



FLEXIBLE DUCT

TT SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

OVERVIEW :

The new range of flexible ducts in aluminium polyester part of the TT series, form a wide range of accessories for the distribution and connection of the principal aeraulic network with the end terminals in HVAC systems.

The use of these flexible ducts allow an easy, rapid and economic installation in the different types of civil and industrial systems, satisfying the latest and most recent Italian fire prevention normatives, both in public and private dwellings.

The TT series range has been devised to satisfy different usage requirements and more precisely:

- **TT0** Used in the extraction or conditioning of air, satisfies the requirements of robustness to tractioning and against tearing. The insulation against vapour and condensation in all those cases where Fire Class 0 is required.

- **TT1** Used in the extraction or conditioning of air, satisfies the requirements of robustness to tractioning and against tearing. The insulation against vapour and condensation in all those cases where Fire Class 1-1 is required.

- **TT2** Used in the extraction or condition of air, satisfies the requirements, satisfies the requirements of mechanical resistance, insulation against vapour and condensations with a specific and aimed reduction in noise produced by a micro puncture in the main internal duct in all those cases where the Fire Class 1-1 is required.

- **TT3** Used in the extraction or conditioning of air, satisfies the requirements of robustness to tractioning and against tearing in all those cases in which the Fire Class 1-1 is requested.

- **TT4/TT6** Used in the extraction or conditioning of air, satisfies the requirements of robustness to tractioning and against and tearing. The insulation against vapour and condensation in all those cases where the Fire Class 1 is requested.

- **TT5/TT7** Used in the extraction or conditioning of air, satisfies the requirements of robustness to tractioning and against and tearing. The insulation against vapour and condensation in all those cases where the Fire Class 1 is requested.

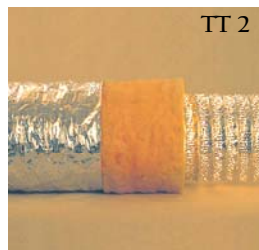
- **TT8** Used in the extraction or conditioning of air, its main characteristic is the insulation in polyester and satisfies the requirements of robustness to tractioning and against and tearing. The insulation against vapour and condensation in all those cases where the Fire Class 1 is requested.



TT 0



TT 1



TT 2



TT 3



TT 4



TT 5



TT 6



TT 7



TT 8

IMPORTANT:
ALL FIRE REACTION DATA RELATE TO THE CURRENT ITALIAN NORMATIVE



FLEXIBLE DUCT

TT SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

BUILD CHARACTERISTICS:

Insulated flexible duct TT 0

Made with an internal duct in aluminium composed from a steel harmonic spring in-between two multilayer laminates aluminium/polyester, each made of three aluminium layers and two polyester layers, for a total thickness of 74 µm.

This duct is then wrapped in a insulating fibre glass jacket having a 18 kg/m³ density and 25mm thickness.

It is protected externally by another jacket made in aluminium/polyester laminate of 49 mm, resistant to vapours.

Fire class 0 - Certified CSI 0274/04/RF

Insulated flexible duct TT 1

Made with an internal duct in aluminium composed from a steel harmonic spring and an aluminium/polyester multilayer laminate made from three aluminium laminate layers and two layers of polyester for a total of 74 mm.

This duct is wrapped in an insulated fibre glass jacket hanging a 18 kg/m³ density and a 25mm thickness.

It is protected externally from another jacket made in aluminium/polyester laminate of 49mm, resistant to vapours.

Fire class 1 - Certified CSI 0086/02/RF

Acoustic insulated flexible duct TT 2

The noise absorbing abilities are a result of the internal part of the duct, made of a steel harmonic spring wrapped in a microperformed aluminium laminate.

The internal duct ensures that the sound waves broke up their wave front thanks to the presence of the micro punctures inhibiting the propagation inside the duct.

Fire class 1 - Certified CSI 0104/04/RF

Non insulated flexible duct TT 3

Made with an internal duct in aluminium composed of a steel harmonic spring wrapped in two multi layers aluminium/polyester laminates each composed by three aluminium laminate layers and two layered polyester laminates, for a total of 74 µm

Fire class 1 - Certified CSI 0087/02/RF

Non insulated flexible duct TT 4

Designed specifically for extraction of ventilation systems that require excellent mechanic and anti-tear characteristics.

From a construction point of view, it is similar to a TT 3 model wrapped in a 100mm PVC layer for a total thickness of 174mm, allowing excellent and tear characteristics and at the acting as a vapour barrier.

