



EUROPEAN ASSESSMENT DOCUMENT

EAD 060013-00-0802

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**KIT FOR SYSTEM CHIMNEYS
WITH OUTER WALL MADE OF
CONCRETE AND CLAY/CERAMIC
FLUE LINER IN COMBINATION
WITH PLASTIC OR METAL FLUE
LINER AND ADDITIONAL DUCT**

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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

The product according to this EAD is a kit for system chimneys with outer wall made of concrete and clay/ceramic flue liner in combination with plastic or metal flue liner and additional duct, named assembled chimney kit thereafter, is designed as a system chimney made of an outer wall made of concrete according to EN 12446¹ with three ducts (see drawing below) used in the following combination: Duct no 1 is used for the clay/ceramic flue liner with thermal insulation, the duct no 2 operating as concentric air flue system or non-room-sealed system, is used for the single wall plastic flue liner or single wall metal flue liner. The duct no 3 is used for installation pipes or ventilation. Thermal insulation made of mineral wool is applied to the flue liner made of clay/ceramic. In addition, the outer wall is equipped with thermal insulation made of foam concrete as depicted in Figure 1.1.1.

Storey height units are not covered by this EAD.

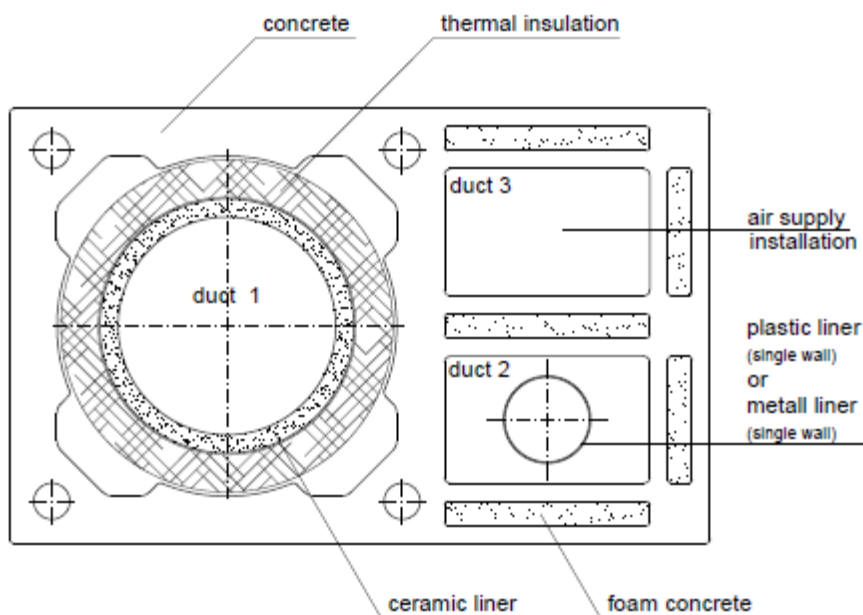


Figure 1.1.1: Cross section of the assembled chimney kit, including nomination of ducts

This EAD applies only to products with the following classifications in accordance with EN 1443:

Duct with clay ceramic flue liner:

T400 N1 D3 Gxx

Txxx N1 W2 Oxx

Duct with plastic flue liner:

Txxx P1/N1 W2 Oxx

Duct with metal flue liner:

Txxx P1/N1 W2 Oxx

¹ All undated references to standards or to EADs in this EAD are to be understood as references to the dated versions listed in Chapter 4.

This EAD is applicable to the assembled chimney kit, which is consisting of the following components:

- outer wall as defined in EN 12446 (vertical hollow sections filled with foam concrete (free of organic materials))
- mortar for jointing outer walls as defined in EN 13063-1
- cleaning and inspection doors of the outer wall as defined in EN 13063-1 and EN 13063-2
- clay/ceramic flue liner and chimney fitting as defined in EN 1457-1 and EN 1457-2
- mortar for jointing clay/ceramic flue liner as defined in EN 13063-1 and EN 13063-2
- thermal insulation as defined in EN 13063-1 and EN 13063-2
- cleaning and inspection doors as defined in EN 13063-1 and EN 13063-2

- plastic flue liner and pre-fabricated seals (optional) as defined in EN 14471
- cleaning and inspection doors of the plastic flue liner as defined in EN 14471
- cleaning and inspection doors of the outer wall as defined in EN 13063-1 and EN 13063-2

- metal flue liner and pre-fabricated seals (optional) as defined in EN 1856-1 and EN 1856-2
- cleaning and inspection doors of the metal flue liner as defined in EN 1856-1
- cleaning and inspection doors of the outer wall as defined in EN 13063-1 and EN 13063-2

Other optional components for the assembled chimney kit according to this EAD defined by their technical specification in the ETA, such as:

- covering made of metal or concrete
- elastomeric seals (optional) in accordance with EN 13063-2 or EN 1856-1 or EN 14241-1 respectively, depending on the designation for the intended use.

