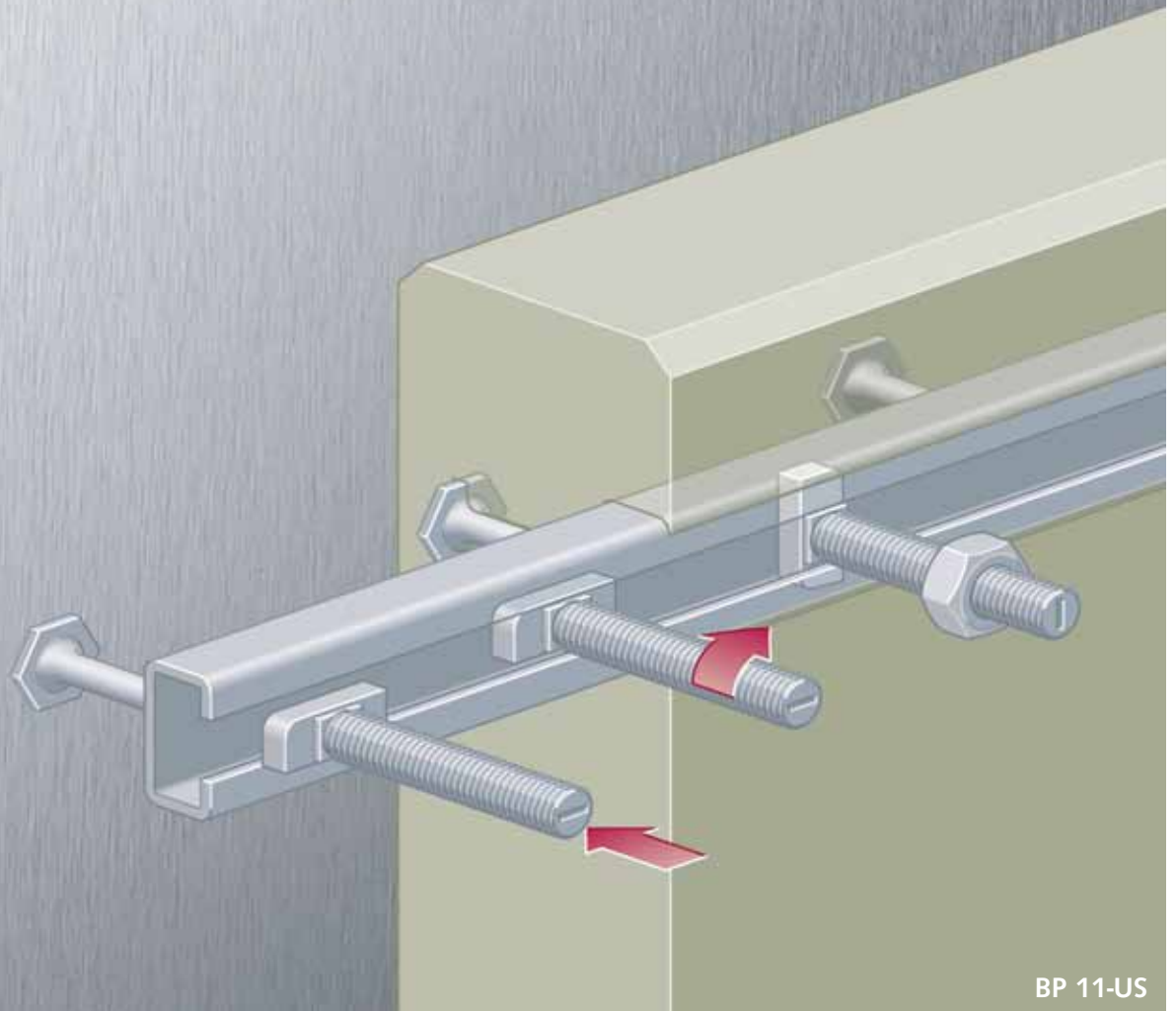


HALFEN CAST-IN CHANNELS

PRODUCT INFORMATION



BP 11-US

HALFEN cast-in channels

The advantages at a glance

Fast and economical

- Fast, adjustable, & simple connections
- Any connection location possible along the length of channel
- Multiple connections per channel
- Reduces construction time
- Wide range of products & accessories for most applications

