

## European Technical Assessment

**ETA 20/0122**  
of 18.03.2020



### General part

#### Technical Assessment Body issuing the ETA: ITeC

ITeC has been designated according to Article 29 of Regulation (EU) No 305/2011 and is member of EOTA (European Organisation for Technical Assessment).

**Trade name of the construction product**

**CLIMAVER® HVAC duct system**

**Product family to which the construction product belongs**

Ventilation system made of mineral wool covered with film on outside and inside.

**Manufacturer**

**SAINT-GOBAIN ISOVER**  
Les Miroirs, 18 Avenue d'Alsace  
92400 Courbevoie  
France

**Manufacturing plant(s)**

According to Annex N kept by ITeC.

**This European Technical Assessment contains**

10 pages including 1 annex which forms an integral part of this assessment

and

Annex N, which contains confidential information and is not included in the European Technical Assessment when that assessment is publicly available.

**This European Technical Assessment is issued in accordance with Regulation (EU) 305/2011, on the basis of**

European Assessment Document EAD 360001-00-0803.

**General comments**

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full (excepted the confidential Annex(es)).

## Specific parts of the European Technical Assessment

### 1 Technical description of the product

Rectangular ventilation, heat and air conditioning ductwork system made from rigid mineral wool panels CLIMAVER® with facings on outside and inside according to table 1. CLIMAVER® panels are CE marked according to EN 14303<sup>1</sup>. Duct joints are sealed with aluminium self-adhesive tape and staples.

**Table 1:** Characteristics of CLIMAVER® panels.

Product variant	Thickness (mm)	Facing	
		External	Internal
CLIMAVER® NETO	25,5 ± 1,0		
CLIMAVER® A2 NETO	25,5 ± 1,0	(1)	(4)
CLIMAVER® A2 APTA	40,0 ± 1,0		
CLIMAVER® A2 DECO	25,5 ± 1,0	(2)	
CLIMAVER® PLUS R	25,5 ± 1,0	(1)	(5)
CLIMAVER® A2 PLUS	25,5 ± 1,0	(3)	(3)

Facing description:

- (1) Kraft paper, glass mesh and aluminium foil with a glass veil.
- (2) Fibreglass fabric and aluminium foil with a glass veil.
- (3) Glass mesh reinforced aluminium foil with a glass veil.
- (4) Black reinforced glass fabric.
- (5) Kraft paper reinforced aluminium foil with a glass veil.

The description of the installation procedure is given in Annex A and shall be in accordance with manufacturer's instructions.

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

Self-supporting ductwork made from faced mineral wool panels for the distribution of air in ventilation, heating and cooling systems used inside buildings<sup>2</sup>.

The provisions made in this ETA are based on a working life of CLIMAVER® of at least 25 years, provided that the conditions laid down in the manufacturer's instructions for the installation, use and maintenance are met. These provisions are based upon the current state of the art and the available knowledge and experience.

<sup>1</sup> EN 14303 Thermal insulation products for building equipment and industrial installations. Factory made mineral wool (MW) products. Specification.

<sup>2</sup> The use of the ventilation systems in outdoor conditions is not considered in the scope of EAD 360001-00-0803 and, therefore, it is not assessed in this ETA. The ventilation systems can be installed in outdoor conditions according to the manufacturer's instructions under his responsibility.

The indications given as to the working life of the product cannot be interpreted as a guarantee but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

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

#### 3.1 Performance of the product

The assessment of CLIMAVER® HVAC duct system has been performed in accordance with EAD 360001-00-0803 for *Ventilation system made of mineral wool covered with film on outside and inside (October 2016)*.

**Table 2:** Performance of the product.

Product: CLIMAVER® HVAC duct system				
Basic requirement	Essential characteristic	Performance		
BWR 2 Safety in case of fire	Reaction to fire	See table 3		
	Erosion	No damage <sup>(1)</sup>		
	Emission of particles	See table 4 <sup>(2)</sup>		
	Microbiological growth	None <sup>(3)</sup>		
	Stiffness	NPA		
	Bulging and/or caving	During the test	0,0 mm (0 %)	
		After load relieving	0,0 mm (0 %)	
	BWR 3 Hygiene, health and the environment	Dimensional stability	NPA	
		Dimensional tolerances	Length	± 1,5 %
			Width	± 2,0 %
Thickness			- 1 mm / + 3 mm <sup>(4)</sup>	
Resistance against pressure	No damage <sup>(5)</sup>			
Tightness	See table 5 <sup>(6)</sup>			
Water vapour resistance	Z (m <sup>2</sup> ·h·Pa/mg)	> 140		
BWR 5 Protection against noise	Acoustical absorption	NPA		

<sup>(1)</sup> The material from the inside surface of the ductwork does not flake off, break away and does not show evidence of delamination or erosion.

