120	19.20	100	6801220120
1800	24	120	23.40	50	6801224120
2750	30	150	63.90	25	6801230150

## VERSION: ELECTRO-GALVANISED

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
80	6	30	0.70	3000	6803206030
150	6	50	1.00	1500	6803206050
200	8	40	1.10	1000	6803208040
250	8	50	1.50	1000	6803208050
350	10	50	1.90	500	6803210050
400	10	60	2.70	500	6803210060
400	12	50	3.60	500	6803212050
600	12	70	5.10	300	6803212070
700	16	70	8.00	250	6803216070
800	16	80	10.70	200	6803216080
1000	16	100	11.40	100	6803216100
1250	20	100	17.30	100	6803220100
1600	24	100	22.50	50	6803224100

## VERSION: ELECTRO-GALVANISED

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
230	8	45	1.90	500	6805208045
250	8	50	2.00	500	6805208050
290	10	40	2.00	500	6805210040
400	10	60	3.50	500	6805210060
350	12	45	4.60	400	6805212045
600	12	70	6.60	250	6805212070
600	16	60	9.76	150	6805216060
1000	16	100	13.80	100	6805216100
1000	20	70	16.30	100	6805220070
1250	20	100	22.30	50	6805220100
1400	24	80	32.40	50	6805224080

## FIXING SOCKET WITH CROSS HOLE



## FIXING SOCKET WITH WAVED END



## FIXING SOCKET WITH ANGULAR END



## Fixing sockets

### VERSION: ELECTRO-GALVANISED

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
500	12	60	7.10	250	6807212060
800	16	80	12.80	100	6807216080
1000	16	100	15.00	100	6807216100
1250	20	95	22.10	50	6807220095
1400	20	115	29.20	50	6807220115
1800	24	120	46.10	50	6807224120

### FIXING SOCKET WITH CROSS PIN



### VERSION: STAINLESS STEEL

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
150	6	40	0.50	3000	6801406040VA
200	8	40	1.00	1500	6801408040VA
250	8	50	1.40	1000	6801408050VA
350	10	50	1.70	1000	6801410050VA
500	12	60	3.90	500	6801412060VA
600	12	70	4.60	400	6801412070VA
700	16	70	7.20	250	6801416070VA
800	16	80	8.60	250	6801416080VA
1000	16	100	10.60	100	6801416100VA
1200	16	120	12.80	100	6801416120VA
1250	20	100	15.70	100	6801420100VA
1800	24	120	33.00	50	6801424120VA

### FIXING SOCKET WITH CROSS HOLE



### VERSION: STAINLESS STEEL

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
120	6	35	0.67	1000	6803406035VA
200	8	40	1.10	1000	6803408040VA
250	8	50	1.50	1000	6803408050VA
350	10	50	1.90	500	6803410050VA
500	12	60	4.60	500	6803412060VA
600	12	70	5.10	300	6803412070VA
800	16	80	9.70	200	6803416080VA
1000	16	100	12.10	100	6803416100VA
1250	20	100	18.30	100	6803420100VA
1800	24	120	33.00	50	6803424120VA

### FIXING SOCKET WITH WAVED END



Transport

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# FIXING TECHNOLOGY

## Fixing socket with nailing plate

### VERSION: ELECTRO-GALVANISED, WITH NAILING PLATE

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
400	10	60	3.00	300	6804210060
600	12	70	6.00	250	6804212070
1000	16	100	12.70	100	6804216100
1250	20	100	18.40	50	6804220100
1600	24	100	28.60	50	6804224100

### VERSION: ELECTRO-GALVANISED, WITH NAILING PLATE

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
400	10	60	3.50	250	6806210060
600	12	70	6.90	200	6806212070
1000	16	100	16.00	100	6806216100
1250	20	100	20.70	50	6806220100

### VERSION: ELECTRO-GALVANISED, WITH NAILING PLATE

Load class (kg)	Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
250	8	50	1.40	400	6802208050
350	10	50	2.10	500	6802210050
600	12	70	5.50	200	6802212070
1000	16	100	11.40	100	6802216100
1250	20	100	19.00	50	6802220100

### VERSION: STEEL, GALVANISED, CONICAL, PLUG-ON

Thread (M)	Outer Ø (mm)	Plate height (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
12	40	10	7.36	1	72MAXKHN120G
16	40	10	8.07	1	72MAXKHN160G
20	55	10	17.69	1	72MAXKHN200G
24	55	10	19.03	1	72MAXKHN240G

### FIXING SOCKET WITH WAVED END



### FIXING SOCKET WITH ANGULAR END



### FIXING SOCKET WITH CROSS HOLE



### MAGNETIC RECESS FORMER



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## Cast-in channels cold-formed with studs

VERSION: 28/15 COLD-FORMED, HOT-DIP GALVANISED				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
100	45	2	120	8228150100FV
150	45	2	90	8228150150FV
200	45	2	70	8228150200FV
250	45	2	60	8228150250FV
300	45	2	45	8228150300FV
350	45	3	35	8228150350FV
450	45	3	84	8228150450FV
550	45	4	84	8228150550FV
850	45	5	84	8228150850FV
1050	45	6	84	8228151050FV
3050	45	16	84	8228153050FV
6070	45	31	84	8228156070FV

- With elastic foam and integrated trigger line
- Special length available on request



Transport

Connection

VERSION: 28/15 COLD-FORMED, STAINLESS STEEL A4 / SS316				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
100	45	2	120	8228150100VA
150	45	2	90	8228150150VA
200	45	2	70	8228150200VA
250	45	2	60	8228150250VA
300	45	2	45	8228150300VA
350	45	3	35	8228150350VA
450	45	3	84	8228150450VA
550	45	4	84	8228150550VA
850	45	5	84	8228150850VA
1050	45	6	84	8228151050VA
3050	45	16	84	8228153050VA
6070	45	31	84	8228156070VA

- With elastic foam and integrated trigger line
- Special length available on request



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## Cast-in channels cold-formed with studs

## VERSION: 38/17 COLD-FORMED, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
100	76	2	120	8238170100FV (1)
150	76	2	90	8238170150FV
200	76	2	70	8238170200FV
250	76	2	60	8238170250FV
300	76	2	45	8238170300FV
350	76	3	35	8238170350FV
450	76	3	84	8238170450FV
550	76	4	84	8238170550FV
850	76	5	84	8238170850FV
1050	76	6	84	8238171050FV
3050	76	16	84	8238173050FV
6070	76	31	84	8238176070FV

- With elastic foam and integrated trigger line
- Special length available on request

## CAST-IN CHANNEL 38/17



## VERSION: 38/17 COLD-FORMED, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
100	76	2	120	8238170100VA (1)
150	76	2	90	8238170150VA
200	76	2	70	8238170200VA
250	76	2	60	8238170250VA
300	76	2	45	8238170300VA
350	76	3	35	8238170350VA
450	76	3	84	8238170450VA
550	76	4	84	8238170550VA
850	76	5	84	8238170850VA
1050	76	6	84	8238171050VA
3050	76	16	84	8238173050VA
6070	76	31	84	8238176070VA

- (1) Length not covered by ETA
- With elastic foam and integrated trigger line
  - Special length available on request

## CAST-IN CHANNEL 38/17



## Cast-in channels cold-formed with studs

VERSION: 40/25 COLD-FORMED, HOT-DIP GALVANISED				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	79	2	80	8240250150FV
200	79	2	60	8240250200FV
250	79	2	50	8240250250FV
300	79	2	40	8240250300FV
350	79	3	35	8240250350FV
400	79	3	70	8240250400FV
550	79	3	70	8240250550FV
800	79	4	70	8240250800FV
1050	79	5	70	8240251050FV
3050	79	13	70	8240253050FV
6070	79	25	70	8240256070FV

