



new air is blowing

preinsulated aluminium air duct

Bductal

sheet metal
air duct



preinsulated aluminium
air duct



preinsulated aluminium
air duct with
antimicrobial treatment



preinsulated aluminium
air duct with
self-cleaning and
antimicrobial treatment



the air duct evolution

the technology evolution

Technology for the environment

P3ductal panels are produced by P3 using exclusively on a world-wide level our Hydrotec technology, based on an international patent EP 1115771 B1, which makes it possible **to eliminate the greenhouse effect (GWP=0) as well as the environmental impact on the ozone in the stratosphere (ODP=0)**. The environmental compatibility of the P3ductal panel was obtained through the **use of water in the expansion (blowing) process of the polyurethane foam, instead of the fluorinated causing greenhouse effect (i.e., CFCs, HCFCs, HFCs) and hydrocarbons (HCs)**. Our Hydrotec technology for expansion of the rigid polyurethane PUR complies with all the European standards and regulations and looks ahead to anticipate possible future directives which, following a restrictive line, will ban the use of all fluorinated gases.

From the preliminary studies to the EPD

The EPD certification represents the greatest achievement at the end of a complicated itinerary which P3 wanted to embark on in order to obtain proof of its commitment in matters of environmental protection and to guarantee the complete eco-compatibility of P3ductal.

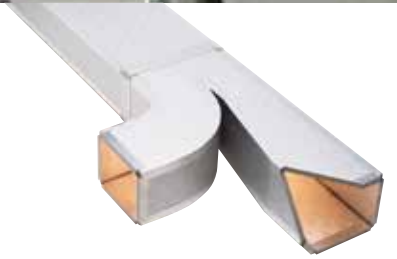
- >> The first step was that of **comparing the environmental impact caused by the various expanding** (blowing) agents used in different types of pre-insulated aluminium panels on the market.
- >> Next, a broader study was carried out, the LCA (Life Cycle Assessment), comparing the environmental impact (in terms of GWP100) of the different types of air ducts available.
- >> The LCA study represented the starting point which would lead to the release of the **product's environmental certification EPD** (i.e., Environmental Product Declaration). In order to obtain further specification of the environmental certification making it significant for the whole sector of air ducts, P3 then proceeded to a precise definition of the standards **stated in the PCR** (Product Category Rules) to then pass on to a final **document drafted according to ISO 14025 standards, supervised by a special supranational body (International EPD System) and later published on the website www.environdec.com**.

 **EPD**[®]
reg. n. S-P-00146 • www.environdec.com






many applications, many advantages, only one system




The P3ductal system is the best solution for air conditioning transportation systems with pressures up to 1.000 Pa (100 mm of water column) and dimensions of up to 2.500 mm. P3ductal can be used in any application, from ducts installed internally, externally, aggressive environments or with strict hygiene requirements. The P3ductal system is not only based on pre-insulated aluminium panels, but is also made up of accessories, equipment, tools and know how necessary for the correct construction and installation of ducts.



Panels > sandwich panels made of a rigid expanded polyurethane insulating board, coated on both sides with an aluminium sheet; intended for the construction of air conditioning ducts.

Equipment > automatic machines and manual tools studied for an easy and professional construction and installation of the P3ductal ducts in a completely automated workshop or directly on site.

Accessories > flanges, glues, profiles, etc. specifically studied for the construction, joining and installation of pre-insulated P3ductal ducts.



Know-how > technical-commercial support and training-refreshing courses for consultants and duct makers. Methods and standard procedures for the correct construction and installation of P3ductal ducts.

Let us discover the seven P3ductal gears: for every application the right duct



P3ductal careplus
easy cleaning high hygiene duct[all] system

air ducts solution with self-cleaning and anti-microbial coating to be used in environments which require high levels of hygiene

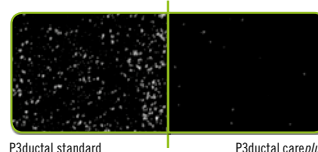


P3ductal careplus, thanks to the revolutionary nano-structured liquid glass coating is capable of reducing, in total safety and thanks to the lotus effect, any possible dust and solid particles deposits.

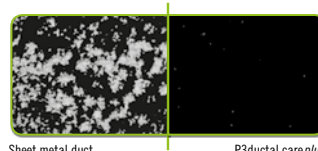
P3ductal careplus guarantees:

- | a cleaning process on the treated surface thanks to both the simple passing of the air in the pieces of duct during their movement in the installation and in particular during the initial test run of the complete ducting system;
- | simple maintenance and cleaning operations;
- | the efficacy of the antimicrobial duct.

The solid particle reduction offered by the P3ductal careplus solution is



50%
compared to the P3ductal standard solution



90%
compared to zinc coated sheet metal

construction advantages

construction ease



- transportation ease
- possibility to quickly bring about changes also on site
- construction equipment studied on purpose
- coded construction procedures

lightness



- extremely reduced weight compared to sheet metal ducts
- reduction of the load on the bearing structure
- reduction of the bracketing points
- reduction of labour time needed for the installation

duct 1,2m	zinc-coated sheet metal		P3ductal		Δ
section	thickness	weight ⁽¹⁾	thickness	weight ⁽²⁾	
300x300	0,6	7,35	20	2,02	-73%
750x750	0,8	24,12	20	5,04	-79%
1200x1200	1,0	47,23	30 ⁽³⁾	12,67	-73%
2000x2000	1,2	94,08	30 ⁽³⁾	21,12	-78%

