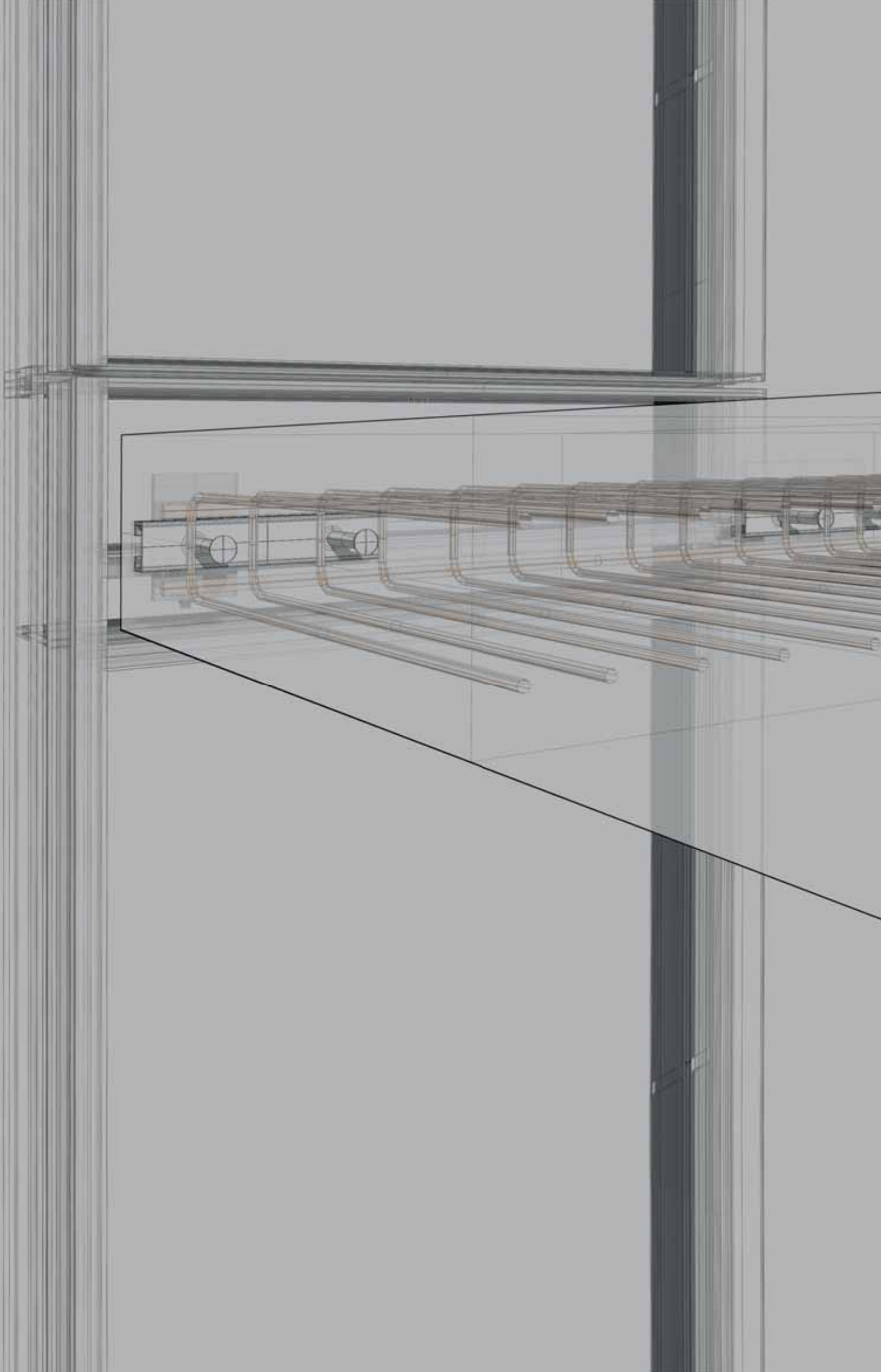




JORDAHL®
anchored in quality



Anchor Channel Application



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Jordahl's products for concrete anchoring have satisfied customers for more than a century – starting in 1907 with the Kahn iron rebar.

Deutsche Kahneisen Gesellschaft

JORDAHL® Connection Technology



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- **JORDAHL® Products are state of the art** and help customers build efficiently to maintain quality standards
- **Strict quality control** according to German and European approval requirements
- **Eurocode compatible** design / reliable safety concept
- **Comprehensive range** of superior anchoring & connection products with accessories
- **ISO 9001 based** internal processes

Wherever construction is carried out, fully developed solutions in installation technology are needed: for joining components to one another, for suspending loads or for connection devices. Irrespective of the product application, quality and safety are fundamental to the selection of a connection system. JORDAHL® Berlin offers the following services:

- **Creative support** for planning and design
- **Customised solutions** and project based consulting
- **Cost effective planning** and support with engineering calculations
- **Excellent technical know-how** by a team of experienced engineers
- **Reliable partner**, focusing on a long-term customer relationship

JORDAHL® Anchor Channels are manufactured by Deutsche Kahneisen GmbH in Germany and distributed worldwide. The history of connecting steel to concrete begins with the invention of Julius Kahn, who was a member of a family of architects from Chicago, whose “Kahn irons” opened up completely new possibilities for construction with reinforced concrete. In 1913 Anders Jordahl, a Norwegian engineer, who introduced Kahn’s reinforcing technology in Germany in 1907, developed the Anchor Channel by designing a C-shaped profile which was used as reinforcement and a connection device at the same time.