Fire class 1 - Certified CSI 0105/04/RF

Insulated flexible duct TT 5

Has excellent mechanic and anti-tear characteristics.

From a construction point of view, it is similar to a TT 4 model wrapped by an insulating fibre glass jacket with a 18 kg/m³ and 25mm thickness, and externally by a PVC jacket 100mm thick.

Fire class 1 - Certified CSI 0191/04/RF

Non insulated flexible duct TT 6

Designed specifically for extraction and ventilation systems that require a excellent mechanism and anti tear characteristics.

From a construction point of view, the flexible duct is made of a steel harmonic spring dipped in a layer 100mm thick polyester, that provides excellent anti tear characteristics and acting as a vapour barrier.

Fire class 1 - Certified CSI 0092/05/RF

Insulated flexible duct TT 7

Has excellent mechanic and anti-tear characteristics. From a construction point of view it is similar to the TT 6 model but wrapped with a insulating fibre glass jacket with 16 kg/m³ density and 25mm thickness. It is externally protected by a another jacket acting as vapour barrier, this also in 100mm polyester.

Fire class 1 - Certified CSI 0152/06/RF

Insulated flexible duct TT 8

Has excellent mechanic and anti-tear characteristics.

From a construction point of view it is similar to the TT 6 model but wrapped in an insulating polyester jacket 25mm thick. The external protection is a small anti vapour jacket, also in polyethylene 100mm thick.

Fire class 1 - Certified CSI 0132/08RF

The documentation indicated above can viewed in electronic form in Italian with prior agreement from the Technical Department.

IMPORTANT:

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FLEXIBLE DUCT

TT SERIES

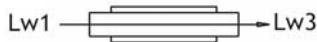
OVERVIEW MANUFACTURING CHARACTERISTICS

LIMITS OF USE :

FLEXIBLE DUCT	AVAILABLE DIAMETERS	INSULATION THICKNESS	USAGE TEMPERATURES	MAXIMUM AIR VELOCITY	MAXIMUM OPERATIONAL PRESSURE	PACKAGING
TT 0	from 52 to 800 mm	25 mm glass wool 18 kg/m ³	-30 °C / +250 °C	30 m/s	3.000 Pa	10 mt box
TT 1	from 52 to 800 mm	25 mm glass wool 18 kg/m ³	-30 °C / +150 °C	30 m/s	3.000 Pa	10 mt box
TT 2	from 52 to 800 mm	25 mm glass wool 18 kg/m ³	-30 °C / +150 °C	30 m/s	2.000 Pa	10 mt box
TT 3	from 52 to 800 mm	-	-30 °C / +150 °C	30 m/s	3.000 Pa	10 mt box
TT 4	from 82 to 800 mm	-	-30 °C / +150 °C	30 m/s	3.000 Pa	10 mt box
TT 5	from 82 to 508 mm	25 mm glass wool 18 kg/m ³	-30 °C / +150 °C	30 m/s	3.000 Pa	10 mt box
TT 6	from 82 to 830 mm	-	-20 °C / +70 °C	30 m/s	2000 Pa	10 mt box
TT 7	from 82 to 508 mm	25 mm glass wool 18 kg/m ³	-20 °C / +70 °C	30 m/s	2000 Pa	10 mt box
TT 8	from 82 to 508 mm	25 mm polyester	-20 °C / +70 °C	30 m/s	2000 Pa	10 mt box

FLEXIBLE DUCT TT 2 - ACOUSTIC CHARACTERISTICS :

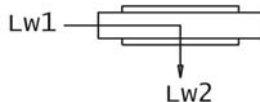
Acoustic reduction (dB) [L_{w1} - L_{w3}]



L=1m	Frequency [Hz]						
	Ø	125	250	500	1000	2000	4000
82	16	25	34	39	30	20	
102	10	22	32	39	27	18	
127	12	20	22	26	27	18	
160	16	24	22	32	19	14	
203	7	14	16	19	14	12	
254	13	14	14	13	10	11	
315	10	11	10	11	9	8	
457	10	9	7	7	6	7	

L=2m	Frequency [Hz]						
	Ø	125	250	500	1000	2000	4000
82	22	37	48	54	46	30	
102	18	32	51	51	44	31	
127	17	31	44	44	40	24	
160	27	39	35	39	30	20	
203	18	24	23	26	18	19	
254	21	21	20	19	15	18	
315	17	15	14	13	12	15	
457	16	14	13	13	12	15	

Acoustic absorption (dB) [L_{w1} - L_{w2}]



