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Pre-insulated ducts and fittings IZOL® system

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Pre-insulated
TECHNICAL INFORMATION

Introduction

This is ALNOR's range of insulated square ducts and fittings of the IZOL®system.
The IZOL®system is a registered tradename of pre-insulated ventilation ducts and fittings for indoor and outdoor systems. All system components are provided with inner and outer steel sheet cladding, and a thermal-insulation layer in between.
The nominal diameter range of 100-500 mm always refers to the inner diameter of ducts and fittings.

Insulation
There are 3 types of insulation available:

- 25 mm insulation — the nominal insulation system is 25 mm, and the actual value ranges from 15 to 32 mm; the insulating layer is fitted tightly against the inner and outer cladding which define the product's size according to the SPIRAL®system sizing series.
- 50 mm insulation — the nominal insulation system is 50 mm, and the actual value ranges from 35 to 60 mm; the insulating layer is fitted tightly against the inner and outer cladding which define the product's size according to the SPIRAL®system sizing series.
- 100 mm insulation — the nominal insulation system is 100 mm, and the actual value ranges from 75 to 140 mm; the insulating layer is fitted tightly against the inner and outer cladding which define the product's size according to the SPIRAL®system sizing series.

Cladding
The inner and outer cladding are made from galvanized steel sheet.

Installation instructions

1. Connection
If the insulating layer is on the exterior, it is critical to provide it with a cover to prevent insulation thinning and breaking off. This can be achieved using e.g. dedicated MSFK sealing clamps which help to ensure that joints have the required strength and airtightness based on EPDM rubber.

2. Ductwork mounting
Pre-insulated ducts are usually installed with balancing tapes and suspension rings, similarly to regular (non-insulated) ductwork systems.

Marking

ALNOR products carry the Polish conformity mark B for construction products and product codes as shown in the technical specifications listed in this catalogue.

Round ducts and fittings of the IZOL®system are certified for compliance with hygiene standards - Hygiene Certificate HK/B/1652/02/2007.

A leak-proof ductwork

The inner ducts and fittings of the IZOL®system are included in the SPIRAL®system.
The SPIRAL®system is a tried and tested system of quick-coupled spiral ducts and fittings provided with factory-installed EPDM gaskets. The gaskets provide leak-proof and durable joints between SPIRAL®system components. The system is available in a full range of diameter sizes.
The SPIRAL®system meets the requirements of EN 12237 for air tightness class D (Certificate no. 0103/07).
The high-quality of workmanship and factory-installed rubber gaskets enable easy and quick assembly of ventilation ductwork. A ductwork based on SPIRAL®system components guarantees long and leak-proof service life and requires no additional sealants.

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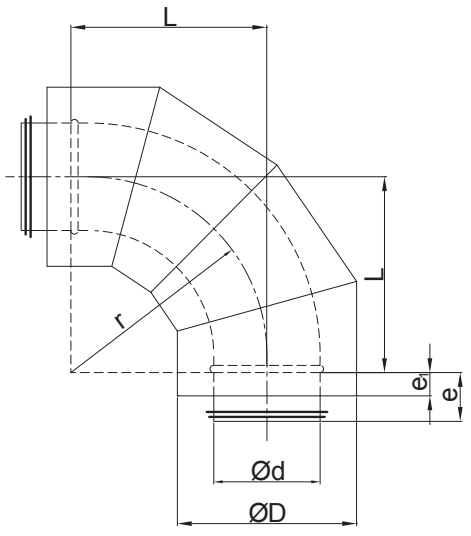
Tolerance limits for ducts

$Ød_{nom}$ [mm]	min. - max. diameter $Ød_{nom\ min}$ - $Ød_{nom\ max}$ [mm]
80	80.0 – 80.5
100	100.0 – 100.5
112	112.0 – 112.5
125	125.0 – 125.5
132	132.0 – 132.5
140	140.0 – 140.6
150	150.0 – 150.6
157	157.0 – 157.6
160	160.0 – 160.6
180	180.0 – 180.7
192	192.0 – 192.7
200	200.0 – 200.7
224	224.0 – 224.8
232	232.0 – 232.8
250	250.0 – 250.8
280	280.0 – 280.9
300	300.0 – 300.9
315	315.0 – 315.9
355	355.0 – 356.0
400	400.0 – 401.0
450	450.0 – 451.1
500	500.0 – 501.1
560	560.0 – 561.2

The IZOL®system meets the tolerance limits given in the table above for the ducts to provide the required sealing performance.
The diameter sizes made with thinner sheets are reinforced by double ribbing, which corresponds to
t = + 0.2 mm.
Ød per PN-EN 1506: 2001

Tolerance limits for fittings

$Ød_{nom}$ [mm]	min. - max. diameter $Ød_{nom\ min}$ - $Ød_{nom\ max}$ [mm]
80	78.8 – 79.3
100	98.8 – 99.3
112	110.8–111.7
125	123.8 – 124.3
132	130.8–131.3
140	138.7 – 139.3
150	148.7 – 149.3
157	155.7–156.3
160	158.7 – 159.3
180	178.6 – 179.3
192	190.6–191.3
200	198.6 – 199.3
224	222.5 – 223.3
232	230.5–231.3
250	248.5 – 249.3
280	278.4 – 279.3
300	298.4 – 299.3
315	313.4 – 314.3
355	353.3 – 354.3
400	398.3 – 399.3
450	448.2 – 449.3
500	498.2 – 499.3
560	558.1 – 559.3



Ød nom. [mm]	e [mm]	e_1 [mm]	Tolerance limits e, e_1 [mm]	
80–224	36	20	0	-5
250–355	55	20	0	-5
400–560	75	35	0	-10

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Pre-insulated

TECHNICAL INFORMATION

Dimensions

25 mm insulation			*50 mm insulation*			*100 mm insulation*		
Inner dia. Ød (mm)	*Outer dia. ØD (mm)*	*Actual insulation thickness (mm)*	*Inner dia. Ød (mm)*	*Outer dia. ØD (mm)*	*Actual insulation thickness (mm)*	*Inner dia. Ød (mm)*	*Outer dia. ØD (mm)*	*Actual insulation thickness (mm)*
80	125	22.5	80	180	50	80	280	100
100	150	25	100	200	50	100	300	100
125	180	27.5	125	224	49.5	125	315	95
140	200	30	140	250	55	140	355	107.5
150	200	25	150	250	50	150	355	102.5
160	224	32	160	250	60	160	355	97.5
180	224	22	180	280	50	180	400	110
200	250	25	200	300	50	200	400	100
224	280	28	224	315	45.5	224	450	113
250	300	25	250	355	52.5	250	450	100
280	315	17.5	280	400	60	280	500	110
300	355	27.5	300	400	50	300	500	100
315	355	20	315	400	42.5	315	500	92.5
355	400	22.5	355	450	47.5	355	560	102.5
400	450	25	400	500	50	400	300	100
450	500	25	450	560	55	450	630	90
500	560	30	500	600	50	500	710	105
560	600	20	560	630	35	560	710	75
600	630	15	600	710	55	600	800	100
			630	710	40	630	800	85
			710	800	45	710	900	95
			800	900	50	800	1000	100
			900	1000	50	900	1120	110
						1000	1250	125
						1120	1400	140
						1250	1500	125
						1400	1600	100

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