

Declaration of Performance



No. 91323 032 DoP 2015-04-10 · Declaration of Performance (DoP)

1. Unique identification code of the product-type:

Multi-wall chimney system type TEC-LS-F according to EN 1856-1:2009

2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):

Metal chimney system with specified outer wall type TEC-LS-F¹⁾

Model 1	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (80- 300)	T400 – N1 – D – V3 – L50050 – G50²⁾
Model 1	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (350- 450)	T400 – N1 – D – V3 – L50050 – G75²⁾
Model 2	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (80- 300)	T400 – N1 – W – V2 – L50050 – G50³⁾
Model 2	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (350- 450)	T400 – N1 – W – V2 – L50050 – G75³⁾
Model 3	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (80- 300)	T600 – N1 – D – V3 – L50050 – G50⁴⁾
Model 3	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (350- 450)	T600 – N1 – D – V3 – L50050 – G75⁴⁾
Model 4	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (80- 300)	T600 – N1 – W – V2 – L50050 – G50⁴⁾
Model 4	TEC-EW-CLASSIC or TEC-EW-COMPLETE	DN (350- 450)	T600 – N1 – W – V2 – L50050 – G75⁴⁾

¹⁾ Manufacturer product identification TEC-LS-F

²⁾ Wall thickness shaft 50 mm for L_A90/ with 25 mm insulation/ annular gap isn't necessary ⁵⁾

³⁾ Wall thickness shaft 50 mm for L_A90/ with 25 mm insulation/ at dry operation (D) annular gap isn't necessary, at wet operation (W) annular gap min. 20 mm ⁵⁾

⁴⁾ Wall thickness shaft 60 mm for L_A90/ with 25 mm insulation/ annular gap min. 20 mm ⁵⁾

⁵⁾ Free cross sectional area between insulation and inside duct, ventilated annular gap of min. 20 mm necessary

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Convey the products of combustion from heating appliances to the outside atmosphere

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):

TECNOVIS GmbH
Lessingstr. 20
DE-63110 Rodgau

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

not applicable

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V:

System 2+ and System 4

7. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Notified factory production control certification body no. 0036 performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control and issued the certificate of conformity 0036 CPR 91323 032 of the factory production control.

8. Declared performance:

	ESSENTIAL CHARACTERISTICS	PERFORMANCE	HARMONIZED TECHNICAL SPECIFICATION
8.1	Compressive strength Chimney sections, fittings and supports	<u>Sections and fittings:</u> Model 1 to 4 DN (80- 300): up to 27 m (metal chimney system) Model 1 to 4 DN (350- 450): up to 21 m (metal chimney system) Model 1 to 4 for all cross sections: up to 25 m (shaft) For further information see the installation instruction TEC-LS-F	EN 1856-1:2009
8.2	Resistance to fire	<u>Resistance to fire from inside to outside:</u> Model 1 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (80- 300): T400 – G50 ¹⁾ Model 1 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (350- 450): T400 – G75 ¹⁾ Model 2 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (80- 300): T400 – G50 ¹⁾ Model 2 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (350- 450): T400 – G75 ¹⁾ Model 3 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (80- 300): T600 – G50 ²⁾ Model 3 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (350- 450): T600 – G75 ²⁾ Model 4 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (80- 300): T600 – G50 ²⁾ Model 4 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (350- 450): T600 – G75 ²⁾ ¹⁾ wall thickness shaft: 50mm for L _A 90/ insulation: min. 25mm ²⁾ wall thickness shaft: 60mm for L _A 90/ insulation: min. 25mm <u>Resistance to fire from outside to outside:</u> Model 1 to 4: 90 minutes (L_A90) according to DIN V 18160-60: 2014-02 <u>Distance to combustible material:</u> Between outside duct and combustible material is a distance from min. 50mm (from DN 350: min. 75mm) necessary. It can be realized ventilated or with mineral insulation 90-117kg/m ³ all-over insulated. Stripes of the duct material can be used on the edges to create a clean finish that can be plastered afterwards. <u>Ceiling duct:</u> Model 1 to 4: Closed and insulated or ventilated, minimum distance 50mm (from DN 350: min. 75mm) at vertical installation Tested without additional cladding around the mineral duct between ceilings. <u>Annular gap:</u> Model 1 and 2: for dry operation (D) no annular gap Model 2: for use as exhaust gas line (oil/ gas) in wet operation mode (W) min. 20 mm ventilated annular gap in co-current flow to the exhaust gas is necessary between insulation shell and inner surface of the duct Model 3 and 4: min. 20 mm ventilated annular gap in co-current flow to the exhaust gas is necessary between insulation shell and inner surface of the duct.	EN 1856-1:2009
8.3	Gas tightness/ leakage	Model 1 to 4 TEC-EW-CLASSIC/ TEC-EW-COMLETE DN (80- 450): N1	EN 1856-1:2009