The product is not covered by harmonised technical specifications due to its configuration of assembly of flue liners made of different materials in combination with duct for air supply within one kit; thereto, the designations for the assembled chimney kit consisting of flue liners made of clay/ceramic, in combination with flue liner made of plastic or metal and in combination with an additional installation duct is not covered by harmonized standards.

Furthermore, for the essential characteristic “Resistance to fire resulting from external to external” the European assessment method available has been introduced in Clause 2.2.1 in this EAD.

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)

Conveyance of the products of combustion from appliances to the outside atmosphere under dry or wet conditions. The second duct is used for flue liners, which convey products of combustion from fuel types for corrosion resistance class 2 according to Table 2 in EN 1443. The third duct is used for installation purposes or ventilation or air supply.

The designation of the product for its intended use is done on basis of the essential characteristics listed below.

- Temperature class
- Pressure class
- Condensate resistance class
- Corrosion resistance class
- Sootfire resistance class
- Distance to combustible materials
- Maximum occurring temperature in duct used for installation purposes or ventilation or air supply

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 assembled chimney kit with clay/ceramic flue liner for the intended use of 10-30 years when installed in the works (provided that the assembled chimney kit with clay/ceramic flue liner 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. In particular working life of 30 years, it is related to the flue liner made of clay/ceramic and the maintenance of its thickness with respect to the concerned aspects of durability given in EN 13063-1, EN 13063-2. Components with working life shorter than 30 years (flue liner made of plastics, flue liner made of metal, inspection doors etc.) shall be indicated in the ETA. Appropriate evaluation is carried out by means of the assessment of the resistance to abrasion of the flue liner in relation to the working life.

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 works².

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.

1.3 Specific terms used in this EAD

For the purposes of this EAD, the specific terms and definitions given in EN 1443, EN 1457-1, EN 1457-2, EN 13063-1, EN 13063-2, EN 13063-3, EN 14471, EN 1856-1 and EN 1856-2 apply.

² 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 2.1.1 shows how the performance of the assembled chimney kit is assessed in relation to the essential characteristics.

Table 2.1.1 Essential characteristics of the assembled chimney kit and methods and criteria for assessing the performance of the assembled chimney kit in relation to those essential characteristics

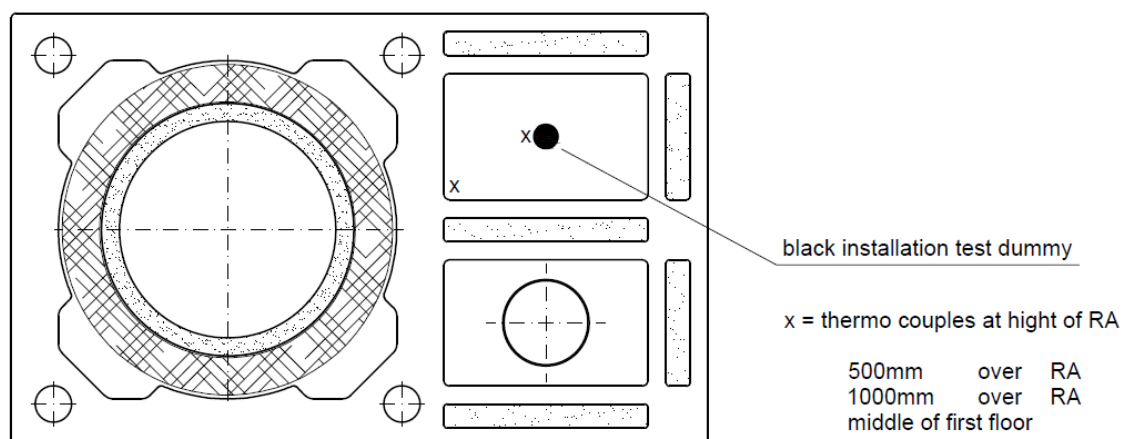
No	Essential characteristic	Assessment method	Type of expression of product performance
Basic Works Requirement 2: Safety in case of fire			
1	Resistance to fire from external to external	2.2.1	Level
2	Resistance to fire from internal to external (sootfire resistance and thermal shock resistance)	2.2.2	Class, level
Basic Works Requirement 3: Hygiene, health and the environment			
3	Gas tightness	2.2.3	Class
4	Flow resistance	2.2.4	Level
5	Thermal resistance	2.2.5	Level
6	Condensate resistance	2.2.6	Class
7	Corrosion resistance	2.2.7	Class
Basic Works Requirement 4: Safety and accessibility in use			
8	Resistance to wind load ¹	2.2.8	Description
9	Flexural tensile strength ¹	2.2.9	Description
10	UV-Resistance ¹	2.2.10	Description
11	Maximum height	2.2.11	Level
12	Freeze-Thaw resistance	2.2.12	Description
¹ Essential characteristics for the assembled chimney kit depending on its composition as defined in the relevant clauses.			

