

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-17/0714
of 12 July 2018

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Pile joints for concrete Piles System "CPG"

Product family
to which the construction product belongs

Pile joints for concrete Piles

Manufacturer

Centrum Pæle A/S
Grønlandsvej 96
7100 Vejle
DÄNEMARK

Manufacturing plant

Centrum Pæle A/S
Grønlandsvej 96
7100 Vejle
DÄNEMARK

This European Technical Assessment
contains

10 pages including 5 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 200014-01-0103

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Specific Part

1 Description of the product

The pile joints coupler system "CPG" described in Annex A1 are made of the following components:

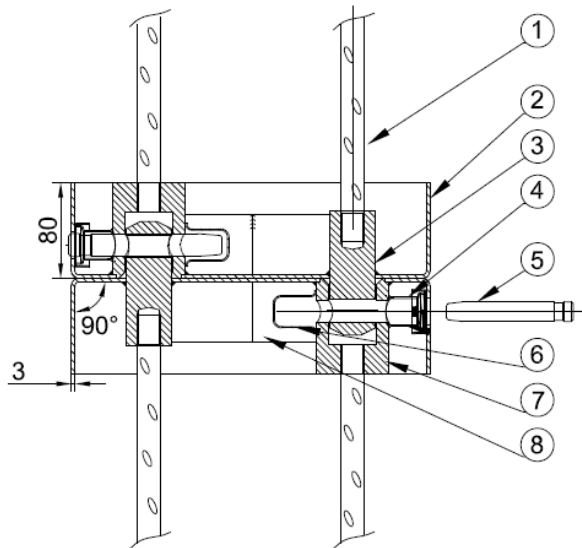


Table 1: Components

No	Component	Material
1	Reinforcement bars	B500B acc. to EN 1992-1-1, Annex C
2	Box	DC 01 ((DC01+ZE25/25-A)) acc. to EN 10152
3	Lock Shaft	S355J2 acc. to EN 10025((-2))
4	Lock Casing	S355J2 acc. to EN 10025((-2))
5	Lock Pin	S355J2C+C acc. to EN 10277
6	Steel void tube	Steel
7	Plugs	HDPE
8	Flat bar	Steel
9	Reinforcement ring	Steel

Depending on type of pile the ETA covers the following product range:

Table 2: Product range

Type of pile-joint	Pile dimension [mm x mm].	Reinforcement bar	Dimensions / Figure
K2	200x200; 235x235; 250x250 270x270; 300x300	2 x 2 \varnothing 20	Annex A2
K4	235x235; 250x250; 270x270 300x300; 350x350; 400x400 450x450	2 x 4 \varnothing 20	Annex A2
K6	270x270; 300x300	2 x 6 \varnothing 20	Annex A3
K8	350x350; 400x400; 450x450	2 x 8 \varnothing 20	Annex A3

For corrosions protection the inner of the lock casing is filled with a mass of corrosion protection (grease). In types of soil and water which are may be aggressive to steel further provisions for corrosion protection could be necessary.

The static load bearing capacities has to be calculated according to Eurocodes with the respective national annexes.

Annex A1 shows the principles and performances of the product and Annex A2 to A4 the dimensions.

2 Specification of the intended use in accordance with the applicable European assessment Document

A pile joint is a connecting device for precast concrete pile segments. It is used to connect additional segments of precast reinforced concrete piles, during pile driving to depths greater than length of a single segment.

The principle of the pile joint is to close the connection between the upper part of the pile joint with the lower part of pile joint with a locking by a pin.

For end use conditions the pile can be calculated for concrete class C40/50 or C50/60 according to EN 206 with a reinforcement up to 5,65 cm² (e.g. 5 ø 12 mm) per corner. For installation maybe more reinforcement is required.

The performances given in Section 3 are only valid if the pile joint is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead the assumption of working life of the pile joint of 100 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.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Resistance of pile joint	See Annex A1
Resistance of rock shoe	No performance assessed
Robustness and rigidity of the pile joint	See Annex A1
Dimensional tolerances	See Annex A2 to A4
Mechanical Resistance to high-cycle fatigue	See Annex A1

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	See Annex A1

3.3 General aspects

The verification of durability and serviceability is only ensured if the specifications of intended use according to Annex B and the specifications of the technical file of the manufacturer are kept.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD 200014-01-0103 the applicable European legal act is 2000/606/EC.

