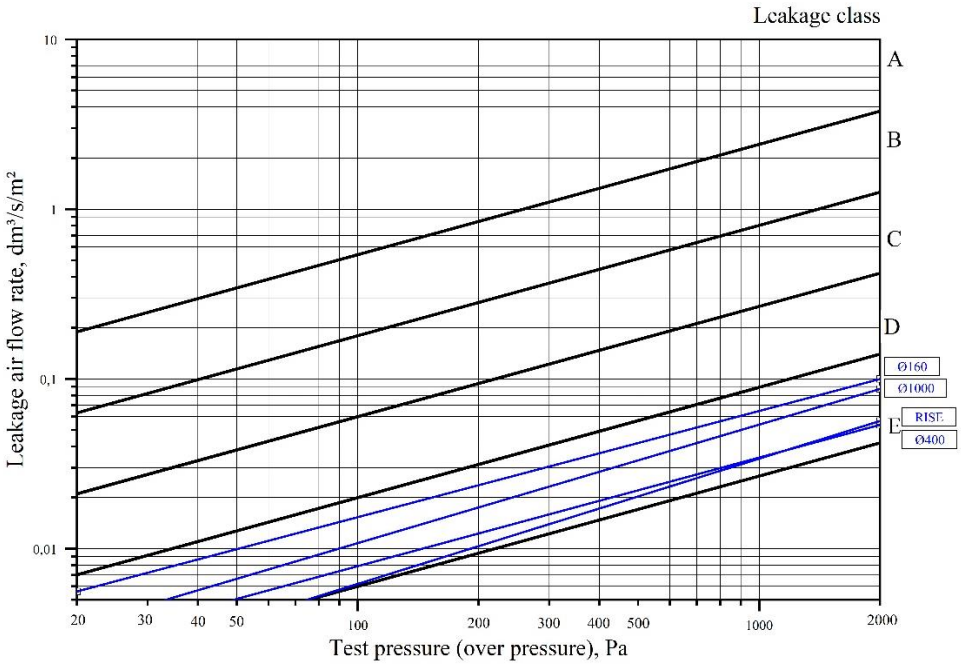
PRODUCT CERTIFICATE

C. Hallström Oy

supplies

ventilation duct system VENT

Ventilation duct system VENT is intended to be used in ordinary ventilation systems in buildings and its tightness, strength and dimensions as well as material and cleanliness are defined according to the certification criteria *SERT R022: Ventilation duct systems* and comply with the requirements. The tightness (EN 12237) of ventilation duct system VENT (in RISE type approval tests the total surface area A of the ductwork was 14.55 m² and the total joint length L was 18.16 m) and circular ducts (diameters 160/400/1000 mm, surface areas 1.51/3.77/9.43 m²) was as follows:



Ventilation duct system VENT meets the certification criteria of the tightness class D both with over- and underpressure. The maximum operating pressure is +2000 Pa/-750 Pa. Components of the certified ventilation duct system VENT are listed in the page 3 of the certificate. Requirements of the certification are listed in the page 4.

This certificate is valid until June 19, 2027 on condition that the product is not essentially changed and the manufacturer and Eurofins Expert Services Oy have a valid contract on quality control. To check the validity of this certificate, please visit www.sertifikaattihaku.fi. Other conditions are listed on the page 2 of the certificate

Espoo June 27, 2022

Katja Vahtikari
Manager, Construction Certification

Mikko Saari
Senior Expert

This document has been signed electronically

PRODUCT CERTIFICATE

Conditions of the validity of the certificate:

Where reference is made in this certificate to any regulations, publications, standards or other documents, it shall be construed as a reference to such publication in the form of which it is in force at the date of this certificate.

The manufacturer is responsible for the quality and continuous quality control of the product. In granting this certificate, Eurofins Expert Services Oy does not accept responsibility to any person or body for any loss or damage incurred in respect of personal injury arising as direct or indirect result of the use of this product.

The use of the name of Eurofins Expert Services Oy or the name Eurofins in advertising or distribution in part of this certificate is only permissible with written authorisation from Eurofins Expert Services Oy.

This certificate is the English version of the original EUFI29-22000452-C Finnish certificate. In case of dispute the Finnish original of the certificate is valid.

PRODUCT CERTIFICATE

Manufactures of the products: ducts C. Hallström Oy, Vantaa, Finland and fittings C. Hallströms Verkstäder AB, Nälden, Sweden.
Components of the certified ventilation duct system VENT:

No.	Item, description	Product symbol	Product code	Standard dimensions, mm
1	Spiral duct, lenght 3 meters, wall thickness 0.5 mm, plugged	HR	AH	100-315
2	Spiral duct, lenght 3 meters, wall thickness 0.7 mm, plugged	HR	AH	400-500
3	Spiral duct, lenght 3 meters, wall thickness 0.9 mm, plugged	HR	AH	630-1250
4	Bend 90°, duct coupling unless otherwise noted	HV	DA	100-1250
5	Bend 45°	HV	DB	100-1250
6	Bend 30°	HV	DC	100-1250
7	Bend 60°	HV	DD	100-1250
8	Bend 15°	HV	DE	100-1250
9	Bend 45° duct-component couplings	HVM	DJ	100-160
10	Bend 90° duct-component couplings	HVM	DN	100-160
11	Short bend 90°	HIBK N/N	DF	100-630
12	Short bend 90° duct-component couplings	HIBKM M/N	DI	100-400
13	Bend 90° with cleaning cover on the back	HVR-A	HB	100-630
14	Bend 90° with cleaning cover on the side	HVR-B	HC	100-630
15	T- piece	HTK	KA	100-1250
16	T- piece, duct-component couplings, duct coupling branch	HTKM	KM	100-200
17	T- piece, duct coupling, component coupling branch	HTKMA	KH	125/100, 125/125
18	X-piece	HXK	KB	100-1250
19	Saddle	HPS	IA	100-1250
20	Saddle, long radius	HPSR	IB	400-1250
21	Slide-in coupling	HI	CA	100-1250
22	Slide-out coupling, component couplings	HM	CB	100-1250
23	Slide-in coupling, long	HIL	CD	100-1000
24	Long coupling, duct-component couplings	HILM	CI	100-400
25	Planar coupling	HSK	CE	100-1250
26	Planar coupling, component coupling	HSKM	CF	100-400
28	Planar coupling, rounded	HSN	FA	100-400
29	End cap for duct	HÄL	FC	100-1000
30	End cap for component	HÄLM	FD	100-1250
31	End cap with handle for duct	HÄLH	FE	100-1250
32	End cap with handle for component	HÄLMH	FF	100-1250
33	Reducer concentric	HFC	JA	100-1250
34	Reducer concentric, duct<component couplings	HFCM	JB	100-1250
35	Reducer eccentric	HFB	JC	100-1250
36	Reducer eccentric, duct<component couplings	HFBM	JD	100-1250
37	Reducer eccentric, short	HFE	JE	400-1250
38	Reducer eccentric, short, duct<component couplings	HFEM	JF	400-1250
39	Damper, class 1	HIS	GA	100-800
40	Damper with shut off, class 3	HISC	GE	100-630
41	Damper with shut off, class 3, with motor bed	HISC-L	GE	100-400
42	Cleaning cover with damper (retrofit)	HRSK	GD	100-630
43	Cleaning cover with damper (retrofit HPS or HTK)	HRS	GH	100-400
44	Iris damper	HRSI	GK	100-800
45	Cleaning and inspection cover for circular duct	HRUK	HG	100-800

PRODUCT CERTIFICATE

Requirements of the certification criteria *SERT R022: Ventilation duct systems.*

Property	***Determination method***	***Requirement***
Tightness	SFS-EN 12237 (circular), SFS-EN 1507 (rectangular), SFS-EN 13180 (flexible), SFS-EN 15727 and 1751 (other devices) and SFS-EN 14239 (area), and SFS-EN 17192 2)	1009/2017, SFS-EN 12237, SFS-EN 1507 and SFS-EN 13180. Tightness class at least C and dampers at least class 3. Tightness class corresponds to the values declared by the manufacturer.
Strenght	SFS-EN 12237 (circular) and SFS-EN 1507 (rectangular) (overpressure 2000 Pa and underpressure 750 Pa), and SFS-EN 17192 2) and SFS-EN 13180 (flexible)	1009/2017, SFS-EN 12237, SFS-EN 1507 and SFS-EN 13180. Meets the strength requirement. For rectangular ducts, pressure class at least 2 (overpressure 1000 Pa). Corresponds to the values declared by the manufacturer.
Dimension	SFS-EN 1506 (circular) and SFS-EN 1505 (rectangular), and SFS-EN 13180 (flexible)	SFS-EN 1506, SFS-EN 1505 and SFS-EN 13180.
Nominal thicknesses of the material of the walls of galvanized steel air ducts	Type approval guidelines of ventilation ducts and fittings	circular ducts, diameter is up to 315 mm ≥ 0.5 mm 400 - 800 mm ≥ 0.7 mm over 800 mm ≥ 0.9 mm rectangular ducts, length of longer side is up to 300 mm ≥ 0.5 mm 301 - 800 mm ≥ 0.7 mm over 800 mm ≥ 0.9 mm
Mass of the zinc layer on the walls	SFS-EN 10346	SFS-EN 10346 (Z275), Type approval guidelines of ventilation ducts and fittings. At least 275 g/m²
Pressure loss	ISO 5221, CEN Instruction N472 REV. A 1998	Can be reported.
Cleanliness of the inner surface	M1-classification of building materials	M1 requirements: Oiliness of ducts and fittings ≤ 0.05 g/m² (deep drawn parts ≤ 0.3 g/m²) or odour > +0.1 Mineral fibers released into the air flow < 0.1 pieces/m³ Amount of surface dust < 0.5 g/m²
Cleanability	Assessment. SFS-EN 12097	Durable and cleanable when performed according to the manufacturer's instructions
Instructions	Assessment	Instructions for inspection, protection, transport, storage, installation, operation and maintenance meet the requirements
Antistatic properties 2)	IEC 61340-4-10 (repealed 30.12.2016)	Will be reported
Chemical emissions 2)	Chemical emissions M1-classification of building materials, SFS-EN 16516:2017 + A1:2020	M1 requirements: TVOC < 0.2 mg/m² h Ammonia < 0.03 mg/m² h Formaldehyde < 0.05 mg/m² h Odour ≥ +0.0 Single VOC ≤ EU-LCI (µg/m³ concentration of model room) Emission of CMR-compounds 1) < 0.005 mg/m² h (or < 0.001 mg/m³ concentration of model room)
Burning behaviour 2)	Procedure based on presumed fire development according to Articles 3 and 4 of Decree 848/2017	Will be reported
Heat release and smoke production of the material 2)	ISO 5660	Will be reported
Fire safety of ventilation system components	Ventilation fire safety guide, https://www.talotekniikkainfo.fi	Can be reported.

1) Emissions of CMR-compounds (carcinogens and mutagens, high risk) of category 1A and 1B according to (EC) No 1272/2008 classification, do not apply to formaldehyde.
2) does not normally apply to products made of metal.