



# European Technical Assessment **ETA 16/0828** of 28/5/2018

## I General Part

<b>Technical Assessment Body issuing the ETA</b>	<b>VTT Expert Services LTD</b>
<b>Trade name of the construction product</b>	<b>Pipemodul-modular element</b>
<b>Product family to which the construction product belongs</b>	<b>Modular element for building services</b>
<b>Manufacturer</b>	<b>Pipe-Modul Oy Työmiehenkatu 2 50150 Mikkeli</b>
<b>Manufacturing plant</b>	<b>Pipe-Modul Oy Työmiehenkatu 2 50150 Mikkeli</b>
<b>This European Technical Assessment contains</b>	<b>8 pages including 2 Annexes which form an integral part of this assessment</b>
<b>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</b>	<b>European Assessment Document EAD 210004-00-0805, edition November, 2016.</b>
<b>This ETA replaces</b>	<b>ETA 16/0828 issued on 16/2/2017</b>

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## II Specific Part

### 1 Technical description of the product

Pipemodul-modular elements consist of painted and galvanized steel sheet cover (thickness of bottom part 1,0 mm and 1,5 mm cover part), inside locating gypsum boards and/or mineral wool insulation and supports for heating, ventilation, water and sewage pipes and piping for electric, IT cables and other installations.

Pipes or cables, which are not part of the ETA, are installed into element in building site.

Modular elements consist of two halves which are fastened together with steel screws after installation of the pipes and cables. Leakage sensors are included in the kit to reveal possible water leakages. Elements are openable, if pipes need maintenance.

Modular element is non load bearing. Element height is normally identical with storey height or width with storey width.

Modular elements are planned according to each request as to size and places needed for pipes, ducts or cables.

When pipes or cables span over the compartmentation zone in floor or wall, penetration seals with provided fire class shall be used according to installation instructions of the modular element producer. Penetration seals used shall have ETA. When ventilation ducts span over the compartmentation zone in floor or wall CE marked fire dampers or air transfer grilles shall be used according to installation instructions of the modular element producer.

The product is not covered by a harmonised European standard (hEN).

### 2 Specification of the intended uses in accordance with the applicable EAD

#### Intended uses

The product is intended to be used as centralized ventilation, water, sewage or cable products route inside new buildings and also in renovation. Product is normally installed on a stairway wall vertically and/or horizontally or also beside stairs, but can also be inside dwellings.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the modular element of 50 years when installed in the works (provided that the modular element is subject to appropriate installation)<sup>1</sup>.

#### Design

This European technical assessment is based on the assumption that all plans needed have been made correctly according to the regulations valid on the building site.

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<sup>1</sup> This means that it is expected that when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the essential requirements of the works. The indications given as to the working life of a Modular element for building services cannot be interpreted as a guarantee given by the producer or the notified body. They should only be regarded as a means for the specifiers to choose the appropriate criteria for Modular elements in relation to the expected, economically reasonable working life of the works.

### Execution of construction works

It is the responsibility of the manufacturer to ensure that proper information for the use of the Modular element for building services is enclosed to each delivery, including general guidance on the basis of this ETA and the specific installation instructions and construction details. With regard to the assumed working life regular maintenance is necessary. The manufacturer shall provide with written documents which contain descriptions about type and frequency of the maintenance.

The completed building (the works) shall comply with the building regulations (regulations on the works) applicable in the Member States in which the building is to be constructed. The procedures foreseen in the Member State for demonstrating compliance with the building regulations shall also be followed by the entity held responsible for this act. An ETA for a modular element for building services does not amend this process in any way.

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

Table 1. Basic requirements for construction works and essential characteristics

Basic requirement and essential characteristics	Performance
<b>BWR 2. Safety in case of fire</b>	
Reaction to fire	
• Kit	Clause 3.1
• Main materials	Clause 3.1
Resistance to fire	Clause 3.1
<b>BWR 3. Hygiene, health and the environment</b>	
Content, emission and/or release of dangerous substances	Clause 3.2
Influence of moisture	Clause 3.2
<b>BWR 4. Safety and accessibility in use</b>	
Safety against personal injuries by contact	Clause 3.3
Resistance to horizontal loads/impact strength	Clause 3.3
<b>BWR 5. Protection against noise</b>	
Sound properties	Clause 3.4
<b>General aspects</b>	
Durability	Clause 3.5

#### 3.1 Safety in case of fire, BWR 2

##### Reaction to fire

The classification of the kit with regard to reaction to fire is A2-s1, d0. The classification is based on full scale testing as specified in EN 13501-1.

The classification of the main materials with regard to reaction to fire is given in Annex 1.

##### Resistance to fire

For walls, classification with regard to resistance to fire is based on full scale testing as specified in EN 13501-2.

The resistance for fire is given in Annex 1.

#### 3.2 Hygiene, health and environment, BWR 3

##### Dangerous substances

According to the manufacturer, modular element does not contain those harmful or dangerous substances listed in EOTA TR 34.

In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, 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 EU

Construction Products Directive, these requirements need also to be complied with, when and where they apply.

#### Influence of moisture

The kit is equipped with leakage sensors to reveal possible water leakages.