Optimum performance and safety

- No damage to reinforcement or concrete
- Maximum reliability for small edge distances and close connection centers
- Safe for connections in tension zones and cracked concrete
- Suitable for dynamic loads
- Dust-free and quiet installation
- No welding or vibration from power tools



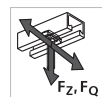
HALFEN CHANNELS

The right solution for every connection problem

Cold-rolled HTA HALFEN channels



- Economical solution for non-critical connections
- Recommended for static, non-dynamic loads
- Suitable for tension and transverse shear loads



Tension F_z ,
Transverse
shear F_Q

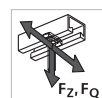


Longitudinal shear
 F_L
(low loads)

Cold-rolled HZA HALFEN channels (toothed)



- Economical solution for non-critical connections
- Recommended for static, non-dynamic loads
- Suitable for tension and longitudinal/transverse shear loads



Tension F_z ,
Transverse
shear F_Q

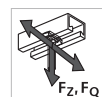


Longitudinal shear F_L
(for carbon steel
and stainless steel)

Hot-rolled HTA HALFEN channels



- Suitable for critical and structural connections
- Recommended for static, dynamic, and blast loads
- Recommended for tension and transverse shear loads



Tension F_z ,
Transverse
shear F_Q

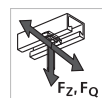


Dynamic loads

Hot-rolled HZA Dynagrip HALFEN channels (toothed)



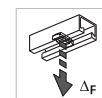
- Suitable for critical and structural connections
- Recommended for static, dynamic, and blast loads
- Recommended for tension and transverse shear loads
- Excellent longitudinal shear load capability



Tension F_z ,
Transverse
shear F_Q



Longitudinal
shear F_L
(high loads)