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

This chapter is intended to provide instructions for TABs. Therefore, the use of wordings such as “shall be stated in the ETA” or “it has to be given in the ETA” shall be understood only as such instructions for TABs on how results of assessments shall be presented in the ETA. Such wordings do not impose any obligations for the manufacturer and the TAB shall not carry out the assessment of the performance in relation to a given essential characteristic when the manufacturer does not wish to declare this performance in the Declaration of Performance.

Testing will be limited only to the essential characteristics which the manufacturer intends to declare. If for any components covered by harmonised standards or European Technical Assessments the manufacturer of the component has included the performance regarding the relevant characteristic in the Declaration of Performance, retesting of that component for issuing the ETA under the current EAD is not required.

For the assessment for thermal performance of the assembled chimney kit according to this EAD the testing arrangements shall cover the relevant operating situations for the use of the product and the most onerous situation regarding occurring temperatures in the duct no 3 which is provided for additional installation or ventilation pipes etc. Positioning of thermocouples in duct no 3 is given in Figure 2.2.1. In the duct no 3 the most onerous situation for the maximum occurring temperature due to the operating scenarios, relevant for the duct no 2, is depending on the design of the outer wall elements and the position of the flue liners. This maximum temperature is relevant for positioning of ventilation pipes, etc. in duct no 3 and is stated in the ETA.



Legend - RA: Flue pipe connection

Figure 2.2.1: Positioning of thermocouples in duct no 3

Relevant operating situation means combination of use of clay/ceramic flue liner and plastic flue liner or metal flue liner according to the designation envisaged (temperature class).

For the duct no 1 with the clay/ceramic flue liner the envisaged temperature class is the relevant criterion.

For the duct no 2 with the plastic or metal flue liner it is to be considered whether it shall be used as air flue chimney or as non-room-sealed chimney or whether it shall be not in use.

The test sequence for the soot fire resistance test and for the heat stress test under operating conditions shall consider the parallel operation of the chimney system with clay/ ceramic flue liner and plastic flue liner on one hand, and of the clay/ceramic flue liner and the metal flue liner on the other hand. For the test sequence according to EN 13063-1, EN 13063-2 for the clay/ceramic flue liner, the conditions for the parallel testing of the plastic flue liner and metal flue liner according EN 13216-1 apply, with the extension of the consideration of the temperature in duct no 3 accordingly.

2.2.1 Resistance to fire from external to external

Purpose of the assessment

Assessment shall be done in order to express the performance of outer wall of the assembled chimney kit.

Assessment method

The resistance to fire from external to external of the assembled chimney kit shall be assessed according EN 1366-13, whereas Clause 7.2 applies.

Expression of results

The assessed resistance to fire from external to external of the assembled chimney kit shall be stated in the ETA in terms of minutes.

2.2.2 Resistance to fire from internal to external (sootfire resistance and thermal shock resistance)

Purpose of the assessment

The performance of the assembled chimney kit shall be expressed and is dealt for the relevant assembly of the various ducts and the concerned flue liners, addressed in the scope of the EAD.

Assessment method

Based on the testing arrangement according to Clause 2.2. third paragraph, in this EAD, for the execution of the tests the conditions given in EN 13216-1 apply.

In order to cover the situation of the duct no 2 as concentric air flue chimney, the concentric combustion air supply of the duct no 2 shall be connected to a fan for the simulated suction of the requested amount of combustion air or in absence of a fan the concentric combustion air supply of the duct no 2 shall be left open in Zone A and Zone C (Zone A and Zone C according to EN 13216-1). To cover the use of duct no 2 with non-room-sealed appliances the air supply duct of the concentric chimney shall be blocked in zone A during testing.