The system to be applied is: 2+

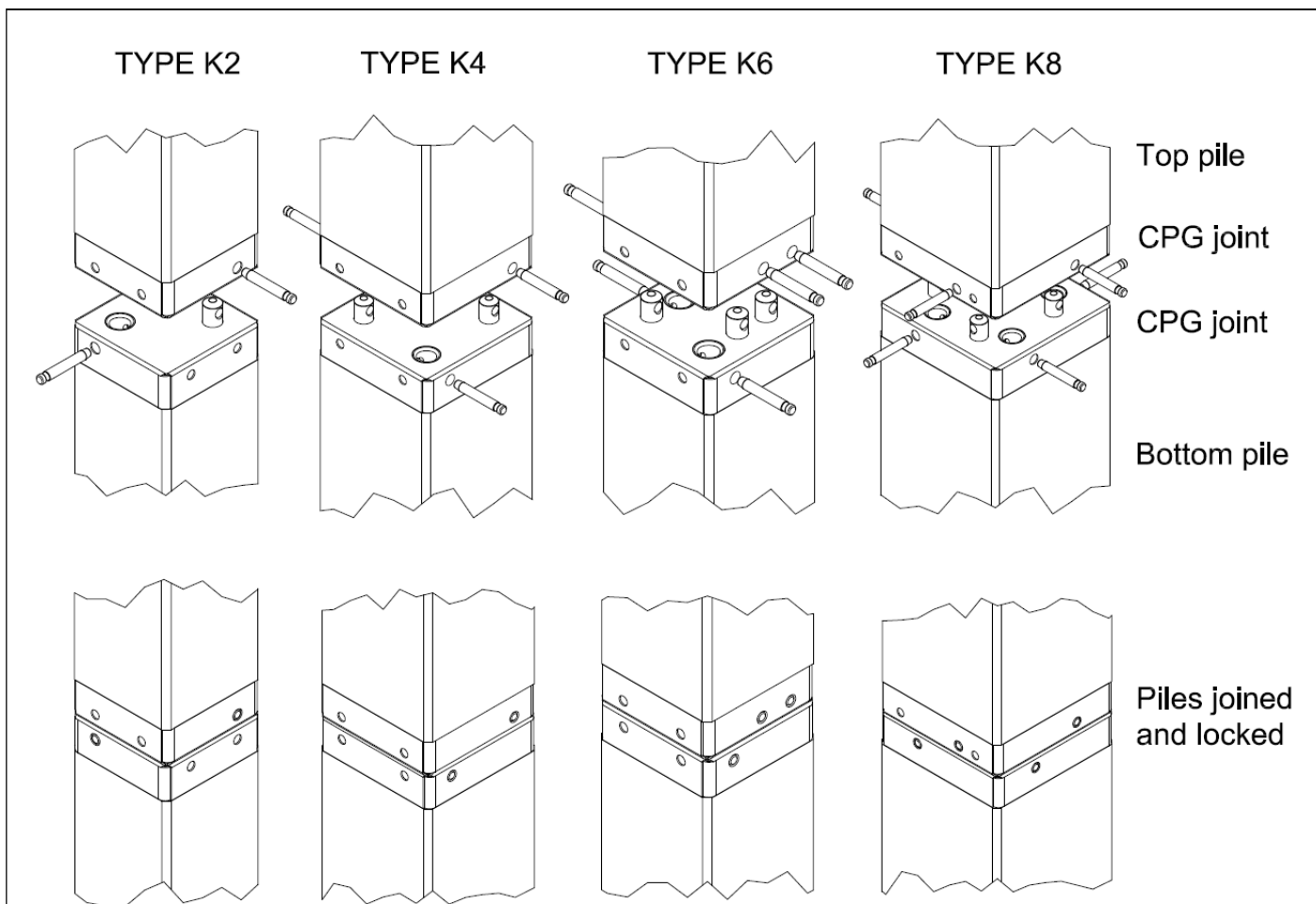
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 12 July 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Hemme



