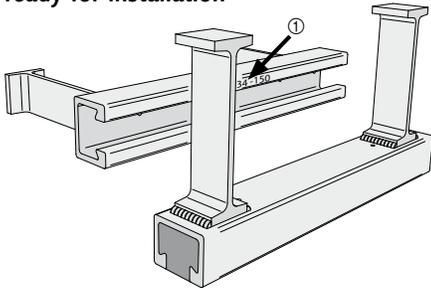
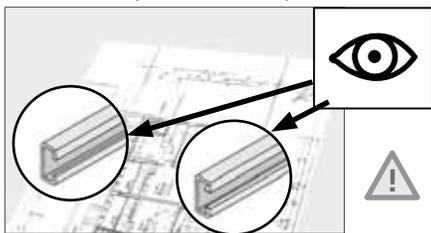


1. Identification and preparations

HALFEN Anchor Channels type HTA, ready for installation



1.1 ① On top of channel lip



1.2 Select the HALFEN Anchor Channel according to the design plans

HALFEN Anchor Channels are supplied with a foam filler and punched holes for nailing to the formwork. Cut excessive foam filler flush at the channel ends. When fixing to the formwork make sure the HALFEN Anchor Channel type (profile, material, length) and its position is as specified in the respective drawing. Fix channels securely so they will not be displaced during the concrete pour and will remain flush with the surface of the formwork. If the formwork is unsuitable for nailing, please select an alternative fixing method.

To avoid rust forming on stainless steel HALFEN Anchor Channels:

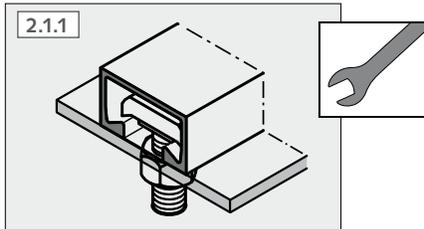
Remove steel packing straps immediately on delivery and store separately with sufficient distance to other metals. Avoid surface damage and contamination caused by contact with carbon steel. Always store the cast-in channels in dry, covered and well ventilated environments.



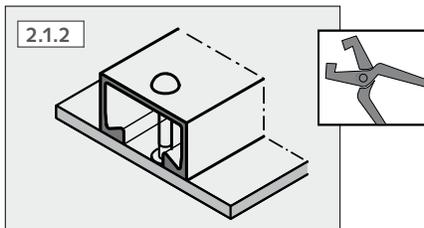
Long-term exposure of foam filler to UV rays will result in degradation of the foam. Stored Channels not intended for immediate installation in an enclosed or covered area.

2. Installation alternatives

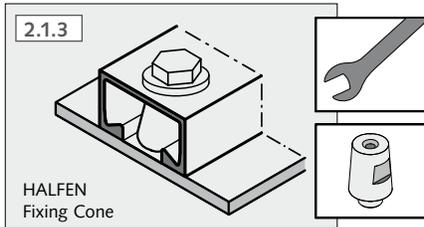
Steel formwork



Fixing by inserting the HALFEN T-head Bolt through pre-drilled holes in the formwork.

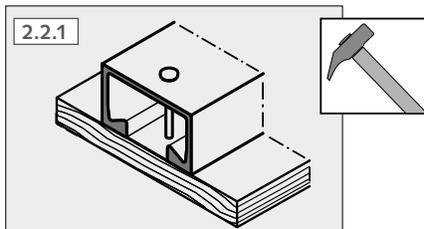


Fixing using aluminum rivets or screws (supplied by contractor) through the holes in the HALFEN Anchor Channel.

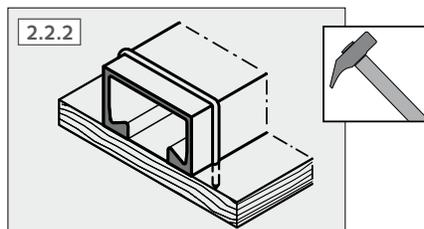


Screw the HALFEN Fixing Cones in the prepared threaded holes in the steel formwork. A HALFEN Anchor Channel is then placed over the row of fixing-cones (spacing approx. 20-40 inches). Suitable spaces are made in the channel filling to accommodate the cones. Plastic bolts with washers are inserted through the slots in the channel and screwed in to the fixing cones; this tightens the channel against the formwork.