For the assessment of the chimney system with clay/ceramic flue liner depending on the classification D/W, EN 13063-1 and EN 13063-2 respectively applies. In case the assembled chimney kit is including a covering made of concrete, it shall be included in the assessment.

Expression of results

The result shall be stated as G(xx) in the ETA. In addition, the resulting classification according to EN 1443 of the flue liner made of plastic or metal in the duct no 2 shall be stated by means of the sootfire resistance and related distance of the outer surface of the assessed assembled chimney kit to adjacent combustable materials as G (xx) in relation to each of the flue liners. Furthermore, the maximum occurring temperature in the duct no 3 shall be stated in the ETA.

2.2.3 Gas tightness

Purpose of the assessment

The gas tightness of the assembled chimney kit is dealt with by the assessment of the gas tightness of various ducts and their flue liner as defined in the scope of the EAD.

Assessment method

Assessment of the gas tightness is done for the individual ducts (no 1 and no 2) in the following way:

For the assessment of the chimney system with clay/ceramic flue liner EN 13063-1, Clause 5.3.1, EN 13063-2, Clause 5.3.1, applies.

For the classification of the flue liner made of plastics the assessment given according to EN 14471, Clause 6.5.1, is used.

For the classification of the flue liner made of metal the assessment given in EN 1856-1, Clause 6.5, is used.

Expression of results

Gas tightness shall be stated in the ETA in relation to the concerned flue liner by means of class “N1/P1”, depending on the outcome of the assessment.

2.2.4 Flow resistance

Purpose of the assessment

The flow resistance of the assembled chimney kit is dealt with by the assessment of the flow resistance of the relevant flue liner and related components to be addressed in the ETA.

Assessment method

The assessment of the relevant components (flue liner, concrete parts in case of air flue system, chimney fittings, metal parts) shall be assessed either according to EN 13216-1, Clause 5.11, for ceramic and plastic parts and EN 1859, Clause 4.12, for metallic parts, or using appropriate data according to EN 13384-1, Tables B.4 and B.8, where available, depending on the type of the component.

Expression of results

The flow resistance of the relevant parts shall be stated in the ETA by means of mean roughness or ζ -values.

2.2.5 Thermal resistance

Purpose of the assessment

The thermal resistance of the assembled chimney kit is dealt with by the assessment of the outer wall of the assembled chimney kit and the related flue liner of the concerned duct, taking into account the configuration of the test specimen for the assembled chimney kit to be covered in the ETA.

Assessment method

When the duct no 2 (see Figure 1.1) is operating as concentric air flue system, the following applies:

For the assessment of the chimney system with clay/ceramic flue liner EN 13063-1, Clause 5.2.3, EN 13063-2, Clause 5.2.4, applies, depending on the classification. Adjacent ducts (no 2 and no 3) are taken into account in the assessment by means of considering the occurring surface temperatures in these areas.

For the assessment of the flue liner made of plastics EN 14471, Clause 4.7, applies.

For the assessment of the flue liner made of metal EN 1856-1, Clause 6.6.3, applies.

Expression of results

The thermal resistance shall be stated in the ETA in the following way, indicating the configuration of the assembled chimney kit: R_{yy} (in relation to the inner diameter of the flue liner)

2.2.6 Condensate resistance

Purpose of the assessment

The condensate resistance of the assembled chimney kit is dealt with by the assessment of the outer wall of the assembled chimney kit and the related flue liner of the concerned duct.

Assessment method

For the assessment of the chimney system with clay/ceramic flue liner EN 13063-2, Clause 5.3.2.1, applies.

For the assessment of the flue liner made of plastics EN 14471, Clauses 6.6.3, 6.7.4 and 6.7.5, apply.

For the assessment of the flue liner made of metal EN 1856-1, Clauses 6.6.4 and 6.6.5, apply.

Expression of results

The relevant class shall be stated in relation to the concerned flue liner in the ETA.

2.2.7 Corrosion resistance

Purpose of the assessment

The corrosion resistance of the assembled chimney kit is dealt with by the assessment of the outer wall of the assembled chimney kit and the related flue liner of the concerned duct.

Assessment method

For the assessment of the chimney system with clay/ceramic flue liner EN 13063-1, Clause 5.3.2, and EN 13063-2, Clauses 5.3.2.1 and 5.3.2.2, apply, depending on the classification.

