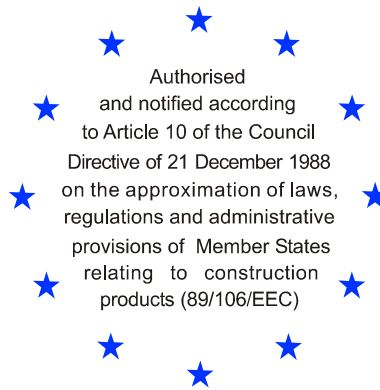


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# DIBt

Mitglied der EOTA  
*Member of EOTA*

## European Technical Approval ETA-09/0338

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung  
*Trade name*

Jordahl-Ankerschiene JTA  
*Jordahl-anchor channel JTA*

Zulassungsinhaber  
*Holder of approval*

Deutsche Kahneisen Gesellschaft mbH  
Nobelstraße 51/55  
12057 Berlin

Zulassungsgegenstand  
und Verwendungszweck  
*Generic type and use  
of construction product*

Einbetonierte Ankerschienen  
*Cast-in anchor channels*

Geltungsdauer: vom  
*Validity: from*  
bis  
*to*

15 February 2010  
15 February 2015

Herstellwerk  
*Manufacturing plant*

14959 Trebbin, Industriestr. 5

Diese Zulassung umfasst  
*This Approval contains*

27 Seiten einschließlich 19 Anhänge  
*27 pages including 19 annexes*



Europäische Organisation für Technische Zulassungen  
European Organisation for Technical Approvals

## I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
  - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products<sup>1</sup>, modified by Council Directive 93/68/EEC<sup>2</sup> and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council<sup>3</sup>;
  - Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998<sup>4</sup>, as amended by law of 31 October 2006<sup>5</sup>;
  - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC<sup>6</sup>.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- 5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Deutsches Institut für Bautechnik. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.
- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities L 40, 11 February 1989, p. 12

2 Official Journal of the European Communities L 220, 30 August 1993, p. 1

3 Official Journal of the European Union L 284, 31 October 2003, p. 25

4 *Bundesgesetzblatt Teil I 1998*, p. 812

5 *Bundesgesetzblatt Teil I 2006*, p. 2407, 2416

6 Official Journal of the European Communities L 17, 20 January 1994, p. 34

## **II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL**

### **1 Definition of the product and intended use**

#### **1.1 Definition of the product**

The Jordahl-anchor channel JTA is an anchor channel consisting of a C-shaped channel of hot-rolled or cold-formed steel and at least two metal anchors non-detachably fixed on the profile back.

The anchor channel is imbedded surface-flush in the concrete. Jordahl-special screws (hammerhead or hooked) with appropriate hexagon nuts and washers will be fixed in the channel.

An illustration of the product and intended use is given in Annex 1.

#### **1.2 Intended use**

The anchor channel is intended to be used for anchorages for which requirements for mechanical resistance and stability and safety in use in the sense of the Essential Requirements 1 and 4 of Council Directive 89/106 EEC shall be fulfilled and failure of anchorages made with these products would cause risk to human life and/or lead to considerable economic consequences.

The anchor channel is to be used only for anchorages subject to static or quasi-static loading in reinforced or unreinforced normal weight concrete of strength classes C12/15 at minimum to C90/105 at most according to EN 206-1:2000-12. The anchor channel may be anchored in cracked and non-cracked concrete.

The anchor channel may be used for transmission of tensile loads, shear loads, or a combination of tensile and shear loads perpendicular to the longitudinal axis of the channel.

The intended use of the anchor channel (channel profile, anchor, special screw, washer and nut) concerning corrosion is given in Annex 3, Table 1 depending on the chosen material.

The provisions made in this European technical approval are based on an assumed working life of the anchor channel of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### **2 Characteristics of the product and methods of verification**

#### **2.1 Characteristics of the product**

The anchor channel corresponds to the drawings and information given in Annex 2 to 7. The characteristic material values, dimensions and tolerances of the anchor channel not indicated in the Annexes shall correspond to respective values laid down in the technical documentation<sup>7</sup> of this European technical approval.

Regarding the requirements concerning safety in case of fire it is assumed that the anchor channel meets the requirements of class A1 in relation to reaction to fire in accordance with the stipulations of the Commission decision 96/603/EC, amended by 2000/605/EC.

The characteristic values for the design of the anchorages are given in Annexes 8 to 17.

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<sup>7</sup> The technical documentation of this European technical approval is deposited at Deutsches Institut für Bautechnik and, as far as it is relevant to the tasks of the approved body involved in the attestation of conformity procedure, is handed over to the approved bodies.

The anchor channel shall be marked with the identifying mark of the producer, the manufacturing method, the size and if applicable additionally with the type of stainless steel, e.g. Jordahl W 53/34-A4 according to Annex 2. The position of the anchor is marked for anchor channels with weld-on anchors by nail holes in the channel profile.

Each special screw is marked with the identifying mark of the producer, the bolt type and if applicable with the strength grade and if applicable with the type of stainless steel according to Annex 2.

## 2.2 Method of verification

### 2.2.1 General

The assessment of the fitness of the anchor channel for the intended use with regard to the requirements of mechanical resistance and stability as well as safety in use in the sense of the Essential Requirements 1 and 4 was performed based on the following verifications:

#### Verifications for tension loads for

- |   |                             |
|---|-----------------------------|
| 1. Distribution of acting tension loads                               |                             |
| 2. Steel failure - anchor   | $N_{RK,s,a}$                |
| 3. Steel failure - special screw                                      | $N_{RK,s,s}$                |
| 4. Steel failure - connection channel/ anchor                         | $N_{RK,s,c}$                |
| 5. Steel failure - local flexure of channel lips                      | $N_{RK,s,l}$                |
| 6. Steel failure - flexure resistance of channel                      | $M_{RK,s,flex}$             |
| 7. Steel failure - transfer of setting torque into prestressing force | $T_{inst}$                  |
| 8. Concrete failure - pullout   | $N_{RK,p}$                  |
| 9. Concrete failure - concrete cone                                   | $N_{RK,c}$                  |
| 10. Concrete failure - splitting due to installation                  | $C_{min}, s_{min}, h_{min}$ |
| 11. Concrete failure - splitting due to loading                       | $N_{RK,sp}$                 |
| 12. Concrete failure - blow-out                                       | $N_{RK,cb}$                 |
| 13. Reinforcement   | $N_{RK,re}, N_{Rd,a}$       |
| 14. Displacement under tension loads                                  | $\bar{\delta}_N$            |

#### Verifications for shear loads for

- |   |                  |
|---|------------------|
| 1. Distribution of acting shear loads                     |                  |
| 2. Steel failure without lever arm - special screw        | $V_{RK,s,s}$     |
| 3. Steel failure without lever arm - flexure channel lips | $V_{RK,sl}$      |
| 4. Steel failure with lever arm                           | $M_{RK,s}^0$     |
| 5. Concrete failure - pry-out                             | $V_{RK,cp}$      |
| 6. Concrete failure - concrete edge                       | $V_{RK,c}$       |
| 7. Reinforcement  | $V_{RK,c,re}$    |
| 8. Displacement under shear loads                         | $\bar{\delta}_V$ |

In addition to the specific clauses relating to dangerous substances contained in this European Technical Approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

### **3 Evaluation and attestation of conformity and CE-marking**

#### **3.1 System of attestation of conformity**

According to the Decision 2000/273/EC of the European Commission<sup>8</sup> system 2(i) (referred to as system 1) of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 1: Certification of the conformity of the product by an approved certification body on the basis of:

(a) Tasks for the manufacturer:

- (1) factory production control;
- (2) further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan;

(b) Tasks for the approved body:

- (3) initial type-testing of the product;
- (4) initial inspection of factory and of factory production control;
- (5) continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

#### **3.2 Responsibilities**

##### **3.2.1 Tasks of the manufacturer**

###### **3.2.1.1 Factory production control**

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial/raw/constituent materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the control plan which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.<sup>9</sup>

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

###### **3.2.1.2 Other tasks for the manufacturer**

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of anchor channels in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

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<sup>8</sup> Official Journal of the European Communities L 86 of 07.04.2000

<sup>9</sup> The control plan is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

### 3.2.2 Tasks of the approved bodies

The approved body shall perform the

- initial type-testing of the product,
- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

### 3.3 CE marking

The CE marking shall be affixed on each packaging of the anchor channel. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate of conformity for the product,
- the number of the European technical approval,
- trade name of the anchor channels and special screws.

## 4 Assumptions under which the fitness of the product for the intended use was favourably assessed

### 4.1 Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

### 4.2 Design of anchorages

The fitness of the anchor channel for the intended use is given under the following condition:

The design of the anchorage is based on the CEN/TS 1992-4:2009 "Design of fastenings for use in concrete", part 1 and 3 under the responsibility of an engineer experienced in anchorages and concrete work.

The verification for shear load with supplementary reinforcement follows CEN/TS 1992-4-3:2009, section 6.3.6 and 6.3.7 or alternatively Annex 16 and 17.

The calculation of  $\alpha_{h,v}$  (effect of the thickness of the structural component) for the verification of concrete edge failure is done according Annex 14, Table 16 exceptional to CEN/TS 1992-4-3:2009, section 6.3.5.6, formula (38).

The reduction of the member cross section caused by the anchor channel is taken into account for the verification of the concrete member if necessary.

The member thickness is not less than  $h_{min}$  indicated in Annex 8, Table 8 and 9.