<sup>(2)</sup> All CLIMAVER® variants fulfil requirements of clause 7.2 of EN 13403.

<sup>(3)</sup> No sign of deterioration in the wall structure, no mould spread beyond the inoculated area and no significant growth of mould.

<sup>(4)</sup> Tolerance level T5 in accordance with EN 14303.

<sup>(5)</sup> No rupture (breaks, tears, rips or any other opening), no displacement of joint adhesive tapes, no evidence of any other type of damage.

<sup>(6)</sup> All CLIMAVER® variants are class D according to EN 1507.

**Table 3:** Reaction to fire.

Product variant	Class
CLIMAVER® NETO	B-s1,d0
CLIMAVER® A2 NETO	A2-s1,d0
CLIMAVER® A2 APTA	A2-s1,d0
CLIMAVER® A2 DECO	A2-s1,d0
CLIMAVER® PLUS R	B-s1,d0
CLIMAVER® A2 PLUS	A2-s1,d0

**Table 4:** Emission of particles.

Product variant	Particles bigger than 0,5 µm (µg/m <sup>3</sup> )	Particles bigger than 5,0 µm (µg/m <sup>3</sup> )
CLIMAVER® NETO		
CLIMAVER® A2 NETO		
CLIMAVER® A2 APTA	0,006	0,003
CLIMAVER® A2 DECO		
CLIMAVER® PLUS R	0,022	0,014
CLIMAVER® A2 PLUS	0,011	0,007

Note: All CLIMAVER® variants fulfil requirements of clause 7.2 of EN 13403.

**Table 5:** Tightness.

Product variant	Leakage factor (l/s)/m <sup>2</sup>		
	- 750 Pa	1000 Pa	2000 Pa
CLIMAVER® NETO	0,03	0,03	0,07
CLIMAVER® A2 NETO	0,03	-	0,06
CLIMAVER® A2 APTA	0,04	-	0,11
CLIMAVER® A2 DECO	0,03	-	0,06
CLIMAVER® PLUS R	0,06	0,08	0,08
CLIMAVER® A2 PLUS	0,01	-	0,02

Note: All CLIMAVER® variants are class D according to EN 1507.

## 3.2 Methods used for the assessment

### 3.2.1 Reaction to fire

CLIMAVER® HVAC duct system has been tested according to EN 13823<sup>3</sup> and EN ISO 11925-2<sup>4</sup> (NETO and PLUS R) and EN 13823 and EN ISO 1716<sup>5</sup> (A2 NETO, A2 DECO, A2 APTA and A2 PLUS), in accordance with EN 13501-1<sup>6</sup> for the products classification in accordance with Regulation (EU) 2016/364. The products have been mounted and fixed following the provisions of EN 15715<sup>7</sup>, tables A.1 and A.2.

### 3.2.2 Erosion and particles emission

CLIMAVER® HVAC duct system has been tested according to clause 7.2 of EN 13403<sup>8</sup>.

### 3.2.3 Microbiological growth

CLIMAVER® HVAC duct system has been tested according to clause 7.4 of EN 13403.

### 3.2.4 Bulging and/or caving

CLIMAVER® HVAC duct system has been tested according to clause 4.4 of EN 13403.

### 3.2.5 Dimensional tolerances

CLIMAVER® panels have been tested for length and width according to EN 822<sup>9</sup> and for thickness according to EN 823<sup>10</sup>.

### 3.2.6 Resistance against pressure

CLIMAVER® HVAC duct system has been tested at 2000 Pa according to clause 7.3 of EN 13403.

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<sup>3</sup> EN 13823 Reaction to fire tests for building products. Building products excluding floorings exposed to the thermal attack by a single burning item.

<sup>4</sup> EN ISO 11925-2 Reaction to fire tests. Ignitability of products subjected to direct impingement of flame. Part 2: Single-flame source test.

<sup>5</sup> EN ISO 1716 Reaction to fire tests for products. Determination of the gross heat of combustion.