L=1m	Frequency [Hz]						
	Ø	125	250	500	1000	2000	4000
82	20	21	19	17	15	20	
102	21	19	17	16	15	18	
127	21	18	17	17	17	18	
160	22	18	16	17	19	22	
203	21	17	15	15	16	22	
254	21	18	16	16	19	24	
315	19	16	15	15	19	21	
457	13	12	11	13	17	21	

L=2m	Frequency [Hz]						
	Ø	125	250	500	1000	2000	4000
82	20	24	19	17	17	20	
102	20	18	17	16	15	18	
127	22	18	16	15	13	17	
160	22	18	16	16	16	21	
203	23	18	15	15	16	22	
254	21	18	17	17	18	23	
315	19	16	15	15	18	19	
457	16	13	11	13	17	20	

By acoustic reduction is meant the difference between the values at the top and at the bottom of the duct.

By acoustic absorption is meant the difference between the irradiated values at the top and bottom of the duct.



FLEXIBLE DUCTING

TECHINICAL CHARACTERISTICS

SERIES
TT

LOCAL PRESSURE DROPS :

Additional length per R/D bend = 1					
Nominal diameter [mm]					
82	0,00	0,82	0,41	1,23	2,05
102	0,00	1,02	0,51	1,53	2,55
112	0,00	1,12	0,56	1,68	2,80
127	0,00	1,27	0,63	1,90	3,17
140	0,00	1,40	0,70	2,10	3,50
152	0,00	1,52	0,76	2,28	3,80
160	0,00	1,60	0,80	2,40	4,00
185	0,00	1,85	0,92	2,77	4,62
203	0,00	2,03	1,01	3,04	5,07
229	0,00	2,29	1,14	3,43	5,72
254	0,00	2,54	1,27	3,81	6,35
305	0,00	3,05	1,52	4,57	7,62
315	0,00	3,15	1,57	4,72	7,87
356	0,00	3,56	1,78	5,34	8,90
406	0,00	4,06	2,03	6,09	10,15
457	0,00	4,57	2,28	6,85	11,42

The pressure drops in the bends are calculated using the "equivalent length" method, i.e. the length of a linear duct with pressure drops equal to the bend (refer to the table alongside). The equivalent length can be taken from the table alongside:

Example :

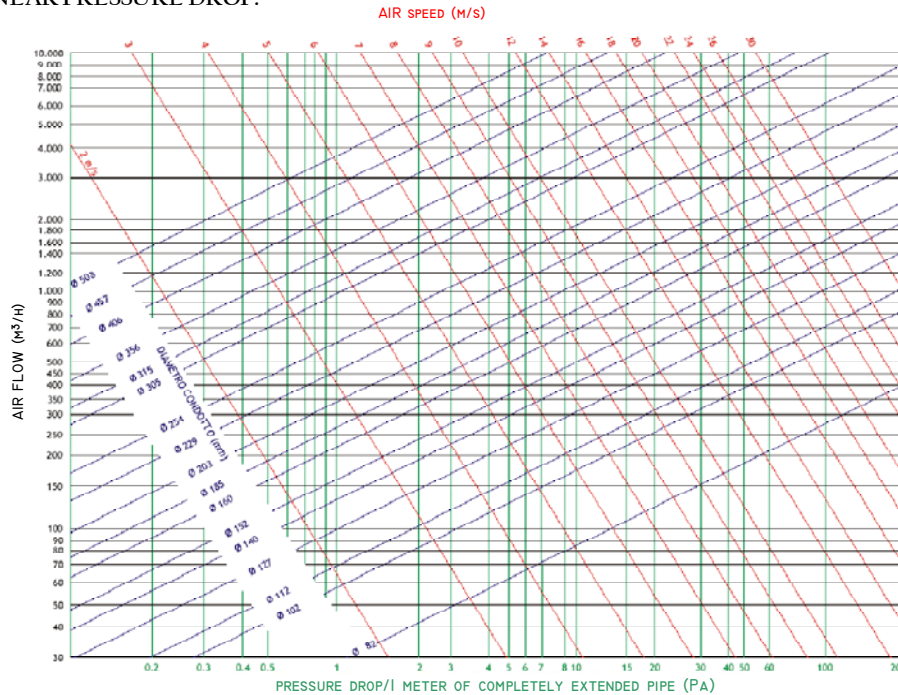
Given a flexible pipe measuring 4 m, with a rated diameter of 203 mm, with a 90° bend and R/D=1, establish the overall pressure drop for an airflow of 580 m³/h.