Today, with a century of experience in anchoring and connection technology “Deutsche Kahneisen GmbH” with its brand name JORDAHL® has developed into an internationally renowned company and a leader of research in anchoring technology with a close relationship to its customers.

- **JORDAHL® Products** – Quality made in Germany since 1907 and used in projects around the world

1 JORDAHL® shipping department, Berlin, Germany

JORDAHL® Anchor Channels for use in concrete

JORDAHL® Anchor Channels are a superior connection system for transferring loads in reinforced and unreinforced concrete components.

- **Anchoring without damaging** the concrete structure & reinforcement
- **Good integration** into heavily reinforced components
- **Suitable for** pre-stressed and post-tensioned structures
- **Increased load capacity** near reinforcement
- **High load capacity** for static and dynamic loads
- **Fatigue** and blast load resistant
- **Time efficient** on-site installation
- **Skilled labour not required** for installation
- **Installation with simple tools** like hammer and wrench
- **Small edge** distances
- **Easy** to customise
- **7+ load classes** for most economical solutions

No drilling ■ no noise ■ no dust ■ no electrical tools required
No welding ■ no risk of fire ■ no damage caused by sparks

Product Range

JORDAHL® offers a broad range of products:

- **JTA**, the standard Anchor Channel product group for tension, angled tension and shear load.
- **JXA**, the toothed channels accommodating loads in all directions.
- **JGB**, the Anchor Channels with welded rebar for installation in thin slabs.
- **JORDAHL® T-bolts**, available as hammer-head, hook head and toothed bolts.
- **JTB**, the easy solution for corrugated metal siding and roof installation on concrete.



W-Profiles

Traditionally JORDAHL® profiles are hot rolled from a billet. Therefore they are particularly free of residual stresses. The geometry is optimised, well-suited for dynamic loads and high clamping forces from the T-bolts. Anchor Channels made from hot-rolled profiles are the preferred solution for curtain walls under high wind loads, elevators, heavy pipes under pre-stressed post-tensioned bridges, etc.

K-Profiles

The smaller JORDAHL® profiles are cold formed in a rolling mill which ensures dimensional consistency throughout the cross sectional area. Cold-formed Anchor Channels can be used for connecting precast elements, taking the dead weight of facades or for attaching profiled metal sheets.

Steel grades

Most profiles are made from carbon steel material conforming to ASTM A283 Grade D with a minimum yield strength of 33,000psi. Stainless steel grade 316 conforming to ASTM A666 is available upon request.

Round Anchors

Unless custom design is required, anchors are generally cold-headed in a fully automated and monitored production process.



Safety work



Time efficient



Low cost



Simple to install



No risk of fire

JTA K28/15
JTA K38/17
JTA W40/22
JTA W50/30
JTA W53/34
JTA W55/42
JTA W72/48
JXA W29/20
JXA W38/23
JXA W53/34
JTB-AR
JTB-UNI