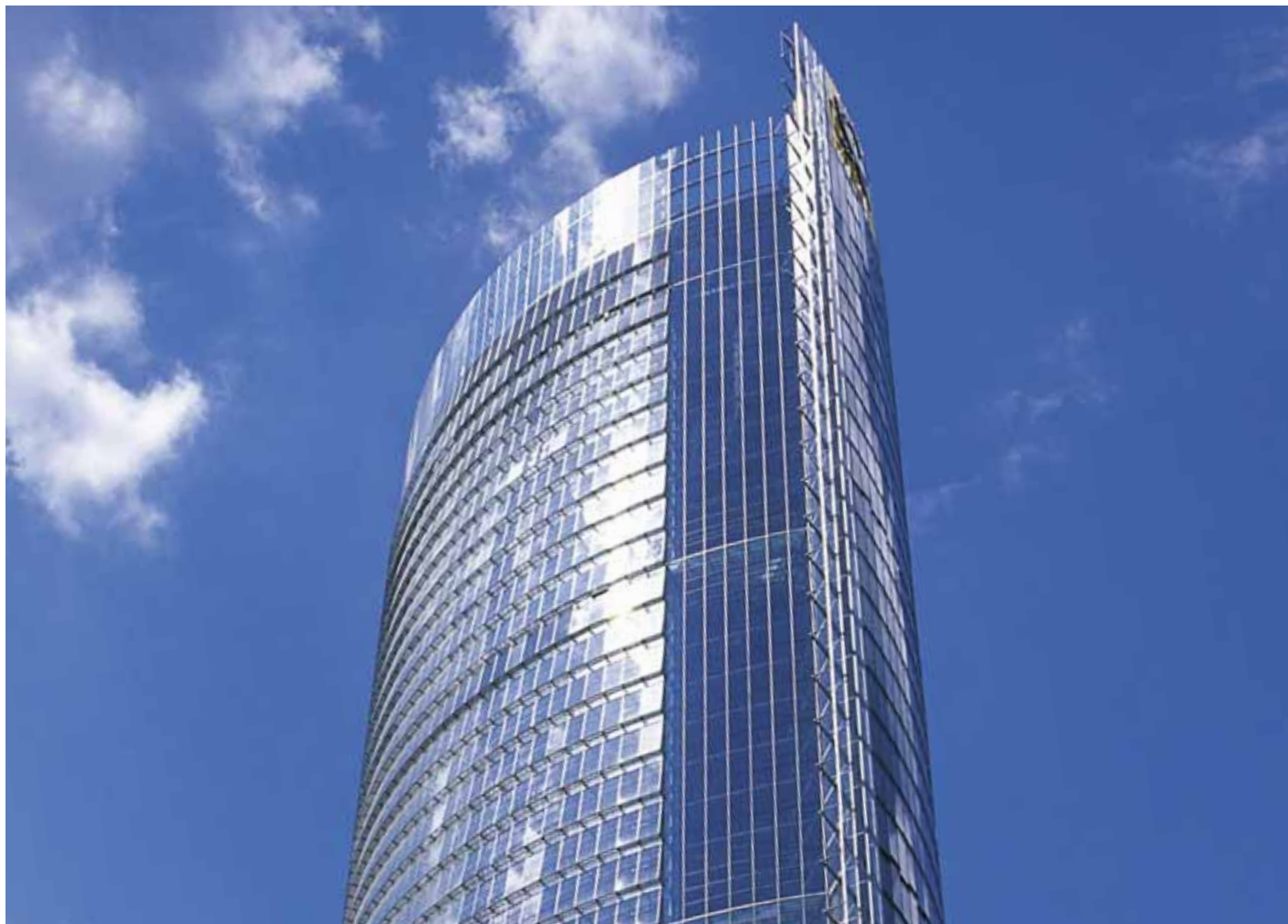
Dynamic
loads

HALFEN supplies each of the above types of channels and T-bolts in a wide range of sizes and load capacities. They are available in high quality galvanized steel and several grades of stainless steel. This provides design flexibility to accommodate most connection applications including those in interior, exterior, marine, and aggressive chemical environments.

Efficient in all types – HALFEN channels are available in lengths from 6" (150mm) to 19'-11" (6.07m), and come with pre-installed easily removable filler to prevent concrete ingress during the concrete pouring process.

USING HALFEN CHANNELS TO ANCHOR

Curtain-Wall Façades



Bold designs by famous architects are often extremely challenging when it comes to the construction phase. Reliability, speed of installation, safety, simplicity, and cost effectiveness are given highest priority.

HALFEN cast-in channels provide the method to achieve these goals. Fully tested for ultimate reliability, they allow fast easy adjustment for the location of façade brackets. Without the need for drilling or welding the façade installation can be completed with substantial time savings. Also, drill damage to the concrete and reinforcement is prevented; weld

spark damage to the glass and façade is avoided; and there is no need for a power supply for installation.

The selection of HALFEN cast-in channels provides both environmental and health advantages to the project.

Installers, other workers, and occupants of buildings close to the construction site avoid the health hazards associated with high levels of noise and airborne dust from drilling and grinding. Installers in particular benefit by avoiding the health risks caused by welding fumes, hot surfaces, high voltage power supplies, and vibrating hand tools that can be associated with drilling and grinding.



HALFEN channels embedded in concrete form the basis of adjustable façade attachment.

USING HALFEN CHANNELS TO ANCHOR

Curtain-Wall Façades

In construction projects in numerous countries on every continent, Halfen channels are helping to realize modern architectural design and complicated structures.



Curtain wall installation: Flush mounted HALFEN channels embedded in concrete mean that brackets can be pre-installed with the option of final adjustment when installing the façade panel.



Façade installation: Pairs of HALFEN channels are suitable for transferring considerable tension and shear forces while providing easy installation adjustment



Curtain wall installation: Flush mounted HALFEN channels embedded in concrete enable rapid and accurate façade installation. This allows the building to be quickly enclosed aiding the programme for the completion of interior finishes.

USING HALFEN CHANNELS TO ANCHOR

Façade, Stadium, and Structural Components



Window installation: HALFEN channels provide secure connections for high loads close to the edge precast façade panels, while allowing fast and easy installation adjustment.



Handrail installation: HALFEN channels provide secure connections for high loads close to the edge of concrete, while allowing fast and easy installation adjustment. In stadiums handrails can be removed or re-positioned for disabled access or special crowd control.



Stadium or auditorium seating connections: HALFEN channels allow fast and accurate installation while avoiding the time, dust and noise associated with drilled connections. During service seats can be removed or re-positioned for disabled access, replacement or special crowd control.