For the assessment of the flue liner made of plastics EN 14471, Clauses 6.7.4 and 6.7.5, apply.

For flue liner made of metal according to this EAD the corrosion resistance class 2 according to EN 1443 applies. For the assessment of the corrosion resistance class 2 of the flue liner made of metal the assessment method given in EN 1856-1, Annex A.2, applies.

Expression of results

The relevant class shall be stated in relation to the concerned flue liner in the ETA.

2.2.8 Resistance to wind load

Purpose of the assessment

The resistance to wind load shall be assessed in case the plastic flue liner is exceeding the height of the outer wall.

Assessment method

The assessment shall be done according to EN 14471, Clauses 6.3 and 7.3.

Expression of results

In the ETA it shall be stated, if physical damage after visual inspection occurs or not.

2.2.9 Flexural tensile strength

Purpose of the assessment

The flexural tensile strength shall be assessed in case the plastic flue liner/metallic flue liner is exceeding the height of the outer wall.

Assessment method

In case the plastic flue liner is exceeding the height of the outer wall, the assessment shall be done according to EN 14471, Clauses 6.2.2, 6.7.3, 6.7.4 and 6.7.5.

In case the metallic flue liner is exceeding the height of the outer wall, the assessment shall be done according to EN 1856-1, Clause 6.2.3.2.

Expression of results

In the ETA, it shall be stated fulfilled or not fulfilled, including the related values.

2.2.10 UV-Resistance

Purpose of the assessment

The UV-resistance shall be assessed in case the plastic flue liner is exceeding the height of the outer wall.

Assessment method

The assessment shall be done according to EN 14471, Clauses 6.7.6 and 7.7.6.

Expression of results

In the ETA, it shall be stated fulfilled or not fulfilled.

2.2.11 Maximum height

Purpose of the assessment

The maximum height of the assembled chimney kit shall be assessed by means of the assessment of its components outer wall, types of flue liners and their jointing materials. This is in order to assess the minimum resulting maximum height on basis of the individual assessments.

Assessment method

- a) For the assessment of the maximum height of the outer wall the following applies:
 - Assessment of the compressive strength of outer wall according to EN 13063-1, Clause 5.1.6.
 - Assessment of the compressive strength of the mortar for jointing outer wall elements EN 13063-1, Clause 5.1.7, or EN 13063-2, Clause 5.1.7, depending on the classification.
- b) For the assessment of the maximum height of the clay/ceramic flue liner the following applies:
 - Assessment of the compressive strength of the clay/ceramic flue liner according to EN 13063-1, Clause 5.1.2 and 5.1.3.
 - Assessment of the compressive strength of the mortar for jointing the clay/ceramic flue liner EN 13063-1, Clause 5.1.4.2, or EN 13063-2, Clause 5.1.3, depending on the classification.
- c) For the assessment of the maximum height of the plastic flue liner the assessment of the compressive strength according to EN 14471 applies.
- d) For the assessment of the maximum height of the metallic flue liner the assessment of the compressive strength according to EN 1856-1, Clause 6.2, applies.

Expression of results

The maximum height of the assembled chimney kit shall be expressed in the ETA by [m], whereas it is outcome of overall assessment of maximum heights of flue liners and outer wall. As far as compressive strength is outcome of the assessment according to the relevant standard, mentioned above, it shall be stated in the ETA as well.

2.2.12 Freeze-Thaw resistance

Purpose of the assessment

Freeze-thaw resistance of the assembled chimney kit is related to the assessment of its components made of concrete and plastics.

Note: Flue liner made of metal do not need assessment of resistance to freeze-thaw as stated in EN 1856-1, Clause 6.7.3.

Assessment method

For the resistance to freeze-thaw the following applies:

- For the assessment of the resistance to freeze-thaw for the outer wall according to EN 12446, Clause 8.6, applies.
- For the assessment of the resistance to freeze-thaw for the clay/ceramic flue according to EN 1457-1, Clause 10.2, EN 1457-2, Clause 10.2, applies.
- For the assessment of the resistance to freeze-thaw for the plastic flue liner according to EN 14471, Clause 7.7.9, applies.
- The assessment of the resistance to freeze-thaw for the covering made of concrete, if any, the freeze-thaw resistance shall be assessed according to the assessment given in EN 13063-1, Clause 5.5.

Expression of results

In the ETA the following shall be stated: Fulfilled / not fulfilled.