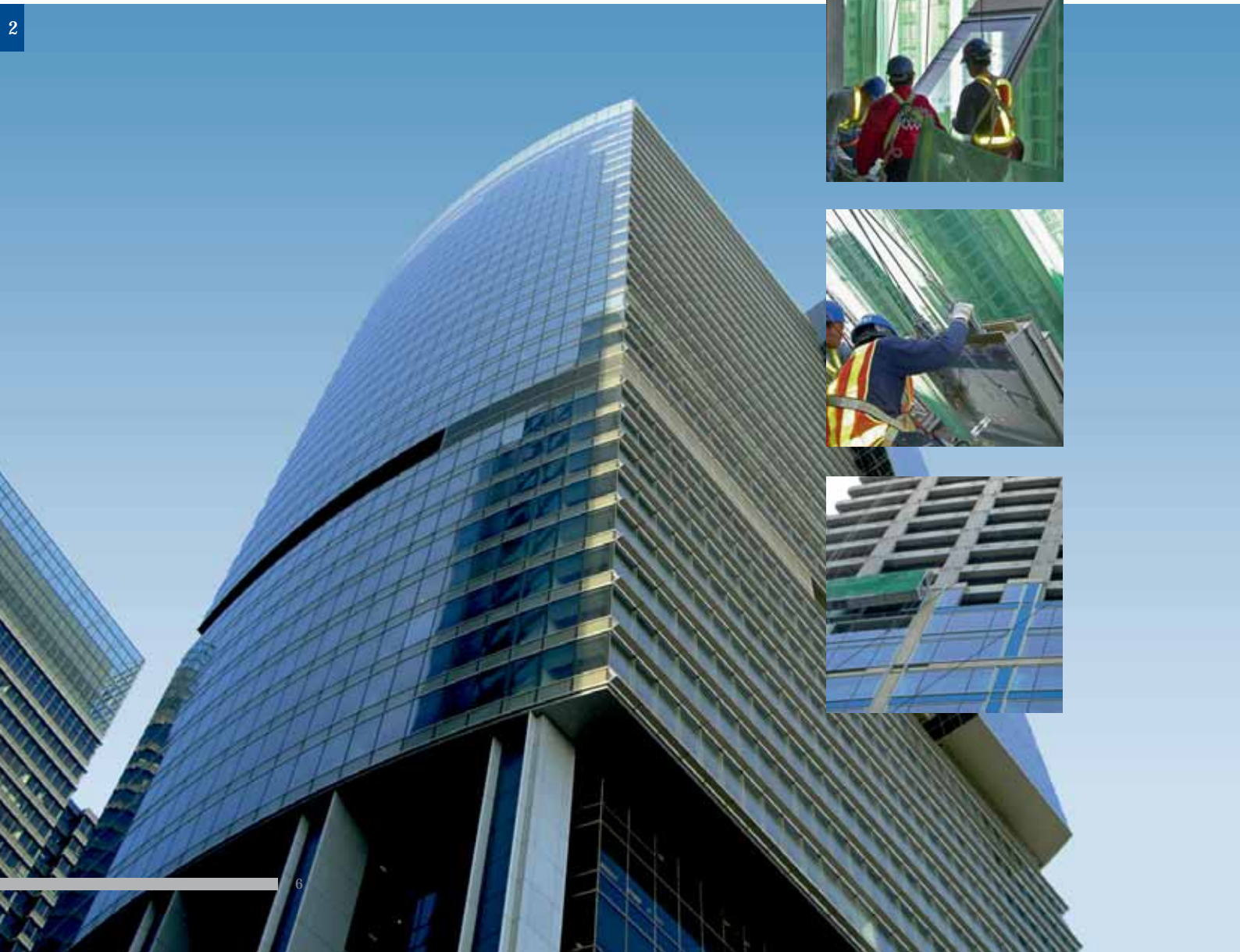
JORDAHL® Anchor Channels Curtain Wall

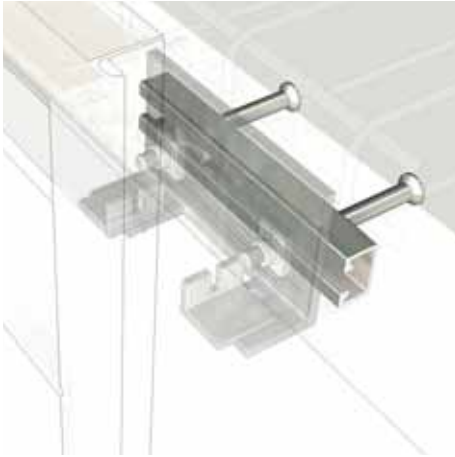
Modern facade systems provide protection for occupants of office and apartment buildings, as well as the means for architects to create attractive buildings on the metropolitan skyline. Complete facade elements can be pre-configured in a factory and lifted with a crane into position. They can consist of glass, metal, concrete and natural stone elements. Even intelligent solar power and

air conditioning systems can be integrated. The curtain wall systems guarantee superior quality, safe working environment and fast-on-site installation.

The outer loads are initially transferred to the JORDAHL® Anchor Channels with brackets and JORDAHL® T-bolts and then into the concrete structure.

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- Safe installation even at high elevations
- Safe working environment
- Customised solution for integration with various slab design concepts (e.g. thin composite decks, corners, etc.)
- Low installation cost
- Simple to install
- Easy to adjust
- Fast onsite installation



5

- 2 Sheung Yee Road, Hong Kong, 2008
- 3 City Plaza Hotel, Hong Kong, 2009
- 4 Citigroup Center London, England, 2002
- 5 HBSC Tower, London, England, 2002
- 6 Metropolitan Warsaw, Poland, 2006



6

JORDAHL® Anchor Channels

Concrete Precast Elements

Connecting Precast Elements by using JORDAHL® Anchor Channels and JORDAHL® T-bolts ensures optimal adjustment, flexibility and reliability. Making use of modular design in the pre-fabrication of large concrete components will result in faster erection time than steel construction. This advantage can be realised especially for shopping malls, manufacturing facilities, office complexes, car parks, etc.

A wide variety of accessories is available by JORDAHL® to address special applications:

- Toothed straps
- Angle plates
- Restraint ties
- Clamping plates

7 [Xinzo De Limia, Orense, Spain, 2008](#)

8 [Storage Hall, Trebbin, Germany, 2006](#)





A pedestal wall connected to a support column using an angle bracket with diagonal slot holes



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Industrial building quickly installed using large concrete components, Anchors Channels, T-bolts and brackets

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Structure of an industrial building completely preconfigured to be installed without any welding, drilling or concrete poured in situ.

JORDAHL® Anchor Channels

Profiled Metal Sheets

Profiled Metal Sheet installation channel allows fast, cost-effective installation of Profiled Metal Sheets for sidings or roofs on reinforced concrete components by the use of self-tapping screws. The hardened tip of the screw cuts the initial hole, allowing the thread to drill into the steel profile. Unlike all other Anchor Channels, the exposed surface of this Anchor Channel system does not have a slot opening. The foam stays inside to allow the tip of the screw to intrude. The Profiled Metal Sheet installation channels from JORDAHL® can be incorporated easily in the existing reinforcement because of their slim anchor profile. The approved system of channels and self-tapping screws gives the precast industry a competitive advantage, due to quicker installation, which results in reduced cost.



Cross section of a JTB-AR channel profile with self tapping screw holding a sheet metal roof

9/10 Ikea Distribution Center, Dortmund, Germany, 2008

11 Shipping Company Fiege Holding Stiftung & Co. Kg, Lahr, Germany, 2007

JTB-UNI channel pre-installed in the rebar cage before pouring concrete





Installation of a multi-layer insulated profiled metal sheet wall.



