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European Technical Assessment

ETA-12/0346
of 20.07.2020

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

FuranFlex®

Product family to which the construction product belongs

Chimneys, flues and specific products - Kit consisting of chimney flue liner, made of flexible compound of glass fibres and mineral and synthetic organic substances, and ancillaries for classification T200 P1 W2 Oxx

Manufacturer

Kompozitor Plastics Developing Ltd.
Széchenyi utca 60
H-2220 Vecsés
Hungary

Manufacturing plant

Kompozitor Plastics Developing Ltd.
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This European Technical Assessment contains

10 pages including Annexes A 1 to A 3 which form an integral part of this assessment.

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of

European Assessment Document (EAD)
EAD 060012-00-0802, Kit consisting of chimney flue liner, made of glass fibres, mineral and organic substances, and ancillaries.

This European Technical Assessment replaces

ETA-12/0346 issued on 09.03.2018.

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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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.

2 Specification of the intended use(s) in accordance with the applicable EAD

FuranFlex® is used for renovation or adaptation of existing chimneys, whereas for classification of resistance to fire from outside to outside the conditions for the existing outer wall apply. The design situations for which the product is to be used are depicted in Annex 1 of this ETA.

FuranFlex® according to this ETA can be used for vertical and non-vertical installation, whereas a value of 45° is considered as maximum allowable inclination.

The use is related to:

- Chimneys with one heating appliance for corrosion resistance classes 1 and 2 according to EN1443, whereas for corrosion resistance class 2 natural wood is excluded.

The designation of the system chimney **FuranFlex®** for its intended use is done on basis of the following information:

Designation according to EN 1443:

- Temperature class
- Pressure class, whereas the assessment of class P1 allows the declaration of N1 as well
- Condensate resistance class
- Corrosion resistance class
- Sootfire resistance class, "O", followed by a distance to combustible materials, depending on the design situation (including related assessment method)

The provisions made in this European Technical Assessment are based on an intended working life for the intended use of 10 years, when installed in the works provided that the chimney flue liner, made of glass fibres, mineral and organic substances, and ancillaries is subject to appropriate installation provided that the kit is subject to appropriate use and maintenance.

It is the responsibility of the manufacturer to ensure that each delivery contains proper information for the use of the kit including general guidance on the basis of the European Technical Assessment. For components subject to wear (cleaning and inspection doors) the need of replacement is to be considered during use of the kit.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for choosing the appropriate product in relation to the expected, economically reasonable working life of the works.

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

3.1 Performance of the product

Table 3.1

Basic requirements for construction works	Essential characteristics	Method of assessment	Performance
BWR 2	Reaction to fire of the flue liner	EAD, Clause 2.1.2	B-s2, d0
BWR 3	Thermal performance	EAD, Clause 2.2.1.2	Clause 3.1.1 in this ETA
	Gas tightness/leakage	EAD, Clause 2.2.1.3	Class "P1"
	Flow resistance	EAD, Clause 2.2.1.4	mean roughness r = 0,0005 m
		Flue liner vertical installation: EN 13216-1	
	Flue liner non-vertical installation: EN 13216-1		ζ-value = 0,86
	Metallic fittings: EN 13384-1, Table B.8, Figure 5		ζ-value = 1,20
	Thermal resistance	EAD, Clause 2.2.1.5	Clause 3.1.2 in this ETA
Durability/Condensate resistance	EAD, Clause 2.2.1.6	Class "W" Design situations according to Cl. 3.1.1 in this ETA	
Durability against chemicals and corrosion	EAD, Clause 2.2.1.7	Class "2"	
BWR 4	Maximum height (including non-vertical installation)	EAD, Clause 2.2.1.8	Clause 3.1.3 in this ETA
	Durability of the flue liner:	EAD, Clauses 2.2.1.9.1 - 2.2.1.9.5	Durable
	Long-term resistance to thermal load		
	Resistance to wet/dry cycling		
	Long-term compatibility with ancillaries (made of metal)		
	Compound of the layer		
Durability against Freeze-thaw		Resistant	

3.1.1 Thermal performance

Design situation No 1 according to Annex 1 of this ETA:

T200 P1 W2 O40 (Assessment according to EN 13216-1) based on boundary conditions stated in Table 1 of this ETA.

Design situation No 2 according to Annex 1 of this ETA with ventilation:

T200 P1 W2 O00 (Assessment according to EN 13216-1) based on boundary condition for the outer wall of a thermal resistance of the system-chimney of $\geq 0,08 \text{ m}^2\text{K/W}$ and related internal nominal diameter = 0,2 m.

Design situation No 2 according to Annex 1 of this ETA without ventilation:

T200 P1 W2 O40 (Assessment according to EN 13216-1) considering boundary conditions stated in Table 1 of this ETA.

Design situation No 3 according to Annex 1 of this ETA:

T200 P1 W2 O00 (Assessment according to EN 13216-1) for double wall chimneys with thermal resistance of $R \geq 0,35 \text{ m}^2 \text{ K/W}$.

T200 P1 W2 O100 (Assessment according to EN 13216-1) for single wall chimneys.