The edge distance of the anchors on the profile back of the channel is not less than  $c_{min}$  indicated in Annex 8, Table 8 and 9 and  $c_{min,s}$  indicated in Annex 9, Table 10.

The spacing of the anchors is between the  $s_{min}$  and  $s_{max}$  given in Annex 6, Table 5.

The spacing of the special screws is not less than  $s_{min,s}$  given in Annex 9, Table 10.

The effective anchorage depth is not less than  $\min h_{ef}$  according to Annex 8, Table 8 and 9.

The characteristic resistances are calculated with the minimum effective anchorage depth.

Taking into account the loads to be anchored verifiable calculation notes and drawings are generated.

The position, the type, the size, the length, of the anchor channel, if applicable the spacing of the anchors, and if applicable the position as well as the size of the special screws are indicated on the design drawings. The material of the anchor channel and the special screw is given additionally on the drawings.

### 4.3 Installation of the anchor channel

The fitness for use of the anchor channel can only be assumed, if the following installation conditions are observed:

- Installation by appropriately qualified personnel and under the supervision of the person responsible for technical matters on site.
- Use of the anchor channel only as supplied by the manufacturer without exchanging the components.
- Installation in accordance with the manufacturer's specifications given in Annex 18 and 19 and the design drawings.
- The anchor channels are fixed on the formwork such that no movement of the channels will occur during the time of laying the reinforcement and of placing and compacting the concrete.
- The concrete under the head of the anchors are properly compacted. The channels are protected from penetration of concrete into the internal space of the channels.
- Size and spacing of special screws corresponding to the design drawings.
- Orientating the special screw (notch according Annex 7) rectangular to the channel axis.
- Observation of the prescribed values (e.g.  $T_{inst}$  according Annex 9) of installation.
- The setting torques given in Annex 9 must not be exceeded.

## **5 Responsibility of the manufacturer**

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1 and 2 including Annexes referred to and 4.2 and 4.3 is given to those who are concerned. This information may be made by reproduction of the respective parts of the European technical approval. In addition all installation data shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

The minimum data required are:

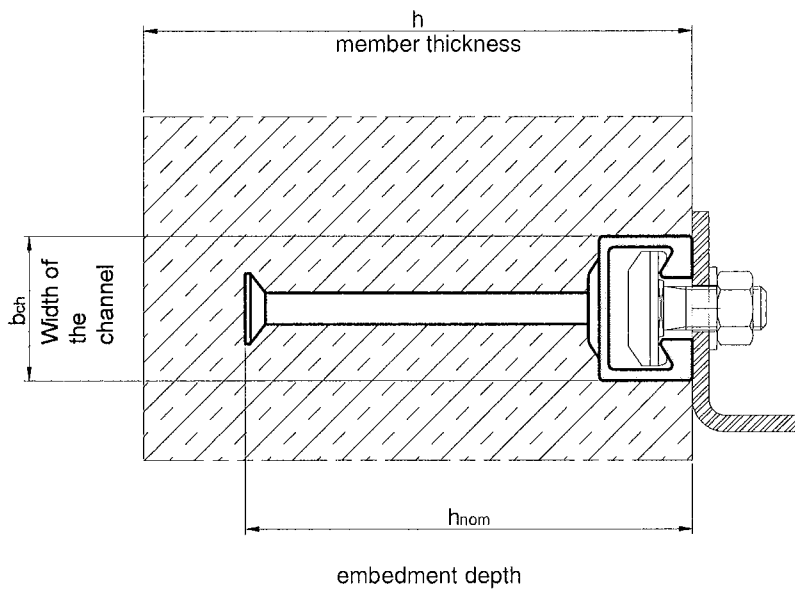
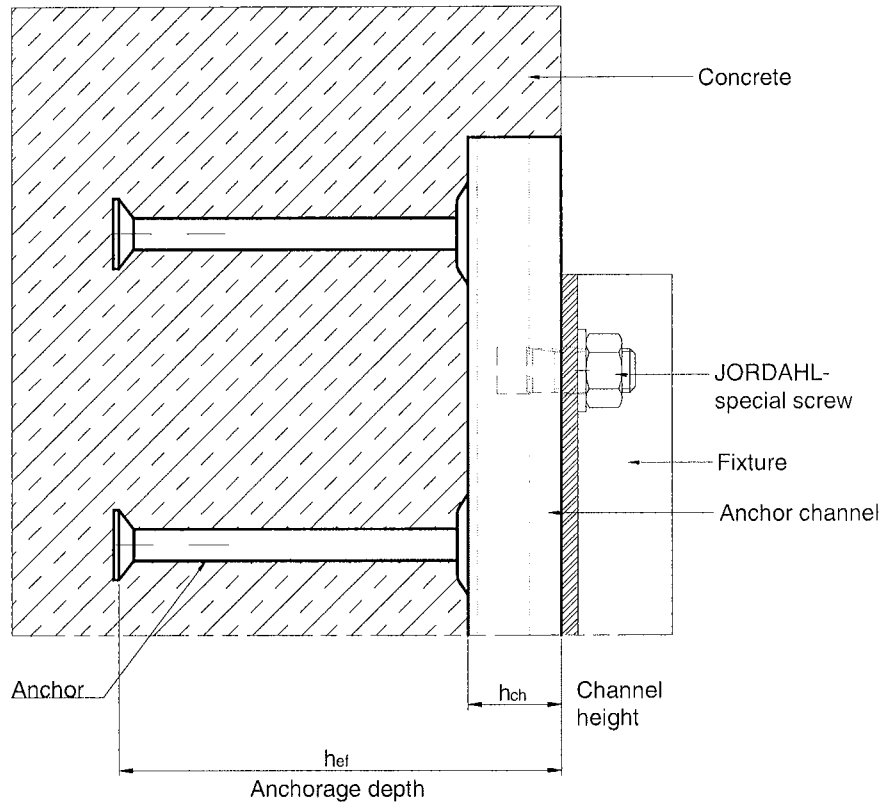
- dimensions of the anchor channel,
- mentioning of the matching screws,
- materials of the anchor channel (channel, anchor, screw , washer, nut)
- details on the installation procedure, preferably by using illustrations,
- maximum setting torque,
- identification of the manufacturing batch.

All data shall be presented in a clear and explicit form.

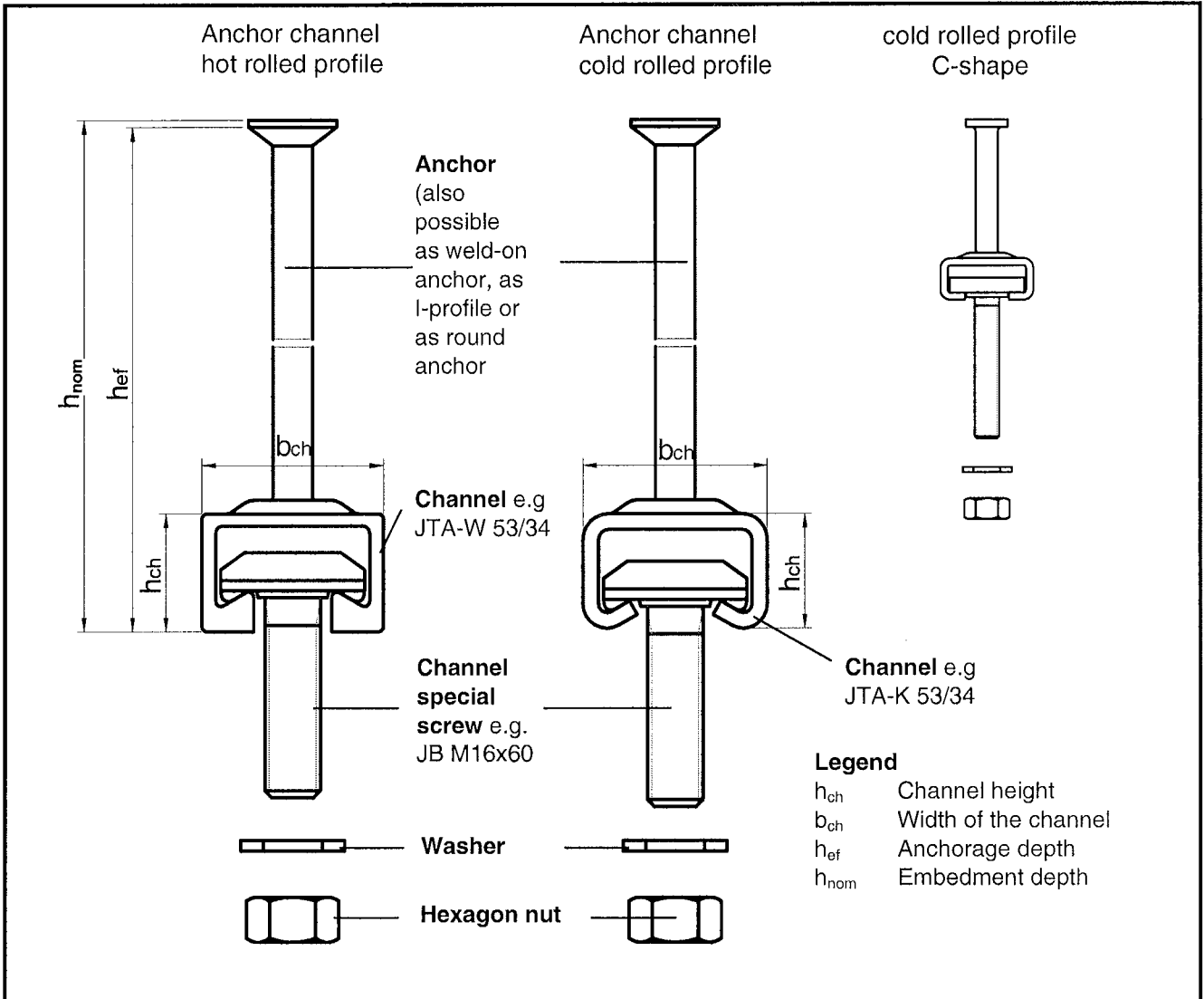
Dipl.-Ing. Georg Feistel  
Head of Division Construction Engineering  
of Deutsches Institut für Bautechnik