- With elastic foam and integrated trigger line
- Special length available on request



Transport

Connection

VERSION: 40/25 COLD-FORMED, STAINLESS STEEL A4 / SS316				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	79	2	80	8240250150VA
200	79	2	60	8240250200VA
250	79	2	50	8240250250VA
300	79	2	40	8240250300VA
350	79	3	35	8240250350VA
400	79	3	70	8240250400VA
550	79	3	70	8240250550VA
800	79	4	70	8240250800VA
1050	79	5	70	8240251050VA
3050	79	13	70	8240253050VA
6070	79	25	70	8240256070VA

- (1) Length not covered by ETA
- With elastic foam and integrated trigger line
  - Special length available on request



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# FIXING TECHNOLOGY

## Cast-in channels cold-formed with studs

### VERSION: 49/30 COLD-FORMED, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	94	2	50	8249300150FV
200	94	2	40	8249300200FV
250	94	2	30	8249300250FV
300	94	2	30	8249300300FV
350	94	3	25	8249300350FV
400	94	3	54	8249300400FV
550	94	3	54	8249300550FV
800	94	4	54	8249300800FV
1050	94	5	54	8249301050FV
3050	94	13	54	8249303050FV
6070	94	25	54	8249306070FV

- With elastic foam and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 49/30



FV

### VERSION: 49/30 COLD-FORMED, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	94	2	50	8249300150VA
200	94	2	40	8249300200VA
250	94	2	30	8249300250VA
300	94	2	30	8249300300VA
350	94	3	25	8249300350VA
400	94	3	54	8249300400VA
550	94	3	54	8249300550VA
800	94	4	54	8249300800VA
1050	94	5	54	8249301050VA
3050	94	13	54	8249303050VA
6070	94	25	54	8249306070VA

- With elastic foam and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 49/30



A4

Transport

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## Cast-in channels cold-formed with studs

VERSION: 54/33 COLD-FORMED, HOT-DIP GALVANISED				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	155	2	30	8254330150FV
200	155	2	25	8254330200FV
250	155	2	20	8254330250FV
300	155	2	15	8254330300FV
350	155	3	15	8254330350FV
400	155	3	27	8254330400FV
550	155	3	27	8254330550FV
800	155	4	27	8254330800FV
1050	155	5	27	8254331050FV
3050	155	13	27	8254333050FV
6070	155	25	27	8254336070FV

- With elastic foam and integrated trigger line
- Special length available on request



Transport

Connection

VERSION: 54/33 COLD-FORMED, STAINLESS STEEL A4 / SS316				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	155	2	30	8254330150VA
200	155	2	25	8254330200VA
250	155	2	20	8254330250VA
300	155	2	15	8254330300VA
350	155	3	15	8254330350VA
400	155	3	27	8254330400VA
550	155	3	27	8254330550VA
800	155	4	27	8254330800VA
1050	155	5	27	8254331050VA
3050	155	13	27	8254333050VA
6070	155	25	27	8254336070VA

- With elastic foam and integrated trigger line
- Special length available on request

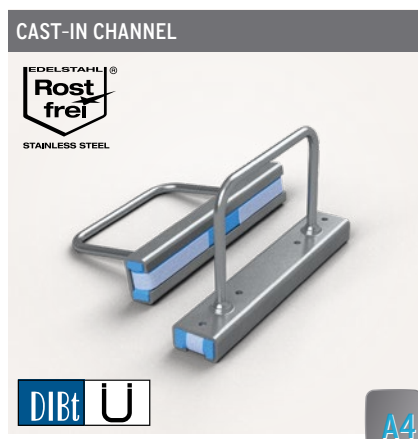


Facade

Fixing

CAST-IN CHANNEL FOR PRECAST CONCRETE LINTELS, STAINLESS STEEL A4 / SS316				
Type	Length (mm)	Embedment depth (mm)	PU (pc.)	Ref. no.
28/15	150	81	700	82ES2815VA
38/17	150	117	700	82ES3817VA

- With elastic foam and integrated trigger line
- Special length available on request



Bearing systems

Earthing

# FIXING TECHNOLOGY

## Cast-in channels hot-rolled with studs

### VERSION: 40/22 HOT-ROLLED WITH STUDS, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	79	2	80	8240220150FV
200	79	2	50	8240220200FV
250	79	2	50	8240220250FV
300	79	2	40	8240220300FV
350	79	3	25	8240220350FV
400	79	3	70	8240220400FV
550	79	3	70	8240220550FV
800	79	4	70	8240220800FV
1050	79	5	70	8240221050FV
1300	79	6	70	8240221300FV
1550	79	7	70	8240221550FV
1800	79	8	70	8240221800FV
2050	79	9	70	8240222050FV
2300	79	10	70	8240222300FV
3050	79	13	70	8240223050FV
6070	79	25	70	8240226070FV

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

### VERSION: 40/22 HOT-ROLLED WITH STUDS, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	79	2	80	8240220150VA
200	79	2	50	8240220200VA
250	79	2	50	8240220250VA
300	79	2	40	8240220300VA
350	79	3	25	8240220350VA
400	79	3	70	8240220400VA
550	79	3	70	8240220550VA
800	79	4	70	8240220800VA
1050	79	5	70	8240221050VA
3050	79	13	70	8240223050VA
6070	79	25	70	8240226070VA

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 40/22



### CAST-IN CHANNEL 40/22



Transport

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## Cast-in channels hot-rolled with studs

### VERSION: 50/30 HOT-ROLLED WITH STUDS, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	94	2	40	8250300150FV
200	94	2	30	8250300200FV
250	94	2	25	8250300250FV
300	94	2	25	8250300300FV
350	94	3	15	8250300350FV
400	94	3	54	8250300400FV
550	94	3	54	8250300550FV
800	94	4	54	8250300800FV
1050	94	5	54	8250301050FV
3050	94	13	54	8250303050FV
6070	94	25	54	8250306070FV

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 50/30



Transport

Connection

### VERSION: 50/30 HOT-ROLLED WITH STUDS, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	94	2	40	8250300150VA
200	94	2	30	8250300200VA
250	94	2	25	8250300250VA
300	94	2	25	8250300300VA
350	94	3	15	8250300350VA
400	94	3	54	8250300400VA
550	94	3	54	8250300550VA
800	94	4	54	8250300800VA
1050	94	5	54	8250301050VA
3050	94	13	54	8250303050VA
6070	94	25	54	8250306070VA

- With elastic foam, both-sided locking cap and integrated trigger line
- special length available on request

### CAST-IN CHANNEL 50/30



Facade

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## Cast-in channels hot-rolled with studs

## VERSION: 52/34 HOT-ROLLED WITH STUDS, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
170	155	2	25	8252340170FV
200	155	2	20	8252340200FV
250	155	2	15	8252340250FV
300	155	2	15	8252340300FV
350	155	3	10	8252340350FV
400	155	3	27	8252340400FV
550	155	3	27	8252340550FV
800	155	4	27	8252340800FV
1050	155	5	27	8252341050FV
3050	155	13	27	8252343050FV
6070	155	25	27	8252346070FV

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

## CAST-IN ANCHOR CHANNEL 52/34



## VERSION: 52/34 HOT-ROLLED WITH STUDS, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	155	2	25	8252340150VA
200	155	2	20	8252340200VA
250	155	2	15	8252340250VA
300	155	2	15	8252340300VA
350	155	3	10	8252340350VA
400	155	3	27	8252340400VA
550	155	3	27	8252340550VA
800	155	4	27	8252340800VA
1050	155	5	27	8252341050VA
3050	155	13	27	8252343050VA
6070	155	25	27	8252346070VA