Timber formwork

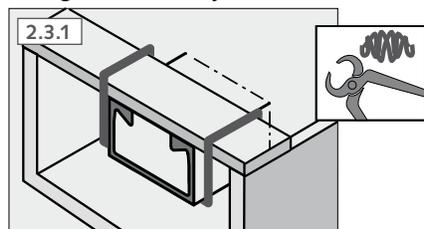


Fixing to timber formwork with nails through the pre-punched holes in the back of the channel. HALFEN recommends the use of stainless steel nails when fixing stainless steel channels.



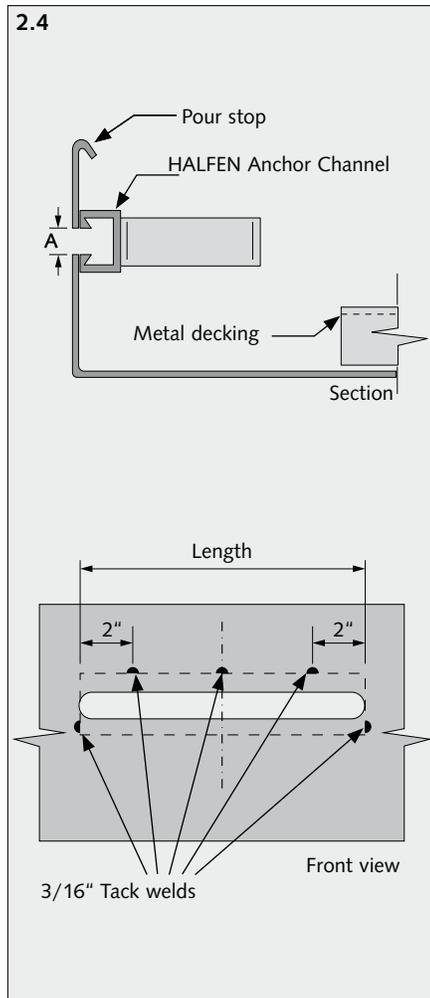
Fixing HALFEN Anchor Channels 28/15 up to 52/34 with staples: Nail the HALFEN Anchor Channel to timber formwork with a sufficient number of staples.

Fixing with auxiliary constructions



Fixing with auxiliary constructions; see picture. Careful concrete compaction is required with a suitable vibrating tool to prevent leaving air bubbles underneath the channel (distance from the HALFEN Anchor Channel should be less than 5-times the vibration tool diameter).

Metal pour stop



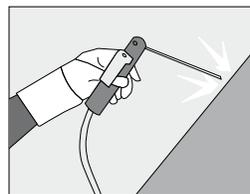
2.4 Securing HALFEN Anchor Channels to metal pour stops

1. Slotted pour stop: Pour stops at HALFEN Anchor Channel locations must be slotted. Slots should be pre-punched by the pour stop supplier. On-site cutting with a welding torch is not recommended. The slot width (dimension A) should be sized and cut to match the distance between the channel lips in the HALFEN Anchor Channel. Oversizing dimension A should be avoided.

2. Welding: Prior to welding, the HALFEN Anchor Channel should be tightly clamped in position over the slot in the pour stop (Figure 2.4). Care should be taken to ensure the channel is aligned properly with the slot.

To connect an HALFEN Anchor Channel up to 24" long to the pour stop, three 3/16" tack welds should be used along the top edge of the channel. A 3/16" tack weld should be used at the bottom lip at each end of the channel (refer to figure 2.4). American Welding Society Standard Specification ANSI/AWS provides for welding to 10-18 gauge galvanized steel (commonly used for pour stops).

After welding, the HALFEN Anchor Channel should be inspected to check it is firmly attached to the pour stop. Large welds or repeated welding should be avoided as this may damage the foam filler in the Anchor Channel. The pour stop should also be inspected after welding to ensure it has not been deformed.