### 3.3 Safety and accessibility in use, BWR 4

#### Safety against personal injuries by contact

According to the written declaration of the manufacturer, the modular element for building services does not have sharp and cutting edges and nature of surface which could cause injury to people or their clothing.

#### Resistance to horizontal loads/impact strength

The modular element resist structural damage from soft body impact load of 200 Nm.

### 3.4 Protection against noise

Airborne sound reduction index ( $R_w$ ) value of the modular unit is  $R_w = 38$  dB.

### 3.5 General aspects

#### Aspects of durability

Inside modular element locating pipes or cables can be changed. Maintenance of possible penetration seals and fire dampers shall take place according to instructions of the producers.

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

For the products covered by this EAD the applicable European legal act is: Decision 1999/91/EC as amended by Decision 2001/596/EC

The system is: 3

In addition, with regard to reaction to fire for products covered by this EAD the applicable European legal act is: Decision 1999/91/EC as amended by Decision 2001/596/EC

The system is: 1

**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 VTT Expert Services Ltd.

Issued in Espoo on 28<sup>th</sup> May, 2018  
by VTT Expert Services Ltd

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**ANNEX 1**  
**DESCRIPTION AND PERFORMANCE OF MODULAR ELEMENT**

**1 Standard parts of the Modular Element**

Combination and cable modules:

- 1.0 mm thick (body) or 1.5 mm thick (cover) steel sheet
- 20 mm rock wool Fire Slab FPS 17
- 15 mm gypsum board Knauf KPS 15 or Gyproc GF 15).

\* Additionally the pipes are protected with rock wool.(Parocfire slab FPS14 (140 kg/m<sup>3</sup>) or Paroc Slab A80 (80 kg/m<sup>3</sup>))

**2 Materials and components and reaction to fire of the main components**

The following table contains materials and components used in the manufacturing of the modular element.

Component	Type	Reaction to fire
Steel sheet	Rautaruukki	A1
Insulation wool	Paroc Pro Slab 80	A1
Gypsum board	Knauf KPS 15 fire protective gypsum board	A2-s1,d0
	Knauf KN 13 (A)	A2-s1,d0
	Knauf KXT 9 (EH 2) Wind barrier gypsum board	A2-s1,d0
	Gyproc gypsum boards	A2-s1,d0

Adhesive and sealing products according to the manufacturer's instructions.

## 2 Resistance to fire of Pipemodul modular element

### EI 30 fire resistance modular elements (exposed to fire on three sides)

Module type	Max depth h [mm]	Max width b [mm]	Max area [mm <sup>2</sup> ]
Vertical cable module	200	600	725*10 <sup>2</sup>
Vertical combination module	155	350	542.5*10 <sup>2</sup>
Horizontal combination module	235	600	1010.5*10 <sup>2</sup>
- fire exposure is from outside of modules to inside - Length of the vertical modules is not restricted, the joint shall be made according to manufacturer's instructions - Max load (cables) inside the cable modules 8.6 kg/m and inside the combination modules 2 kg/m - Two composite pipes (max Ø 50 mm) can be installed inside the combination modules - Horizontal module can include a hatch according to manufacturer's drawing PM-0320PA or PM-0325PA and PM-0341P - Connection of the vertical and horizontal modules according to manufacturer's instructions			

### EI 30 fire resistance modular elements (exposed to fire on four sides)

Module type	Max depth h [mm]	max width b [mm]	Max area [mm <sup>2</sup> ]
Vertical cable module	140	580	700*10 <sup>2</sup>
Horizontal cable module	280	580	1000*10 <sup>2</sup>
- Fire exposure is from outside of modules to inside. - Vertical modules; max distance of supports 3000 mm with L- or U-connections - Connections to at least 200 mm thick slab. - Max load of the connection: 0.2 kN. Max load attached inside the modules: 8.6 kg/m. - Connection of the vertical and horizontal modules according to manufacturer's instructions			

### EI 30 fire resistance modular elements, in cases where fire resistance requirement is only for cable boxes (exposed to fire on three sides, fire exposure from outside of modules to inside)

Cable box of the combination module AS3512/SPN1* ( <i>manufacturer's drawing number</i> )
Cable box of the combination module PM-0428* ( <i>manufacturer's drawing number</i> )
<i>*insulation between the cable box and the pipes: 20 mm thick rock wool type Paroc Fire slab FPS 17 or at least 42.5 mm thick rock wool type Paroc ProSlab 80.</i>
Cable box of the fire protection module PMS 2054** ( <i>manufacturer's drawing number</i> )
<i>**insulation in addition to KPS15 board between the cable box and the pipes: 20 mm thick rock wool type Paroc Fire slab FPS 17 or at least 42.5 mm thick rock wool type Paroc ProSlab 80</i>

### Other terms

Vertical cable modules and combination modules can have a leak detector according to manufacturer's drawings PM-0301P, PMS-865 or VIKN350x120-76-52-76.

Fire resistance of wall and floor penetrations shall be verified separately.

Gypsum board Knauf KPS15 (type F) can be replaced with gypsum board Gyproc GF 15 Protect F (type F).