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

## CAST-IN CHANNEL 52/34



Transport

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## Cast-in channels hot-rolled with studs

VERSION: 40/22-P HOT-ROLLED WITH STUDS, HOT-DIP GALVANISED				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	91	2	80	824022P0150FV
200	91	2	50	824022P0200FV
250	91	2	50	824022P0250FV
300	91	2	40	824022P0300FV
350	91	3	25	824022P0350FV
400	91	3	70	824022P0400FV
550	91	3	70	824022P0550FV
800	91	4	70	824022P0800FV
1050	91	5	70	824022P1050FV
1300	91	6	70	824022P1300FV
1550	91	7	70	824022P1550FV
1800	91	8	70	824022P1800FV
2050	91	9	70	824022P2050FV
2300	91	10	70	824022P2300FV
3050	91	13	70	824022P3050FV
6070	91	25	70	824022P6070FV

- With elastic foam, both-sided locking cap and integrated trigger line

- Special length available on request



Transport

Connection

VERSION: 40/22-P HOT-ROLLED WITH STUDS, STAINLESS STEEL A4 / SS316				
Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	91	2	80	824022P0150VA
200	91	2	50	824022P0200VA
250	91	2	50	824022P0250VA
300	91	2	40	824022P0300VA
350	91	3	25	824022P0350VA
400	91	3	70	824022P0400VA
550	91	3	70	824022P0550VA
800	91	4	70	824022P0800VA
1050	91	5	70	824022P1050VA
3050	91	13	70	824022P3050VA
6070	91	25	70	824022P6070VA

- With elastic foam, both-sided locking cap and integrated trigger line

- Special length available on request



Facade

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# FIXING TECHNOLOGY

## Cast-in channels hot-rolled with studs

### VERSION: 50/30-P HOT-ROLLED WITH STUDS, HOT-DIP GALVANISED

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	106	2	40	825030P0150FV
200	106	2	30	825030P0200FV
250	106	2	25	825030P0250FV
300	106	2	25	825030P0300FV
350	106	3	15	825030P0350FV
400	106	3	54	825030P0400FV
550	106	3	54	825030P0550FV
800	106	4	54	825030P0800FV
1050	106	5	54	825030P1050FV
1550	106	7	54	825030P1550FV
3050	106	13	54	825030P3050FV
6070	106	25	54	825030P6070FV

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 50/30-P



Transport

Connection

### VERSION: 50/30-P HOT-ROLLED WITH STUDS, STAINLESS STEEL A4 / SS316

Length (mm)	Embedment depth (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
150	106	2	40	825030P0150VA
200	106	2	30	825030P0200VA
250	106	2	25	825030P0250VA
300	106	2	25	825030P0300VA
350	106	3	15	825030P0350VA
400	106	3	54	825030P0400VA
550	106	3	54	825030P0550VA
800	106	4	54	825030P0800VA
1050	106	5	54	825030P1050VA
3050	106	13	54	825030P3050VA
6070	106	25	54	825030P6070VA

- With elastic foam, both-sided locking cap and integrated trigger line
- Special length available on request

### CAST-IN CHANNEL 50/30-P



Facade

Fixing

Length (mm)	Width (mm)	PU (pc.)	Ref. no.
100	26	1	82MAX2815
100	30	1	82MAX3817
100	30	1	82MAX4022
100	30	1	82MAX4025
100	30	1	82MAX5030
100	30	1	82MAX5234

For the combination of magnets and cast-in channels please refer to the Application Instruction of the Magnetic fastener for anchor channels.

### MAGNETIC FASTENER



Bearing systems

Earthing

## Hammer-head bolt

HAMMER-HEAD BOLT HBC-28/15 (INCL. NUT)				
Length (mm)	Ref. no. 82HBC2815...			
	M6 Ref. no.	M8 Ref. no.	M10 Ref. no.	M12 Ref. no.
<b>Hot-dip galvanised 8.8</b>				
30	...06030FV	...08030FV	...10030FV	...12030FV
40	...06040FV	...08040FV	...10040FV	...12040FV
50	...06050FV	...08050FV	...10050FV	...12050FV
60	...06060FV	...08060FV	...10060FV	...12060FV
70	...06070FV	...08070FV	...10070FV	...12070FV
80	...06080FV	...08080FV	...10080FV	...12080FV
90	...06090FV	...08090FV	...10090FV	...12090FV
100	...06100FV	...08100FV	...10100FV	...12100FV
<b>Stainless steel A4-70 / SS316</b>				
30	...06030VA	...08030VA	...10030VA	...12030VA
40	...06040VA	...08040VA	...10040VA	...12040VA
50	...06050VA	...08050VA	...10050VA	...12050VA
60	...06060VA	...08060VA	...10060VA	...12060VA
70	...06070VA	...08070VA	...10070VA	...12070VA
80	...06080VA	...08080VA	...10080VA	...12080VA
90	...06090VA	...08090VA	...10090VA	...12090VA
100	...06100VA	...08100VA	...10100VA	...12100VA

HAMMER-HEAD BOLT HBC-38/17 (INCL. NUT)				
Length (mm)	Ref. no. 82HBC3817...			
	M8 Ref. no.	M10 Ref. no.	M12 Ref. no.	M16 Ref. no.
<b>Hot-dip galvanised 8.8</b>				
30	...08030FV	...10030FV	...12030FV	...16030FV
40	...08040FV	...10040FV	...12040FV	...16040FV
50	...08050FV	...10050FV	...12050FV	...16050FV
60	...08060FV	...10060FV	...12060FV	...16060FV
70	...08070FV	...10070FV	...12070FV	...16070FV
80	...08080FV	...10080FV	...12080FV	...16080FV
90	...08090FV	...10090FV	...12090FV	...16090FV
100	...08100FV	...10100FV	...12100FV	...16100FV
<b>Stainless steel A4-70 / SS316</b>				
30	...08030VA	...10030VA	...12030VA	...16030VA
40	...08040VA	...10040VA	...12040VA	...16040VA
50	...08050VA	...10050VA	...12050VA	...16050VA
60	...08060VA	...10060VA	...12060VA	...16060VA
70	...08070VA	...10070VA	...12070VA	...16070VA
80	...08080VA	...10080VA	...12080VA	...16080VA
90	...08090VA	...10090VA	...12090VA	...16090VA
100	...08100VA	...10100VA	...12100VA	...16100VA

### HAMMER-HEAD BOLT



Suitable for following profiles:  
- 28/15

### HAMMER-HEAD BOLT



Suitable for following profiles:  
- 38/17

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## Hook-head bolt

HOOK-HEAD BOLT HBC-40/22 (INCL. NUT)				
Length (mm)	Ref. no. 82HBC4022...			
	M10 Ref. no.	M12 Ref. no.	M16 Ref. no.	
<b>Hot-dip galvanised 8.8</b>				
30	...10030FV	...12030FV	...16030FV	
40	...10040FV	...12040FV	...16040FV	
50	...10050FV	...12050FV	...16050FV	
60	...10060FV	...12060FV	...16060FV	
70	...10070FV	...12070FV	...16070FV	
80	...10080FV	...12080FV	...16080FV	
90	...10090FV	...12090FV	...16090FV	
100	...10100FV	...12100FV	...16100FV	
<b>Stainless steel A4-70 / SS316</b>				
30	...10030VA	...12030VA	...16030VA	
40	...10040VA	...12040VA	...16040VA	
50	...10050VA	...12050VA	...16050VA	
60	...10060VA	...12060VA	...16060VA	
70	...10070VA	...12070VA	...16070VA	
80	...10080VA	...12080VA	...16080VA	
90	...10090VA	...12090VA	...16090VA	
100	...10100VA	...12100VA	...16100VA	