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: 95/467/EC (EU), amended by 2001/596/EC (EU) and 2002/592/EC (EU) and 2010/679/EC (EU)

The system is: 2+

3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the assembled chimney kit in the procedure of assessment and verification of constancy of performance are laid down in Table 3.2.1 to Table 3.2.4.

The manufacturer (regarding the components he buys from the market with DoP) shall take into account the Declaration of Performance issued by the manufacturer of that component. No retesting is necessary.

Table 3.2.1 Control plan for the manufacturer; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC)					
1	Components produced by the manufacturer himself:				
	▪ Flue liner and chimney fittings	See Table 3.2.2, No1	See Table 3.2.2, No1	See Table 3.2.2, No1	See Table 3.2.2, No1
	▪ Outer wall made of concrete	See Table 3.2.2, No2	See Table 3.2.2, No2	See Table 3.2.2, No2	See Table 3.2.2, No2
	▪ Mortar for jointing outer wall	See Table 3.2.2, No3	See Table 3.2.2, No3	See Table 3.2.2, No3	See Table 3.2.2, No3
	▪ Mortar for jointing clay/ceramic flue liners	See Table 3.2.2, No4	See Table 3.2.2, No4	See Table 3.2.2, No4	See Table 3.2.2, No4
	▪ Elastomeric seals	See Table 3.2.2, No5	See Table 3.2.2, No5	See Table 3.2.2, No5	See Table 3.2.2, No5
	▪ Upper cleaning and inspection door	See Table 3.2.2, No6	See Table 3.2.2, No6	See Table 3.2.2, No6	See Table 3.2.2, No6
	▪ Covering	See Table 3.2.2, No7	See Table 3.2.2, No7	See Table 3.2.2, No7	See Table 3.2.2, No7
	▪ Thermal insulation material	See Table 3.2.2, No8	See Table 3.2.2, No8	See Table 3.2.2, No8	See Table 3.2.2, No8
2	Components not produced by the manufacturer himself (*)	See Table 3.2.3	See Table 3.2.3	See Table 3.2.3	See Table 3.2.3
3	Kit	See Table 3.2.4	See Table 3.2.4	See Table 3.2.4	See Table 3.2.4
(*) Components produced by the supplier under the specifications of the manufacturer.					

Table 3.2.2 Control plan when the components are produced by the manufacturer himself; cornerstones

No	Subject/type of control	Test or control method	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	Flue liner and chimney fittings				
1.1	Clay/ceramic: For parameters according to EN 1457-1, Clause 15.4 (classification D) and EN 1457-2 Clause 15.4 (classification W) respectively	EN 1457-1 and EN 1457-2 respectively	EN 1457-1 and EN 1457-2 respectively	EN 1457-1 and EN 1457-2 respectively	EN 1457-1 and EN 1457-2 respectively
1.2	Plastics: For parameters according to EN 14471, Clause 10.5	EN 14471	EN 14471	EN 14471	EN 14471
1.3	Metal: For parameters according to EN 1856-1, Clause 10.3, EN 1856-2, Clause 10.3	EN 1856-1, EN 1856-2	EN 1856-1, EN 1856-2	EN 1856-1, EN 1856-2	EN 1856-1, EN 1856-2
Parameters are related to the essential characteristics 3-12 in Table 2.1.1 of this EAD.					
2	Outer wall made of concrete				
2.1	Parameters as defined in EN 12446, Clause 12.4	EN 12446	EN 12446	EN 12446	EN 12446
2.2	Foamed concrete:				
2.2.1	Bulk density	EN 772-13	Value (Tolerances: ± 50 kg/m ³)	3	1 per month
2.2.2	Composition	As defined in control plan	As defined in control plan	As defined in control plan	Each production unit
Parameters are related to the essential characteristics 2, 3-7, 11 and 12 in Table 2.1.1 of this EAD.					
3	Mortar for jointing outer wall				
3.1	Compressive strength	EN 13063-1, Clause 5.1.7 and EN 13063-2, Clause 5.1.6 respectively	EN 13063-1, Clause 5.1.7 and EN 13063-2, Clause 5.1.6 respectively	EN 998-2, Clause 8.3	EN 998-2, Clause 8.3
Parameters are related to the essential characteristic 2, 3-7, 11 and 12 in Table 2.1.1 of this EAD.					
4	Mortar for jointing clay/ceramic flue liners				
4.1	Density	EN 13063-1, Clause 10.5 and EN 13063-2, Clause 10.5 respectively	EN 13063-1, Clause 10.5 and EN 13063-2, Clause 10.5 respectively	EN 13063-1, Clause 10.5 and EN 13063-2, Clause 10.5 respectively	EN 13063-1, Clause 10.5 and EN 13063-2, Clause 10.5 respectively
Parameters are related to the essential characteristic 2, 3-7, 11 and 12 in Table 2.1.1 of this EAD.					
5	Elastomeric seal				