*beglaubigt*  
Müller



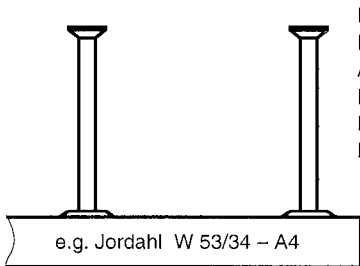


<p>JORDAHL - Anchor Channel JTA</p>	<p><b>Annex 1</b></p>
<p>Product and intended use</p>	<p>of European technical approval <b>ETA-09/0338</b></p>



**Marking of the JORDAHL - anchor channel:**  
e.g. Jordahl W 53/34-A4

Jordahl or J = Identifying mark of the manufacturer  
 W = Manufacturing method  
 53/34 = Size  
 A4 = Material  
 Close to the anchors a nail hole is positioned

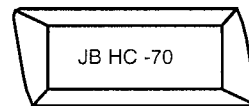


Material channels:  
 No marking for 1.0038/1.0044  
 A4 = 1.4401/1.4404/1.4571  
 F4 = 1.4462  
 HC or HCR = 1.4529/1.4547  
 L4 = 1.4362 (Lean Duplex)

Manufacturing method:  
 W = hot rolled  
 K = cold rolled

**Marking of the JORDAHL - special screw:**  
e.g. JB HC - 70

J = Identifying mark of the manufacturer  
 B = Special screw type  
 HC-70 = Material/Strength grade



Material/Strength grade special screws:  
 4.6 = Steel grade 4.6  
 8.8 = Steel grade 8.8  
 A4 = Stainless steel (1.4401/1.4404/1.4571) grade -50  
 A4-70 = Stainless steel (1.4401/1.4404/1.4571) grade -70  
 F4-70 = Stainless steel (1.4462), grade -70  
 L4-70 = Stainless steel (1.4362), grade -70  
 HC-50 = Stainless steel (1.4529/1.4547), grade -50  
 HC-70 = Stainless steel (1.4529/1.4547), grade -70

JORDAHL - Anchor Channel JTA

Product and marking

**Annex 2**

of European technical approval  
**ETA-09/0338**

Table 1: Materials and intended use

1	2	3	4	5		6
				Intended use		
Item no.	Specification	Dry internal conditions	Internal conditions with usual humidity	Medium corrosion exposure	High corrosion exposure	
		Anchor channels may only be used in structures subject to dry internal conditions (e.g. accommodations, bureaux, schools, hospitals, shops, exceptional internal conditions with usual humidity acc. column 4)	Anchor channels may also be used in structures subject to internal conditions with usual humidity (e.g. kitchen, bath- and laundry in residential buildings, exceptional permanent damp conditions and application under water)	Anchor channels may also be used in structures subject to external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal conditions, if no particular aggressive conditions (e.g. permanent, alternating immersion in seawater etc. acc column 6) exist.	Anchor channels may also be used in structures subject to exposure in particular aggressive conditions (e.g. permanent, alternating immersion in seawater or the splash zone of swimming pools or atmosphere with chemical pollution e.g. in desulphurization plants or road tunnels where deicing materials are used)	
<b>Materials</b>						
1	<b>Channel profile</b>	Steel 1.0038; 1.0044 EN 10025 hot-dip galv. $\geq 50 \mu\text{m}^5$	Steel 1.0038; 1.0044 EN 10025 hot-dip galv. $\geq 50 \mu\text{m}^5$	Stainless steel 1.4401/ 1.4404/ 1.4571; 1.4362, EN 10088		Stainless steel 1.4462 <sup>1)</sup> 1.4529/ 1.4547 EN 10088
2	<b>Anchor</b>	Steel 1.0038; 1.0214, 1.0401, 1.1132, 1.5525 EN 10263 hot-dip galv. $\geq 50 \mu\text{m}^5$	Steel 1.0038; 1.0214, 1.0401, 1.1132, 1.5525 EN 10263 hot-dip galv. $\geq 50 \mu\text{m}^5$	Stainless steel 1.4401/ 1.4404/ 1.4571/ 1.4578; 1.4362; 1.0038 <sup>2)</sup> EN 10088		
3	<b>JORDAHL-special screw with shaft and thread according to EN ISO 4018</b>	Steel, strength grade 4.6/8.8 EN ISO 898-1 electroplated $\geq 5 \mu\text{m}^3$	Steel, strength grade 4.6/8.8 EN ISO 898-1 hot-dip galv. $\geq 40 \mu\text{m}^4$	Stainless steel 1.4401/ 1.4404/ 1.4571; 1.4362, EN ISO 3506-1		Stainless steel 1.4462 <sup>1)</sup> , 1.4529/ 1.4547 EN ISO 3506-1
4	<b>Washer, EN ISO 7089 and EN ISO 7093-1 production class A, 200HV</b>	Steel EN 10025 electroplated $\geq 5 \mu\text{m}^3$	Steel EN 10025 hot-dip galv. $\geq 40 \mu\text{m}^4$	Stainless steel 1.4401/ 1.4404/ 1.4571, EN 10088		Stainless steel 1.4462 <sup>1)</sup> , 1.4529/ 1.4547 EN 10088
5	<b>Hexagonal nuts EN ISO 4032</b>	Steel strength grade 5/8 EN 20898-2 electroplated $\geq 5 \mu\text{m}^3$	Steel strength grade 5/8 EN 20898-2 hot-dip galv. $\geq 40 \mu\text{m}^4$	Stainless steel 1.4401/ 1.4404/ 1.4571 EN ISO 3506-2		Stainless steel 1.4462 <sup>1)</sup> , 1.4529/ 1.4547 EN ISO 3506-2

1) 1.4462 not applicable for indoor swimming-pools

2) Steel acc. to EN 10025, 1.0038 not for anchor channels K28/15 and K38/17

3) Electroplated acc. to EN ISO 4042

4) Hot-dip galvanized acc. to EN ISO 10684

5) Hot-dip galvanized on the basis of EN ISO 1461, but coating thickness  $\geq 50 \mu\text{m}$ 

JORDAHL - Anchor Channel JTA

Materials and intended use

Annex 3

of European technical approval  
ETA-09/0338

Hot rolled profile

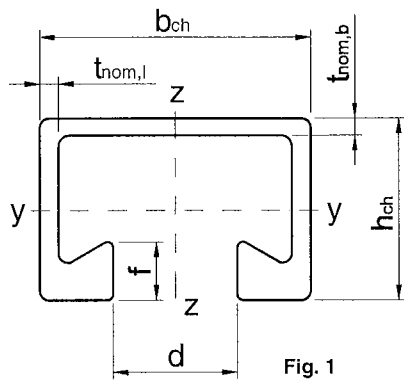


Fig. 1

Cold rolled profile

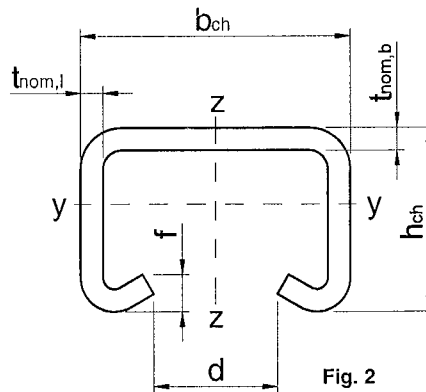


Fig. 2

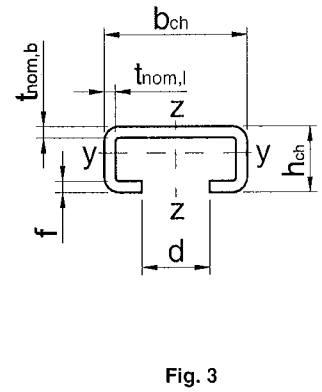


Fig. 3

Table 2: Geometrical profile properties

Anchor channel	Figure	Dimensions						Material	I <sub>y</sub> [mm <sup>4</sup> ]
		b <sub>ch</sub>	h <sub>ch</sub>	t <sub>nom,b</sub>	t <sub>nom,l</sub>	d	f		
[mm]									
K 28/15	3	28.00	15.25	2.25	2.25	12.00	2.25	Steel	4060
K 38/17	3	38.00	17.50	3.00	3.00	18.00	3.00		8547
K 40/25	2	40.00	25.00	2.75	2.75	18.00	5.60		20570
K 50/30	2	50.00	30.00	3.00	3.00	22.00	7.39		41827
K 53/34	2	53.50	33.00	4.50	4.50	22.00	7.90		72079
K 72/48	2	72.00	49.00	6.00	6.00	33.00	9.90		293579
W 40/22	1	39.50	23.00	2.40	2.40	18.00	6.00		19703
W 50/30	1	49.00	30.00	3.00	2.75	22.50	7.85		51904
W 53/34	1	52.50	33.50	4.10	4.00	22.50	10.50		93262
W 55/42	1	54.50	42.00	5.00	5.00	26.00	12.90		187464
W 72/48	1	72.00	48.50	4.50	5.00	33.00	15.50	349721	
K 28/15	3	28.00	15.25	2.25	2.25	12.00	2.25	Stainless steel	4060
K 38/17	3	38.00	17.50	3.00	3.00	18.00	3.00		8547
K 40/25	2	39.50	25.00	2.50	2.50	18.00	5.40		19097
K 50/30	2	50.00	30.00	3.00	3.00	22.00	7.39		41827
K 53/34	2	53.50	33.00	4.50	4.50	22.00	7.90		72079
K 72/48	2	72.00	49.00	6.00	6.00	33.00	9.90		293579
W 40/22	1	39.50	23.00	2.40	2.40	18.00	6.00		19759
W 50/30	1	49.00	30.00	3.00	2.75	22.50	7.85		51904
W 53/34	1	52.50	33.50	4.10	4.00	22.50	10.50		93262
W 72/48	1	72.00	48.50	4.50	5.00	33.00	15.50		349721