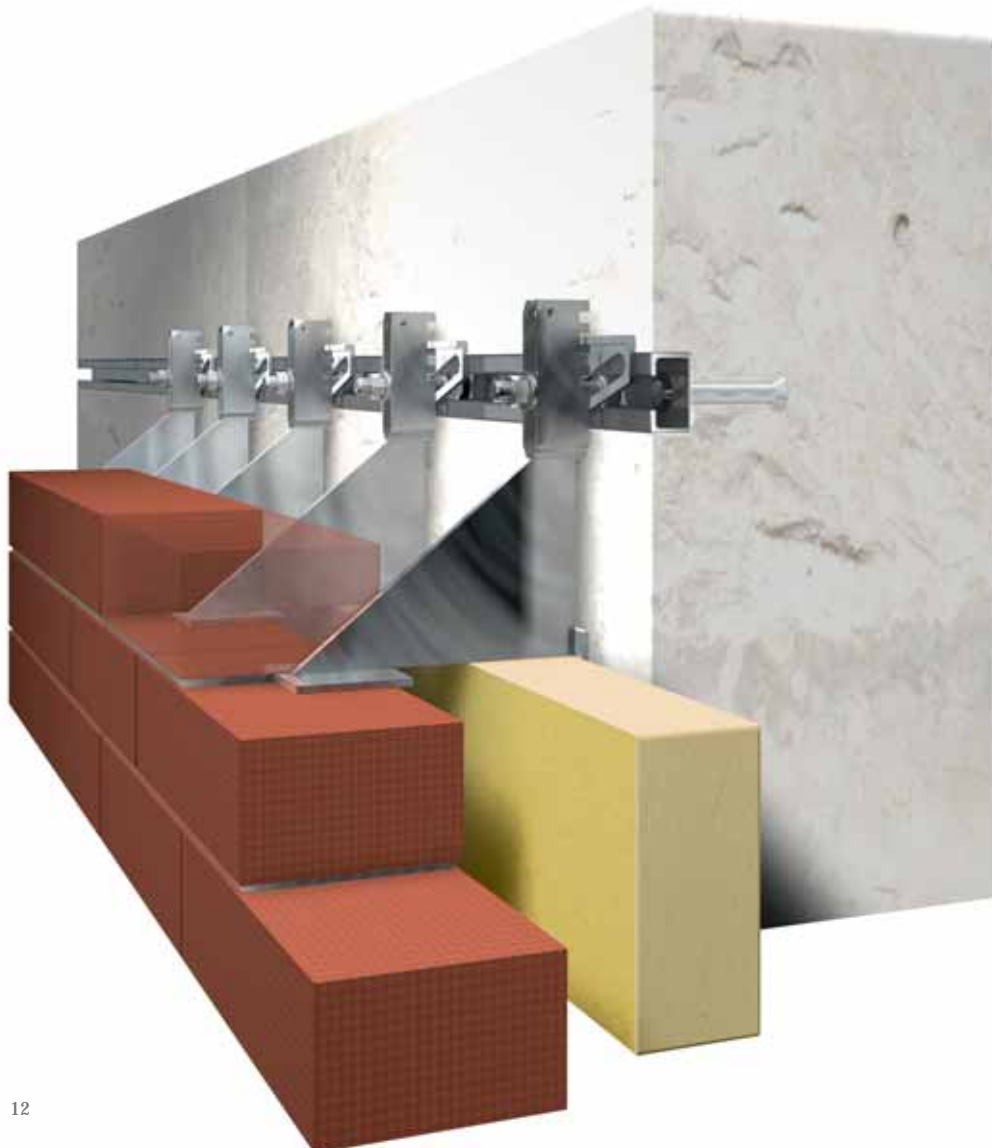
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JXA W38/23
JXA W53/34
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JTB-UNI

JORDAHL® Anchor Channels Brickwork Support



Sample of a bracket mounted onto a piece of anchor channel designed to hold two bricks

Creative design with masonry or exposed brickwork needs solutions which are perfect in every detail. JORDAHL® offers the solutions that innovative architects need. A wide range of support brackets is available in Stainless Steel. These can easily be connected to JORDAHL® Anchor Channels – the unique design of JORDAHL® brackets allows adjustment in horizontal and vertical directions. Lateral restraints transfer loads into the concrete structure, no matter what height the building reaches.





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The best solution for installation to a concrete structure is utilising Anchor Channels during the design phase. On site the reward is a reliable, easy to use and quick connection.

- 12 University of Cardinal Stefan Wyszyński, Warsaw, Poland, 2007
- 13 Office Building, Potsdamer Platz, Berlin, Germany, 1999
- 14 Music Education Center Symfonia, Katowice, Poland, 2006
- 15 RBB Potsdam-Babelsberg, Germany, 1996

JORDAHL® Anchor Channels

Railings and Stadium Seats

Railing is one of the most challenging applications for architects and designers. The JORDAHL® Anchor Channel JGB system for railings and balustrades is a perfect solution offering long term and economical safety. This special type of JORDAHL® Anchor Channel is an engineered connection of railing posts to the front face of thin concrete slabs. This is possible due to the custom welded anchors made of reinforcement bars. Besides tensile and shear strength the JGB channels are also designed to take bending moments.