Essential characteristic

Resistance of pile joint	EN 12794
Resistance of rock shoe	EN 12764
Robustness and rigidity of the pile joint	EN 12794
Dimensional tolerances	
Mechanical resistance to high-cycle fatigue	EAD, ch. 2.2.1.5
Reaction to fire	1996/603/EC ¹

Performance

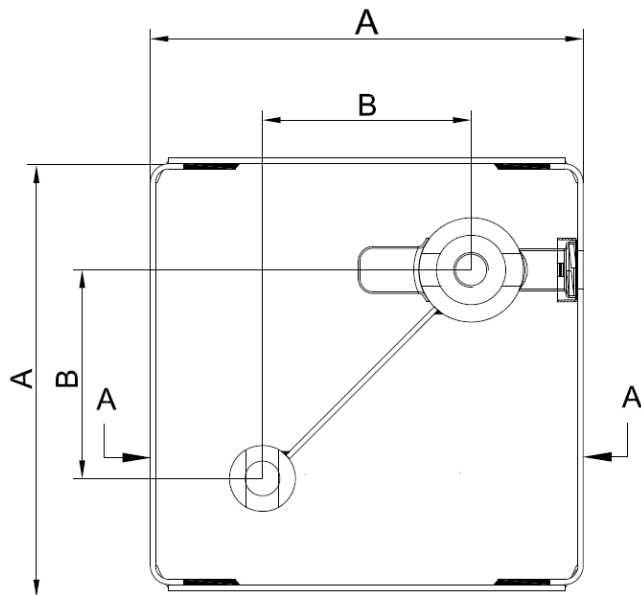
Class 1
no performance assessed
Class A
Annex A2 to A4
Stress range $\Delta\sigma_{Rsk} = 59 \text{ N/mm}^2$
N^* cycles = 10 Mio
stress exponent $k_1 = 3,5$
stress exponent $k_2 = 5,0$
Class A1

¹ Official Journal of the European Communities/Union L 267, 19.10.1996, p. 23-26

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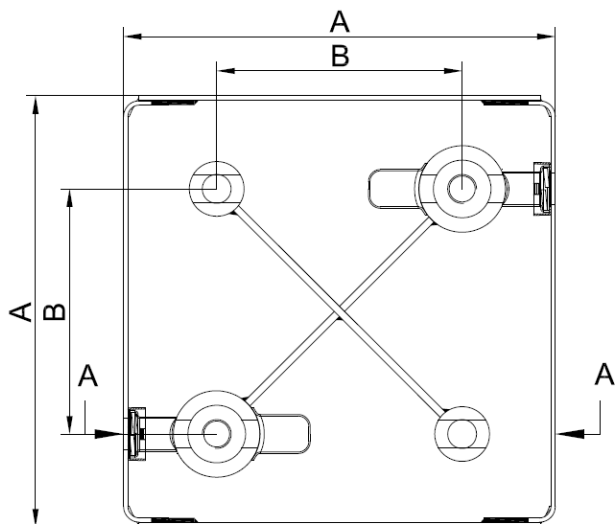
Pile joints for concrete Piles System "CPG"	Annex A1
Product , performance adn classification	

CPG K2



Pile dimension	A	B
200	199	70
235	234	105
250	249	120
270	269	140
300	299	170

CPG K4



Lock parts position - 0		
Pile dimension	A	B
235	234	105
250	249	120
270	269	140
300	299	170
350	349	220
400	399	270
450	449	320

Lock parts position - 1		
Pile dimension	A	B
250	249	94
270	269	114
300	299	144
350	349	194
400	399	244
450	449	294