JORDAHL - Anchor Channel JTA

Geometrical profile properties

**Annex 4**

of European technical approval

**ETA-09/0338**

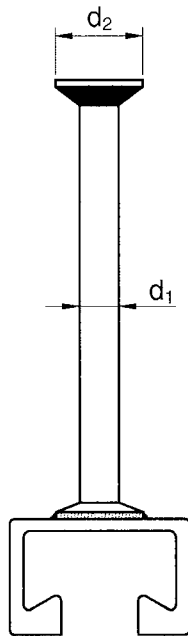


Table 3: Types of round anchors

Type	Shaft Ø d <sub>1</sub>	Head Ø d <sub>2</sub>
	[mm]	
R	7.0	12.0
	8.5	15.0
	9.0	17.0
	9.0	17.5
	10.8	19.0
	11.5	23.5
	15.5	28.0
	15.5	31.0

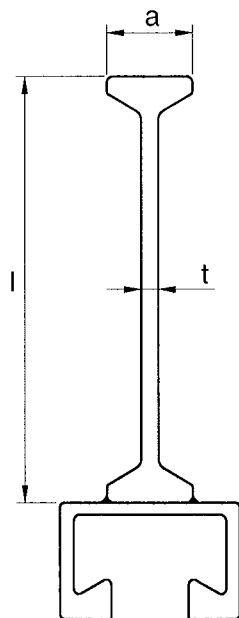


Table 4: Types of I-anchors

Type	Length l	Head width a	Web thickness t
	[mm]		
<b>I 60</b>	62	18	5
<b>I 69</b>	69	18	5
<b>I 128</b>	128	17	6
<b>I 140</b>	140	20	7.1

JORDAHL - Anchor Channel JTA

Types of anchors

**Annex 5**

of European technical approval

**ETA-09/0338**

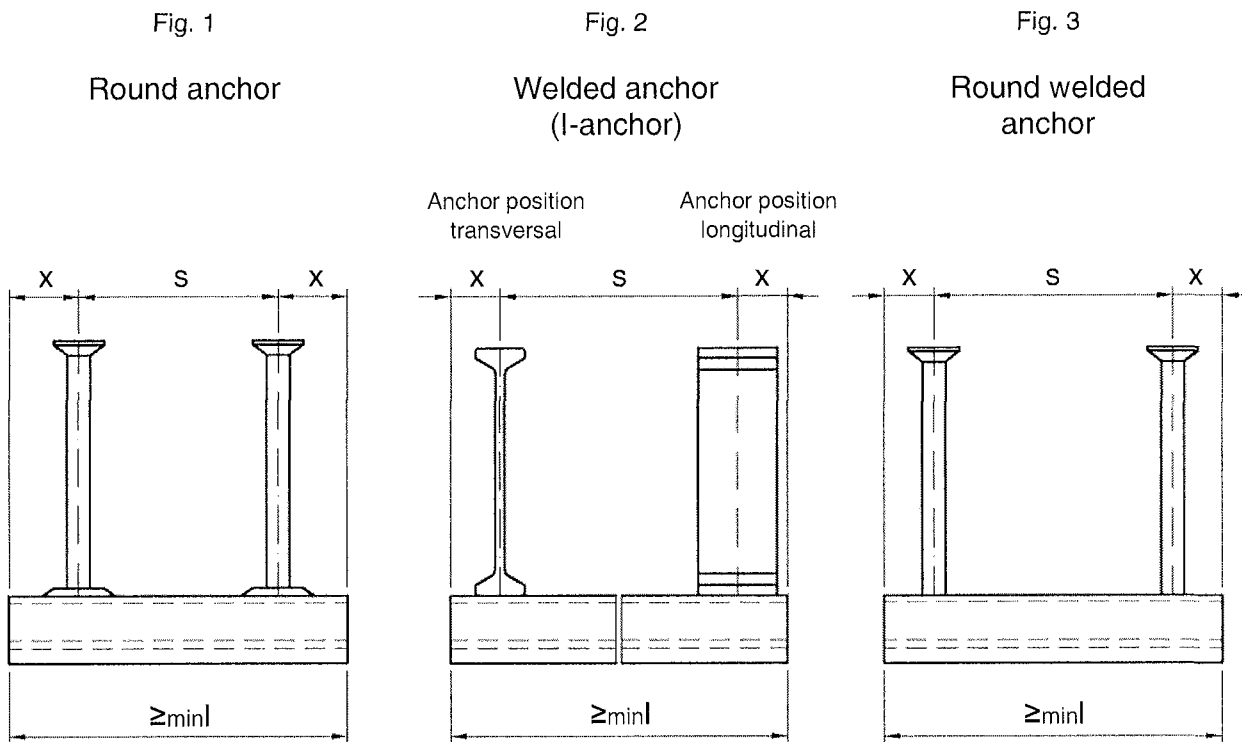


Table 5: Anchor positioning

Anchor channel	Anchor spacing		End spacing x		min. Channel length (min l)	
	$s_{min}$	$s_{max}$	Round anchor Fig. 1	Welded anchor Fig. 2 and Fig.3	Round anchor Fig. 1	Welded anchor Fig. 2 and Fig.3
	[mm]					
K 28/15 K 38/17	50	200	25 <sup>1)</sup>	25	100	100
K 40/25 W 40/22 K 50/30 W 50/30	100 (50)	250	25 <sup>1)</sup>	25	100	150
K 53/34 W 53/34	100 (80)	250	35	25	150	150
W 55/42	100 (80)	300	35	25(35)	150	150
K 72/48 W 72/48	100 (80)	400	35	25(35)	150	150

( ) Values for round anchors acc. to Fig. 1 and welded anchors with 35 mm end spacing

1) The end spacing of round anchors for channel lengths  $\geq 150$  mm may be increased from 25 mm to 35 mm

JORDAHL - Anchor Channel JTA

Anchor positioning

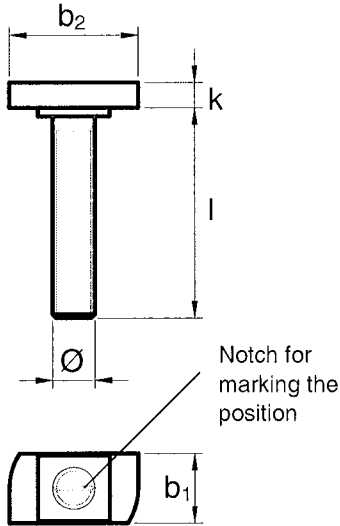
**Annex 6**

of European technical approval

**ETA-09/0338**

Hammer-head special screw

Fig.1



Hook-head special screw

Fig.2

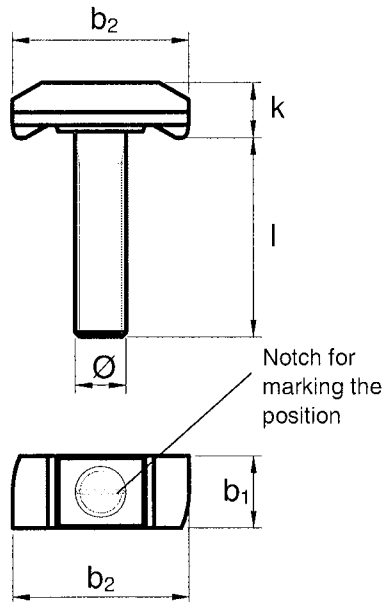


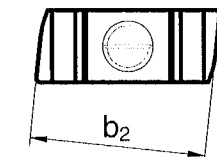
Table 6: Dimensions of the JORDAHL special screw

Anchor channel	Fig.	Special screw type	Special screw dimensions				Length l [mm]	
			b <sub>1</sub>	b <sub>2</sub>	k	Ø		
K 28/15	1	JD	11.2	22.4	4.5	6	15-60	
					4.5	8	15-150	
		JD/JUD	11.2	22.4	6.5	12	20-200	
K 38/17	1	JH	16.5	30.5	6.0	10	20-175	
		JH/JUH			16.5	30.5	8.0	16
K 40/25 W 40/22	2	JC	14.0	32.5	8.0	10	20-150	
					17,0	32.5	8.0	16
K 50/30 W 50/30 K 53/34 W 53/34	2	JB	17.0	41.6	9.0	10	25-100	
					10.0	12	30-300	
					11.0	16	30-300	
W 55/42	2	JB	17.0	41.6	9.0	10	25-100	
					10.0	12	30-300	
		JE	24.5	41.5	16.0	24	40-300	
K 72/48 W 72/48	2	JA	25.0	58.0	14.0	20	50-200	
					25.0	20.0	24	50-250
					28.0	20.0	27	50-250
					31.0	20.0	30	50-300