16/17 Mittelstandsmeile, Chemnitz, Germany, 2002



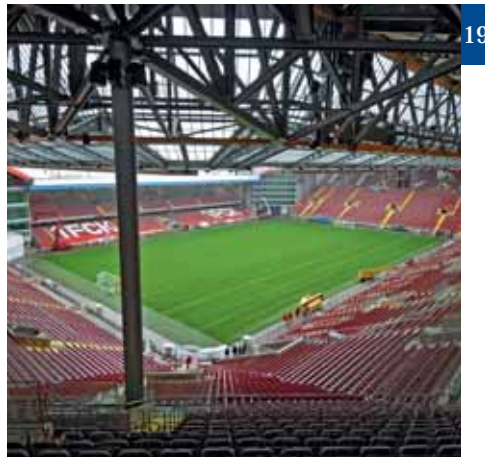
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Seats in a sports stadium or arena require a heavy-duty connection method. The seat and the connection must be robust but also easy to remove, in case it needs to be moved to another location for a different event or has to be replaced in case of damage. Continuous Anchor Channels with hook head T-bolts in solid concrete stages are the perfect solution.

18 ETO Park Stadion, Győr, Hungary, 2008

19 Fritz-Walter-Stadion, Kaiserslautern, Germany, 2006



JTA K28/15
JTA K38/17
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JTA W50/30
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JXA W38/23
JXA W53/34
JTB-AR
JTB-UNI

JORDAHL® Anchor Channels

Overhead Crane Rails and Industrial Machine Foundations



Overhead crane rail held in place with JORDAHL® T-bolts in anchor channels in a concrete corbel at a precast column



Crane rails rest on corbels where they have to be secured in place to avoid tilting. At the same time crane rails must be perfectly aligned on their bearings. Anchor Channels with clamping plates and clamp connections with turnbuckles allow installation of overhead cranes rails on concrete corbels faster and safer than with any other technique.



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JORDAHL® Anchor Channels solve the challenges of concrete slab design required for manufacturing plants utilising heavy production equipment and machinery. By designing Anchor Channels into the foundation slab to anchor heavy machinery, many challenges are eliminated. If the foundation slab is post-tensioned, or if heating elements are installed, drilling into the foundation slab

is not advisable. The installation of Anchor Channels provides a flexible, strong and safe connection of production equipment or even heavy duty storage shelves to the concrete slab.

20 Storage Hall, Trebbin, Germany, 2007

21/22 Building Site, Zollern Antriebstechnik, Herbertingen, Germany, 2002



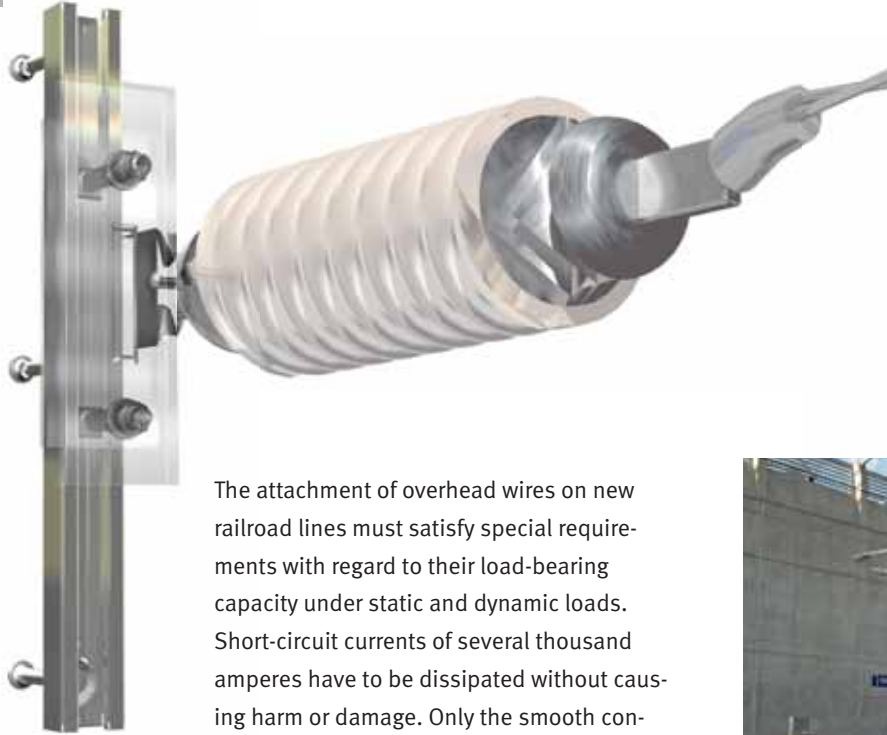
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JORDAHL® Anchor Channels

Overhead lines, Lights and Ventilation in Tunnels



The attachment of overhead wires on new railroad lines must satisfy special requirements with regard to their load-bearing capacity under static and dynamic loads. Short-circuit currents of several thousand amperes have to be dissipated without causing harm or damage. Only the smooth contact surface of the hot-rolled Anchor Channels, together with high strength JORDAHL® T-bolts, can guarantee this without any welding. Anchor Channels ensure a flexible and maintenance free attachment for years, even in polluted environments. Subsequent adjustment or repositioning of any attachments can be easily done at any time.