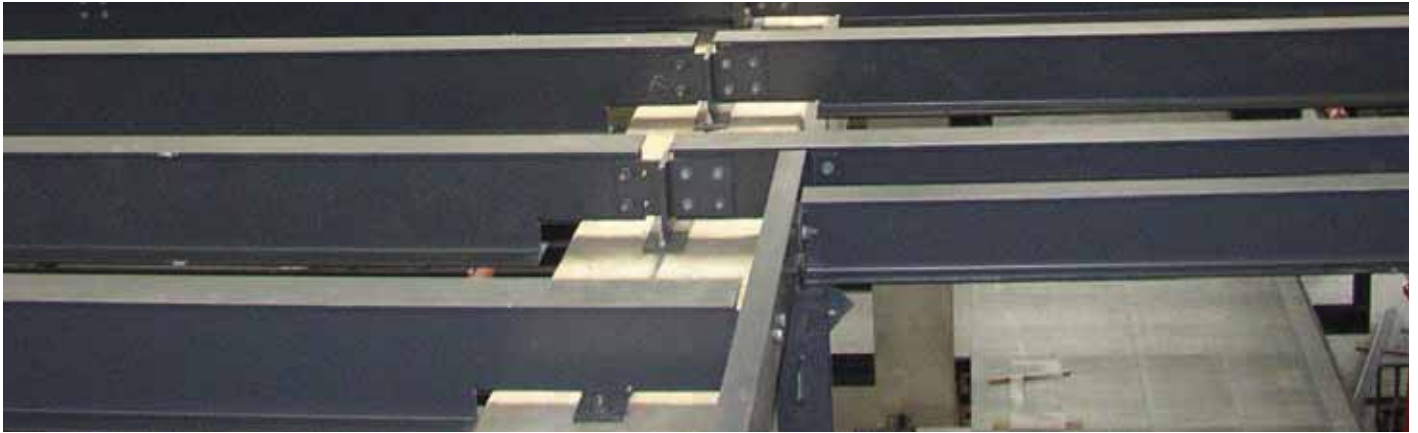
Roof and beam connections: HALFEN channels allow secure and accurate installation of major structural elements.



Walkway, window cleaning, and sunscreen connections: HALFEN channels in stainless steel or hot dip galvanized finish allow totally secure and accurate connections for building components requiring high levels of safety.

USING HALFEN CHANNELS TO ANCHOR

Façade, Mechanical Services, and Structural Components



Connections to precast structural components: HALFEN channels allow accurate and clean installation of major structural elements, without dust from drilling, damage to the concrete, or the access problems of welding.



Anchoring: HALFEN channel embedded in concrete is used as the basis for secure yet adjustable pre-cast element connections.



Pipeline & building service connections: For small and large loads HALFEN channels allow accurate positioning of supports, without dust from overhead drilling, damage to the concrete, or the access problems of welding. HALFEN channels provide particular advantages when anchoring to highly reinforced or post tensioned concrete slabs.



Elevator shaft connections: HALFEN channels allow the required exact positioning of doors and elevator guide rails, while providing the necessary absolute security for public safety and the support of dynamic loads.



Brick façade support: Continuous Halfen channels combined with HALFEN brick support brackets at movement joints, allow accurate positioning of brick support combined with low thermal transfer.

USING HALFEN CHANNELS TO ANCHOR

Façade, Mechanical Services, and Structural Components



Elevator shaft connections: HALFEN channels allow the exact positioning of elevator guide rails, which is needed for smooth elevator travel. They can either be used to position the secondary steelwork which later will support the guide rail (as shown in the left picture); or to connect the guide rail directly to the concrete as shown in the right photograph.



Suspension assemblies: Hot-rolled HALFEN channels provide secure connections for heavy structural elements, as seen here in an assembly used for a funicular railway pulley structure.



Machine mountings: Machines can be quickly and securely mounted with HALFEN channels embedded in the concrete floor.

USING HALFEN CHANNELS TO ANCHOR

Equipment and Tunnel Components



Equipment connections: HALFEN channels allow accurate and clean installation of plant and equipment. HALFEN toothed channels provide high load capacities while providing vertical adjustment.



Craneway connections: HALFEN channels allow accurate alignment, and fast installation. HALFEN toothed channels provide high dynamic side load capacities.



Connections in road tunnels: Cast-in HALFEN channels when used with HALFEN framing channels provide two-way tolerance for the accurate installation of lighting systems, and ventilation equipment. Channels made from special high corrosion resistance grades of stainless steel are available for conditions with high concentrations of sulphur dioxide or chlorides.