HAMMER-HEAD BOLT HBC-50/30 (INCL. NUT)				
Length (mm)	Ref. no. 82HBC5030...			
	M6 Ref. no.	M8 Ref. no.	M10 Ref. no.	M12 Ref. no.
<b>Hot-dip galvanised 8.8</b>				
30	...06030FV	...08030FV	...10030FV	...12030FV
40	...06040FV	...08040FV	...10040FV	...12040FV
50	...06050FV	...08050FV	...10050FV	...12050FV
60	...06060FV	...08060FV	...10060FV	...12060FV
70	...06070FV	...08070FV	...10070FV	...12070FV
80	...06080FV	...08080FV	...10080FV	...12080FV
90	...06090FV	...08090FV	...10090FV	...12090FV
100	...06100FV	...08100FV	...10100FV	...12100FV
<b>Stainless steel A4-70 / SS316</b>				
30	...06030VA	...08030VA	...10030VA	...12030VA
40	...06040VA	...08040VA	...10040VA	...12040VA
50	...06050VA	...08050VA	...10050VA	...12050VA
60	...06060VA	...08060VA	...10060VA	...12060VA
70	...06070VA	...08070VA	...10070VA	...12070VA
80	...06080VA	...08080VA	...10080VA	...12080VA
90	...06090VA	...08090VA	...10090VA	...12090VA
100	...06100VA	...08100VA	...10100VA	...12100VA

## HOOK-HEAD BOLT



Suitable for following profiles:  
- 40/22  
- 40/25

## HOOK-HEAD BOLT



Suitable for following profiles:  
- 54/33  
- 52/34  
- 50/30  
- 49/30

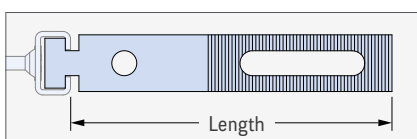


## Toothed strap

## VERSION: ELECTRO-GALVANISED (INCL. TOOTHED COUNTER PLATE)

Length (mm)	PU (pc.)	Ref. no.
<b>Suitable for profile 28/15</b>		
75	100	82VL2815075VC
100	100	82VL2815100VC
125	100	82VL2815125VC
150	100	82VL2815150VC
175	100	82VL2815175VC
200	100	82VL2815200VC
<b>Suitable for profile 38/17</b>		
75	100	82VL3817075VC
100	100	82VL3817100VC
125	100	82VL3817125VC
150	100	82VL3817150VC
175	100	82VL3817175VC
200	100	82VL3817200VC

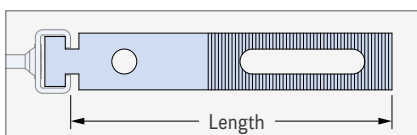
## TOOTHED STRAP VL



## VERSION: STAINLESS STEEL (INCL. TOOTHED COUNTER PLATE)

Length (mm)	PU (pc.)	Ref. no.
<b>Suitable for profile 28/15</b>		
75	100	82VL2815075VA
100	100	82VL2815100VA
125	100	82VL2815125VA
150	100	82VL2815150VA
175	100	82VL2815175VA
200	100	82VL2815200VA
<b>Suitable for profile 38/17</b>		
75	100	82VL3817075VA
100	100	82VL3817100VA
125	100	82VL3817125VA
150	100	82VL3817150VA
175	100	82VL3817175VA
200	100	82VL3817200VA

## TOOTHED STRAP VL



## VERSION: SENDZIMIR ZINC PLATED / STAINLESS STEEL

Type (suitable for profile)	Length (mm)	PU (pc.)	Ref. no.
<b>Sendzimir zinc plated</b>			
38/17	85	100	82BL085SV
38/17	120	100	82BL120SV
38/17	180	100	82BL180SV
<b>Stainless steel</b>			
38/17	120	100	82BL120VA
38/17	180	100	82BL180VA

## BRICK TIE ANCHOR BL



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

# FIXING TECHNOLOGY

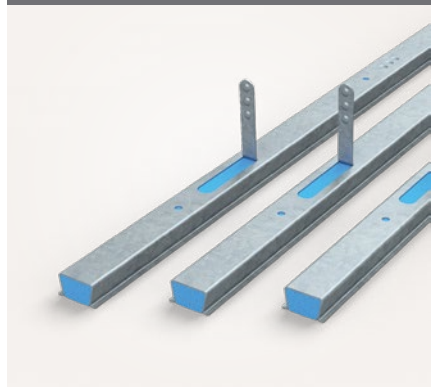
## Trapezoidal sheet metal channel / brick-tie channel system

### VERSION: 25/15 SENDZIMIR ZINC PLATED / STAINLESS STEEL

Length (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
<b>Sendzimir zinc plated</b>			
2500	10	40	82MAS25152500SV
<b>Stainless steel</b>			
2500	10	40	82MAS25152500VA

- With elastic foam

### BRICK TIE CHANNEL MS



### VERSION: HOT-DIP GALVANISED / STAINLESS STEEL

Type (suitable for profile)	Length (mm)	PU (pc.)	Ref. no.
<b>Hot-dip galvanised</b>			
25/15 and 28/15	85	100	82ML085FV
25/15 and 28/15	120	100	82ML120FV
25/15 and 28/15	180	100	82ML180FV
<b>Stainless steel</b>			
25/15 and 28/15	120	100	82ML120VA
25/15 and 28/15	180	100	82ML180VA

- With elastic foam

### BRICK TIE CHANNEL ML



### VERSION: STAINLESS STEEL

Type (suitable for profile)	Length (mm)	PU (pc.)	Ref. no.
25/15 and 28/15	120	100	82PB120VA
25/15 and 28/15	150	100	82PB150VA
25/15 and 28/15	180	100	82PB180VA
25/15 and 28/15	240	100	82PB240VA

### THIN BED MORTAR ANCHOR PB

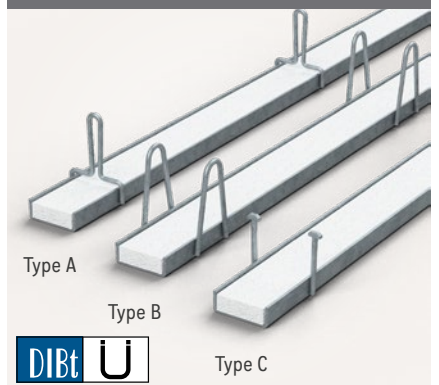


### VERSION: HOT-DIP GALVANISED

Type	Length (mm)	No. of studs (pc.)	Ref. no.
A	3000	8	82TS3A300008FV
A	3000	20	82TS3A300020FV
B	3000	8	82TS3B300008FV
B	3000	20	82TS3B300020FV
C	3000	8	82TS3C300008FV
C	3000	20	82TS3C300020FV