Pile Dimension	Tolerance [mm]
A	+ 0 / -1,0
B	+/- 0,2

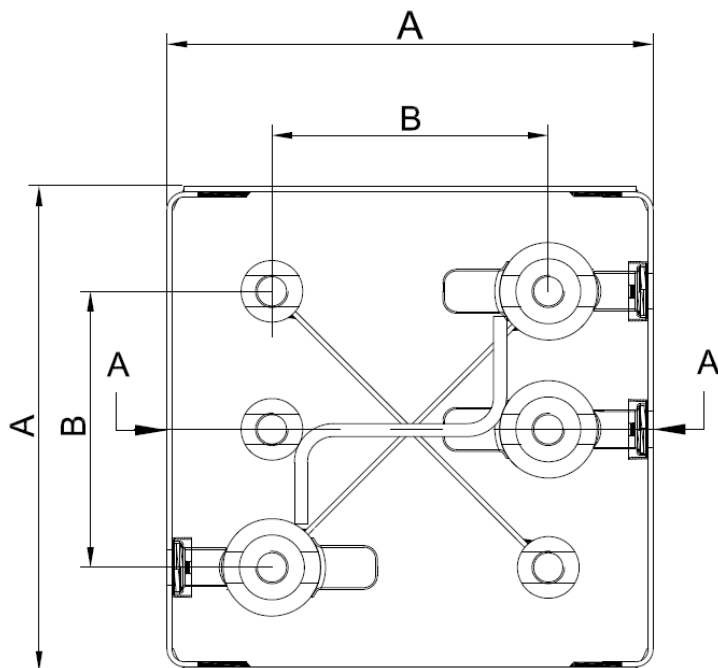
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Pile joints for concrete Piles System "CPG"

CPG K2 and K4, Dimensions in [mm]

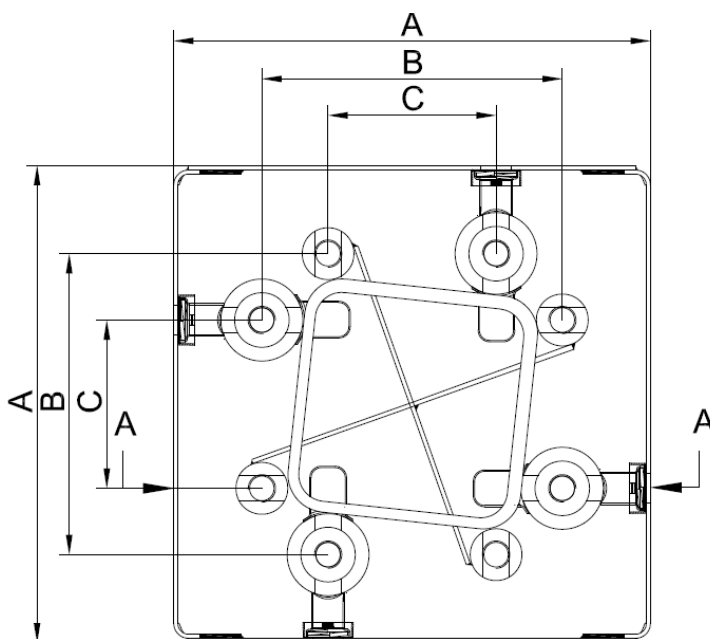
Annex A2

CPG K6



Pile dimension	A	B
270	269	140
300	299	170

CPG K8



Lock part position - 0			
Pile dimension	A	B	C
350	349	220	123
400	399	270	173
450	449	320	223

Lock part position - 2			
Pile dimension	A	B	C
350	349	170	73
400	399	220	123
450	449	270	173