8. Declared performance:

	ESSENTIAL CHARACTERISTICS	PERFORMANCE	HARMONIZED TECHNICAL SPECIFICATION																								
8.4	Flow resistance of chimney sections, fittings and terminals	<p>According to EN 13384-1</p> <table border="1"> <thead> <tr> <th>component:</th> <th>ζ (Zeta-value) single resistance</th> </tr> </thead> <tbody> <tr> <td>pipe tee 87°:</td> <td>1,14</td> </tr> <tr> <td>pipe tee 45°:</td> <td>0,35</td> </tr> <tr> <td>pipe bend 87°:</td> <td>0,40</td> </tr> <tr> <td>pipe bend 45°:</td> <td>0,28</td> </tr> <tr> <td>pipe bend 30°:</td> <td>0,20</td> </tr> <tr> <td>pipe bend 15°:</td> <td>0,10</td> </tr> <tr> <td colspan="2">Terminals: (only for operation in negative pressure)</td> </tr> <tr> <td>rain cap:</td> <td>1,0</td> </tr> <tr> <td>fin cap type „Hubo“:</td> <td>$\leq \varnothing 140 \text{ mm } 0,1 / \geq \varnothing 150 \text{ mm } 0,2$</td> </tr> <tr> <td>wind deflector:</td> <td>$\leq \varnothing 140 \text{ mm } 0,1 / \geq \varnothing 150 \text{ mm } 0,2$</td> </tr> <tr> <td>hurricane:</td> <td>0,1</td> </tr> </tbody> </table>	component:	ζ (Zeta-value) single resistance	pipe tee 87°:	1,14	pipe tee 45°:	0,35	pipe bend 87°:	0,40	pipe bend 45°:	0,28	pipe bend 30°:	0,20	pipe bend 15°:	0,10	Terminals: (only for operation in negative pressure)		rain cap:	1,0	fin cap type „Hubo“:	$\leq \varnothing 140 \text{ mm } 0,1 / \geq \varnothing 150 \text{ mm } 0,2$	wind deflector:	$\leq \varnothing 140 \text{ mm } 0,1 / \geq \varnothing 150 \text{ mm } 0,2$	hurricane:	0,1	EN 1856-1:2009
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8.5	Thermal resistance	<p>Model 1 to 2 DN (80- 450): 0.75 m²K/W calculated for 200°C * Model 3 to 4 DN (80- 450): 0.85 m²K/W calculated for 200°C * *Thermal resistance of the whole system (inner pipe, 25mm insulation and mineral outer pipe)</p>	EN 1856-1:2009																								
8.6	Thermal shock resistance Sootfire resistance	<p>Model 1 to 4 DN (80- 450): Yes²⁾ ²⁾ Because designated G</p>	EN 1856-1:2009																								
8.7	Thermal performance under normal operating conditions	<p>Model 1 to 2 EW-FU / EW-KL DN (80- 450): T400 Model 3 to 4 EW-FU / EW-KL DN (80- 450): T600</p>	EN 1856-1:2009																								
8.8	Flexural tensile strength (only for means of connection for chimney sections and fittings)	Model 1 to 4 DN (80- 450): n.p.d.	EN 1856-1:2009																								
8.9	Non vertical installation	<p>Model 1 to 4 DN (80- 450): Maximum distance between supports/ suspensions $\leq 1 \text{ m at } 90^\circ$ The fixations have to be affixed to the joints of the outer shell. (All vertical and horizontal forces of the flue gas system have to be transferred into the building in a safe way.)</p>	EN 1856-1:2009																								
8.10	Components subject to wind load	<p>Model 1 to 4 DN (80- 450): Free standing height 1.5 m above roof. Maximum spacing between lateral supports: 5 m (For the run inside the building with suspended ceiling.) 3 m (For the installation in/ affixed to buildings with fixation to the wall.)</p>	EN 1856-1:2009																								
8.11	Durability: Water and vapour diffusion resistance	<p>Modell 1 and 3 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): No Modell 2 and 4 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): Yes</p>	EN 1856-1:2009																								
8.12	Condensate penetration resistance	<p>Modell 1 and 3 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): No Modell 2 and 4 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): Yes</p>	EN 1856-1:2009																								
8.13	Against corrosion	<p>Modell 1 and 3 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): V3 Modell 2 and 4 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): V2</p>	EN 1856-1:2009																								
8.14	Freeze thaw resistance	Modell 1 to 4 TEC-EW-CLASSIC/ TEC-EW-COMPLETE DN (80- 450): Yes	EN 1856-1:2009																								

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Rodgau, 10th April 2015

A handwritten signature in blue ink, appearing to read 'Attila Kovacs', written over a horizontal dotted line. The signature is stylized and cursive.