- Version: channel thickness 3 mm, hot-dip galvanised, Styrofoam filling

### TRAPEZOIDAL CAST-IN CHANNEL



Type A

Type B

Type C



## Cable holder channels

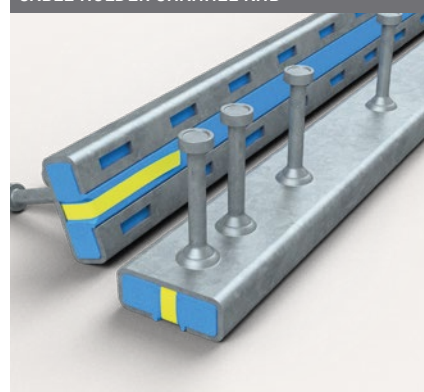
### VERSION: 70/28 FOR USE IN CONCRETE, HOT-DIP GALVANISED

Length (mm)	No. of studs (pc.)	PU (pc.)	Ref. no.
670	7	54	82KHB0670FV
820	8	54	82KHB0820FV
970	9	54	82KHB0970FV
1120	10	54	82KHB1120FV
1270	11	54	82KHB1270FV
1345	12	54	82KHB1345FV
1645	14	54	82KHB1645FV
1945	16	54	82KHB1945FV
2245	18	54	82KHB2245FV
2545	20	54	82KHB2545FV

- With elastic foam and integrated trigger line

- Special length available on request

### CABLE HOLDER CHANNEL KHB



### VERSION: 70/28 FOR DOWELLING, HOT-DIP GALVANISED

Length (mm)	Punching	PU (pc.)	Ref. no.
1400	Ø13	54	82KHM1400FV
1700	Ø13	54	82KHM1700FV
2000	Ø13	54	82KHM2000FV
2300	Ø13	54	82KHM2300FV
2600	Ø13	54	82KHM2600FV

- Special length available on request

### CABLE HOLDER CHANNEL KHM



### VERSION: PLASTIC

Type	PU (pc.)	Ref. no.
70/28	100	82KHE7028

### LOCKING CAPS



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

## Consoles

Transport

## VERSION: 70/28 HOT-DIP GALVANISED / PLASTIC

Support length (mm)	PU (pc.)	Ref. no.
210	1	82KKH210FV
310	1	82KKH310FV
420	1	82KKH420FV
600	1	82KKH600FV

Connection

## VERSION: 70/28 HOT-DIP GALVANISED / PLASTIC

Support length (mm)	PU (pc.)	Ref. no.
210	1	82KWB210FV
310	1	82KWB310FV
420	1	82KWB420FV
600	1	82KWB600FV

Facade

Fixing

Bearing systems

Earthing

## HOOK-IN BRACKETS



## CONSOLE



## Mounting channels

VERSION: HOT-ROLLED			
Type	Length (mm)	PU (pc.)	Ref. no.
<b>Bright</b>			
40/22	6070	50	82MS402206070BL
50/30	6070	50	82MS503006070BL
52/34	6070	50	82MS523406070BL
<b>Hot-dip galvanised</b>			
40/22	6070	50	82MS402206070FV
50/30	6070	50	82MS503006070FV
52/34	6070	50	82MS523406070FV
<b>Stainless steel</b>			
40/22	6070	50	82MS402206070VA
50/30	6070	50	82MS503006070VA
52/34	6070	50	82MS523406070VA

Other lengths available on request.

VERSION: COLD-FORMED			
Type	Length (mm)	PU (pc.)	Ref. no.
<b>Bright</b>			
28/15	6070	50	82MS281506070BL
38/17	6070	50	82MS381706070BL
<b>Hot-dip galvanised</b>			
28/15	6070	50	82MS281506070FV
38/17	6070	50	82MS381706070FV
<b>Stainless steel</b>			
28/15	6070	50	82MS281506070VA
38/17	6070	50	82MS381706070VA

Other lengths available on request.

VERSION: COLD-FORMED WITH PUNCHING			
Type	Length (mm)	PU (pc.)	Ref. no.
<b>Hot-dip galvanised</b>			
28/15	3050	50	82MS281503050FVL
28/15	6070	50	82MS281506070FVL
<b>Stainless steel</b>			
28/15	6070	50	82MS281506070VAL

Other lengths available on request.

MOUNTING CHANNEL



MOUNTING CHANNEL



MOUNTING CHANNEL



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

## Clamping plate

## VERSION: HOT-DIP GALVANISED

Clamping height (mm)	PU (pc.)	Ref. no.
10	100	82KLP6010
12	100	82KLP6012
14	100	82KLP6014
16	100	82KLP6016
18	100	82KLP6018
20	100	82KLP6020

## CLAMPING PLATE ACC. TO DIN 3568



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

Transport

Connection

Facade

**Fixing**

Bearing systems

Earthing

## » Bearing systems with noise reduction

Requirements from the building physics are also becoming more and more important in prefabricated construction. Here, the protection of human health but also the growing demands for comfort are gaining in importance.

In this context, noise protection plays a significant role in ensuring that unacceptable disturbances due to sound transmission do not occur. Besides airborne sound insulation, impact sound insulation is an important part in the structural-physical consideration of a building.

Stairs and landings must be installed in buildings in such a way that they are acoustically decoupled, so that impact sound transmission from the staircase system via the staircase walls or structural slabs is prevented. With prefabricated reinforced concrete elements, suitable decoupling elements can fulfil this requirement.

The secret of sound insulation here lies in the actual elastomeric bearings, which are the most important part of the elements.





“

# DID YOU HEAR THAT?



# NOISE PROTECTION TECHNOLOGY

## System overview

### ISODORN HQW®

For decoupling of (spiral) staircases and landings as well as loggias and access balconies, the ISODORN HQW® can be used universally and without further brackets in staircases of any design. The system is suitable for vertical shear forces (in both directions) and can be extended by additional components such as height adjustment, tie bar, increased mounting distances up to 120 mm and much more.



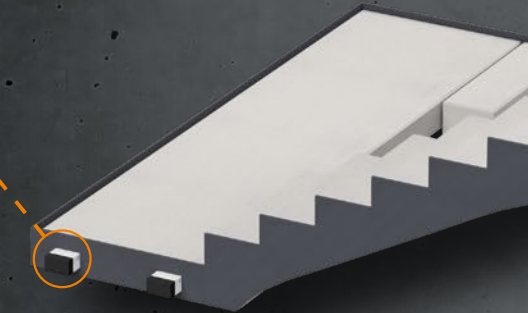
### Stair dowel TreDo

A compact solution for decoupling of stairs and landings is our stair bolt called TreDo. Its combination of a simple bolt for shear forces with many applications of support and a well sound reduction convinces.



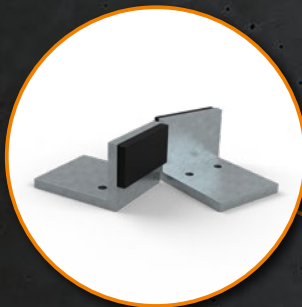
### PD dowel

On the one hand the PD Dowel is used to secure the structural position of concrete elements and on the other hand as sound decoupling at the base of a staircase. The dowel can be used in prefabricated and in-situ concrete staircases and is available in a galvanised or stainless steel version.



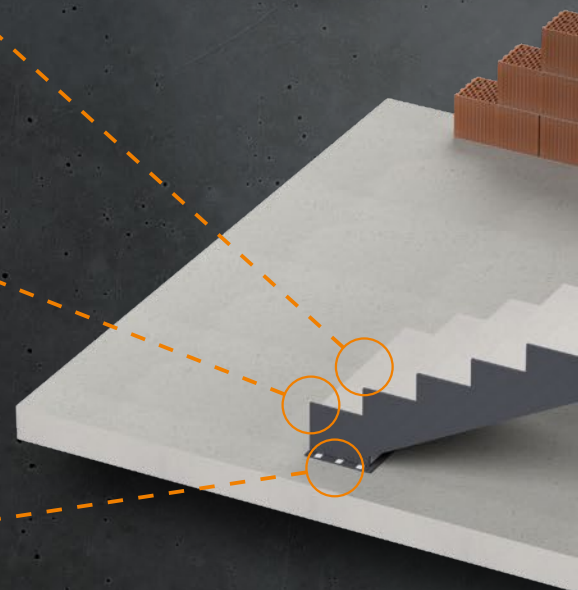
### Treppenfußwinkel Typ PD-H

The Stair angle is used in order to secure the structural position of concrete elements that are to be sound decoupled. The angles are installed at the base of the stairs to support them against horizontal actions.