From the table:
 equivalent length = 2.03 m
 total length = 4 + 2.03 = 6.03 m
 from the diagram:
 air speed: 5 m/s
 pressure drop per 1 m: 3 Pa (from diagram)

Correction R/D

R/D	0,75	1,00	1,50	2,00
Corr.	1,50	1,00	0,70	0,60

LINEAR PRESSURE DROP:



The pressure drop data shown in the diagram above are valid for an air temperature of 20°C. For different temperatures, apply the following correction coefficients:

Temperature [°C]	-20	0	20	40	60	80	100
Correction coefficient	1,158	1,073	1,000	0,936	0,880	0,830	0,785



FLEXIBLE DUCTING

LOGISTICS

SERIES
TT

PACK SIZES [mm]

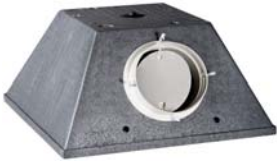
Nominal diameter [mm]	TT 0	TT 3	TT 4	TT6	TT7 TT8
	TT 1 TT 2 TT 5				
52		135x135x370	135x135x500		
68		100x100x550	170x170x370		
76		100x100x550	170x170x370		
82	205x205x1100	100x100x550	110x110x550	105x105x560	205x205x1100
102	205x205x1100	115x115x400	115x115x550	120x120x510	205x205x1100
112	205x205x1100	115x115x401	115x115x551	120x120x510	205x205x1100
127	205x205x1100	135x135x370	135x135x500	180x180x400	205x205x1100
133	205x205x1100	135x135x371	135x135x500	180x180x400	205x205x1100
140	235x235x1100	170x170x370	170x170x500	205x205x400	235x235x1100
152	235x235x1100	170x170x370	170x170x500	205x205x400	235x235x1100
160	235x235x1100	170x170x370	170x170x500	205x205x400	235x235x1100
185	280x280x1100	215x215x370	215x215x500	225x225x400	280x280x1100
203	280x280x1100	215x215x370	215x215x500	255x255x385	280x280x1100
229	330x330x1100	270x270x400	270x270x500	280x280x505	330x330x1100
254	330x330x1100	270x270x400	270x270x500	280x280x505	330x330x1100
305	380x380x1100	320x320x400	320x320x500	350x350x410	380x380x1100
315	380x380x1100	320x320x400	320x320x500	350x350x410	380x380x1100
356	430x430x1100	370x370x400	370x370x500	380x380x400	430x430x1100
406	480x480x1100	420x420x420	420x420x500	455x455x400	480x480x1100
457	520x520x1100	480x480x480	480x480x500	500x500x400	520x520x1100
508	580x580x1100	520x520x520	520x520x520		570x570x1100
630	700x700x1100				700x700x1100
800	880x880x1100				860x860x1100

TT 0, TT 1, TT 2, TT 5, TT7: CONFEZIONI PER BANCALE

Nominal diameter [mm]	52	68	76	82	102	112	127	140	152	160	185
N° boxes on pallet				55	55	55	55	36	36	36	24
Pallet dimensions [cm x cm]				100x110	100x110	100x110	100x110	100x110	100x110	100x110	80x110

Nominal diameter [mm]	203	229	254	305	315	356	406	457	508	630	800
N° boxes on pallet	24	21	21	18	18	10	10	8			
Pallet dimensions [cm x cm]	80x110	100x110	100x110	120x110	120x110	100x110	100x110	100x110			





PS PLENUM

PPS SERIES

OVERVIEW

OVERVIEW :

The PPS series of polystyrene assemblable plenum boxes have a density of 45 kg/m³, with a Fire class 1 quality, eternally crystallised.

The transformation process and the special properties of the material, make the PPS a very compact and light weight plenum.

These special features combined to the trapezoidal shape that distinguish it, allows the fixing of the unit in completed countersealing structure. This facilitates both the realisation and maintenance of the system. Given the light weight, the plenum is positioned on the structure of the counter ceiling, eliminating therefore the necessity of using hanging clips for fixing to the ceiling.

This has the advantage of reducing considerably the fitting time and a saving of the space used of over 50%, compared to a traditional plenum box.

The PPS has an excellent thermal acoustic insulation characteristic. It does not therefore require additional insulating material.

The PPS plenums can be supplied already assembled with a square 600x60mm diffuser panel , model KQ1, complete with regulation damper in ABS and equalizer, ready for installation.