Table 7: Strength grade

Special screws	Steel <sup>1)</sup>		Stainless steel <sup>1)</sup>	
	4.6	8.8	A4-50	A4-70
Strength grade	4.6	8.8	A4-50	A4-70
f <sub>uk</sub> [N/mm <sup>2</sup> ]	400	800	500	700
f <sub>yk</sub> [N/mm <sup>2</sup> ]	240	640	210	450
Finish	z.p., h.d.g.		—	

1) Materials according to Annex 3, Table 1



alternative head shape

Marking of the special screw head acc. to Annex 2

JORDAHL - Anchor Channel JTA	Annex 7 of European technical approval <b>ETA-09/0338</b>
JORDAHL-special screw Dimensions and strength grade	

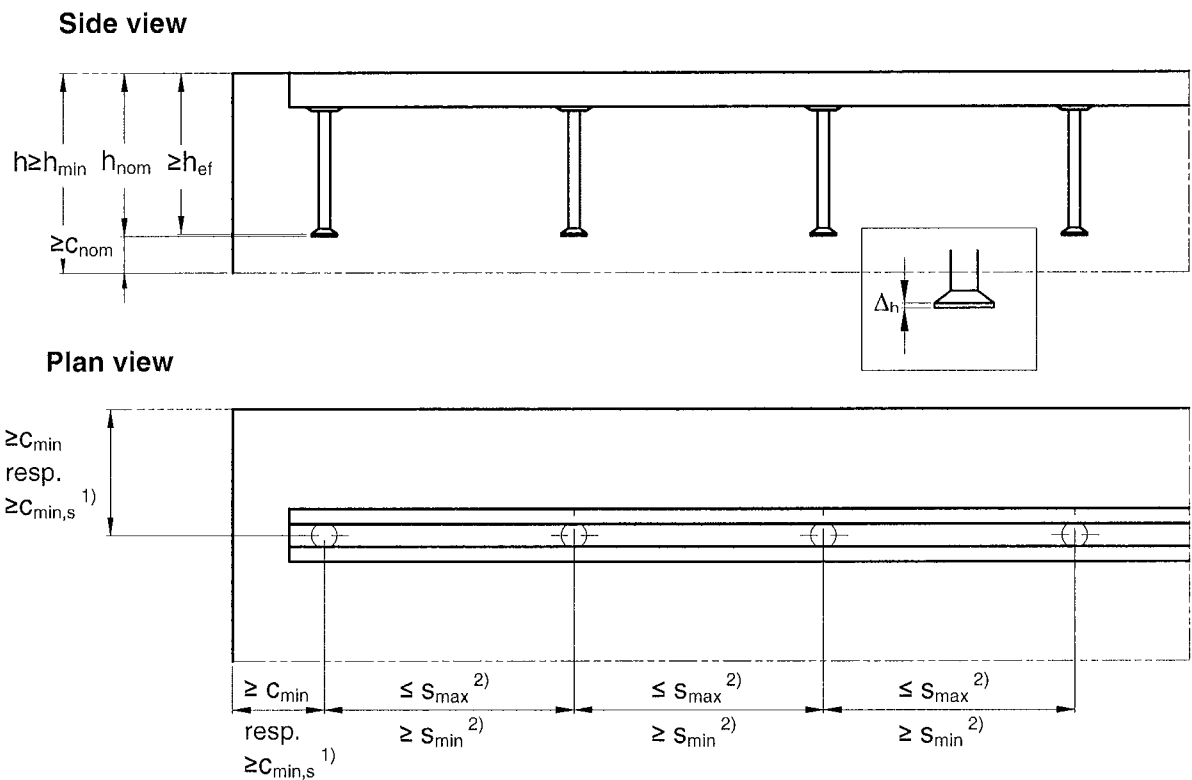


Table 8: Minimum anchorage depth, edge distance and member thickness for cold rolled profiles

Anchor channel		K 28/15	K 38/17	K 40/25	K 50/30	K 53/34	K 72/48
Min. anchorage depth	min $h_{ef}$	45	76	79	94	155	179
Min edge distance	$c_{min}$	40	50	50	75	100	150
Min member thickness	$h_{min}$	$h_{ef} + \Delta_h^{3)} + c_{nom}$					

Table 9: Minimum anchorage depth, edge distance and member thickness for hot rolled profiles

Anchor channel		W 40/22	W 50/30	W 53/34	W 55/42	W 72/48
Min. anchorage depth	min $h_{ef}$	79	94	155	175	179
Min edge distance	$c_{min}$	50	75	100	100	150
Min member thickness	$h_{min}$	$h_{ef} + \Delta_h^{3)} + c_{nom}$				

1)  $c_{min,s}$  acc. to Table 10, Annex 9 subjected to special screw Ø

2)  $s_{min}$ ,  $s_{max}$  acc. to Table 5, Annex 6

3)  $\Delta_h$  = anchor head thickness

JORDAHL - Anchor Channel JTA

Installation parameters for  
cold- and hot rolled anchor channels

**Annex 8**

of European technical approval

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Table 10: Minimum edge distance, spacing and setting torque of JORDAHL special screws

Anchor channel	Special screw Ø	Min. edge distance $c_{min,s}$ <sup>4)</sup> and min. spacing $s_{min,s}$ <sup>5)</sup> of the special screw	Setting Torque $T_{inst}$ <sup>1)</sup>		
			General <sup>2)</sup>	Steel - steel contact <sup>3)</sup>	
			4.6; 8.8; A4-50; A4-70 <sup>1)</sup>	4.6 A4-50 <sup>1)</sup>	8.8 A4-70 <sup>1)</sup>
	[mm]	[mm]	[Nm]		
K 28/15	6	30	-	3	-
	8	40	8	8	20
	10	50	13	15	40
	12	60	15	25	70
K 38/17	10	50	15	15	40
	12	60	25	25	70
	16	80	40	65	180
K 40/25 W 40/22	10	50	15	15	40
	12	60	25	25	70
	16	80	45	65	180
K 50/30 W 50/30	10	50	15	15	40
	12	60	25	25	70
	16	80	60	65	180
	20	100	75	130	360
K 53/34 W 53/34	10	50	15	15	40
	12	60	25	25	70
	16	80	60	65	180
	20	100	120	130	360
W 55/42	10	50	15	15	40
	12	60	25	25	70
	16	80	60	65	180
	20	100	120	130	360
	24	120	200	230	620
K 72/48 W 72/48	20	100	120	130	360
	24	120	200	230	620
	27	135	300	340	900
	30	150	380	460	1200

1) Materials according to Tab. 1, Annex 3

2) Acc. to figure 1, Annex 10

3) Acc. to figure 2, Annex 10

4) See Annex 8, plan view

5) See Annex 11, Fig. 1

6)  $T_{inst}$  must not be exceeded

JORDAHL - Anchor Channel JTA

Installation parameters of  
JORDAHL-special screws**Annex 9**

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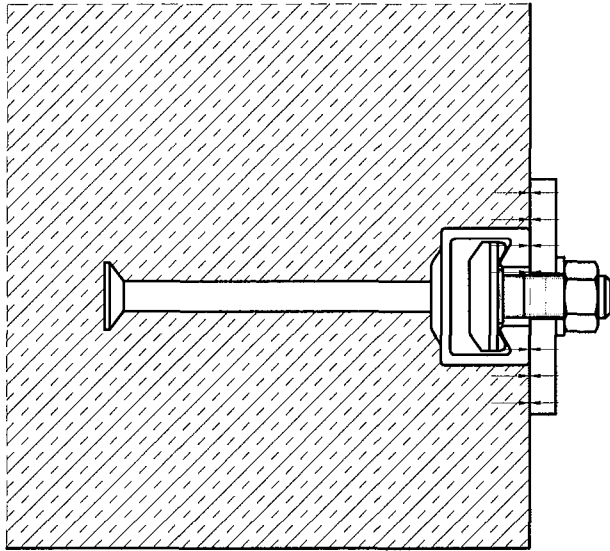


Fig. 1

**General:**

The fixture is braced to the concrete or to the anchor channel respectively braced to concrete and anchor channel.  
The setting torques acc. to Annex 9, Table 10 shall be applied and must not be exceeded.

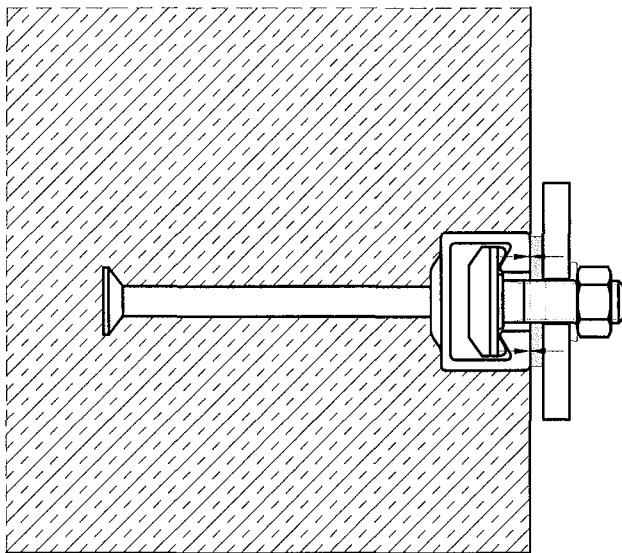


Fig. 2

**Steel-steel contact:**

The fixture is braced to the anchor channel by suitable washer.  
The setting torques acc. to Annex 9, Table 10 shall be applied and must not be exceeded.