### Sound board NB

The Sound board NB is used for the acoustic decoupling of a stair base or a landing from the floor slab. Here, the board can be easily adapted to different geometric shapes of the stair base by cutting on-site. The actual element to be decoupled can be made of in-situ concrete or as prefabricated element.





### Sound board NF

The Sound board NF is used for the acoustic decoupling of stair cases resp. landings with continuous brackets. All concrete elements can be made of in-situ concrete or as prefabricated parts. An adaptation of the Sound board NF to different geometric shapes of the concrete elements is possible by cutting on-site. The special type NF-VH can also be used to transfer horizontal loads from planned actions.



### Bearing system with noise reduction (TSS system)

The TSS system is versatile and also suitable for single-flight as well as spiral staircases made of precast concrete. In combination with diverse PHILIPP Threaded transport anchors it is very variable and thus offers numerous possibilities for different stair inclinations.



### Sound board NL

The Sound board NL is used to create the joint between stairs resp. landings and the staircase walls without acoustic bridges. All concrete elements can be made of in-situ concrete or as prefabricated parts. The boards made of PE foam are self-adhesive with no load-bearing function. An adaptation of the Sound board NL to different geometric shapes of the concrete elements is possible by cutting on-site.

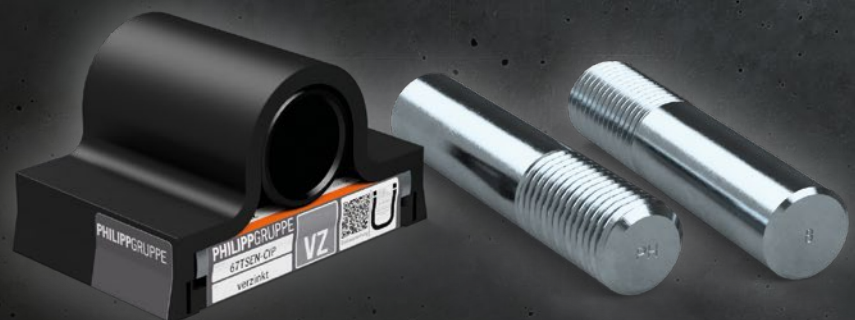


### ISOBOX TSB®

The ISOBOX TSB® is designed for a wide range of applications and is suitable for use in staircases and in particular for the support of in-situ and precast concrete landings in staircase walls of any type. Here, the system can be individually extended with elastomeric bearings to transfer loads in up to three directions. Only a reinforcement cage within a bracket and no further installation parts requires this type-tested box.



## » Bearing systems with noise reduction



# CONTENT

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# NOISE REDUCTION TECHNOLOGY

## Bearing system with noise reduction TSS

### (INCREASED) SOUND INSULATION ACC. TO DIN 4109, (CIPREMENT®)

Type (M/RD)	Weight (kg/pc.)	PU (pc.)	Ref. no.
<b>Version: electro-galvanised</b>			
M36	1.08	1	67TSEN-CIP

Version in stainless steel available on request

### (INCREASED) SOUND INSULATION ACC. TO DIN 4109, (COMPACT ELASTOMERIC BEARING S65)

Type (M/RD)	Weight (kg/pc.)	PU (pc.)	Ref. no.
<b>Version: electro-galvanised</b>			
M36	1.08	1	67TSEN-S65

Version in stainless steel available on request

### VERSION: ELECTRO-GALVANISED

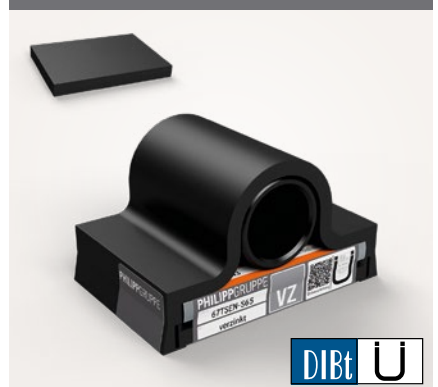
Type (M/RD)	Bolt length (mm)	Weight (kg/pc.)	PU (pc.)	Ref. no.
<b>S355</b>				
M36	160	1.20	1	670TSSN160ST
M36	170	1.28	1	670TSSN170ST
M36	180	1.36	1	670TSSN180ST
M36	190	1.44	1	670TSSN190ST
M36	200	1.52	1	670TSSN200ST
M36	210	1.60	1	670TSSN210ST
M36	220	1.68	1	670TSSN220ST
<b>Tempered steel</b>				
M36	160	1.20	1	670TSSN1608
M36	170	1.28	1	670TSSN1708
M36	180	1.36	1	670TSSN1808
M36	190	1.44	1	670TSSN1908
M36	200	1.52	1	670TSSN2008
M36	210	1.60	1	670TSSN2108
M36	220	1.68	1	670TSSN2208

Version in stainless steel available on request

### BEARING ELEMENT



### BEARING ELEMENT



### THREADED BOLT



## Bearing system with noise reduction TSS

VERSION: SOCKET BRIGHT ZINC PLATED				
Type (RD)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Compact anchor</b>				
36	235	130.00	1	67TSS360235
<b>Threaded anchor - straight tail</b>				
36	690	310.00	1	67M36
36	1100	460.00	1	67M361100

BEARING SYSTEM WITH NOISE REDUCTION TSS REINFORCEMENT CAGE TYPE TSS-BK					
Type	Width (mm)	Height (mm)	Depth (mm)	PU (pc.)	Ref. no.
TSS-BK	170	120	400	100	67TSSBK

VERSION: FIRE RESISTANCE F 90				
Joint (mm)	Hole diameter (mm)	Height × width (mm)	PU (pc.)	Ref. no.
20	36	150 × 150	1	67TSBMN020
30			1	67TSBMN030
50			1	67TSBMN050

A combination of different thicknesses is possible.

VERSION: FIRE RESISTANCE R 120				
Joint (mm)	Hole diameter (mm)	Height × width (mm)	PU (pc.)	Ref. no.
20	36	160 × 160	1	74BSM020-36
30			1	74BSM030-36
40			1	74BSM040-36
50			1	74BSM050-36
60			1	74BSM060-36
70			1	74BSM070-36
80			1	74BSM080-36
90			1	74BSM090-36
100			1	74BSM100-36

### THREADED TRANSPORT ANCHOR TSS



### REINFORCEMENT CAGE TYPE TSS-BK



### FIRE PROTECTION PLATE TSS



### FIRE PROTECTION PLATE TSS



Transport

Connection

Facade

Fixing

Bearing systems

Earthing

## Bearing system with noise reduction TreDo

## STAIR DOWEL TREDO

Type	Width (mm)	Height (mm)	Depth (mm)	Thrust bearing	PU (pc.)	Ref. no.
TreDo 27	125	75	105	bottom	1	74TRED027S
TreDo 27 DUO				bottom / top	1	74TRED027SDUO
TreDo 27 DUO +				bottom / top / sideways	1	74TRED027SDUO+
TreDo 30	125	80	105	Down	1	74TRED030S
TreDo 30 DUO				bottom / top	1	74TRED030SDUO
TreDo 30 DUO +				bottom / top / sideways	1	74TRED030SDUO+
TreDo 33	125	90	105	bottom	1	74TRED033S
TreDo 33 DUO				bottom / top	1	74TRED033SDUO
TreDo 33 DUO +				bottom / top / sideways	1	74TRED033SDUO+
TreDo 35	125	90	105	bottom	1	74TRED035S
TreDo 35 DUO				bottom / top	1	74TRED035SDUO
TreDo 35 DUO +				bottom / top / sideways	1	74TRED035SDUO+
TreDo 40	125	95	105	bottom	1	74TRED040S
TreDo 40 DUO				bottom / top	1	74TRED040SDUO
TreDo 40 DUO +				bottom / top / sideways	1	74TRED040SDUO+

