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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

European Technical Assessment ETA-23/0508 of 2023/08/21

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 330083-03-0601 - Power-actuated fastener in concrete for redundant non-structural applications
This version replaces:	

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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 P65, P40P+ or P27. 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 4 according to the classification given in EAD 330083-04-0601 with a minimum embedment depth of 13 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 and C1.
Displacements: See annex C1

Safety in case of fire (BWR 2):
Reaction to fire: Class A1
Resistance to fire: See Annex C1.

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 330083-03-0601.

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 2023-08-21 by

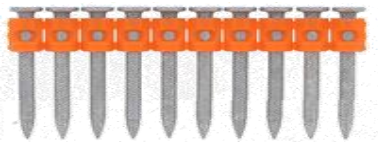
Thomas Bruun
Managing Director, ETA-Danmark

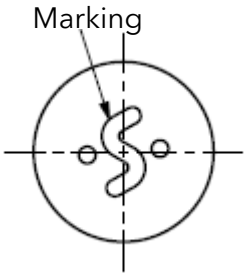
System

HC6 length	Tool P27	Tool P40P+	Tool P65
HC6-17	✓	✓	✓
HC6-22	✓	✓	✓

Nail Types

SPIT HC6-17
SPIT HC6-22





Trade name : SPIT HC6
Designation : HC6-LT with LT : Total length of the nail
Example : HC6-17 / HC6-22
Marking : "S" Identifying mark of the producer on the head

SPIT PULSA Gas actuated tool and gas can

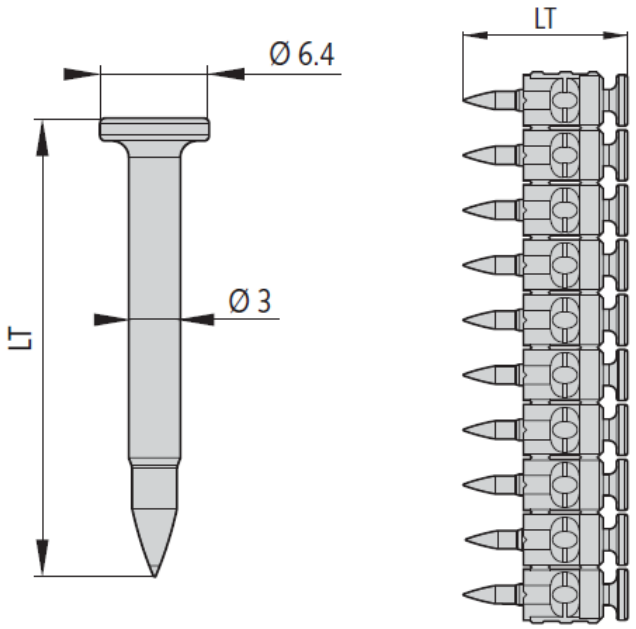
PULSA P27 (95 Joules)

Gas can supplies with nails pack

PULSA P40 P+ (100 Joules)

PULSA P65 (100 Joules)

The P27, P40P+ and P65 tools must be used with pin guide "P", usually used for drywall application.



SPIT HC6

Table A1 : Dimensions and materials

HC6 dimensions			**HC6-17**	**HC6-22**
Length	LT	[mm]	17	22
Shaft diameter	d	[mm]	3,0	
Effective anchorage depth	h_{ef}	[mm]	≥ 13,0	
Head diameter	D	[mm]	6,4	
Material nail		[-]	Steel, Hardness ≥ 56 HRc	
Material collated strip		[-]	Polypropylene, orange color	
Zinc plating		[-]	Mechanical zinc plating, min. zinc 10µm	

SPIT HC6 with PULSA P27, PULSA P40 P+ and PULSA P65 Power actuated drywall fasteners	**Annex A2**
Material, dimensions	

Specification of intended use

Anchorage subject to :

- Shear dead loads of drywalls tracks acting on the fastener
- The fasteners HC6-17 and HC6-22 are to be used for fastening metal tracks with a thickness of 0,6 mm ≤ t ≤ 2,0 mm and a tensile strength of $R_m \geq 260$ N/mm²
- Static and quasi-static loads
- Fire exposure