JORDAHL - Anchor Channel JTA

Positions of the fixture

**Annex 10**

of European technical approval

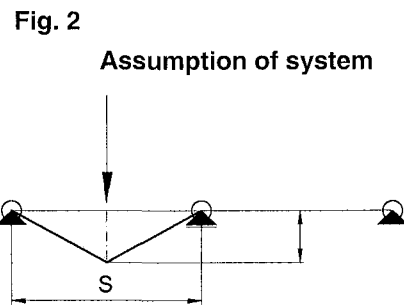
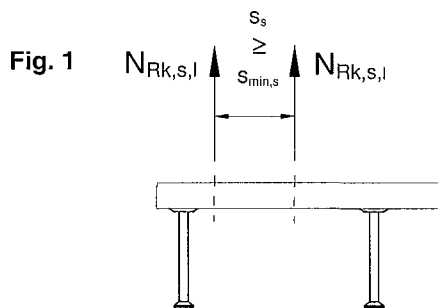
**ETA-09/0338**

Table 11: Characteristic values for tension loads - Steel failure channel

Anchor channel			K 28/15	K 38/17	K 40/25 W 40/22	K 50/30 W 50/30	K 53/34 W 53/34	W 55/42	K 72/48 W 72/48
<b>Steel failure, Anchor</b>									
Characteristic resistance	$N_{Rk,s,a}$	[kN]	not relevant						
Partial safety factor	$\gamma_{Ms}$ <sup>1)</sup>		1.8						
<b>Steel failure, Connection Channel anchor</b>									
Characteristic resistance	$N_{Rk,s,c}$	[kN]	9	18	20	31	55	80	100
Partial safety factor	$\gamma_{Ms,ca}$ <sup>1)</sup>		1.8						
<b>Steel failure, Local flexure of channel lips for <math>s_s \geq s_{slb}</math></b>									
Spacing of special screws for $N_{Rk,s,l}$	$s_{slb}$	[mm]	42	52	65	81	88	109	129
Characteristic resistance	$N_{Rk,s,l}$	[kN]	9	18	20	31	55	80	100
Partial safety factor	$\gamma_{Ms,l}$ <sup>1)</sup>		1.8						
<b>Steel failure, Local flexure of channel lips for <math>s_{slb} \geq s_s \geq s_{min,s}</math><sup>2)</sup></b>									
Characteristic resistance	$N_{Rk,s,l}$	[kN]	$0,5 (1+s_s/s_{slb}) N_{Rk,s,l} \leq N_{Rk,s,c}$						
Partial safety factor	$\gamma_{Ms,l}$ <sup>1)</sup>		1.8						

1) In absence of other national regulations

2)  $s_{min,s}$  acc. to Table 10, Annex 9



$$M_{Ed} \leq M_{Rk,s,flex} / \gamma_{Ms,flex}$$

Table 12: Flexure resistance of channel

Anchor channel (Fig. 2)		K 28/15	K 38/17	K 40/25	K 50/30	K 53/34	K 72/48	W 40/22	W 50/30	W 53/34	W 55/42	W 72/48
Characteristic flexure resistance of channel	Steel	317	580	1099	1673	2984	8617	1076	2038	3373	6447	8593
	Stainless steel	324	593	1071	1708	2984	8617	1080	2081	3445	-	8775
Partial safety factor	$\gamma_{Ms,flex}$ <sup>1)</sup>	1.15										

1) In absence of other national regulations

JORDAHL - Anchor Channel JTA	<b>Annex 11</b> of European technical approval <b>ETA-09/0338</b>
Characteristic values for tension loads Steel failure channel	

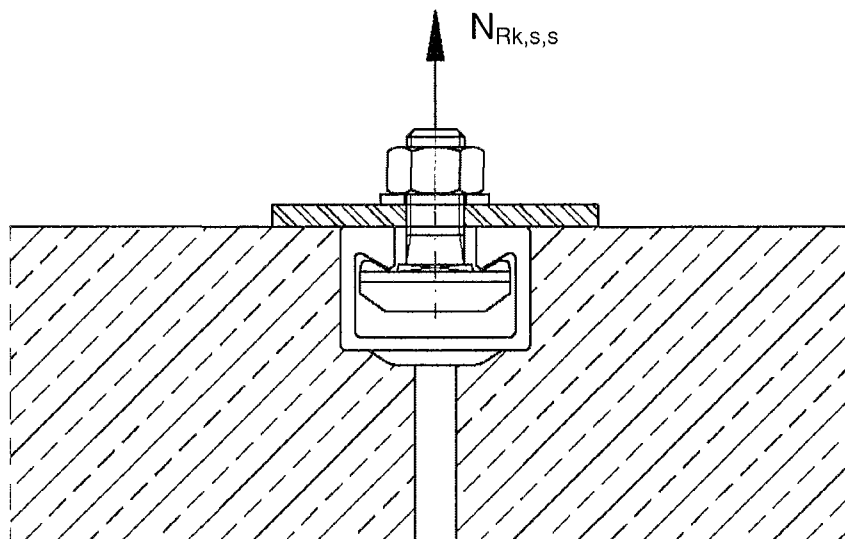
Table 13: Characteristic values for tension load - Steel failure JORDAHL-special screw

Special screw Ø			M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 27	M 30	
<b>Steel failure</b>												
Characteristic resistance	$N_{Rk,s,s}$ <sup>2)</sup>	[kN]	4.6	8.0	14.6	23.2	33.7	62.8	98.0	141.2	183.6	224.4
			8.8	16.1	29.3	46.4	67.4	125.6	196.0	282.4	367.2	448.8
			A4-50 <sup>1)</sup>	10.1	18.3	29.0	42.2	78.5	122.5	176.5	229.5	280.5
			A4-70 <sup>1)</sup>	14.1	25.6	40.6	59.0	109.9	171.5	247.1	321.3	392.7
Partial safety factor	$\gamma_{Ms,s}$ <sup>3)</sup>	4.6	2.00									
		8.8	1.50									
		A4-50 <sup>1)</sup>	2.86									
		A4-70 <sup>1)</sup>	1.87									

1) Materials according to Table 1, Annex 3

2) In conformity to EN ISO 898-1 : 1999

3) In absence of other national regulations



Channel under tension load

JORDAHL - Anchor Channel JTA

Characteristic values for tension loads  
Steel failure JORDAHL-special screws

**Annex 12**

of European technical approval

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Table 14: Characteristic values for tension loads - Concrete failure

Anchor channel			K 28/15	K 38/17	K 40/25 W 40/22	K 50/30 W 50/30	K 53/34 W 53/34	W 55/42	K 72/48 W 72/48	
<b>Pullout failure</b>										
Characteristic resistance in cracked concrete C12/15	Round anchors	$N_{Rk,p}$	[kN]	6.7	14.7	10.8	15.9	29.7	38.4	50.9
	Welded anchors			11.7	11.7	14.0	21.1	25.7	37.2	46.4
Increasing factor of $N_{Rk,p}$	C20/25	$\psi_c$	[-]	1.67						
	C25/30			2.00						
	C30/37			2.47						
	C35/45			3.00						
	C40/50			3.33						
	C45/55			3.67						
	$\geq$ C50/60			4.00						
		$\Psi_{ucr,N}$	1.4							
Partial safety factor		$\gamma_{Mp} = \gamma_{Mc}^{1)}$	1.5							
<b>Concrete cone failure <math>N_{Rk,c}^0</math> see CEN/TS 1992-4-3: 2009, chap. 6.2.5</b>										
		$\alpha_{ch}$	0.81	0.88	0.88	0.91	0.98	1.00	1.00	
Effective anchorage depth	$h_{ef}$	[mm]	45	76	79	94	155	175	179	
Characteristic edge distance	$c_{cr,N}$		111	171	176	199	260	269	270	
Characteristic spacing	$s_{cr,N}$		223	342	352	399	521	538	540	
		$\Psi_{ucr,N}$	1.4							
Partial safety factor		$\gamma_{Mc}^{1)}$	1.5							
<b>Splitting</b>										
Verification of splitting is not relevant										

1) In absence of other national regulations

Table 15: Displacements under tension loads

Anchor channel			K 28/15	K 38/17	K 40/25 W 40/22	K 50/30 W 50/30	K 53/34 W 53/34	W 55/42	K 72/48 W 72/48
Tension load	$N_{Ek}$	[kN]	3.6	7.1	8.3	12.3	21.8	31.7	39.7
Short time displacement	$\delta_{N0}$	[mm]	0.3	0.3	0.4	0.4	0.5	0.5	0.5
Long time displacement	$\delta_{N\infty}$	[mm]	1.2	1.2	1.2	1.2	1.2	1.2	1.2

JORDAHL - Anchor Channel JTA

Characteristic values for tension loads  
Concrete failure and displacements**Annex 13**

of European technical approval

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Table 16: Characteristic values for shear loads