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23 Train Station Airport Cologne-Bonn, Germany, 2000

24 Tunnel Gleisberg, High Speed Railway ICE, Nuremberg-Munich, Germany, 2008

25 Tiergartentunnel, Berlin, Germany, 2006



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JORDAHL® Anchor Channels have numerous applications in tunnels. They allow a fast, flexible and safe installation of wires, signal lights, signs or ventilation systems. Stainless steel Anchor Channels guarantee lifetime corrosion resistance to the pollution and corrosive salty conditions experienced in tunnel applications.

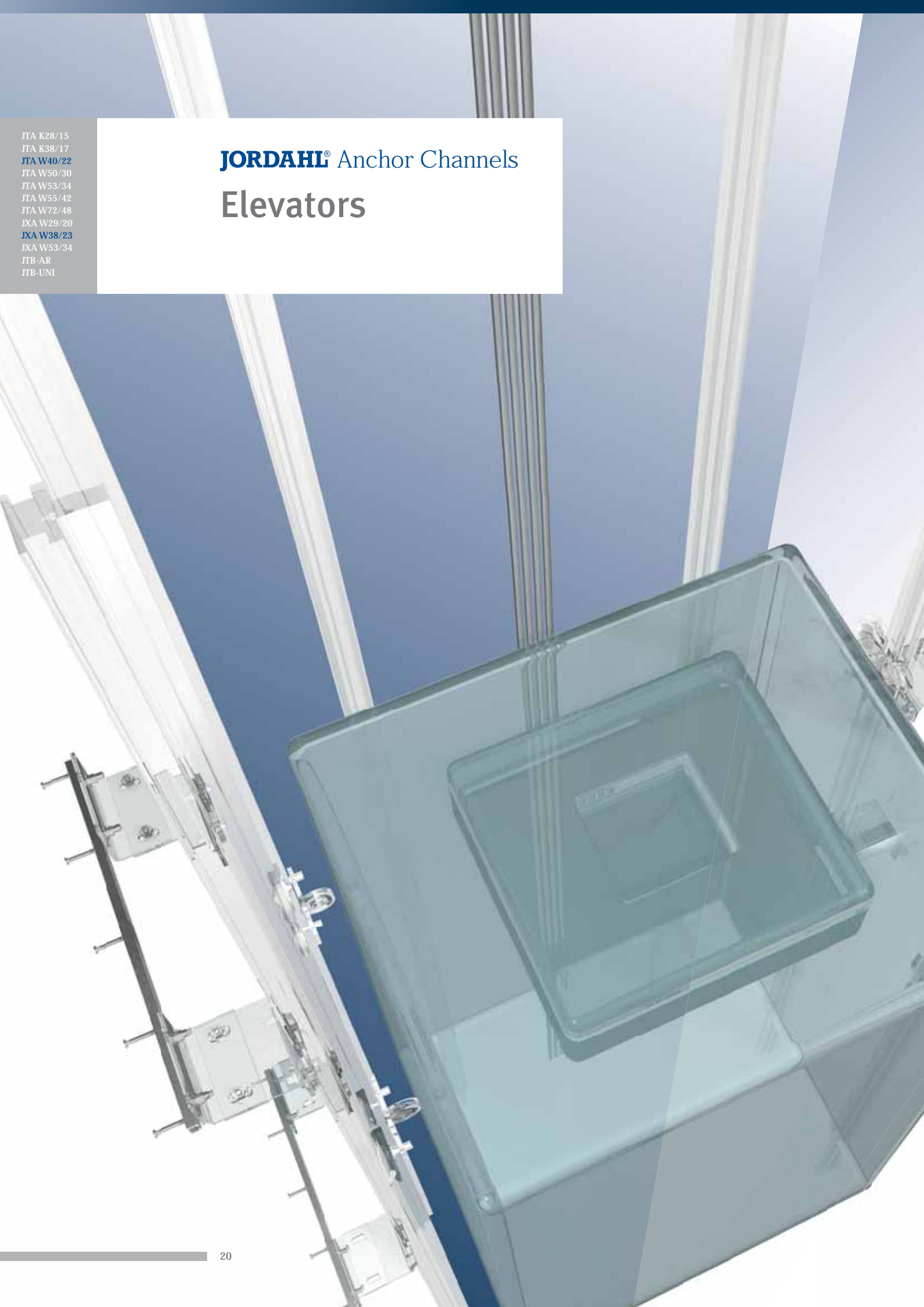


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JORDAHL® Anchor Channels Elevators





Adjustable bracket detail with a short Anchor Channel



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“Safety first” is the basis for the design and construction of elevators. Therefore the reliability and the installation safety of JORDAHL® Anchor Channels make them the preferred connection method for the vertical guide-rails. Repetitive loading due to non-symmetry and stresses induced by emergency brakes can be transferred securely into the concrete structure. Hot-rolled Anchor Channels are preferred because of the dynamic nature of the loading.

26 Burj Tower, Dubai, UAE, 2009

JORDAHL® Anchor Channels

Water Pipeline and other Projects

Water pipes have to cross rivers or streets. Many play an important role in the fresh water supply or waste water disposal network. The weight is substantial and frequently not constant but rather changing dynamically. Infrastructure bridges are logical means to help cross the obstacles. However, most of these bridges are pre-stressed or post-tensioned construction. Post-drill connections are a nuisance and they can even be dangerous if any cable is hit.



JORDAHL® Anchor Channels are the right product for installing such pipelines under bridges: safe, quick and easy connection, easy to reuse for new applications and flexible without risk of damaging the structure.





