TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Certifikační orgán, Notifikovaná osoba, Inspekční orgán
Accredited Testing Laboratory, Authorized Body, Certification Body, Notified Body, Inspection Body

Authorized Body 204
empowered by the Decision of COSMT No. 05/2017
Branch 0900 – Technical Engineering Services

issues

pursuant to Act No. 22/1997 Coll. on technical requirements on products and on the change and amendment of some laws, as amended, and Sections 2 and 3 of the Government Decree No. 163/2002 Coll., as amended by Government Decree No. 312/2005 Coll. and by the Government Decree No. 215/2016 Coll.

NATIONAL TECHNICAL APPROVAL

No. 090-043103

for product:

ANP-SHS Micropile

type / variant: steel bar H 0420-38, H 0500-38,
H 0630-51, H 0800-51,
H 1000-64, H 1200-64,
H 1400-76, H 1600-76; H 1800-76 and H 2400-108

for manufacturer:

ANP – Systems GmbH

Address:	Christophorusstraße 12, A-5061 Elsbethen, Austria
Manufacturer:	ANP – Systems GmbH
Address:	Christophorusstraße 12, A-5061 Elsbethen, Austria
Production plant:	ANP – Systems GmbH
Address:	Christophorusstraße 12, A-5061 Elsbethen, Austria
Order:	Z090180497

Authorized Body 204 hereby certifies the product's technical properties, their standard and the procedures of their determination in relation to the fundamental requirements set forth in Annex 1 of Government Decree No. 163/2002 Coll., as amended by Government Decree No. 312/2005 Coll. and by the Government Decree No. 215/2016 Coll.

This Approval is a technical specification intended to assess compliance of the product concerned.

Number of pages of the National Technical Approval, incl. title page: 5

National Technical Approval prepared by:

Ing. Jitka Kadlecová
Head Assessor

Approval valid until: 31 January 2022

Person responsible for the correctness of this National Technical Approval:

Stamp of Authorized Body 204

Prague, 14 January 2019

Martin Pešek
Deputy Manager of the Authorized Body 204

Note: This National Technical Approval shall not be reproduced other than in whole without the written consent of the Director of Authorized Body 204.

1. Information about the product and its intended use:

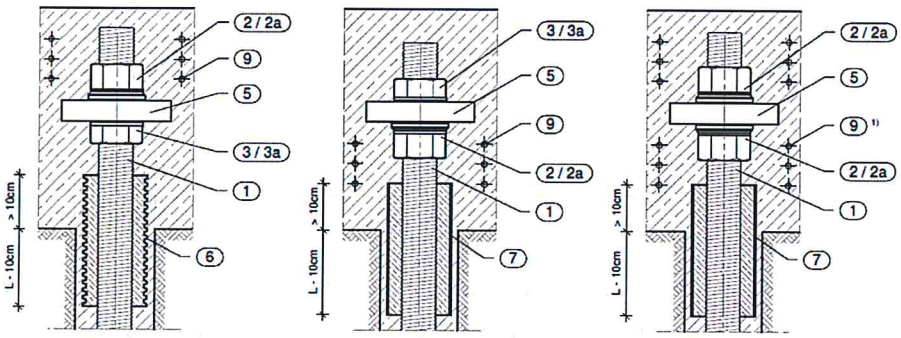
- **ANP – SHS Micropile** is foundational element that transmits the axial load (compression load and tension load) from the building loads to deeper layers of ground.

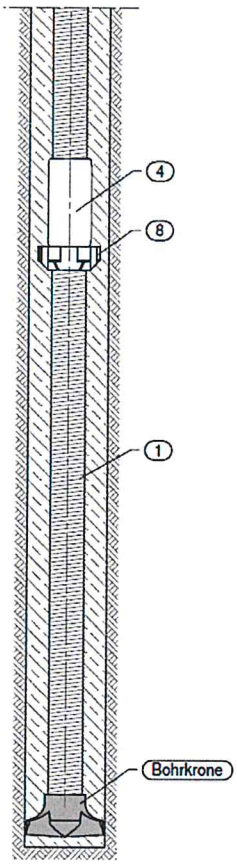
Micropiles are used especially in these cases:

- foundation of buildings
- reinforcement / reinforcement of existing structures
- fabrication of support walls with micropiles
- micropiles against groundwater pressure

Micropile is composed of three main parts – pile head, steel bar and root

The load-bearing element of this product is a hollow threaded steel bar with a cold-rolled left-hand thread of the R-type or a right-hand thread RR-type for special applications in geotechnics.





1	Hollow bar
2	Hexagonal nut
3	Counter nut
4	Sleeve
5	Anchor plate
6	Plastic pipe
7	Steel tube
8	Spacer
9	Additional reinforcement

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The micropile head consists of a square anchor plate that is locked by a hexagonal nut and counter-nut.
Coupling of micropile is possible with cylindrical coupler, which is tightened using a drilling device.

The micropile is applicated with using a lost drill bit and hammer drilling. The drilling device ensures the flush of the bar with water, air or cement suspension.
The filling of the outer space of the micropile is through the bar and drilling bit. This filling is possible at the same time as drilling using grouting – drill adapter or after drilling.

- **Steel threaded bar ANP-SHS**

System ANP – SHS Micropile compose following type of threaded bar:

- H 0420-38, H 0500-38
- H 0630-51, H 0800-51
- H 1000-64, H 1200-64
- H 1400-76, H 1600-76, H 1800-76
- H 2400-108

designation:

H – (Hohlstab) hollow bar with a cold rolled thread
420 till 2400 – nominal value of ultimate load in kN
38, 51, 64, 76 a 108 – nominal diameter in mm

Reinforcing element type R (H0420-38 till H0800-51) is the steel bar longitudinally welded made of 28Mn6 according to EN 10083-2. The longitudinally welded bar is in accordance with the standard EN 10210-1 and fulfilled criteria of standard EN 14199.

Reinforcing element type RR (H1000-64 till H2400-108) is the seamless bar made of 36Mn5. Seamless bar is in accordance with the standard EN 10210-1 and fulfilled criteria of standard EN 10297-1 and standard EN 14199.

Self-drilling bar SHS type R with diameter 38 and 51 mm have a cold-rolled left-hand circular thread along the whole length of the bar.

Self-drilling bar SHS type RR with diameter 64, 76 and 108 mm have the cold-rolled right-hand thread.

Service life of micropile systems:

- Micropiles for temporary use (service life max. 2 years)
- Permanent micropiles (service life up to 50 years) depending on the degree of corrosion.

Table No. 1 Nominal dimensions and mass, rib geometry

Type of the bar	Nominal diameter **Da, jm [mm]**	Outer diameter **Da [mm]**	Nominal cross section **S_o [mm²]**	Nominal mass per meter **m [kg/m]**	Thread height **a [mm]**
H 0420-38	38	37,99	640	5,0	1,5
H 0500-38	38	37,99	740	5,8	1,5
H 0630-51	51	49,99	930	7,3	1,7
H 0800-51	51	49,99	1145	9,0	1,7
H 1000-64	64	63,80	1470	11,5	2,1
H 1200-64	64	63,80	1720	13,5	2,1
H 1400-76	76	76,90	2020	15,8	2,2
H 1600-76	76	76,90	2270	17,8	2,2
H 1800-76	76	76,90	2510	19,7	2,2
H 2400-108	108	108,1	3550	27,8	2,2

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