Version in stainless steel available on request

## STAIR DOWEL TREDO



## FIRE PROTECTION PLATE (REI 120)

Joint (mm)	Hole diameter (mm)	Height x width (mm)	PU (pc.)	Ref. no.
10	27/ 30/ 33 / 35 / 40	160 x 160	1	74BSM010__
20			1	74BSM020__
30			1	74BSM030__
40			1	74BSM040__
50			1	74BSM050__

Example ref. no.: joint 20 mm; hole diameter 27 mm -> 74BSM020-27

## FIRE PROTECTION PLATE TREDO





## Bearing system with noise reduction TSB

ISOBOX® TYP TSB-F (WITHOUT MOUNTING FRAME)						
Type	Width (mm)	Height (mm)	Depth (mm)	Thrust bearing	PU (pc.)	Ref. no.
TSB F 01	252	160	150	bottom	126	74TSB-F01
TSB F 02	252	160	150	bottom / top	126	74TSB-F02
TSB F 03	252	160	150	bottom / top / sideways	126	74TSB-F03
TSB F 11	245	180	150	Down	126	74TSB-F11
TSB F 12	245	180	150	bottom / top	126	74TSB-F12
TSB F 13	245	180	150	bottom / top / sideways	126	74TSB-F13
TSB F 21	245	200	150	bottom	108	74TSB-F21
TSB F 22	245	200	150	bottom / top	108	74TSB-F22
TSB F 23	245	200	150	bottom / top / sideways	108	74TSB-F23



ISOBOX® TYP TSB-MB (WITH MOUNTING FRAME)						
Type	Width (mm)	Height (mm)	Depth (mm)	Thrust bearing	PU (pc.)	Ref. no.
TSB MB 01	252	160	150	bottom	108	74TSB-MB01
TSB MB 02	252	160	150	bottom / top	108	74TSB-MB02
TSB MB 03	252	160	150	bottom / top / sideways	108	74TSB-MB03
TSB MB 11	245	180	150	bottom	108	74TSB-MB11
TSB MB 12	245	180	150	bottom / top	108	74TSB-MB12
TSB MB 13	245	180	150	bottom / top / sideways	108	74TSB-MB13
TSB MB 21	245	200	150	bottom	84	74TSB-MB21
TSB MB 22	245	200	150	bottom / top	84	74TSB-MB22
TSB MB 23	245	200	150	bottom / top / sideways	84	74TSB-MB23



ISOBOX® REINFORCEMENT CAGE TYPE TSB-BK (SUITABLE FOR TSB-F AND TSB-MB)						
Type	Width (mm)	Height (mm)	Depth (mm)	PU (pc.)	Ref. no.	
TSB BK 6	205	120	586	42	74TSB-BK6	
TSB BK 8	205	140	586	42	74TSB-BK8	



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Earthing

# NOISE REDUCTION TECHNOLOGY

## Bearing system with noise reduction HQW

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ISODORN® HQW - TYPE 60 × 40 × 5 mm, S355 GALVANISED				
Type	Joint (mm)	Length (mm)	PU (pc.)	Ref. no.
Load bearing element	10	300	100	74HQWTE60405-300
	20	310	100	74HQWTE60405-310
	30	320	100	74HQWTE60405-320
	40	330	100	74HQWTE60405-330
	50	340	100	74HQWTE60405-340
	60	350	100	74HQWTE60405-350
	70	360	100	74HQWTE60405-360
	80	370	100	74HQWTE60405-370
	90	380	100	74HQWTE60405-380
	100	390	100	74HQWTE60405-390
	110	400	100	74HQWTE60405-400
Noise reduction and bearing	0 - 120	-	100	74HQWSB6040
Sleeve	0 - 120	250	100	74HQWLH6040
Portal reinforcement	0 - 120	-	100	74HQWPB6040
Noise box DUO	0 - 120	-	100	74HQWDUSB6040
Portal reinforcement DUO	0 - 120	-	100	74HQWUOPB6040

ISODORN® HQW - TYPE 60 × 60 × 5 mm, S355 GALVANISED				
Type	Joint (mm)	Length (mm)	PU (pc.)	Ref. no.
Load bearing element	10	300	100	74HQWTE60605-300
	20	310	100	74HQWTE60605-310
	30	320	100	74HQWTE60605-320
	40	330	100	74HQWTE60605-330
	50	340	100	74HQWTE60605-340
	60	350	100	74HQWTE60605-350
	70	360	100	74HQWTE60605-360
	80	370	100	74HQWTE60605-370
	90	380	100	74HQWTE60605-380
	100	390	100	74HQWTE60605-390
	110	400	100	74HQWTE60605-400
Noise reduction and bearing	0 - 120	-	100	74HQWSB6060
Sleeve	0 - 120	250	100	74HQWLH6060
Portal reinforcement	0 - 120	-	100	74HQWPB6060
Noise box DUO	0 - 120	-	100	74HQWDUSB6060
Portal reinforcement DUO	0 - 120	-	100	74HQWUOPB6060

FIRE PROTECTION PLATE HQW (REI 120)				
Height × width (mm)	Joint (mm)	PU (pc.)	Ref. no.	Ref. no.
			Type 60 × 40	Type 60 × 60
160 × 160	10	300	74BSM010-6040	74BSM010-6060
160 × 160	20	310	74BSM020-6040	74BSM020-6060
160 × 160	30	320	74BSM030-6040	74BSM030-6060
160 × 160	40	330	74BSM040-6040	74BSM040-6060
160 × 160	50	340	74BSM050-6040	74BSM050-6060
160 × 160	60	350	74BSM060-6040	74BSM060-6060
160 × 160	70	360	74BSM070-6040	74BSM070-6060
160 × 160	80	370	74BSM080-6040	74BSM080-6060
160 × 160	90	380	74BSM090-6040	74BSM090-6060
160 × 160	100	390	74BSM100-6040	74BSM100-6060
160 × 160	110	400	74BSM110-6040	74BSM110-6060
160 × 160	120	410	74BSM120-6040	74BSM120-6060



## Sound boards Type NF/NB/NL

SOUND BOARD NF-V (STAIR HEAD)						TYPE-TESTED
Type	Length (mm)	Width (mm)	Thickness (mm)	Bearing (pc.)	PU (pc.)	Ref. no.
NF-V-1000	1000	410	10	4	25	74NFV-1000
NF-V-1100	1100	410	10	4	25	74NFV-1100
NF-V-1200	1200	410	10	4	25	74NFV-1200
NF-V-1300	1300	410	10	4	25	74NFV-1300
NF-V-1400	1400	410	10	4	25	74NFV-1400
NF-V-1500	1500	410	10	4	25	74NFV-1500
NF-V-1800	1800	410	10	4	25	74NFV-1800