(1) the weights do not include the insulation, flanges and brackets

(2) the weights do not include the flanges and brackets

(3) P3ductal outdoor panel, 30 mm thick, 80/200 micron aluminium

cleaning during start-up

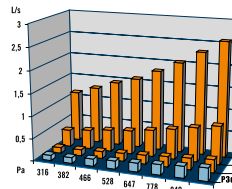


The self-cleaning solution (P3ductal careplus), is capable of reducing the accumulation of dust and solid particles during the following phases:

- movement of duct sections
- initial start-up testing
- flush-out Phase (LEED - IAQ management plant)

energy saving and eco-sustainability

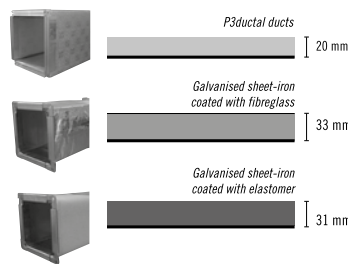
air seal



- exclusive invisible flanging system
- elimination of the longitudinal leaks and the reduction of the ones in the transversal junctions
- "C" air seal class according to the UNI EN 13403 standard

Air seal class	Allowed air leak (l/s per m2 duct surf.)	
Low pressure: class A	sheet metal duct, standard construction	$0,027 \times p^{0,65}$
Medium pressure: class B		$0,009 \times p^{0,65}$
High pressure: class C	P3ductal duct	$0,003 \times p^{0,65}$

thermal insulation



- high thermal insulation with a thermal conductivity value of $\lambda_i=0,022$ W/(m °C) measured at 10 °C

type of material	Term. Conduct. l (10 °C) [W/(m °C)]
Piral HD Hydrotec panel	0,024
Glass wool mattress	0,040
Neoprene mattress	0,037

energy saving



- maximum utilization of the AHU performance and an increase in the whole systems efficiency

eco-sustainability



- ecological water foaming expansion (Hydrotec) without the use of green house effect gasses with GWP = 0 and ODP = 0
- LCA (Life Cycle Assessment) study of the duct
- Environmental Product Declaration (EPD)



care
high hygiene applications duct[al] system

air ducts solution with antimicrobial treatment to be used in environments which require high levels of hygiene

indoor
indoor applications duct[al] system

standard air ducts solution for internal applications

outdoor
outdoor applications duct[al] system

special air ducts solution for external applications

hygiene and air quality

hygiene and air quality

P3ductal careplus

sheet metal duct

- internal aluminium surface which eliminates the particle release problem
- high level of hygiene guaranteed by the aluminium, which is suitable for the food industry
- no contribution from the material to the proliferation of the bacteria
- **availability of panels with antimicrobial treatment and self-cleaning effect.**

safety

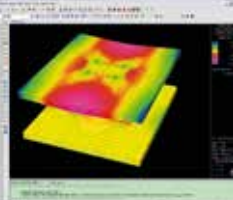
fire safety

P3ductal

sheet metal duct

- low fire participation
- compliance with the principal International safety standards
- class B according to EN 13501-1
- excellent performance to the most demanding tests (ISO 9705 – Room Corner Test)
- reduced smoke emissions
- low toxicity and opacity of the fumes
- F1 class according to AFNOR NF F 16-101 (fumes)
- FED y FEC < 0,3 according to prEN 50399-21/1

earthquake safety



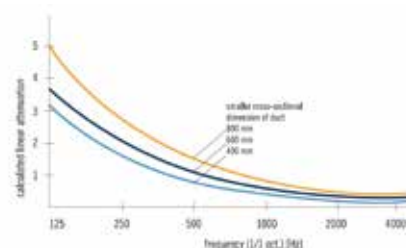
- lightness and rigidity
- deformation and movement reduction
- high dampening values

other technical advantages

noiselessness



- high acoustic comfort thanks to a good linear attenuation especially at the low frequencies
- vibrations and resonance blocked by the insulating panel



duration



- strength, rigidity and good resistance to corrosion, erosion and deformation, even in particular applications



P3ductal resistant
aggressive applications duct[al] system

air ducts solution
for aggressive environments



P3ductal smart4
fast construction duct[al] system

quadrangular air ducts solution
for low pressure systems,
made up of pre-cut panels



P3ductal smart8
fast construction duct[al] system

octagonal air ducts solution for low pressure
systems with high aesthetical requirements,
made up of pre-cut panels





the air, for P3 a mission from over 50 years



For more than 3 generations we have been working in the air distribution ducts field.

Today P3 is part of an, ever increasing international group, whose mission is the promotion of the P3ductal preinsulated aluminium duct with the aim of turning it into an important reality in the air distribution ducts market.

P3 has renewed the construction system of traditional galvanised sheet metal ducts, by developing the P3ductal technology which makes use of preinsulated aluminium panels and creating the accessories, tools and machinery intended for the construction and installation of air distribution ducts.

The P3ductal system is produced in various plants around the world, distributed in more than 100 countries and can count on a widespread sales network, able to give the required support to all its customers and consultants.

P3's strong points are represented by the constant research in order to improve the quality of its products. Thanks to the continuous commitment and innovation of its internal laboratories which cooperate in close relationship with various University Research Centres, P3 is able to offer vanguard performances and technologically advanced materials. Since 1996 P3 has been working under a certified management system according to the UNI EN ISO 9001, 14001, 18001, 50001, 10014 standards.



P3 srl unipersonale

Via Salvo D'Acquisto, 5
35010 Villafranca Padovana Loc. Ronchi (Padova - Italy)
Tel. + 39 049 90 70 301 - Fax + 39 049 90 70 302
p3italy@p3italy.it - www.p3italy.it

dealer