Connections to tunnel linings: Curved or straight cast-in HALFEN channels allow accurate and fast installation for lighting systems, ventilation equipment, and power delivery catenaries.



Connections to precast tunnel linings: Curved cast-in HALFEN channels allow accurate and clean installation of mechanical and electrical services, without dust and noise from drilling; damage to the concrete; or the power and access problems associated with welding.

HALFEN CHANNELS

Overview of HALFEN channel range

		Hot-rolled for dynamic and static loads				
HALFEN Channel Selection	HTA 72/48	HTA 55/42	HTA 52/34	HTA 50/30	HTA 40/22	
Channel Dimensions – Inches (mm)						
a	1-7/8" (48)	1-5/8" (42)	1-5/16" (34)	1-3/16" (30)	7/8" (22)	
b	2-7/8" (72)	2-1/8" (55)	2-1/16" (52)	2" (50)	1-9/16" (40)	
c ₁	2" (50)	1-9/16" (40)	1-9/16" (40)	1" (25)	3/4" (20)	
c ₂	-	-	-	-	-	
h ₁	6-15/16" (176)	7-1/8" (182)	6-1/4" (159)	3-5/8" (92)	3-5/16" (84)	
h ₂	-	-	-	-	-	
HALFEN T-bolt range	M20-M30 (3/4"-1-1/4") 	M16-M20 (5/8"-3/4") 			M10-M16 (3/8"-5/8") 	

HALFEN Channel Selection	Hot-rolled for dynamic and static loads				Cold-rolled for static loads		
	Toothed channels for high longitudinal loads						
	HZA 53/34	HZA 38/23	HZA 29/20	HZA 41/22	HTA 49/30	HTA 38/17	HTA 28/15
Channel Dimensions – Inches (mm)							
a	1-5/16" (34)	7/8" (23)	3/4" (20)	13/16" (21)	1-3/16" (30)	5/8" (17)	9/16" (15)
b	2-1/16" (53)	1-1/2" (38)	1-1/8" (29)	1-5/8" (41)	1-15/16" (49)	1-1/2" (38)	1-1/8" (28)
c ₁	1-3/16" (30)	9/16" (15)	1/2" (12)	3/4" (20)	1" (25)	3/4" (20)	9/16" (15)
c ₂	1" (25)	3/4" (20)	5/8" (16)	-	-	-	-
h ₁	6-3/8" (162)	5-15/16" (151)	3-1/4" (82)	3-5/16" (84)	3-5/8" (92)	3-1/8" (79)	3-1/16" (77)
h ₂	6-11/16" (170)	3-3/4" (96)	3-3/16" (80)	-	-	-	-
HALFEN T-bolt range	M16-M20 (5/8"-3/4") 	M12-M16 (1/2"-5/8") 	M12 (1/2") 	M12-M16 (1/2"-5/8") 	M10-M20 (3/8"-3/4") 	M10-M16 (3/8"-5/8") 	M6-M12 (1/4"-1/2")

Notes: Most HALFEN channels are available in hot dip galvanised carbon steel and stainless steel. HALFEN T-bolts are available in the widest range of lengths and diameters, with finishes ranging from electroplated and hot dip galvanised to stainless steel.

THE HALFEN CHANNEL EXPERIENCE

Simple, secure and cost effective

By planning the use of Halfen channels during the design phase, both designers and contractors are able to save construction time, and ensure reliable connections. Jobsite safety hazards are reduced by avoiding the dust, noise, vibration, and fire risk

associated with drilling and welding operations. With no need for special tools or special training, Halfen channels and T-bolts are easily installed by normal construction workers, and connections quickly adjusted to suit construction tolerances.



1. After marking the approximate position needed for connections, HALFEN channels are simply nailed to the formwork before pouring concrete.



2. When the formwork is removed the foam filler strip is simply removed from the HALFEN channel.



3. HALFEN T-bolts can be quickly be twisted into any position in the HALFEN channel. Nuts are simply tightened on HALFEN T-bolts to secure building components to the structure. Slotted brackets combined with HALFEN channels allow adjustment for accurate positioning in two or three dimensions.

CONTACT HALFEN WORLDWIDE

HALFEN has a global network of Subsidiary Companies to assist you. The main contact information for North America, Europe and Asia is provided below. For a full list of offices please visit www.halfen.com



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