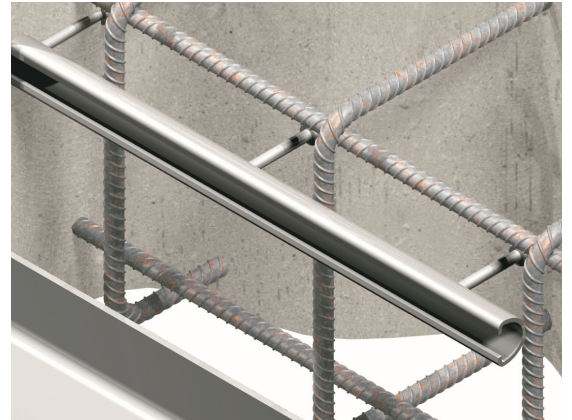


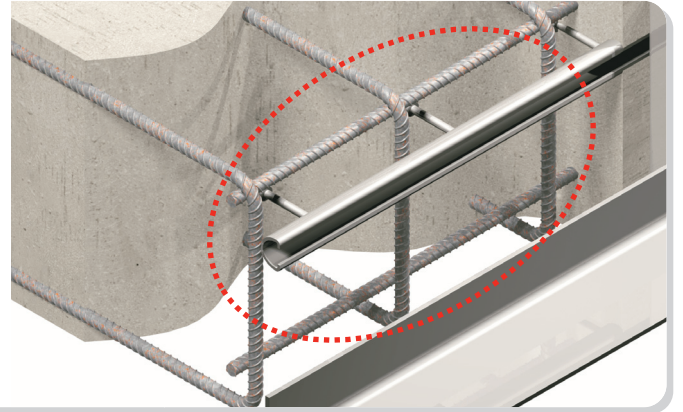
ACS AXIS Curve
Medium Duty Cast in Channel



Introducing ACS AXIS Curve

Medium Duty Cast in Channel

- ✓ Europe's Most Cost Effective Medium Duty Channel
- ✓ Strongest Multi Purpose Channel Available
- ✓ Ensures a Rapid, Accurate and Safe Fix
- ✓ Environmentally Superior
- ✓ Improved Concrete Flow and Fix
- ✓ Fully Tested, Warranted and Indemnified



Background

The ACS Curve, Cast in Channel and T Head Bolt Assembly is a unique patented system. It is designed to provide support and/or restraint to secondary products that are fixed back to a concrete structure without the need for drilling and post-fixing. The channel provides continuous adjustment along its length via the Curve T Head Bolt, allowing for normal site tolerance and disassembly as appropriate. The system has been designed specifically

to suit Masonry Support and Windpost applications but it is a multipurpose, medium duty channel that can be readily used in various static loading applications across a range of industries. The Curve system is typically supplied in standard 3m lengths but can be supplied in short lengths or special welded corner, angle or radiused fabrication details to suit specific site requirements.

Application

The 31/21 Curve is a medium duty cast in channel that provides a load capacity exceeding that of a standard 38/17 rectangular channel section, and uses considerably less material. The channel is therefore a cost effective alternative to a 38/17 or other equivalent predecessors. The ACS 31/21 Curve is intended for use in reinforced concrete with a minimum compressive strength class of C20/25 or greater. The channel assembly consists of the Curve channel section, which is supplied complete with concrete anchors attached to the back of the channel profile and a specially designed T Head Bolt.

The following guide contains technical information on the 31/21 Curve Channel and Bolt Assembly, showing how it can be used to provide a simple and cost effective fixing solution across a range of structural applications.

Use

The channel is fixed to the formwork prior to casting of the concrete. Once the formwork is struck the cast in channel provides a slot to allow secondary structural components to be fixed via the use of a specially designed 31/21 T Head Bolt.