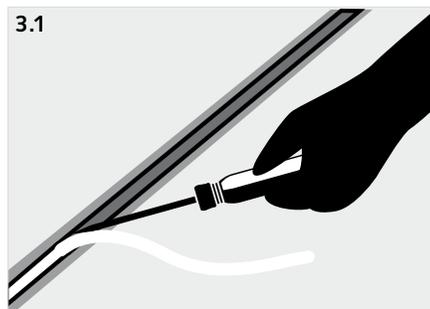


Welding of galvanized steel components produces hazardous fumes. Appropriate precautions should be taken to ensure safe working conditions for those in the vicinity of the welding operation.



Installation by placing the channel in wet concrete is not recommended! If this kind of installation cannot be avoided then very careful concrete vibration is essential after placing the channel (minimum 10 seconds vibration for short channels or 20 seconds per meter for long channels on both sides with a vibrating tool or 10 seconds total with a vibrating table).

3. After concreting and striking the formwork



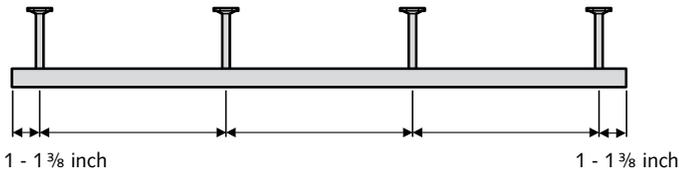
3.1 Remove filler using an appropriate tool, e.g. a screwdriver.



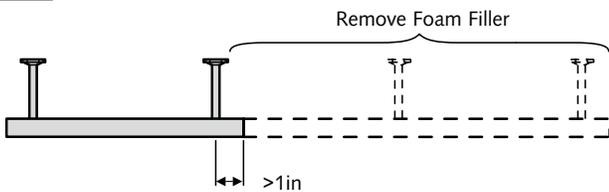
For correct installation of HALFEN T-bolts (HS/HZS/HSR) see instructions for HALFEN Bolts.

4. HALFEN Channels - channels cut to length

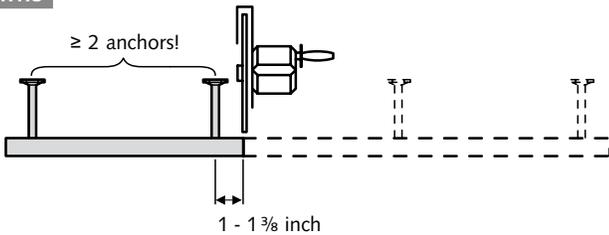
4.1.1



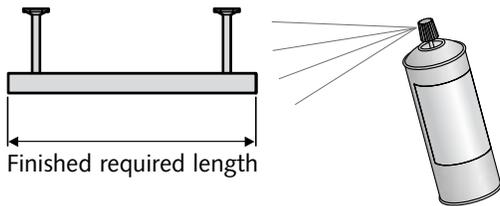
4.1.2



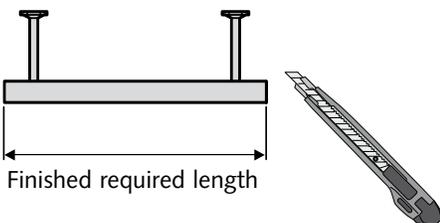
4.1.3



4.1.4



4.1.5



4.1.6

A full range of ready to use standard length channels are available from HALFEN.

Partially remove the foam filler from the excess channel up to a minimum of 1 inch past the location of the cut to avoid heating and potentially damaging the foam.

Cut the HALFEN Anchor Channel to length on site. 1 - 1 3/8 in. (25 - 35 mm) ② of the channel must remain at both ends of the cut piece between each end anchor and the respective channel end.

HALFEN Channels must have at least 2 anchors.

HALFEN Anchor Channel		②
HTA	HZA	
28/15	29/20	1 inch
38/17	38/23	
40/22	41/22	
50/30	-	
52/34	53/34	1 3/8 inch
55/42	64/44	
72/48	-	

Hot dip galvanized channels: after cutting this type of channel, repair the cut surface with zinc-rich paint or zinc spray. Coating thickness and application should be in accordance with ASTM A780 and ASTM A123.