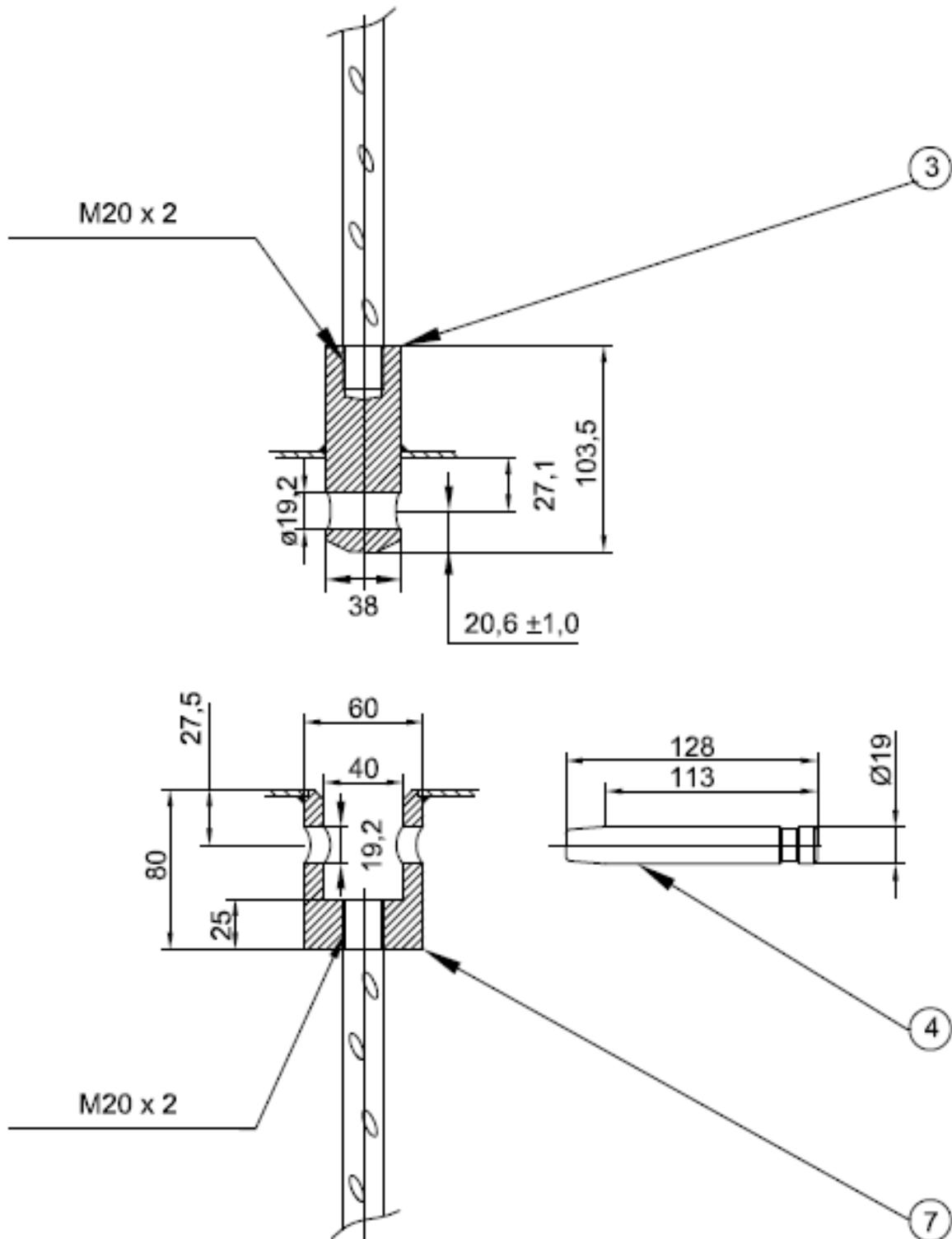
Pile Dimension	Tolerance [mm]
A	+ 0 / -1,0
B	+/- 0,2
C	+/- 0,2

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Pile joints for concrete Piles System "CPG"

CPG K6 and K8, Dimensions in [mm]

Annex A3



All non specified tolerances according to EN 22768-1-m

Pile joints for concrete Piles System "CPG"

Details of lock mechanism, dimensions in [mm]

Annex A4

Installation

The performance of the pile joint can be assumed only, if the installation is carried out according to the installation instructions stated in the technical file of the manufacturer, in particular taking account of the following points:

- proper Information for the use of the pile joints is enclosed to each delivery
- Installation by appropriately trained personnel
- Installation of only those components which are specified as components of the products
- Installation with the required tools

The pile joint has to be installed in such a way that the deviation to a plane to right angles of the pile axis does not exceed 1: 150. The base plate of the coupling may differ from the flatness, even in the installed state, only concave up to a maximum of 0.56 mm.

The piling works should be carried out according to EN 12699¹ maybe in addition to national regulation.

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¹ EN 12699 Execution of special geotechnical works – displacement piles

Pfahlkupplungen für Stahlbetonrammpfähle System "CPG"	Anhang B1
Intended use Specific Information about Installation	