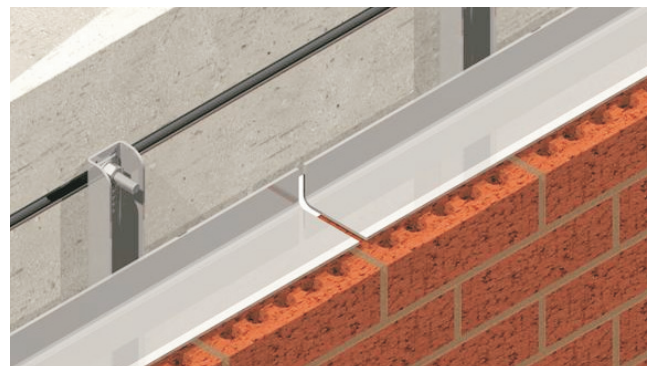
The key advantages of a cast in channel includes; infinite adjustment along the length of the channel, whilst preventing the need for site drilling to post fix components.

The Curve System

ACS Curve Channel is available as a standard 3000mm length with crimped anchor pairs fixed at 220mm centres or stud anchors at 150mm. Alternative short lengths can be supplied for specific applications. For further information see the Channel Lengths section.

The Curve system also consists of a specially designed M12 x 50mm stainless steel T Head bolt. All components are designed and manufactured in line with BS EN 100088, BS EN ISO 3506 and ETAG 001.

The standard Curve system provides a permissible load capacity (F_{PERM}) of 8.5kN in tension, shear or combined loading criteria at nominal centres and spacing in C20/25 reinforced concrete.



Medium Duty Cast in Channel

Installation

ACS 31/21 Curve is typically supplied in 3m lengths complete with channel anchors, nail holes and an expanded polymer foam infill, which is intended to prevent the ingress of concrete during construction. To reduce the potential for this ingress, the channel must be fixed to the formwork using all nail holes provided.

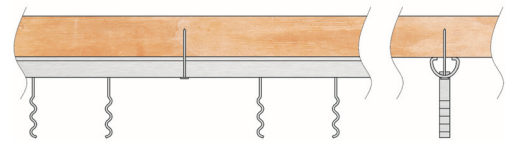
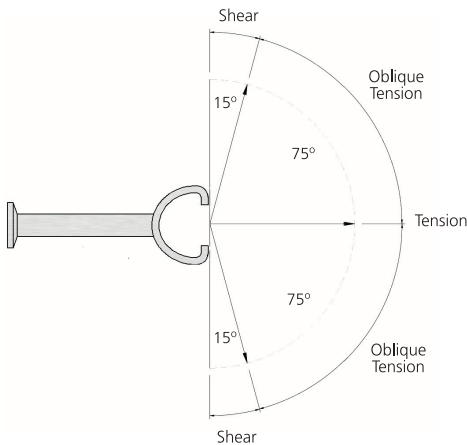
The load capacity of the channel is subject to its edge distance and spacing. The minimum and nominal spacing's along with the edge distances and associated load capacities can be seen in the following tables.

Channel Position	Edge Distance (mm)	F _{PERM} Tension (kN)	F _{PERM} Shear (kN)
Nominal Edge Distance	75	8.5	8.5
Minimum Edge Distance	50*	6	6

* A minimum edge distance of 50mm is possible providing additional suspended reinforcement is used to transfer loads back into the structural slab. For more information, see the ACS channel catalogue.