Replace the previously removed foam filler back into the channel and trim flush to the end of the channel.

Recommendation: tape/cover cut end of the channel end to prevent concrete ingress.

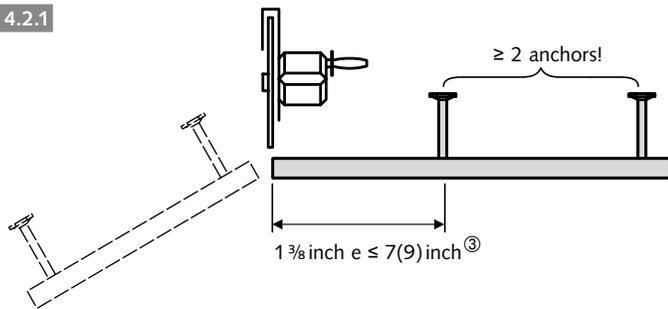
Install the anchor channel in accordance with section 2 and 3 of the assembly instructions.

Note : HALFEN ANK-E Anchors are not in accordance with ICC-ESR 1008.

HALFEN ANK-E Anchors are not included with delivery of HALFEN Anchor Channels. Please order these separately in the same material and finish as the HALFEN Anchor Channel.

HALFEN ANK - E Anchors are only available for profiles 28/15, 38/17, 40/22 and 41/22.

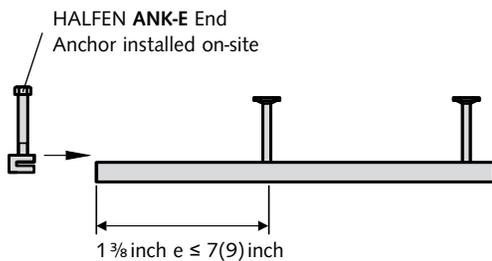
4.2.1



Cut the HALFEN Anchor Channel as required following assembly instruction 4.1.2. The cut must be at right angles to the channel-axis. Maximum and minimum lengths for "e" at the ends of HALFEN Channels are 7 - 9 in ③ and greater than 1 3/8 in.

HALFEN Anchor Channel	③ e ≤
28/15	7 inch
38/17	
40/22	9 inch
41/22	

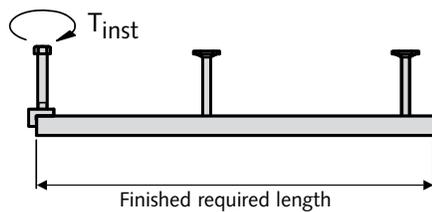
4.2.2



Note: After cutting hot dip galvanized channels repair galvanization according to assembly instruction 4.1.4.

Select the type of ANK-E End anchor to fit the HALFEN Anchor Channel according to the table below. Push the clamp on to the channel to its full extent; press in the foam filler if necessary.

4.2.3



Tighten the hexagonal head bolt with a torque wrench with the value specified in the table below.

4.2.4

Install Anchor Channel in accordance with section 2 and 3 of the assembly instructions.

End Anchor selection						
HALFEN Anchor Channel	Article name ⑥	Thread	Torque T _{inst}		End anchor capacities	
			lbf-in	Nm		
HTA 28/15	ANK - E1 - FV	M 8	88.5	10	9 kN (2 kip)	
HTA 38/17	ANK - E2 - FV	M 10	177	20		
HTA 40/22 ④	ANK - E2 - FV	M 10	177	20	20 kN (4.5 kip)	
HZA 41/22 ⑤	ANK - E2 - FV	M 10	177	20		

④ ANK-E2 Capacity is less than HTA 40/22 Anchor capacity per ICC-ESR 1008. Contact HALFEN engineering to confirm verification of connection capacity.

⑤ Only one end anchor is permitted for short channel length HZA 41/22. Not included in ICC ESR -1008.

⑥ FV = Hot Dip Galvanized. All end anchors are also available in A4 stainless steel.

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