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MODULAR ELEMENT FOR BUILDING SERVICES

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This European Assessment Document (EAD) has been developed taking into account up-to-date technical and scientific knowledge at the time of issue and is published in accordance with the relevant provisions of Regulation (EU) No 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

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1 SCOPE OF THE EAD

1.1 Description of the construction product

Modular elements for building services consist of painted and galvanized steel sheet cover (e.g. EN 14783), inside locating gypsum boards (EN 520) and/or mineral wool insulation (EN 13162) and supports for heating, ventilation, water and sewage pipes and piping for electric, IT cables and other installations. Modular elements consist of two halves which are fastened together with steel screws after installation of the pipes and cables. Leakage sensors can be included to reveal possible water leakages. Elements are openable, if pipes need maintenance. For keeping pipes clean protection plugs are installed on the both ends in the factory.

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. Minimum distance between inside locating installations and minimum distance of inside locating installation and external element surface are defined in the ETA.

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

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).

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

Relevant manufacturer's stipulations having influence on the performance of the product covered by this European Assessment Document shall be considered for the determination of the performance and detailed in the ETA.

1.2 Information on the intended use(s) of the construction product

1.2.1 Intended use(s)

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.

1.2.2 Working life/Durability

The assessment methods included or referred to in this EAD have been written based on the manufacturer's request to take into account a working life of the modular elements for building services for the intended use of 50 years when installed in the works (provided that the modular element is subject to appropriate installation (see 1.1). These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works¹.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting this EAD nor by the Technical Assessment Body issuing an ETA based on this EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

¹ The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than referred to above.

2 ESSENTIAL CHARACTERISTICS AND RELEVANT ASSESSMENT METHODS AND CRITERIA

2.1 Essential characteristics of the product

Table 1 shows how the performance of modular elements for building services is assessed in relation to the essential characteristics.

Table 1 Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics

No	Essential characteristic	Assessment method	Type of expression of product performance (level, class, description)
Basic Works Requirement 2: Safety in case of fire			
1	Reaction to fire	see 2.2.1	Class
2	Resistance to fire	see 2.2.2	Class
Basic Works Requirement 3: Hygiene, health and the environment			
3	Influence of moisture	see 2.2.4	Description
Basic Works Requirement 4: Safety and accessibility in use			
4	Safety against personal injuries by contact	see 2.2.5	Description
5	Resistance to horizontal loads/impact strength	see 2.2.6	Assessment
Basic Works Requirement 5: Protection against noise			
6	Sound properties	see 2.2.7	Level
General aspects relating to the performances of the construction product*)			
7	Durability	see 2.2.8	Description

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product

2.2.1 Reaction to fire

Reaction to fire of the kit is tested according to the standards EN ISO 1182, EN ISO 1716, EN ISO 11925-2 and/or EN 13823. The product shall be classified according to the standard EN 13501-1 and Commission Delegated Regulation (EU) No 2016/364.

The reaction to fire classes of the kit is given in the ETA.

2.2.2 Resistance to fire

Resistance to fire is tested according to the standards EN 1363-1 and EN 1364-1 and classified according to the standard EN 13501-2

The fire resistance class is given in the ETA.

2.2.3 Influence of moisture

The means for detecting pipe leaks (e.g. moisture sensor, leakage tray) of drinking water- and sewage pipes shall be described.

The existence of pipe leak system will be described in the ETA.

2.2.4 Safety against personal injuries by contact

Assessment shall be made concerning general workmanship of metal products which could cause injury to people or their clothing.

The assessment result is described in the ETA.

2.2.5 Impact strength

When relevant, resistance to structural damage from soft body impact load- 50 kg shall be tested according to the EOTA TR 001:2003.

Assessment or test results of impact strength will be given in the ETA.

2.2.6 Sound properties

The determination of the sound insulation and sound absorption level of the modular element containing building services is performed according to the standards EN ISO 10140-1 (Annex C) and 2.

The results will be given in the ETA as airborne sound reduction index (R_w) values.

2.2.7 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.

The general information of penetration seals and fire dampers will be given in the ETA.

