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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

MEMBER OF EOTA

European Technical Assessment ETA-22/0439 of 2022/07/25

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S	
Trade name of the construction product:	PULSA HC6 Nails
Product family to which the above construction product belongs:	Power-actuated fastener for multiple use in concrete for non-structural applications
Manufacturer:	SPIT Route de Lyon FR-26500 Bourg-Les-Valence Internet www.spit.com
Manufacturing plant:	SPIT Route de Lyon FR-26500 Bourg-Les-Valence
This European Technical Assessment contains:	11 pages including 6 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 330083-04-0601 - Power-actuated fastener in concrete for redundant non-structural applications
This version replaces:	

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product
PULSA HC6 Nails is a power-actuated fasteners which are placed into the concrete without previous drill by use of a gas actuated tool PULSA P40P+ or P65. They are anchored in the concrete by sintering and mechanical interlock.

The fastener (nail) is made of galvanised steel. The nails are arranged and connected with each other by special plastic strips that guides the nails in the gas actuated tool magazine

The product specification is given in annex A.

The characteristic material values, dimensions and tolerances of the fastener not indicated in Annexes shall correspond to the respective values laid down in the technical documentation[1] of this European Technical Assessment.

2 Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

The HC6 Nails is for redundant application in cracked and non cracked normal weight concrete between classes C20/25 and C50/60.

The intended use of the HC6 Nails is for under indoor conditions in building construction with a maximum thickness of the construction member of 250 mm.

The HC6 Nails is a fastener type 2 according to the classification given in EAD 330083-04-0601 with a minimum embedment depth of 15 mm.

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

The provisions made in this European Technical Assessment are based on an assumed intended working life of the fastener of 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body, 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.

1 The technical documentation of this European Technical Assessment is deposited at ETA-Danmark and, as far as relevant for the tasks of the Notified bodies involved in the attestation of conformity procedure, is handed over to the notified bodies.

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

3.1 Characteristics of product

Mechanical resistance and stability (BWR 1):
Characteristic values of resistance: See annex B2, C1 to C3.
Displacements: See annex C1

Safety in case of fire (BWR 2):
Reaction to fire: Class A1
Resistance to fire: No performance assessed.

Durability
See annex B1

3.2 Methods of assessment

The assessment of fitness of the fastener for the intended use in relation to the requirements for mechanical resistance and stability and safety in use in the sense of the Basic Requirements 1 and 2 has been made in accordance with EOTA EAD 330083-04-0601.

4 Assessment and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 1997/463/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

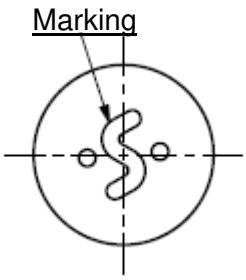
Issued in Copenhagen on 2022-07-25 by

Thomas Bruun
Managing Director, ETA-Danmark

Nail Types







Trade name : SPIT HC6
Designation : HC6-LT with LT : Total length of the nail
Example : HC6-27 / HC6-32 / HC6-50 / HC6-57 and HC6-65
Marking : "S" Identifying mark of the producer on the head

SPIT PULSA Gas actuated tool and gas can



PULSA P40 P+ (100 Joules)
for nails up to 32 mm length



PULSA P65 (100 Joules)
for nails up to 65 mm length



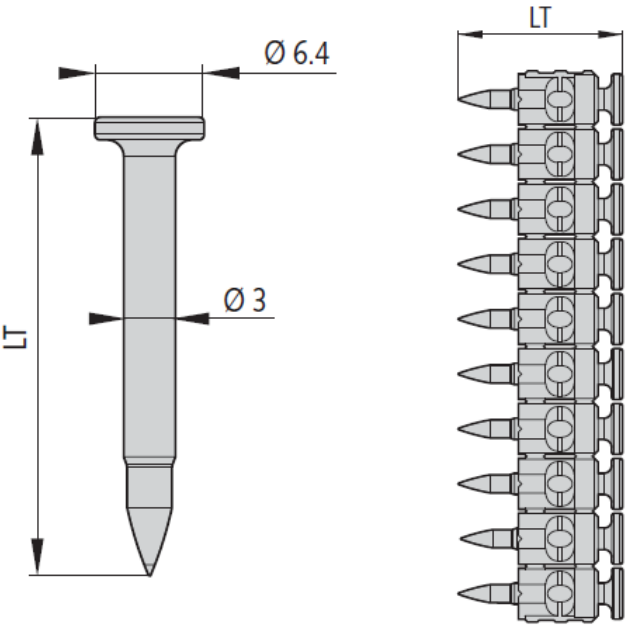
Gas can
supplied with nails pack

Gamme HC6	Tool P40P+	Tool P65
HC6-27	✓	✓
HC6-32	✓	✓
HC6-50		✓
HC6-57		✓
HC6-65		✓

SPIT HC6 with PULSA P40 P+ and PULSA P65

Product description

Annex A1



SPIT HC6

Table A1 : Dimensions and materials

HC6 dimensions			HC6-27	HC6-32	HC6-50	HC6-57	HC6-65
Length	LT	[mm]	27	32	50	57	65
Shaft diameter	d	[mm]	3,0				
Effective anchorage depth	h_{ef}	[mm]	≥ 15				
Head diameter	D	[mm]	6,4				
Material nail		[-]	Steel, Hardeness ≥ 56 HRc				
Material collated strip		[-]	Polypropylene, orange color				
Zinc plating		[-]	Mechanical zinc plating, min. zinc 10υm				