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
5.1	Acid resistance	EN 14241-1, whereas details are laid down in control plan	EN 14241-1, whereas details are laid down in control plan	3	Each delivery
5.2	Gastightness	EN 14241-1, whereas details are laid down in control plan	EN 14241-1, whereas details are laid down in control plan	3	Each delivery
Parameters are related to the essential characteristics 1, 3 and 7 in Table 2.1.1 of this EAD.					
6	Cleaning and inspection door				
6.1	Cleaning and inspection door of outer wall: Parameters as defined in EN 13063-1, Clause 10.5	EN 13063-1	EN 13063-1	EN 13063-1	EN 13063-1
6.2	Cleaning Inspection door of flue liner: Parameters as defined in relevant standard (EN 13063-1, Clause 10.5, EN 13063-2, Clause 10.5, EN 1856-1, Clause 10.3, EN 1856-2, Clause 10.3, EN 14471, Clause 10.5)	According to relevant standard (EN 13063-1, EN 13063-2, EN 1856-1, EN 1856-2, EN 14471)	According to relevant standard (EN 13063-1, EN 13063-2, EN 1856-1, EN 1856-2, EN 14471)	According to relevant standard (EN 13063-1, EN 13063-2, EN 1856-1, EN 1856-2, EN 14471)	According to relevant standard (EN 13063-1, EN 13063-2, EN 1856-1, EN 1856-2, EN 14471)
Parameters are related to the essential characteristics 2-7 in Table 2.1.1 of this EAD.					
7	Covering				
7.1	Covering made of stainless steel:				
7.1.1	Dimensions	Measurement by means of tape	Laid down in control plan	1	Each charge
7.1.2	Material quality	Laid down in control plan	Laid down in control plan	Laid down in control plan	Each delivery
7.2	Covering made of concrete:				
7.2.1	Condition	Visual control	Absence of cracks	Each piece	Each piece
7.2.2	Bending tension strength	EN 13063-1, Clause 10.5	EN 13063-1, Clause 10.5	Laid down in control plan	Laid down in control plan
7.2.3	Spread value of concrete	EN 1015-3	Laid down in control plan	Laid down in control plan	Laid down in control plan
Parameters are related to the essential characteristics 2 and 12 in Table 2.1.1 of this EAD.					
8	Thermal insulation material				
8.1	Thermal insulation to be applied between the outer wall and the flue liner: Parameters as defined in EN 13063-1, Clause 10.5	EN 13063-1, Clause 10.5	EN 13063-1, Clause 10.5	EN 13063-1, Clause 10.5	EN 13063-1, Clause 10.5
Parameters are related to the essential characteristics 2-7 in Table 2.1.1 of this EAD.					

Table 3.2.3 Control plan when the components are not produced by the manufacturer; cornerstones

No	Subject/type of control (****)	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC)					
1	Components belonging to Case 1 (*)	(1)	Conformity with the order	Testing is not required	Each delivery
		(2)	According to Control Plan	Testing is not required	Each delivery
2	Components belonging to Case 2 (**):	(1)	Conformity with the order	Testing is not required	Each delivery
		(2)	According to Control Plan	Testing is not required	Each delivery
		(3)	According to Control Plan	According to Control Plan	According to Control Plan
3	Components belonging to Case 3 (***):	(1)	Conformity with the order	Testing is not required	Each delivery
		(3)	According to Control Plan	According to Control Plan	According to Control Plan
<p>(1) Checking of delivery ticket and/or label on the package.</p> <p>(2) Checking of technical data sheet and DoP or, when relevant: supplier certificates or supplier tests or test or control according to Table 3.2.2 above.</p> <p>(3) Checking of supplier documents and/or supplier tests and/or test or control according to Table 3.2.2 above.</p> <p>(*) Case 1: Component covered by a hEN or its own ETA for all characteristics needed for the specific use within the kit.</p> <p>(**) Case 2: If the component is a product covered by a hEN or its own ETA which, however, does not include all characteristics needed for the specific use within the kit or the characteristic is presented as NPD option for the component manufacturer.</p> <p>(***) Case 3: The component is a product not (yet) covered by a hEN or its own ETA (in case of inspection document according to EN 10204, Type 3.1 applies for parameters given in line 7.1.2 in Table 3.2.2).</p> <p>(****) Component characteristics are those defined in Table 3.2.2 above.</p>					