Anchor channel			K 28/15	K 38/17	K 40/25	K 50/30	K 53/34	W 55/42	K 72/48
					W 40/22	W 50/30	W 53/34		W 72/48
<b>Steel failure, Local flexure of channel lip</b>									
Characteristic resistance	$V_{Rk,s,l}$	[kN]	9	18	20	31	55	104	100
					26	40.3	71.5		130
Partial safety factor	$\gamma_{Ms,l}$ <sup>1)</sup>	1.8							
<b>Pry out failure</b>									
Factor k in equation (31) of CEN/TS 1992-4-3	$k_5$ <sup>3)</sup>	2.0							
Partial safety factor	$\gamma_{Mc}$ <sup>1)</sup>	1.5							
<b>Concrete edge failure</b>									
Product of factor $\alpha_p$ and factor $\psi_{re,v}$	Cracked concrete without edge reinforcement or stirrups	$\alpha_p \psi_{re,v}$	2.5	3.0	3.0	3.5	3.5	3.5	4.0
	cracked concrete with straight edge reinforcement ( $\geq \emptyset 12$ mm)	$\alpha_p \psi_{re,v}$	3.0	3.5	3.5	4.1	4.1	4.1	4.7
	Non-cracked concrete <sup>2)</sup> or cracked concrete with edge reinforcement and stirrups with a spacing $a \leq 100$ mm and $a \leq 2c_1$	$\alpha_p \psi_{re,v}$	3.5	4.0	4.0	4.7	4.7	4.7	5.3
Effect of the thickness of the structural component	$\alpha_{h,v}$	$(h/h_{cr,v})^{2/3}$							
Characteristic height	$h_{cr,v}$	$2c_1 + 2h_{ch}$							
Characteristic edge distance	$c_{cr,v}$	$2c_1 + b_{ch}$							
Characteristic spacing	$s_{cr,v}$	$4c_1 + 2b_{ch}$							
Partial safety factor	$\gamma_{Mc}$ <sup>1)</sup>	1.5							

1) In absence of other national regulations

2) Proof acc. to CEN/TS 1992-4-1: 2009, section 5

3) Without supplementary reinforcement. In case of supplementary reinforcement the factor  $k_5$  should be multiplied with 0.75

JORDAHL - Anchor Channel JTA

Characteristic values for shear loads

Annex 14

of European technical approval

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Table 17: Characteristic values for shear loads - Steel failure JORDAHL-special screws

Special screw Ø			M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 27	M 30	
<b>Steel failure</b>												
Characteristic resistance	$V_{Rk,s,s}^{2)}$	[kN]	4.6	4.8	8.8	13.9	20.2	37.7	58.8	84.7	110.2	134.6
			8.8	8.0	14.6	23.2	33.7	62.8	98.0	141.2	183.6	224.4
			A4-50 <sup>1)</sup>	6.0	11.0	17.4	25.3	47.1	73.5	105.9	137.7	168.3
			A4-70 <sup>1)</sup>	8.4	15.4	24.4	35.4	65.9	102.9	148.3	192.8	235.6
Characteristic flexure resistance	$M_{Rk,s}^0$	[Nm]	4.6	6.3	15.0	29.9	52.4	133.2	259.6	449.0	665.8	899.6
			8.8	12.2	30.0	59.8	104.8	266.4	519.3	898.0	1331.5	1799.2
			A4-50 <sup>1)</sup>	7.6	18.7	37.4	65.5	166.5	324.5	561.3	832.2	1124.5
			A4-70 <sup>1)</sup>	10.7	26.2	52.3	91.7	233.1	454.4	785.8	1165.1	1574.3
Partial safety factor	$\gamma_{Ms,s}^{3)}$		4.6	1.67								
			8.8	1.25								
			A4-50 <sup>1)</sup>	2.38								
			A4-70 <sup>1)</sup>	1.56								

1) Materials according to Table 1, Annex 3

2) In conformity to EN ISO 898-1 : 1999

3) In absence of other national regulations

Table 18: Displacements under shear loads

Anchor channel			K 28/15	K 38/17	K 40/25 W 40/22	K 50/30 W 50/30	K 53/34 W 53/34	W 55/42	K 72/48 W 72/48
Shear load	$V_{Ek}$	[kN]	3.6	7.1	8.3	12.3	21.8	31.7	39.7
Short time displacement	$\delta_{V0}$	[mm]	0.6	0.6	0.6	0.6	1.2	1.2	1.2
Long time displacement	$\delta_{V\infty}$	[mm]	0.9	0.9	0.9	0.9	1.8	1.8	1.8

JORDAHL - Anchor Channel JTA

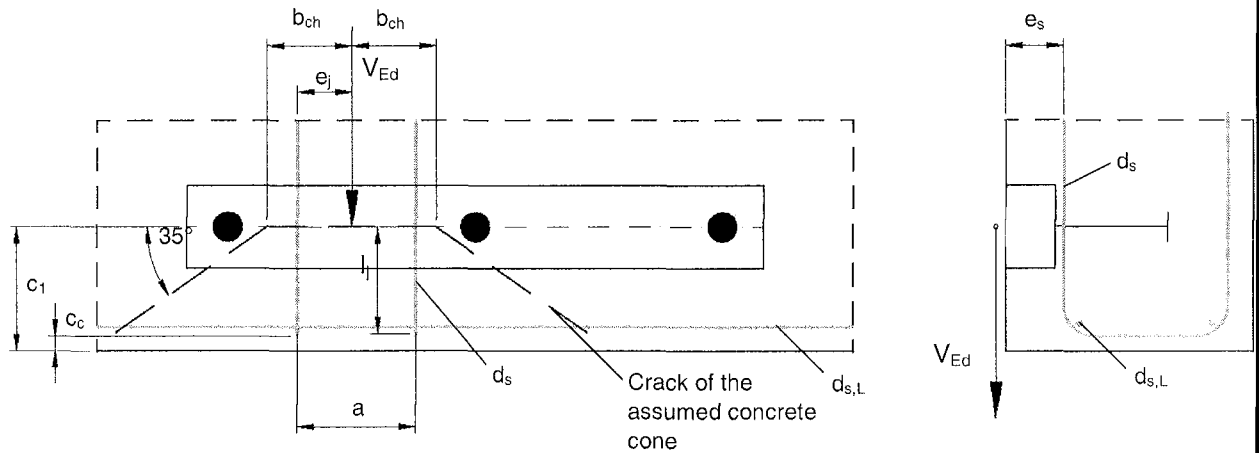
Characteristic values for shear loads  
Steel failure JORDAHL-special screw  
and displacements

**Annex 15**

of European technical approval

**ETA-09/0338**

Verification for anchor channels for shear loads with reinforcement  
(only for loading perpendicular to the edge)



$$V_{Ed} \leq V_{Rd,re} = V_{Rk,re} / \gamma_M \quad V_{Ed} = \max(V_{Ed}; V_{Ed}^a) \quad (1)$$

$$V_{Rk,re} = V_{Rk,c,re} / \chi \quad (2)$$

$$V_{Rk,c,re} = V_{Rk,c,hook} + V_{Rk,c,bond} \leq V_{Rk,c,re,max} \leq \sum_{m+n} A_s \cdot f_{y,k} \quad (3)$$

$$V_{Rk,c,hook} = \sum_{j=1}^m \left( \psi_1 \cdot \psi_3 \cdot \psi_4 \cdot A_s \cdot f_{y,k} \cdot \left( \frac{f_{ck}}{30} \right)^{0,1} \right) + \sum_{j=1}^n \left( \psi_2 \cdot \psi_3 \cdot \psi_4 \cdot A_s \cdot f_{y,k} \cdot \left( \frac{f_{ck}}{30} \right)^{0,1} \right) \quad (4)$$

$$V_{Rk,c,bond} = \sum_{j=1}^{m+n} (\pi \cdot d_s \cdot l_j \cdot f_{bk}) \quad (5)$$

$$V_{Rk,c,re,max} = 4,2 \cdot c_1^{-0,12} \cdot V_{Rk,c} \quad (6)$$

$$V_{Rk,c} = V_{Rk,c}^0 \cdot \alpha_{s,v} \cdot \alpha_{c,v} \cdot \alpha_{h,v} \quad (7)$$