As an alternative, there is also a version assembled but without the diffuser fitted.

Lastly a kit is also available, comprising the plenum, the connection "C", bar "A" and assembly diagram.

Installation: once the diffuser has been fitted to the plenum using the screw "V" (PPS-V680T) to bar "A", the plenum is positioned on the counter ceiling structure.

TECHNICAL CHARACTERISTICS:

fire reaction:
Class 1 - Test report CSI DC01/378F05.
Euroclass E - Test report CSI DC01/656F07

Mechanic resistance:
10% deformation with 226kPa pressure - Test report CSI 0936/FPM/MATs/07.

Water absorption:
Increase average volume 3,26% in full immersion, tested according to UNI EN 12087 method 2A - Test report CSI 0936/FPM/MATs/07_2.

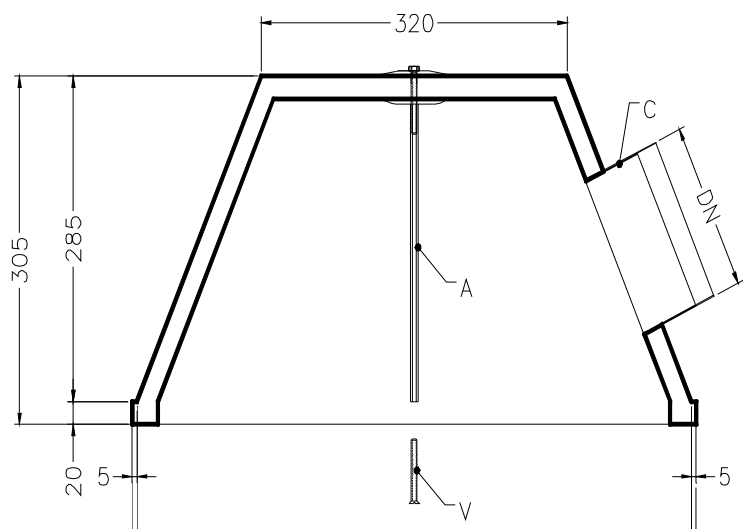
Thermal conductivity:
 Δ (average) 0,0320 W/mK - Test report CSI 0037/DC/TTS/07.

Thermal resistance:
R (average) 0.637 m²K/W - Test report CSI 0037/DC/TTS/07.

Test certificate type:
Certificate CSI DE/1831/07 issued in conformity to directive 89/106/CEE on the basis of UNI EN 13163/2003 and UNI EN 13172/2003.

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ASSEMBLED PPS





PS PLENUM

CODES

PPS SERIES

Image	Description	Connector diameter	Code
	Plenum in PS already assembled with connector in ABS with damper and without equalizer.	125	PPS-PSI25
		160	PPS-PSI60
		200	PPS-PS200
		250	PPS-PS250
	Plenum in PS already assembled, complete with connector in ABS with damper and equalizer.	125	PPS-PESI25
		160	PPS-PESI60
		200	PPS-PES200
		250	PPS-PES250
	Plenum in PS already assembled, complete with connector in ABS with damper, equalizer and diffuser KQI 600.	125	PPS-KQIPESI25
		160	PPS-KQIPESI60
		200	PPS-KQIPES200
		250	PPS-KQIPES250

ACCESSORIES

	Only PS bell shape body with fixing bar (without connector)		PPS-KIT
	Equalizer for plenum		PPS-E
	Connector in ABS	125	RR10-125
		160	RR10-160
		200	RR10-200
		250	RR10-250
	Damper for connectors in ABS	125	RRS10-125
		160	RRS10-160
		200	RRS10-200
		250	RRS10-250
	Fixing screw (usually already included in the DIFFUSER)		PPS-V680T