SPIT HC6 with PULSA P40 P+ and PULSA P65	Annex A2
Product description	

Specification of intended use

Anchorage subject to :

- Static and quasi-static loads

Base materials :

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000
- For cracked and non-cracked concrete
- Anchorages in two-dimensional load-bearing structures (slab and walls)
- Strength classes C20/25 to C50/60 according to EN 206-1 for use of setting tools PULSA P40P+ and PULSA P65

Use conditions (Environment conditions):

- Structures subject to dry internal conditions

Design :

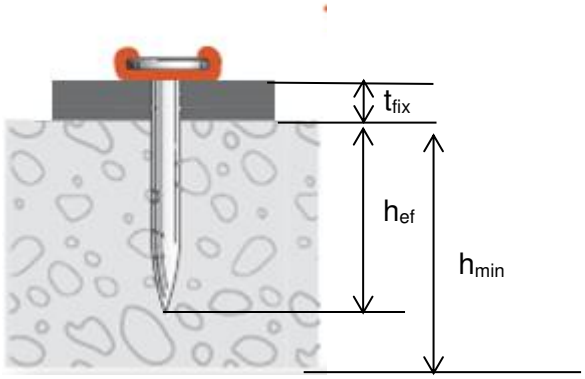
- The anchorages are designed in accordance with EN 1992-4 : 2018, Design method C under the responsibility of an engineer experienced in anchorages and concrete work
- Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the fasteners is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- The fastener HC6 is to be used only for multiple use for non-structural application according category 2b, with following definition :
  - Number of fixing points $n_1 \geq 6$,
  - Number of fasterners per fixing point $n_2 = 1$,
  - Design value of actions $F_{ED,lim}$ per fixing poin $n_3 \leq 0,3$ kN.
- The design of the fixture is such that in the case of excessive slip or failure of one fastener the load can be transmitted to neighbouring fasteners without significantly violating the requirements on the fixture in the serviceability and ultimate limit state.

Installation:

- Fastener installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.
- Use of the fastener only as supplied by the manufacturer without exchanging the components of an fastener.
- Fastener installation in accordance with the manufacturer's specifications and drawings and using the appropriate tools.
- Effective anchorage depth, edge distances and spacing not less than the specified values without minus tolerances.

SPIT HC6 with PULSA P40 P+ and PULSA P65	Annex B1
Intended use - Specifications	

Installed condition



h_{ef} : Effective anchorage depth
t_{fix} : Thickness of part to be fixed
h_{min} : Minimum member thickness

Installation parameters

HC6 dimensions			HC6-27	HC6-32	HC6-50	HC6-57	HC6-65
For use with tool			P40P+ P65	P40P+ P65	P65	P65	P65
Maximum concrete strength class	[-]		C50/60				
Maximum thickness of fixture	t_{fix}	[mm]	5	10	28	35	43
Effective anchorage depth	h_{ef}	[mm]	≥ 15				
Average anchorage depth when used in maximum concrete strength class	$h_{ef,m}$	[mm]	16,1				
Diameter of clearance hole in the fixture	d_f	[mm]	3,5				
Minimum member thickness	h_{min}	[mm]	80				
Minimum spacing	S_{min}	[mm]	200				
Minimum edge distance	C_{min}	[mm]	150				

SPIT HC6 with PULSA P40 P+ and PULSA P65

Installation condition and Installation parameters

Annex B2

Installation instructions

▪ With PULSA tool, fuel injection is carried out by an electro valve and an electronic chip (fully automatic tool). PULSA is powered by easily replaceable fuel cells. Each time the nose of the tool is depressed, a metered amount of air and fuel gas mixture is injected into the combustion chamber where it is ignited by a spark when the trigger is pressed. The piston is forced down, driving the fastener to a pre-set depth.

2 conditions to obtain percussion in order :
- Step 1 : Press the tool against the working surface
- Step 2 : Press the trigger

▪ Fasteners to be installed perpendicular to the surface of the base material, by using the SPIT PULSA P40P+ or PULSA P65

▪ When setting, pay attention to setting defects. A setting defect is present if the nail can be pull out of the concrete by hand

▪ Fasteners to be installed ensuring not less than the minimum effective anchorage depth according to table A2. If the embedment depth is smaller than the minimum effective anchorage depth the nail must be assumed as a setting defect and may not be loaded.

▪ A new fastener is set at a minimum distance away of 100 mm of the edge of the damaged surface.

SPIT HC6 with PULSA P40 P+ and PULSA P65	**Annex B3**
Installation instruction	

Table C1: Characteristic values, Design method C

HC6 dimensions			HC6-27	HC6-32	HC6-50	HC6-57	HC6-65
For use with tool			P40P+ P65	P40P+ P65	P65	P65	P65
Characteristic resistance for all directions	F_{Rk}	[N]	50				
Partial safety factor	γ_M	[-]	1,5				
Characteristic spacing	S_{cr}	[mm]	200				
Characteristic edge distance	C_{cr}	[mm]	150				
Displacement for all load directions	δ_0, δ_∞	[mm]	≤ 0,1 mm				