3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

3.1 System(s) of assessment and verification of constancy of performance to be applied

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

3.2 Tasks of the manufacturer

3.2.1 Factory production control (FPC)

The cornerstones of the actions to be undertaken by the manufacturer of the product in the procedure of assessment and verification of constancy of performance are laid down in Table 2.

Table 2 Control plan for the manufacturer; cornerstones

No	Subject/type of control (<i>product, raw/constituent material, component - indicating characteristic concerned</i>)	Test or control method (<i>refer to 2.2 or 3.4</i>)	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC) [including testing of samples taken at the factory in accordance with a prescribed test plan]					
1	Element dimensions Comparison to drawings	Own	Manufacturer's tolerances	1	Every production batch
2	Used raw materials - Steel sheet - Gypsum boards - Mineral wool	Raw materials (EC) certificates	-	-	Every delivery of raw material
3	Delivery content	Inspection against order	-	-	Every production batch

The manufacturer shall exercise permanent internal control of production. All the elements requirements and provisions adopted by the manufacturer shall be documented in a systematic manner including policies and procedures and records of test results. This production control system shall insure that the product is in conformity with the ETA.

3.3 Tasks of the notified body

The cornerstones of the actions to be undertaken by the notified body in the procedure of assessment and verification of constancy of performance for modular elements are laid down in Table 3.

Table 3 Control plan for the notified body; cornerstones

No	Subject/type of control (product, raw/constituent material, component - indicating characteristic concerned)	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Initial inspection of the manufacturing plant and of factory production control (for system 1 only – only for reaction to fire)					
1	Initial inspection of the manufacturing plant and of factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire and taking into account a limiting of organic material and/or the addition of fire retardants	As defined in clause 2.2.1 of the EAD	As defined in clause 2.2.1 of the EAD	As defined in clause 2.2.1 of the EAD	When starting the production
Continuous surveillance, assessment and evaluation of factory production control (for system 1 only - only for reaction to fire)					
2	Continuous surveillance, assessment and evaluation of the factory production control carried out by the manufacturer regarding the constancy of performance related to reaction to fire and taking into account a limiting of organic material and/or the addition of fire retardants.	As defined in clause 2.2.1 of the EAD	As defined in clause 2.2.1 of the EAD	As defined in clause 2.2.1 of the EAD	Once a year

3.3.1 Initial inspection of the manufacturing plant and of factory production control

The notified body shall verify the ability of the manufacturer for a continuous and orderly manufacturing of the product. In particular the following items shall be appropriately considered regarding the constancy of performance related to reaction to fire

- personnel and equipment
- the suitability of the factory production control established by the manufacturer
- full implementation of the prescribed control plan

Limiting of organic material and/or the addition of fire retardants shall correspond to that prescribed in the ETA. Number of samples controlled shall cover all types to be certified.

3.3.2 Continuous surveillance, assessment and evaluation of factory production control

The notified body shall verify regarding the constancy of performance related to reaction to fire

- the manufacturing process
- the system of factory production control
- the implementation of the prescribed test plan are maintained.

Limiting of organic material and/or the addition of fire retardants shall correspond to that prescribed in the ETA. Number of samples controlled shall cover all types manufactured.

4 REFERENCE DOCUMENTS

As far as no edition date is given in the list of standards thereafter, the standard in its current version at the time of issuing the European Technical Assessment, is of relevance.

EN 13501-2	Fire classification of construction products and building elements. Part 2: Classification using data from fire resistance tests, excluding ventilation services
EN 1363-1	Fire resistance tests. Part 1: General Requirements
EN 1364-1	Fire resistance tests for non-loadbearing elements. Part 1: Walls
ISO 7892	Vertical building elements -- Impact resistance tests -- Impact bodies and general test procedures
EN ISO 10140-2	Acoustics. Laboratory measurement of sound insulation of building elements. Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010)
EN ISO 354	Acoustics. Measurement of sound absorption in a reverberation room (ISO 354:2003)

ANNEX 1 – EXAMPLES OF THE MODULAR ELEMENTS FOR BUILDING SERVICES