- 27 Strelasundbridge, Stralsund, Germany, 2007
- 28 High Tide Barrier, Cologne, Germany, 2008
- 29 Powerhouse, Grevenbroich, Germany, 2006
- 30 Concrete pole, motorway service area
Parsberg Autobahn 3, Germany
- 31 Sewage-treatment-plant, Germany

JORDAHL® Anchor Channels

Installation – Efficient, Easy and Fast



JORDAHL® supplies Anchor Channels in all desired lengths. To avoid fresh concrete from flowing into the profile, JORDAHL® Anchor Channels are filled with either polystyrene (PS) or polyethylene (PE) foam. Both types can easily be removed.

Installing:

JORDAHL® Anchor Channels are installed according to the reinforcement / formwork drawings. To prevent displacement during concrete pouring, the channels are held in place:

- in wooden formwork by nails through the nail holes in the back of the profile, or by lateral bonding with hot melt adhesives
- in steel formwork by bonding with hot melt adhesives, or by bolting on with JORDAHL® T-bolts, or with magnets
- in the surface of a concrete slab by wiring the anchors to reinforcement bars or, if required, by means of special spacers spot welded to the anchors.



Connecting:

Example of a JORDAHL® Anchor Channel connected to wooden formwork.



Concrete:

Concrete is poured, raked and vibrated into the formwork. Around the Anchor Channel concrete has to be compacted using appropriate means.



Removal of Foam Filler:

After the removal of the formwork the foam filler can be easily removed by means of a hammer or other tools.



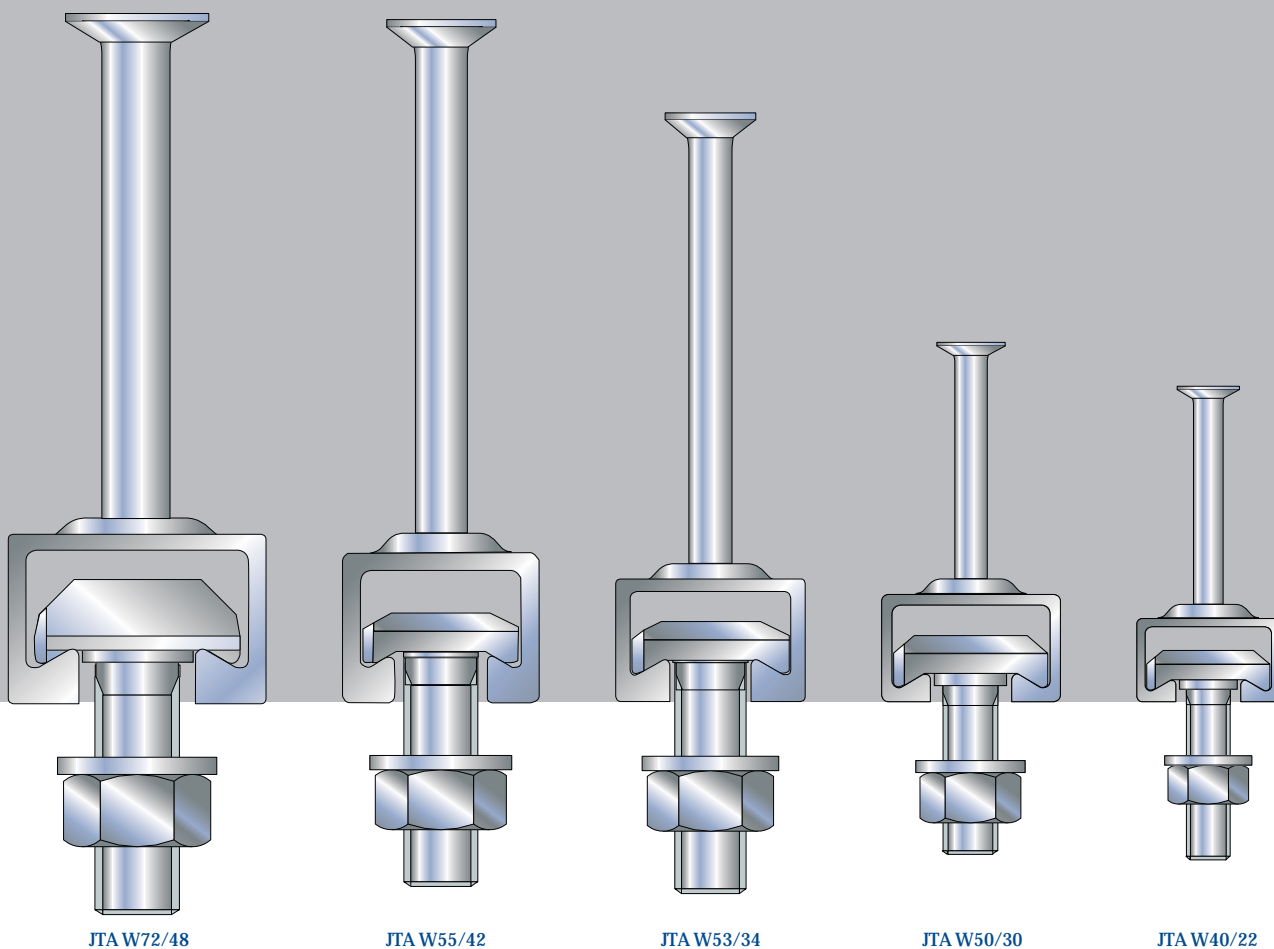
Making Connections:

JORDAHL® T-bolts can now be inserted to the Anchor Channel slot at any desired point and, following a 90° rotation, can be fixed by tightening with the appropriate torque. The slot must be transverse in relation to the channel direction.