Table 3.2.4 Control plan of the complete kit; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC)					
1	Conformity to the specification drawings e.g. correct elements, dimensions, pre assembly.	As defined in control plan (e.g., checking the list of kit components and specification drawings to be delivered)	As defined in control plan (e.g., conformity with the order)	As defined in control plan	Each delivery
2	General aspects EN 13063-1, EN 13063-2, EN 13063-3; EN 14471; EN 1856-1, EN 1856-2; as far as relevant and to be laid down in control plan	EN 13063-1, EN 13063-2, EN 13063-3; EN 14471; EN 1856-1, EN 1856-2 Details laid down in control plan	EN 13063-1, EN 13063-2, EN 13063-3; EN 14471; EN 1856-1, EN 1856-2 Details laid down in control plan	Each kit	Each kit

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 the assembled chimney kit are laid down in Table 3.3.1.

Table 3.3.1 Control plan for the notified body; cornerstones

No	Subject/type of control	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					
1	The notified body shall ascertain that, in accordance with the prescribed control plan (FPC), the manufacturing plant of the product manufacturer, in particular personnel and equipment, and the factory production control are suitable to ensure a continuous and orderly manufacturing of the product.	Verification of the complete FPC as described in the control plan agreed between the TAB and the manufacturer	According to Control plan	According to Control plan	When starting the production or a new line
Continuous surveillance, assessment and evaluation of factory production control					
2	It shall be verified by routine inspection of the notified body that the system of factory production control and the specified manufacturing process are maintained taking account of the prescribed control plan (FPC).	Verification of the controls carried out by the manufacturer as described in the control plan agreed between the TAB and the manufacturer with reference to the raw materials, to the process and to the product as indicated in Table 3.2.1 to Table 3.2.4	According to Control plan	According to Control plan	1/year

4 REFERENCE DOCUMENTS

EN 772-13:2000	“Methods of test for masonry units - Part 13: Determination of net and gross dry density of masonry units (except for natural stone)”
EN 998-2:2016	“Specification for mortar for masonry - Part 2: Masonry mortar”
EN 1015-3:1999+A1:2004+A2:2006	“Methods of test for mortar for masonry - Part 3: Determination of consistence of fresh mortar (by flow table)”
EN 1366-13:2019	“Fire resistance tests for service installations - Part 13: Chimneys”
EN 1443:2003	“Chimneys - General requirements”
EN 1457-1:2012	“Chimneys - Clay/ceramic flue liners - Part 1: Flue liners operating under dry conditions - Requirements and test methods”
EN 1457-2:2012	“Chimneys - Clay/ceramic flue liners - Part 2: Flue liners operating under wet conditions - Requirements and test methods”
EN 1856-1:2009	“Chimneys- Requirements for metal chimneys - Part 1: System chimneys products”
EN 1856-2:2009	“Chimneys- Requirements for metal chimneys - Part 2: Metal flue liners and connecting flue pipes”
EN 1859:2009+A1:2013	“Chimneys – Metal chimneys – Test methods”
EN 10204:2004	“Metallic products - Types of inspection documents”
EN 12446:2011	“Chimneys - Components - Concrete outer wall elements”
EN 13063-1:2005+A1:2007	“Chimneys - System chimneys with clay/ceramic flue liners - Part 1: Requirements and test methods for sootfire resistance”
EN 13063-2:2005+A1:2007	“Chimneys - System chimneys with clay/ceramic flue liners - Part 2: Requirements and test methods under wet conditions”
EN 13063-3:2007	“Chimneys - System chimneys with clay/ceramic flue liners - Part 3: Requirements and test methods for air flue system chimneys”
EN 13216-1:2004	“Chimneys - Test methods for system chimneys - Part 1: General test methods”
EN 13384-1:2015	“Chimneys - Thermal and fluid dynamic calculation methods - Part 1: Chimneys serving one appliance”
EN 14241-1:2013	“Chimneys - Elastomeric seals and elastomeric sealant - Material requirements and test methods- Part1: Seals in flue liners”
EN 14471:2015	“Chimneys - System chimneys with plastic flue liners – Requirements and test methods”