Attila Kovacs CEO

Product information



„Chimneys – Requirements for metal chimneys - Part 1: System chimney products“ EN 1856-1:2009

Manufacturer's identification: **TECNOVIS GmbH**
Lessingstr. 20
DE-63110 Rodgau

Product trade name: **TEC-LS-F** (metal chimney system TEC-EW-CLASSIC / TEC-EW-COMPLETE with specified outer wall)

Certification office: **TÜV SÜD Industrie Service GmbH**

Name and position of the responsible person: **Attila Kovacs CEO**

Identification of accompanying documentation

0.1 TEC-EW-CLASSIC / TEC-EW- COMPLETE	Metal chimney	EN 1856-1	T400	N1	D	V3-L50050	G50 G75	80 - 300 350 - 450	Sootfire resistant chimney system with metallic inner flue liner, system TEC-EW-CLASSIC or TEC-EW-COMPLETE, with 25mm insulation and light construction duct (L _{A,90}) as outer lining, composed of 50mm Calciumsilicat fire protection material. Distance between duct and combustible material of minimum 50mm, can be realized ventilated or with mineral insulation 90-117kg/m ³ allover insulated. Closed and insulated or ventilated at the ceiling duct, distance 50mm at vertical installation. Operation mode in negative pressure for solid fuels.
0.2 TEC-EW-CLASSIC / TEC-EW- COMPLETE	Metal chimney	EN 1856-1	T400	N1	W	V2-L50050	G50 G75	80 - 300 350 - 450	Sootfire resistant chimney system with metallic inner flue liner, system TEC-EW-CLASSIC or TEC-EW-COMPLETE, with 25mm insulation and light construction duct (L _{A,90}) as outer lining, composed of 50mm Calciumsilicat fire protection material. Distance between duct and combustible material of minimum 50mm, can be realized ventilated or with mineral insulation 90-117kg/m ³ allover insulated. Closed and insulated or ventilated at the ceiling duct, distance 50mm at vertical installation. For wet operation mode (W) an annular gap of min. 20mm between insulation and inside shaft is necessary. Operation mode in negative pressure for liquid and gaseous combustibles or solid fuels.
0.3 TEC-EW-CLASSIC / TEC-EW- COMPLETE	Metal chimney	EN 1856-1	T600	N1	D	V3-L50050	G50 G75	80 - 300 350 - 450	Sootfire resistant chimney system with metallic inner flue liner, system TEC-EW-CLASSIC or TEC-EW-COMPLETE, with 25mm insulation and light construction duct (L _{A,90}) as outer lining, composed of 60mm Calciumsilicat fire protection material. Distance between duct and combustible material of minimum 50mm, can be realized ventilated or with mineral insulation 90-117kg/m ³ allover insulated. Closed and insulated or ventilated at the ceiling duct, distance 50mm at vertical installation. Between insulation and inside duct an annular gap of min. 20mm is necessary. Operation mode in negative pressure for solid fuels.
0.4 TEC-EW-CLASSIC / TEC-EW- COMPLETE	Metal chimney	EN 1856-1	T600	N1	W	V2-L50050	G50 G75	80 - 300 350 - 450	Sootfire resistant chimney system with metallic inner flue liner, system TEC-EW-CLASSIC or TEC-EW-COMPLETE, with 25mm insulation and light construction duct (L _{A,90}) as outer lining, composed of 60mm Calciumsilicat fire protection material. Distance between duct and combustible material of minimum 50mm, can be realized ventilated or with mineral insulation 90-117kg/m ³ allover insulated. Closed and insulated or ventilated at the ceiling duct, distance 50mm at vertical installation. Between insulation and inside duct an annular gap of min. 20mm is necessary. Operation mode in negative pressure for liquid and gaseous combustibles or solid fuels.

Product description	
Standard number	EN 1856-1
Temperature level	T400
Pressure level	N1
Condensate resistance (W: wet / D: dry)	D
Corrosion resistance	V3
Flue liner material specification	L50050
Sootfire resistance (G: yes/ O: no) and Distance to combustible material (in mm)	G50 G75
Nominal diameter (∅) (inner tube) in mm	80 - 300 350 - 450

Properties of a multi-wall metal chimney system

Compressive strength:

Inner pipe to DN 300: 27m/ to DN 450: 21m
 Shaft: to maximum 25m

Flow resistance:

Average roughness: 1.0 mm, Zeta-values according to EN 13384-1

Thermal resistance WDW:

Model 1 and 2: 0.75 m²K/W with 25 mm insulation
 Model 3 and 4: 0.85 m²K/W with 25 mm insulation

Flexural strength:

Angular assembly: Maximum length between two supports:
 1m at 90° from the perpendicular. All vertical and horizontal forces of the flue gas system have to be transferred into the building in a safe way

Maximum distance between vertical supports:

1 m (Fixations to the joints of duct elements) all vertical and horizontal forces of the flue gas system have to be transferred into the building in a safe way

Wind load: free standing end above last fixation:

≤ 1.5 m over the last support

Freeze-thaw resistance: Yes

Cleaning:

The chimney system is only allowed to be cleaned with cleaning devices made of plastic or rust-resistant stainless steel.