SOUND BOARD NF-V



SOUND BOARD NB (STAIR BASE)						TYPE-TESTED
Type	Length (mm)	Width (mm)	Thickness (mm)	Bearing (pc.)	PU (pc.)	Ref. no.
NB-1000/350	1000	350	10	4	25	74NBV-3501000
NB-1000/600	1000	600	10	4	25	74NBV-6001000
NB-1100/350	1100	350	10	4	25	74NBV-3501100
NB-1100/600	1100	600	10	4	25	74NBV-6001100
NB-1200/350	1200	350	10	4	25	74NBV-3501200
NB-1200/600	1200	600	10	4	25	74NBV-6001200
NB-1300/350	1300	350	10	4	25	74NBV-3501300
NB-1300/600	1300	600	10	4	25	74NBV-6001300
NB-1500/350	1500	350	10	4	25	74NBV-3501500
NB-1500/600	1500	600	10	4	25	74NBV-6001500
NB-1800/350	1800	350	10	4	25	74NBV-3501800
NB-1800/600	1800	600	10	4	25	74NBV-6001800

SOUND BOARD NB



SOUND BOARD NL (STAIR STRINGER)						TYPE-TESTED
Type	Length (mm)	Width (mm)	Thickness (mm)	PU (pc.)	Ref. no.	
<b>Roll</b>						
NL 250/15	15000	250	15	1	74NL250	
NL 360/15	15000	360	15	1	74NL360	
NL 420/15	15000	420	15	1	74NL420	
<b>Cut to size</b>						
NL 250/15	1000	250	15	1	74NL250-1000	
NL 360/15	1000	360	15	1	74NL360-1000	
NL 420/15	1000	420	15	1	74NL420-1000	
<b>Pallet</b>						
NL 250/15	1000	250	15	250	74NL250-1000	
NL 360/15	1000	360	15	250	74NL360-1000	
NL 420/15	1000	420	15	250	74NL420-1000	

SOUND BOARD NL



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## Stair dowel / angle

## STAIR DOWEL PD

Type	Diameter (mm)	Length (mm)	PU (pc.)	Ref. no.
<b>Version: electro-galvanised</b>				
PD 20	Ø20	200	1	74PD20GV
PD 30	Ø30	350	1	74PD30GV
<b>Version: stainless steel A4 / SS316</b>				
PD 20	Ø20	200	1	74PD20A4
PD 30	Ø30	350	1	74PD30A4

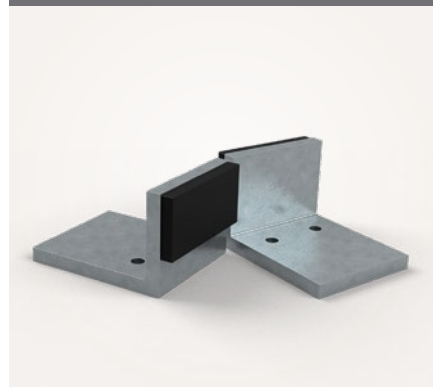
## STAIR DOWEL PD



## STAIR ANGLE TYPE PD-H (ELECTRO GALVANISED)

Type	Length (mm)	Width (mm)	Height (mm)	Elastomeric bearing (mm)	PU (pc.)	Ref. no.
PD-H	122	100	82	100 x 50 x 10	1	74PD-HGV

## STAIR ANGLE TYPE PD-H



Transport

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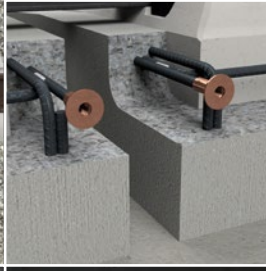
## » Earthing technology

Earthing technology is always used when a defined reference potential or potential equalisation is to be established. This is to short-circuit any voltages that may occur. Basically, measures are taken that are necessary to connect an electrical part to earth.

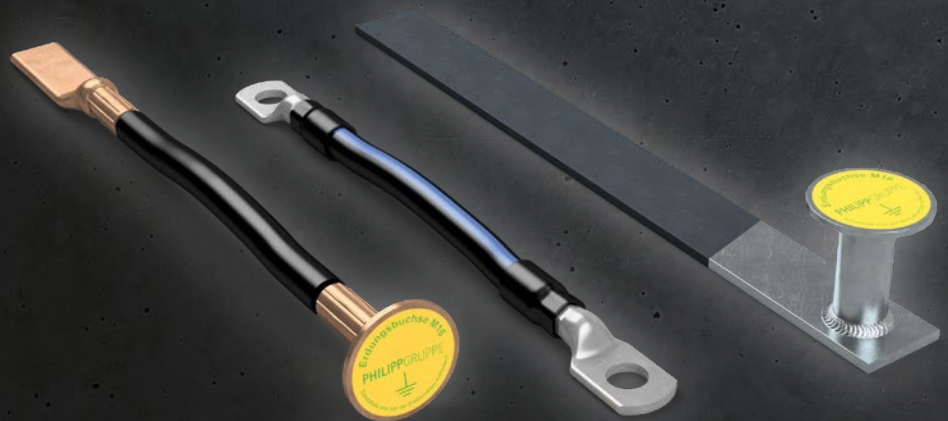




# WIDE RANGE OF EARTHING TECHNOLOGY



# » Earthing technology





# CONTENT

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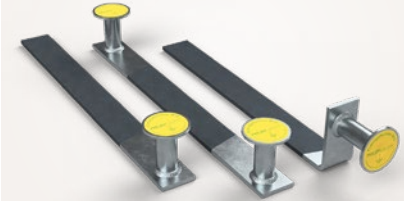
## Earthing sleeves

## VERSION: 71 EB F40

Thread (M)	Length (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Earthing sleeve, straight flat steel (approved by: DB (German Railway) and ÖBB (Austrian Railway))</b>				
16	400	76.80	1	71ERD16
<b>Both-sided Earthing sleeve, straight flat steel (approved by: DB (German Railway))</b>				
16	400	88.8	1	71EBF4002
<b>Earthing sleeve, 90° angled flat steel</b>				
16	350	76.80	1	71EBF4003-350

DB acc. to drawing Ebs.15.03.19-11  
 ÖBB acc. to drawing ED 6409 B1.5

## EARTHING SLEEVE



## VERSION: 71 EB B16

Thread (M)	Length (mm)	Rebar Ø (mm)	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Earthing sleeve, straight rebar</b>					
16	400	16	74.5	1	71EBB1601-400
<b>Both-sided Earthing sleeve, straight rebar</b>					
16	400	16	85.8	1	71EBB1602-400
<b>Earthing sleeve, bent rebar</b>					
16	400	16	89.5	1	71EBB1603-400

DB acc. to drawing Ebs.15.03.19-25

## EARTHING SLEEVE



## VERSION: 71 EB K95

Thread (M)	Length (mm)	Coated copper wire (mm <sup>2</sup> )	Weight (kg/100 pcs.)	PU (pc.)	Ref. no.
<b>Earthing sleeve, welding strap</b>					
16	400	95	650	1	71EBK9501-400
<b>Both-sided Earthing sleeve</b>					
16	400	95	500	1	71EBK9502-400
<b>Both-sided welding strap</b>					
16	400	95	700	1	71EBK9503-400

DB acc. to drawing Ebs.15.03.19-26

## EARTHING SLEEVE



## Earthing connectors

VERSION: 71 EV K70 (CUSTAL CABLE, PVC COATING): DB (GERMAN RAILWAY)

For thread (M)	Length (mm)	Coated copper wire (mm <sup>2</sup> )	Weight (kg/100 pc.)	PU (pc.)	Ref. no.
16	400	70	36.00	1.00	71EBK7003-400

DB acc. to drawing Ebs.15.03.17-6

EARTHING CONNECTORS



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