

MODERN TECHNICAL IDEA



PRODUCTS FOR THE
VENTILATION INDUSTRY



BLACKFLEX SPECTRA 200

VENTILATION DUCTS with ANTIBACTERIAL,
ANTIFUNGAL and ANTISTATIC properties



SPECTRA

ANTIMICROBIAL PROTECTION FOR POLYMERS



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The BlackFlex Spectra 200 ventilation ducts are used for air transfer in ventilation and recuperation systems in residential, public and industrial buildings.

The internal wall is entirely made of material with antibacterial and antifungal properties. The material of which the ducts are made was developed by Ingremio and is protected by patents. It was created in cooperation with scientific centres in the course of a research project, during which high effectiveness for different types of bacteria and fungi was confirmed. The material contains silver, copper and other microbiologically active compounds in the polymer matrix so that they do not undergo migration, ionisation and elution. The virtual absence of biologically active compounds migration from the polymer has been confirmed in the laboratory tests that were performed in significantly more aggressive environments compared to these of ventilation systems. The substances used ensure in practice an indefinite bactericidal and fungicidal effect and prevent the formation of defensive mechanisms by bacteria and fungi regardless of air temperature and humidity. The composition of the materials used is entirely safe for people, animals and plants. Moreover, all materials used are approved for food contact.

The ducts are characterised by very high flexibility, so that they can be freely shaped, bent at very small radii (according to the permissible bending radii) and adapt to the installation conditions, without the need for additional fasteners and fittings.

The duct structure ensures mechanical compression strength over 500 N, which allows for their pouring over with structural concrete while performing construction works.

The internal duct wall also has an antistatic effect, which reduces settling and accumulation of dust in the ducts. The smooth internal surface allows for high air flows with low-pressure losses, contributing to the low energy consumption of the entire system. It also makes it easier to clean the ducts if necessary. The double-wall structure of the ventilation ducts with a properly profiled internal wall and closed air voids to a large extent suppresses the entry of noise caused by air flowing inside and thermally insulates.

The BlackFlex Spectra 200 ventilation ducts are available in a wide range of diameters, which allows for optimal selection to meet the requirements of the ventilation system and construction conditions. The duct ends are secured and sealed during the production process. The entire coil is protected with foil, which prevents possible contamination during transport and storage.

BLACKFLEX SPECTRA 200

Reaction to fire class: **flammable duct F** (PN-EN 13501-1:2019-02)

Compression strength: **500N** (PN-EN 61386-24)

Impact resistance: **N** (PN-EN 61386-24)

Longitudinal stiffness: **flexible ducts** (3 x DN PN-EN 13180:2004)

Material: **modified polyethylene (HDPE-mod.) approved for food contact**

External layer:

Properties: **high impact strength and mechanical resistance, UV stabilisation - medium**

Colour: **black**

Internal layer:

Properties: **Material with antibacterial and antifungal properties, antistatic, smooth surface.**

Global migration (average): **< 0,5 mg/dm²** (PN-EN 1186-3:2005 and PN-EN 1186-14:2005)

Colour: **transparent**

internal layer: **antibacterial, antifungal, antistatic, fluorescent under UV light**



HIGH IMPACT STRENGTH



Ag, Cu, +



ANTIBACTERIAL, ANTIFUNGAL PROPERTIES



ANTISTATIC PRODUCT

AVAILABLE PIPE DIAMETERS

Nominal dimension DN (mm)	Inner diameter (mm)	Outer diameter (mm)	Minimum bending radius* (m)	Lengths of sections (m)
50	40	50,5	0,11	50
63	52	63,2	0,15	50
75	61	76,2	0,17	50
90	75	90,6	0,25	50
110	93	110,7	0,33	50
160	136	161	0,40	25 / 2
200	176	201,5	0,55	25 / 2

* temperature above 10°C

AIR FLOW CAPACITY (m³/h)

Nominal dimension DN (mm)	Air velocity (m/s)						
	0,5	1,0	1,5	2,0	3,0	4,0	5,0
50	2,3	4,5	6,8	9,0	13,6	18,1	22,6
63	3,9	7,8	11,7	15,6	23,4	31,2	39,0
75	5,3	10,5	15,8	21,0	31,6	42,1	52,6
90	7,8	15,7	23,5	31,4	47,1	62,8	78,5
110	12,2	24,5	36,7	48,9	73,4	97,8	122,3
160	26,1	52,3	78,4	104,6	156,9	209,2	261,5
200	44,0	88,1	132,1	176,2	264,2	352,3	440,4