INSULATED PLENUM IN ABS WITH ADJUSTABLE CONNECTOR

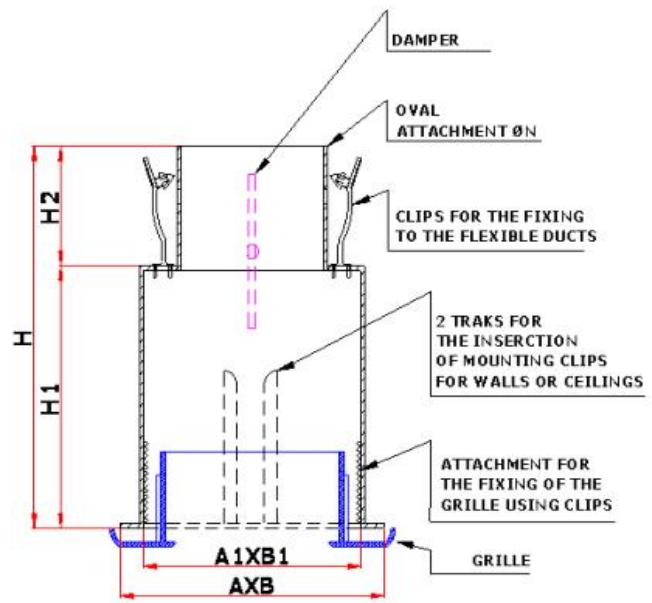
TE-PAB
SEIRES

MATERIALS
MANUFACTURING DIMENSIONS



The insulated TE-PAB series plenum is a special patented model in ABS class V0, with quick connector for flexible ducts, adjustable in height and complete of regulation damper. Its particular design, allows to rapidly fit with a simple action the flexible ducts of different diameters blocking them with special clips. The TE-PAB plenum is an alternative to the traditional ones in galvanized steel sheets and thanks to the regulation of the connector, enables the use of one single type of plenum for grille size. The plenum disposes of a butterfly damper so as to easy adapt to the size of the connector previously chosen. The presence of guides for the use of clips for fitting to walls or ceilings and its reduced weight, make the TE-PAB an ideal product for every type of installation.

Materials
Standard Plenum TE-PAB: In ABS. Regulation damper: In abs.



Connector regulation system



Adaptable damper

Model	Ø N	AXB	A1XB1	H	H1	H2
TE-PAB-200100	125	125x223	102x201	160	110	50
TE-PAB-300100	160-200	125x323	102x301	160	110	50
TE-PAB-400100	160-200	125x423	102x401	160	110	50
TE-PAB-300150	160-200	175x323	152x301	160	110	50
TE-PAB-400150	160-200-250	175x423	152x401	160	110	50
TE-PAB-500150	160-200-250	175x523	152x501	160	110	50
TE-PAB-600150	160-200-250	175x623	152x601	160	110	50
TE-PAB-400200	200-250	225x423	202x401	160	110	50
TE-PAB-500200	200-250	225x523	202x501	160	110	50
TE-PAB-600200	200-250	225x623	202x601	160	110	50





**ALL-PURPOSE WIRING SYSTEMS
FIXING CLAMPS - PLIERS
PERFORATED STRIPS**

CC
SERIES

**OVERVIEW
CONSTRUCTION CHARACTERISTICS**

OVERVIEW:

The new range of accessories in the CC series is made up of various components for **all-purpose wiring systems** and **flexible ducting** for connecting the main air supply system to the diffusion terminals and air intake terminals for ventilation, heating, and air conditioning systems. These components include:

- a) Continuous clamps with tensioning clamps for fixing flexible ducting between the main pipefittings and those on plenums on terminal units, and for industrial fixing applications in general.
- b) Clamps with a self-locking tensioning system for fixing flexible piping, plumbing pipes, and general electrical wiring conduits.
- c) Tensioning pliers that work only on the clamps, with a self-locking tensioning system.
- d) Continuous strips for fixing or handing plenums, ducting, piping, etc.
- e) Anti-vibration, flexible, sealed joints for ducting and connecting to machines and fans.

CONSTRUCTION CHARACTERISTICS OF CONTINUOUS STRIPS:

Continuous 30 metre stainless steel strip (AISI 430 / DIN 1.4016) 9 mm wide and 0.6 mm thick.

Tensioning devices (clamps) complete with sump in nickel galvanised steel. Galvanised screws with olive green passivation (200 hour resistance to saline mist), with a 7 mm hexagonal head with straight and star screwdriver slots.

CONSTRUCTION CHARACTERISTICS OF THE SELF-LOCKING CLAMPS:

Made of nylon 6/6 MIL-SPEC M 20693B with widths between 4.8 and 9 mm. Working temperature -40 C + 85 C. Calibrated pliers for fixing clamps 3.6 to 9.0 mm wide.

CONSTRUCTION CHARACTERISTICS OF PERFORATED STRIPS:

Continuous strip made of 0.8 mm thick multihole galvanised perforated steel.

CHARACTERISTICS OF ANTI-VIBRATION JOINTS:

The CC8 series of anti-vibration joints comes in 25 m rolls. They are made up of a 400 mm galvanised steel joints with PVC fabric that has a density of 0.450 kg/m². The versions available provide support / fabric / support widths of 45/60/45 and 70/100/70.