JORDAHL® Anchor Channels and T-bolts

Product Range

Hot rolled Anchor Channels



JA

M 20
M 24
M 30

JB

M 16
M 20
M 24

JB

M 10
M 12
M 16
M 20

JB

M 10
M 12
M 16
M 20

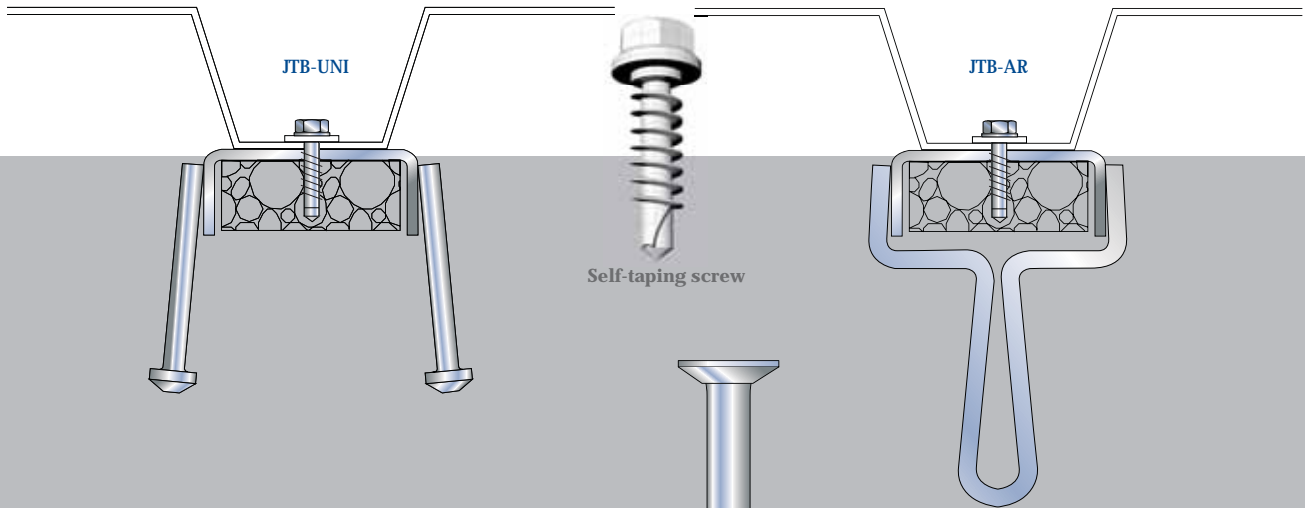
JC

M 10
M 12
M 16

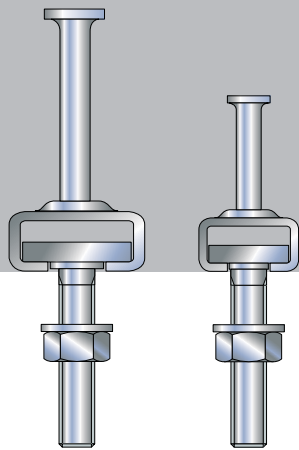
Hook head T-bolts
metric thread sizes



Installation Channels for Corrugated metal
sidings and roofs



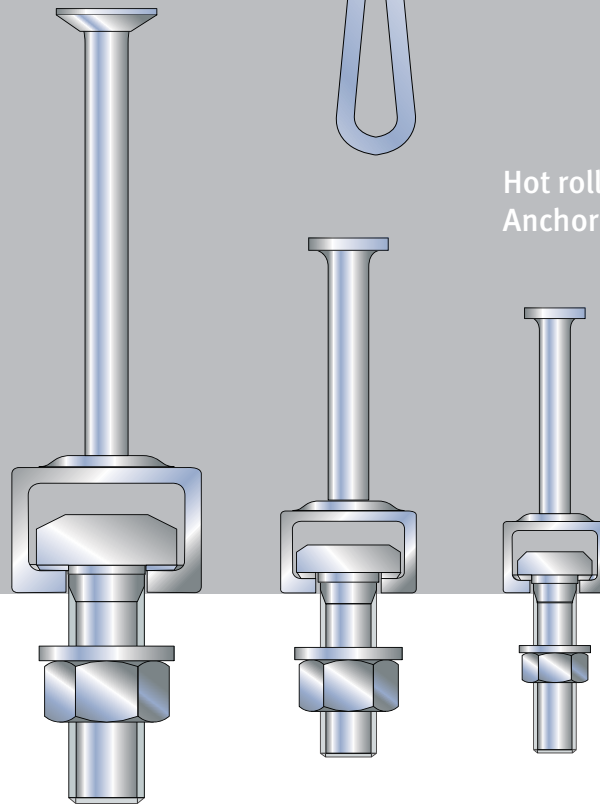
Cold rolled
Anchor Channels



JTA K38/17

JTA K28/15

Hot rolled toothed
Anchor Channels



JXA W53/34

JXA W38/23

JXA W29/20

Hammer head T-bolts
metric thread sizes

JD	JH
M 10	M 6
M 12	M 8
M 16	M 10
	M 12



JXB	JXH	JXD
M 16	M 12	M 10
M 20	M 16	M 12

Toothed T-bolts
metric thread sizes





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