<sup>6</sup> EN 13501-1 Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests.

<sup>7</sup> EN 15715 Thermal insulation products. Instructions for mounting and fixing for reaction to fire testing. Factory made products.

<sup>8</sup> EN 13403 Ventilation for buildings. Non-metallic ducts. Ductwork made from insulation ductboards.

<sup>9</sup> EN 822 Thermal insulating products for building applications. Determination of length and width.

<sup>10</sup> EN 823 Thermal insulating products for building applications. Determination of thickness.

### 3.2.7 Tightness

CLIMAVER® HVAC duct system has been tested at -750 Pa, 1000 Pa and 2000 Pa according to EN 1507<sup>11</sup>.

### 3.2.8 Water vapour resistance

CLIMAVER® panels have been tested according to EN 12086<sup>12</sup> at 23 °C and at 50 % R.H.

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

According to the Decision 1999/91/EC of the European Commission, as amended by Decision 2001/596/EC, the system of AVCP (see EC delegated Regulation (EU) No 568/2014 amending Annex V to Regulation (EU) 305/2011) given in the following table applies.

**Table 7:** AVCP system.

Product(s)	Intended use(s)	System
Thermal insulating products	Any	3

Regarding reaction to fire, according to the Decision 1999/91/EC as amended by Decision 2001/596/EC, the system of AVCP given in the following table applies.

**Table 8:** Reaction to fire AVCP system.

Product(s)	Intended use(s)	System
Thermal insulating products	For uses subject to regulations on reaction to fire	1

<sup>11</sup> EN 1507 Ventilation for buildings. Sheet metal air ducts with rectangular section. Requirements for strength and leakage.

<sup>12</sup> EN 12086 Thermal insulating products for building applications. Determination of water vapour transmission properties.

## 5 Technical details necessary for the implementation of the AVCP system, as foreseen in the applicable EAD

All the necessary technical details for the implementation of the AVCP system are laid down in the *Control Plan* deposited with the ITeC and agreed in accordance with EAD 360001-00-0803, section 3.

The *Control Plan* is a confidential part of the ETA and only handed over to the notified product certification body involved in the assessment and verification of constancy of performance.

The factory production control operated by the manufacturer shall be in accordance with the above-mentioned *Control Plan*.

Issued in Barcelona on 18 March 2020

by the Catalonia Institute of Construction Technology.



Ferran Bermejo Nualart  
Technical Director, ITeC



## ANNEX A. Description of the installation procedure (informative)

### A.1 General

This informative annex provides a general description of the product installation for a better understanding of CLIMAVER® HVAC duct system. The design and installation of the ventilation system shall be carried out in accordance with the manufacturer’s instructions.

### A.2 Installation description

CLIMAVER® HVAC duct system is made from glass wool panels faced on both sides as shown in table 1, which are cut, folded, assembled and fixed with staples and adhesive tape to build duct segments.

Connection between duct segments is made with the male-female leaning shiplaps of the panels, fixing the panels’ flap to the adjacent segment with staples and covering the overlapped joint with self-adhesive aluminium tape.