INFORMATION FOR USERS:

The CCI model of continuous strip provides the best conditions for optimising consumption during utilisation, as it allows you to use the exact length of material required for any specific cabling job.

In order to obtain the required diameter, count the number of spaces between the two arrows on the strip, as shown in the table. Then cut the strip and insert it into the tensioning device in the direction indicated by the arrows and fold.

Diam	100	125	150	175	200	225	250	275	300	350	400	450
Interval	3,0	3,5	4,5	5	5,0	6,5	7,0	7,5	8,5	9,5	11	12



ALL-PURPOSE WIRING SYSTEMS
FIXING CLAMPS - PLIERS
PERFORATED STRIPS

CC
SERIES

CODES



Photo	Description	Code
	Continuous straps in 30 m rolls. Strap 9 mm wide and 0.6 mm thick in AISI 430 stainless steel. Price per strap.	CC 1
	Tensioning device for CCI continuous strip, with nickle galvanised steel sump. Galvanised steel screws with a 7 mm hexagonal head and straight and star screwdriver slots. Price for box of 50 pieces.	CC 2
	Nylon straps for wiring, with self-locking system, for maximum diameters of 123, 160 and 235 mm. Price per pack of 100 pieces.	CC 3 123 CC 3 160 CC 3 235
	Countinuous, multi-hole galvanised steel strip, 17 mm (CC4) and 25 mm (CC 5), thickness 0,6 mm (CC 4) and 0,75 mm (CC 5) and lenght 10 m, for hanging plenums, ducting and piping. Price per box of 5 strips.	CC 4 CC 5
	Calibrated pliers for nylon straps between 3.6 and 9.0 mm wide. Price per piece.	CC 6
	Glossy, laminated aluminium adhesive tape 45 m long, 40 mm wide. Other widths available 50, 75 and 100 mm. Price per box.	CC 7-050-045 CC 7-075-045 CC 7-100-045
	Anti-vibration galvanised steel / PVC fabric / galvanised steel joint in 25 m packs. Widths available: 45/60/45 (CC8-A) and 70/100/70 (CC8-B). Price per box.	CC 8-A CC 8-B



SEALANTS

CS SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

OVERVIEW :

The CS series of sealants, with its different models, form a complete range of products for sealing and connecting the steel ducts of the main aeraulic network with the diffuser and aspiration units in systems of ventilation, heating and conditioning.

The use of these sealants allows an easy, quick and economic installation in the different types of civil and industrial systems in both public and private buildings.

The range of the CS series has been designed to satisfy the different usage requirements that will be shown later.

ACRYLIC DISPERSION SEALANTS - CS 1 SERIES

This is a single component elasto-plastic sealant with an acrylic base with water dispersion, for joints between construction elements subjected to low prodding.

The CS 1 is ready for use and seals internal and external joints securely on porous supports like metal sheets, concrete, plaster, brick work, and wood. It is not suitable for joints in continuous contact with water.

It is available in grey in packs of 24 cartridges.

ACETIC ANTIMOULD SEALANT - CS 2 SERIES

This is a single component silicone sealant, with a antimould acetic polymerization very adapt for smooth surfaces, non absorbing and for non porous like glass, aluminium and steel.

It is particular adapt for large windows and prefabricated buildings. In may be used in production or directly on site.

The CS 2 is used to form a flexible seal, impermeable, between non porous supports like glass, ceramic tiles, metals and the majority of plastics.

The CS 2 series sealants should not be used for applications in completely closed placed as it requires the atmospheric humidity to polymerize.

It is advised against the use in full water immersion or on surfaces where the acetic acid, released during the polymerization, may react with the surfaces with which it is in contact (eg. cement, some metals, mortar, etc.).

It is available transparent in packs of 24 cartridges.

FIRE DAMPER SEALANT REI180 - SERIES CS 5

Used mainly outside for supply and extraction of air, on metallic surfaces. It satisfies the necessities for the resistance to fire at high temperatures, until reaching the REI 180 class performance.

The product itself is a auto-expanding filler ideal for sealing various types of small gaps and joints of different material. the reaction temperature is 100 °C and must be used within 6/8 hours of opening the cartridge.