Table 1: Reference scenario used for outer wall for classification of **FuranFlex®** for renovation/adaptation of existing chimneys

Thermal resistance of the system-chimney [$\text{m}^2\text{K/W}$]	Thickness of outer wall [m]	Internal nominal diameter [m]
$\geq 0,09$	$\geq 0,115$	$\leq 0,35$
$\geq 0,12$	$\geq 0,115$	$\leq 0,65$
$\geq 0,15$	$\geq 0,115$	$\leq 1,40$

3.1.2 Thermal resistance

Table 2: Thermal resistance values for different design situations for **FuranFlex®**

Internal nominal size in terms of diameter	Design situations according to Annex 1 of this ETA	Result	Thermal Resistance Ryy
0,20 m	No 1a	0,11 $\text{m}^2\text{K/W}$	R11
	No 1b	No performance assessed	
	No 2 (with ventilation)	0,13 $\text{m}^2\text{K/W}$	R13
	No 2 (without ventilation)	0,14 $\text{m}^2\text{K/W}$	R14
	No 3 (with thermal insulation of thickness = 25 mm)	0,40 $\text{m}^2\text{K/W}$	R40

The thermal resistance Ryy is evaluated for the internal diameter of 0,20 m for flue liner **FuranFlex®** with a thermal conductivity $\lambda = 0,27 \text{ W/mK}$ and a thickness of 0,00216 m, as a representative installation situation. Depending on the individual installation situation, the concerned thermal resistance Ryy values are to be calculated for the concerned internal diameter, depending on the concerned design situation.

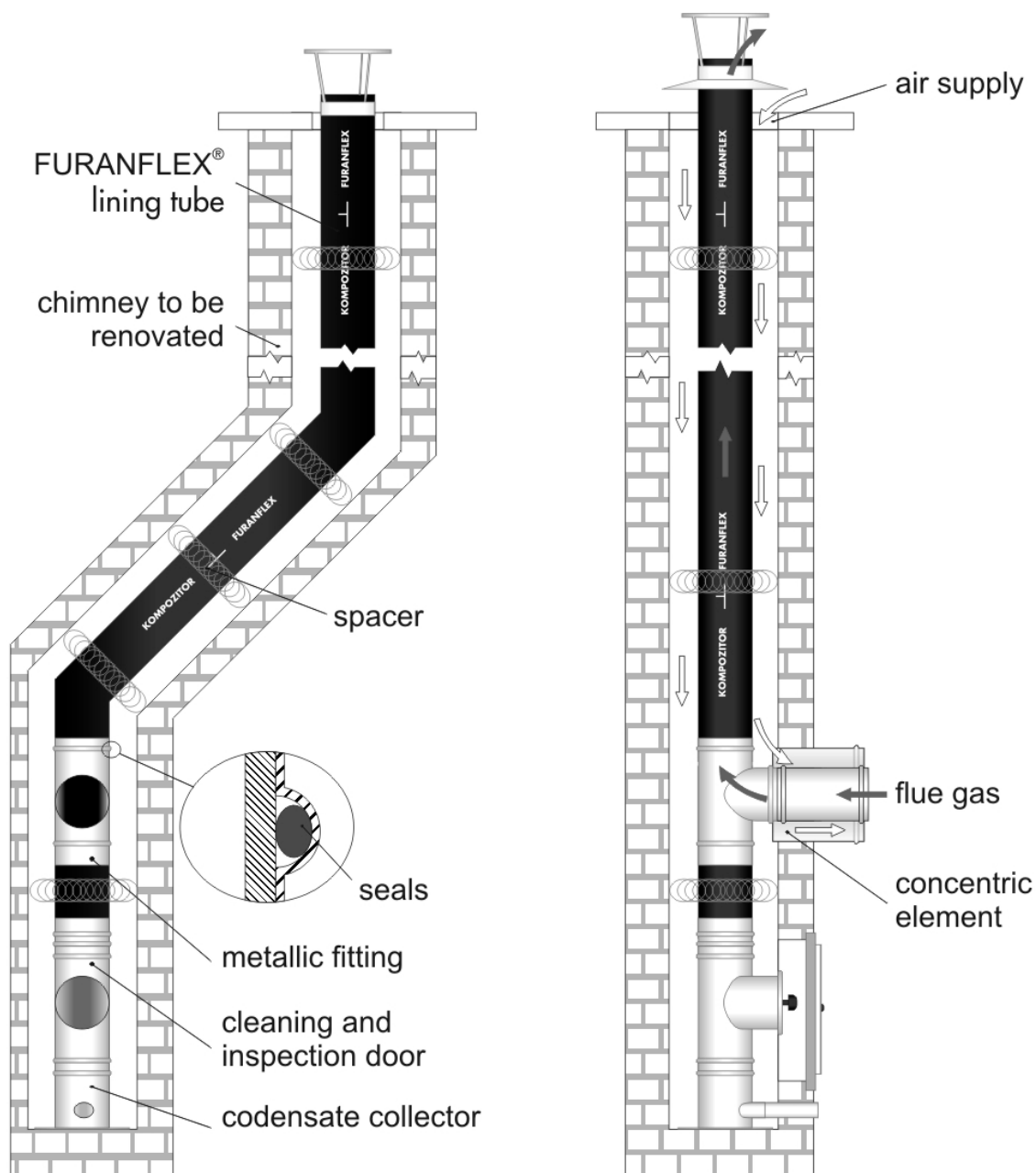


Figure left: Example for non-vertical installation (design situation No 2)
Figure right: Example for concentric P1 configuration (design situation No 2)

Reference documents

- EAD European Assessment Document (EAD), EAD 060012-00-0802 Kit consisting of chimney flue liner, made of glass fibres, mineral and organic substances, and ancillaries
- EN 1443 "Chimneys - General requirements"
- EN 1856-1 "Chimneys - Requirements for metal chimneys - Part 1: System chimney products"
- EN 1856-2 "Chimneys - Requirements for metal chimneys - Part 2: Metal flue liners and connecting flue pipes"
- EN 13216-1 "Chimneys – Test methods for system chimneys – Part 1: General test methods"
- EN 13384-1 "Chimneys – Thermal and fluid dynamic calculation methods – Part 1: chimneys serving one heating appliance"
- EN 14297 "Chimneys - Freeze-thaw resistance test method for chimney products"
- EN 14471 "Chimneys - System chimneys with plastic flue liners - Requirements and test methods"