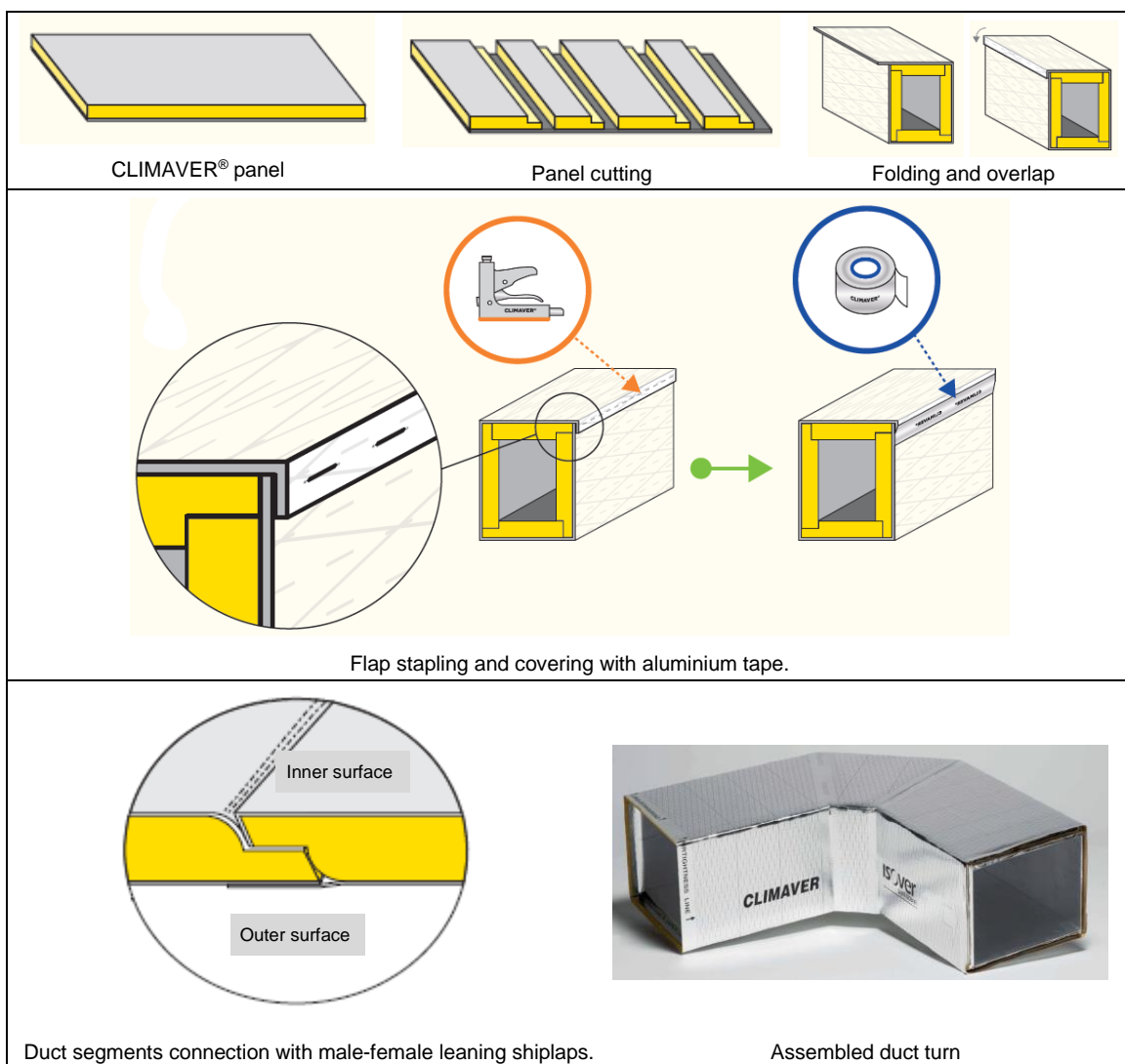


Figure A.1: General description of duct segment assembly.

All ancillary products and tools used for the installation of CLIMAVER® HVAC duct system shall be in accordance with the manufacturer's instructions.

Mechanical reinforcement of the duct section can be necessary depending on the duct dimensions and operating pressure, as shown in table A.1 (information provided by the manufacturer based on test report CETIAT 1415023, not assessed in this ETA).

**Table A.1:** Duct dimensions and mechanical reinforcement.

Side dimension (mm)	Operating pressure (Pa)		
	≤ 200	201 – 400	> 400
≤ 600			No reinforcement required
601 – 750	No reinforcement required	No reinforcement required	Mechanical reinforcement every 0,6 m
751 – 900			
901 – 1050		Mechanical reinforcement every 1,2 m	Mechanical reinforcement every 0,6 m
1051 – 1200	Mechanical reinforcement every 1,2 m	Mechanical reinforcement every 0,6 m	
1201 – 1500			
> 1500			---

The duct is suspended with hangers at a maximum distance depending on the dimension of the duct section largest side, as shown in the next table. Accessories (such as fire dampers, diffusers, etc.) will be independently supported.

**Table A.2:** Duct suspension elements.

Largest side dimension (mm)	Maximum distance between hangers (m)
< 900	2,4
900 ≤ L ≤ 1500	1,8
> 1500	1,2

The duct is provided with inspection hatches for access and cleaning, which will be made from the same CLIMAVER® panel and other ancillary products as described above, together with aluminium profiles Perfiver H.

The duct is connected to the air handling units with aluminium profiles Perfiver H and the joint covered with self-adhesive aluminium tape. The connection will allow the system disassembly for maintenance.