Base materials :

- Reinforced or unreinforced normal weight concrete according to EN 206-1:2000
- Strength classes C20/25 to C50/60 according to EN 206-1 for use of setting tools PULSA P27, PULSA P40P+ or PULSA P65
- Cracked and non-cracked concrete
- Anchorages in two-dimensional load-bearing structures (slab and walls)

Use conditions (Environment conditions):

- Structures subject to dry internal conditions

Design :

- Number of fixing points $n_1 \geq 5$,
- Number of fasterners per fixing point $n_2 = 1$,
- Design value of actions $V_{ED,lim}$ per fixing point ≤ 0,6 kN.
- Design concept : $H \cdot s \leq \frac{V_{Rk}}{\gamma_M \cdot \gamma_F}$

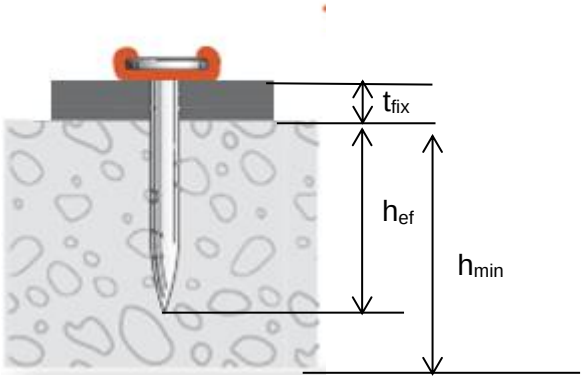
With
- H : Horizontal load per meter acting on the drywall track
- S : Spacing of the fasteners in meter
- V_{Rk} : Characteristic shear load according to Annex C1
- γ_M : Partial safety factor for fastener resistance
- γ_F : Partial safety factor for acting loads

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
- Effective anchorage depth, edge distances and spacing not less than the specified values without minus tolerances.

SPIT HC6 with PULSA P27, PULSA P40 P+ and PULSA P65 Power actuated drywall fasteners	**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			HC6-17	HC6-22
Maximum concrete strength class	[-]		C50/60	
Minimum thickness of fixture	Min t_{fix}	[mm]	0,6	
Maximum thickness of fixture	Max t_{fix}	[mm]	2,0	
Effective anchorage depth	$h_{ef,k}$	[mm]	≥ 13,0	
Minimum member thickness	h_{min}	[mm]	80	
Minimum spacing	S_{min}	[mm]	200	
Minimum edge distance	C_{min}	[mm]	150	

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 P27, 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.

Table C1: Characteristic values

HC6 dimensions			HC6-17	HC6-22
For use with tool			P27 P40P+ P65	P27 P40P+ P65
Characteristic shear strength	V_{Rk}	[kN]	0,56	
Partial safety factor	γ_M [1)]	[-]	1,5	
Minimum spacing	S_{min}	[mm]	200	
Minimum edge distance	C_{min}	[mm]	150	
Displacement for all load directions	δ_0, δ_∞	[mm]	≤ 0,1	
[1)] In absence of other national regulations				

Table C2: Characteristic values under fire exposure

HC6 dimensions				HC6-17	HC6-22
For use with tool				P27 P40P+ P65	P27 P40P+ P65
Characteristic resistance for all directions, **for minimum 3 nails per meter length**	R30	$F_{Rk,fi,30}$	[kN/ml]	0,268	
	R60	$F_{Rk,fi,60}$	[kN/ml]	0,198	
	R90	$F_{Rk,fi,90}$	[kN/ml]	0,129	
	R120	$F_{Rk,fi,120}$	[kN/ml]	0,095	
Partial safety factor		$\gamma_{M,fi}$ [1)]	[-]	1,0	
Minimum spacing		S_{min}	[mm]	200	
Minimum edge distance		C_{min} [2)]	[mm]	150	

[1)] In absence of other national regulations
[2)] If the fire attack is from more than one side, the edge distance shall be c ≥ 300 mm