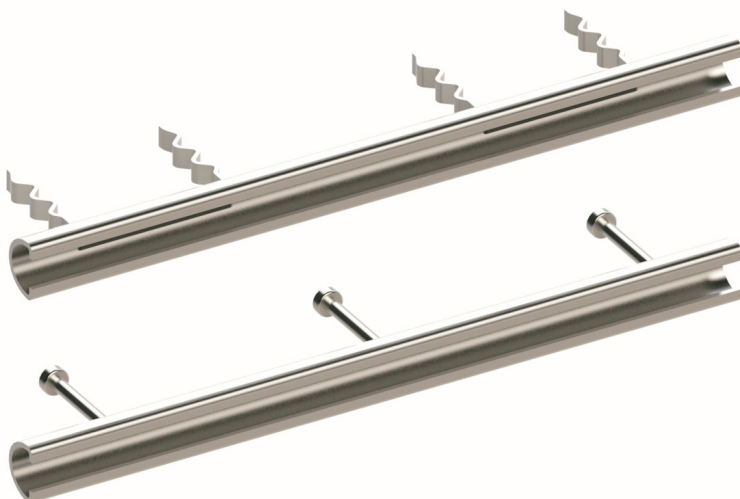
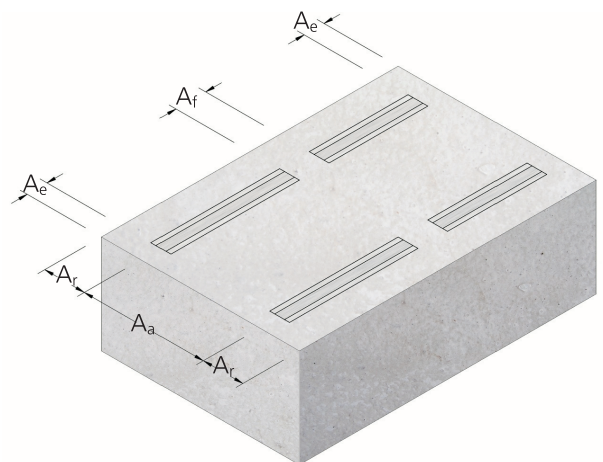
Allowable Loads

The allowable loads table provides the capacity for both direct tension and shear. Combined loads must not exceed either of these capacities and must be subject to a combined load check during calculation.



Channel setting out details

Channel Reference	Edge Spacing A _r (mm)	Axial Spacing A _a (mm)	End Spacing A _e (mm)	Intermediate Spacing A _f (mm)	Installation Height h (mm)
31/21 Curve	75	150	50	100	70



ACS Curve Channel and Stud/Crimped Anchors

Components

Short Channel Lengths

Short lengths of channel can be supplied to suit site specific applications. Short lengths are available in lengths from 140mm in increments of 220mm up to the full channel length of 3000mm. These can be made to order by ACS or alternatively cut to suit on site.

Channel Length (mm)	Number of Anchor Pairs per Length	Anchor Spacing (mm)
140	1	70
360	2	220
580	3	220
800	4	220
1020	5	220
1240	6	220
1460	7	220
1680	8	220
1900	9	220
2120	10	220
2340	11	220
2560	12	220
2780	13	220
3000	14	220

All short lengths are supplied with a maximum end cantilever, measured from the last anchors of 35mm. To ensure the structural integrity of the channel and to minimise deflection this maximum cantilever length of 35mm must be maintained when cutting channel on site.

ACS Curve T-head Bolt

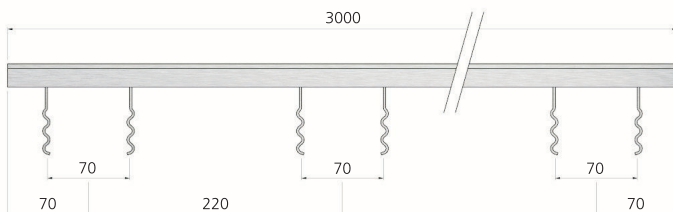
The ACS Curve T Head Bolt is designed, manufactured and tested in line with the guidance of BS EN ISO 3506-1:2009, Mechanical Properties of Stainless Steel Fasteners.



Channel Anchors

ACS Curve Channel is available as a standard 3000mm length with crimped anchor pairs fixed at 220mm centres or stud anchors at 150mm centres.

ACS can also supply short lengths of channel to suit specific site applications. A table of short channel lengths and the associated anchor centres can be seen above.



T Head Bolt Installation

The Curve T Head Bolt is installed into the slot between the lips of the channel and rotated through 90°. During this operation, the bolt engages with the curved profile of the channel and is driven forward in the channel until the bolt locks into the front of the channel allowing ancillary components to be fixed. The bolt has a slot feature on the end of the shank to illustrate its orientation, which should be approximately vertical in its final fixed position.

Bolt Size	Bolt Length (mm)	Tightening Torque (Nm)	Material	Property Class	SWL Tension (kN)	SWL Shear (kN)
M12	50	25	A2 (304)	70	31	22

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