Reinforcement requirements

$$50 \text{ mm} \leq a \leq \begin{cases} s \\ 150 \text{ mm} \\ (c_1 - c_c + 0,7b_{ch} - 4d_s) / 0,35 \\ c_1 - c_c \end{cases} \quad (8)$$

$$6 \text{ mm} \leq d_s \leq 20 \text{ mm} \quad (9)$$

JORDAHL - Anchor Channel JTA

Verification for shear loads with reinforcement

**Annex 16**

of European technical approval

**ETA-09/0338**



- $\psi_1$  = effectiveness factor  
 = 0,67 for stirrups directly besides a shear load 1  
 • for a stirrup at the location of a shear load 3  
 • for stirrups between 2 shear loads acting on an anchor channel (distance between the loads  $p \leq s_{cr,v}$  according to Table 16) 2
- $\psi_2$  = effectiveness factor  
 = 0,11 for other stirrups in the concrete cone 4
- $\psi_3 = (d_{s,L}/d_s)^{2/3}$   
 $d_s$  = diameter of stirrup [mm]  
 $d_{s,L}$  = diameter of edge bars [mm]
- $\psi_4 = \left(\frac{l_j}{c_1}\right)^{0.4} \cdot \left(\frac{10}{d_s}\right)^{0.25}$   
 $l_j$  = anchorage length of a stirrup leg in the concrete cone [mm]  
 =  $c_1 - c_c - 0,7 \cdot (e_j - b_{ch})$  [mm] for stirrups crossed diagonally by the assumed crack  
 =  $c_1 - c_c$  [mm] for stirrups directly under the load or for stirrups crossed orthogonally by the assumed crack  
 $\geq 4 \cdot d_s$
- $c_1$  = edge distance [mm]  
 $c_c$  = concrete cover [mm]  
 $e_j$  = distance of the stirrup leg to the point of load action [mm]  
 $b_{ch}$  = width of the anchor channel [mm] (according to Table 2)  
 $A_s$  = cross section of one leg of the stirrup [mm<sup>2</sup>]  
 $f_{y,k}$  = characteristic yield strength of the reinforcement [N/mm<sup>2</sup>]  
 $f_{ck}$  = characteristic concrete strength measured on cubes with a side length of 150 mm [N/mm<sup>2</sup>]  
 $f_{bk}$  = characteristic bond strength [N/mm<sup>2</sup>]  
 $m$  = number of stirrups in the assumed concrete cone with  $\psi_1$   
 $n$  = number of stirrups in the assumed concrete cone with  $\psi_2$   
 $a$  = spacing of stirrups  
 $x$  =  $e_s/z + 1$  [-]  
 factor taking into account eccentricity between reinforcement force and load  
 $e_s$  = distance between reinforcement and shear force acting on the anchor channel  
 $z \approx 0,85d$  [mm]  
 internal lever arm of the concrete member  
 $d = \min(2h_{ef}, 2c_1)$   
 $V_{Rk,c}^0$  = according to CEN/TS 1992-4-3:2009, section 6.3.5.3  
 $V_{Ed}^a$  = according to CEN/TS 1992-4-1:2009, section 3.2.2

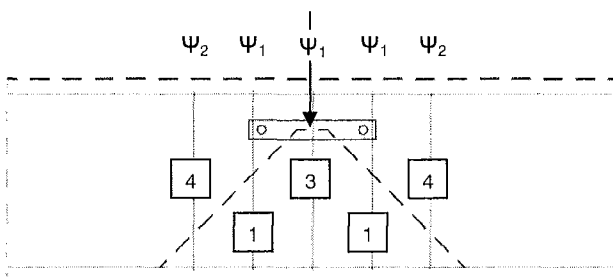


Fig 1: effectiveness factor for one load

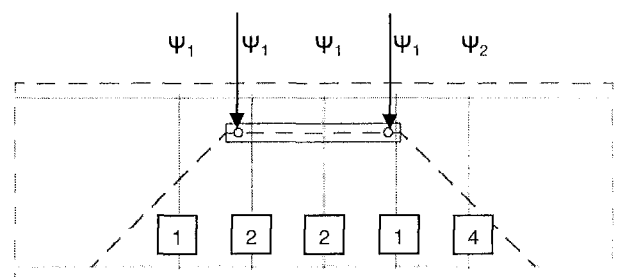
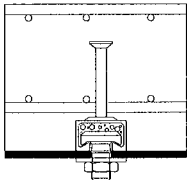
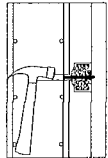
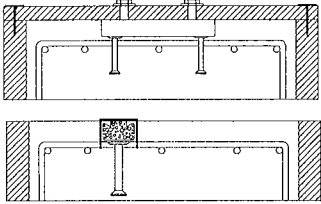


Fig 2: effectiveness factor for two loads

<p>JORDAHL - Anchor Channel JTA</p>	<p><b>Annex 17</b> of European technical approval <b>ETA-09/0338</b></p>
<p>Verification for shear loads with reinforcement</p>	

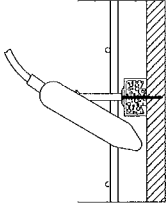
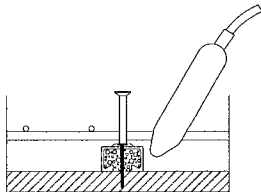
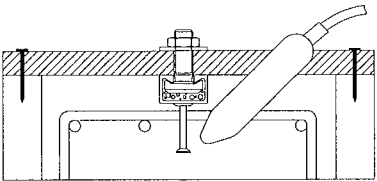
### 1. Fixing anchor channel

Install the channel surface flush and fix the channel undisplaceable to the formwork or to the reinforcement.

	<p><b>a) Fixing to steel formwork</b> With JORDAHL-special screws and nuts, with rivets, cramps or with magneting fixings.</p> <p>or</p>
	<p><b>b) Fixing to timber formwork</b> With nails through the pre punched holes in the back of the channels and with staples.</p> <p>or</p>
	<p><b>c) Fixing to anchor channels at the top</b></p> <ul style="list-style-type: none"> <li>• To timber batten on the side formwork (e.g. with JORDAHL-special screws).</li> <li>• Fixing from above directly to the reinforcement or to a mounting rebar, attach the channel by wire binding.</li> </ul>

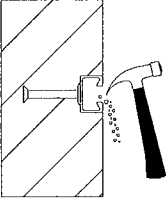
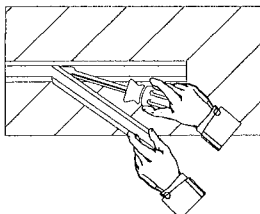
### 2. Pouring concrete and regular compacting of concrete

Compact the concrete properly around the channel and the anchors.

	or		or	
<p><b>a)</b> sidefaces to the formwork</p>		<p><b>b)</b> in soffits</p>		<p><b>c)</b> into top surfaces of concrete up stands</p>

### 3. Removing of the channel infill

Clean the channel on the outside after removing the formwork.

	<p><b>a) Foam infill</b> With a hammer or a hook.</p> <p>or</p>
	<p><b>b) PE - foam infill</b> By hand or with help of a screw driver in one piece.</p>

JORDAHL - Anchor Channel JTA

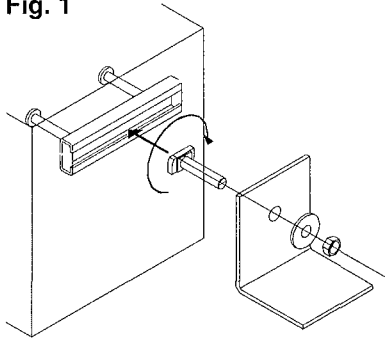
Manufacturer's Specification  
Anchor Channel

**Annex 18**

of European technical approval  
**ETA-09/0338**

#### 4. Fastening the JORDAHL-special screw to the anchor channel

Fig. 1



##### a) Setting torques (General)

1. Insert the JORDAHL-special screw into the channel slot at any point along the channel length (Fig. 1).
2. Turn the special screw 90° clockwise and the head of the screw locks into position (Fig. 1).
3. Do not mount the special screw closer than 25 mm from the end of the channel.
4. Use the washer under the nut (Fig. 1).
5. Check the correct fit of the JORDAHL-special screw. The groove on the shank end of the special screw must be perpendicular to the channel longitudinal axis.
6. Tighten the nuts to the setting torque according to Table 1 (Fig. 2). The setting torque must not be exceeded.

Fig. 2

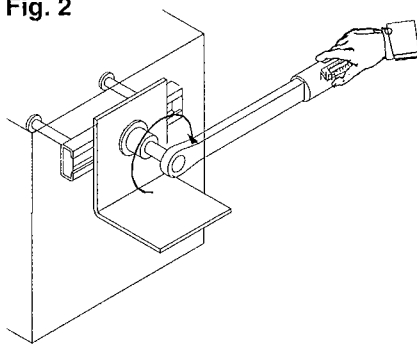
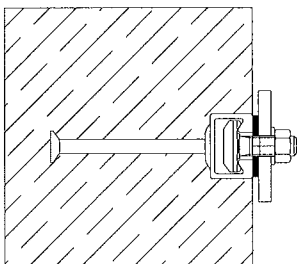


Table 1	Anchor channel	T <sub>inst</sub> [Nm]							
		M8	M10	M12	M16	M20	M24	M27	M30
Strength Grade	K 28/15	8	13	15	-	-	-	-	-
	K 38/17	-	15	25	40	-	-	-	-
	K 40/25	-	15	25	45	-	-	-	-
	W 40/22	-	15	25	45	-	-	-	-
4.6	K 50/30	-	15	25	60	75	-	-	-
	W 50/30	-	15	25	60	75	-	-	-
8.8	K 53/34	-	15	25	60	120	-	-	-
	W 53/34	-	15	25	60	120	-	-	-
A4-50	K 55/42	-	15	25	60	120	200	-	-
	W 55/42	-	15	25	60	120	200	-	-
A4-70	K 72/48	-	-	-	-	120	200	300	380
	W 72/48	-	-	-	-	120	200	300	380

or

Fig. 3



##### b) Setting torques (Steel-to-steel contact)

1. Use washers between the channel and the fixture to create a defined contact.
2. Tighten the nuts to the setting torque according to Table 2. The setting torque must not be exceeded.

Table 2	Strength/ Material grade	T <sub>inst</sub> [Nm]							
		M8	M10	M12	M16	M20	M24	M27	M30
JA, JB JC, JE	4.6	8	15	25	65	130	230	340	460
	A4-50	8	15	25	65	130	230	340	460
JD/JUD JH/JUH	8.8	20	40	70	180	360	620	900	1200
	A4-70 F4-70	20	40	70	180	360	620	900	1200

JORDAHL - Anchor Channel JTA

Manufacturer's Specification  
Special Screw

**Annex 19**

of European technical approval

**ETA-09/0338**