SEALANTS

CS
SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

	CS 1 - Acrylic dispersion sealant	CS 2 - Acetic antimould sealant
PROPERTY		
Composition	Acrylic base	Silicone gum with antimould acetic polymerization
Consistency	Doughy	Thixotropic
Packaging	310 ml cartridges in PE	280 ml cartridges in PE, 600 ml sachet
Available colours	grey - other colours (white) available on request and by quantity.	transparent - other colours (white, grey, black, brown, ivory) on request and quantity
Varnishability	Varnishable with almost any colours; it is suggested to make some tests.	--
TECHNICAL DATA		
Specific weight	(1,69 ± 0,05 kg/dm ³)	(1,02 ± 0,03 kg/dm ³)
Usage temperature	from +5 °C to +50 °C	from +5 °C to +40 °C
Usage temperature range	from -20 °C to +80 °C	from -40 °C to +150 °C
film forming time / work time	15-30 minutes	15-30 minutes
Time / speed of polymerization	from 1 to 4 weeks (joint thickness, temperature and air humidity)	1,5 mm/1 day, 4 mm/3 days
Storage	Up to 15 months in a dry place, protected from from freezing and heat.	Up to 14 months with storage in a fresh and dry place.
CHARACTERISTICS AFTER SETTING		
Hardness	--	23 ± 3 shore A
Volume variation	(-12 ± 2)%	--
E-model at 100% dilation	(0,25 ± 0,02) MPa	0,44 MPa
Traction resistance	--	0,49 MPa
Stretching to ripping	8% of the length of the joint	125 ± 30% on a 12x12x50 mm joint
Elastic recovery	--	> 90%
APPLICATION		
Surface preparation	The joint parts must be clean, without dust, oil, grease, bitumen and ice. The minimum size of the joint must be 6x6mm, and the maximum 25x20mm.	The surfaces of the joint parts must be dry and clear of dust and other contaminants. We advise against the use for joints prone to abrasion.
Warnings	Do not apply if raining or of high possibility of rain. After applying, protect from rain for at least 6 hours.	Do not apply on construction material that may release oils, plastics, solvents or on materials that may react with the acetic acid. It is an irritant to eyes and skin. IN the event of contact with the product clean abundantly with water. Keep away from the reach of children.



SEALANTS

CS
SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

Description	Code
GREY sealant with acrylic dispersion for INDOOR USE on metallic and ceramic surfaces.	CS1-OR240GR3
TRANSPARENT sealant with acetic reaction for INDOOR and EXTERNAL USE ON TREATED AND GLASS SURFACES.	CS2-OR410TR3
GREY sealant REI 180 auto expanding for OUTDOOR USE on metallic and ceramic surfaces.	CS5-A 10

- CS 1 Acrylic sealant with water dispersion
- CS 2 Antimould acetic sealant
- CS 5 REI 180 sealant





ROCK WOOL

LR SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

OVERVIEW :

The LR series is an excellent construction and insulating material with excellent thermal insulating and acoustic absorption properties.

The rock wool is obtained from the fusion and spinning of natural rocks bonded by thermal inducing resins. It is produced on 2000x1200mm panels with 50,60 or 100 kg/m³ density.

Because of its thermal properties, the rock wool is used to insulate walls and attics, in the construction of insulating panels for air handling units and for tanks insulation.

Because of its acoustic properties, the rock wool is used in the construction of all kinds of silencers and insulating cells. For this reason it is proposed also in a version with a protecting film on one or both sides. The film protects the rock wool from the abrasive action of the air lengthening the durability of the silencer and prevent the release of dust particles in ducted air.

TECHNICAL CHARACTERISTICS

code	density [kg/m ³]	thickness [mm]	protecting film	Thermal conductivity 110°C [W/m ² K]	panels per pallet [pieces]	surface per pallet [m ²]
LR-025-00-100	100	25	no	0,033	48	115,2
LR-050-00-060	60	50	no	0,036	48	115,2
LR-050-01-060	60	50	1 lato	0,036	48	115,2
LR-100-01-050	50	100	1 lato	0,036	12	28,8
LR-100-02-050	50	100	2 lati	0,036	12	28,8
LR-200-00-050	50	200	no	0,036		
LR-200-02-050	50	200	2 lati	0,036		





INSULATING ROLLS

PA-P
SERIES

OVERVIEW MANUFACTURING CHARACTERISTICS

OVERVIEW:

The PA-P series make up the new range of products for the insulation of ducts, tanks, large diameter ducts and all other applications that require particular thermal insulation.

The PA-P insulators are made primarily of polyolephine (group including PE, PP, copolymers-EVA, etc) having a chemical net, expanded with closed cells.

The PA-P series insulators are supplied in rolls with different thicknesses of the following types:

PA-P1 rolls in polyolephine (polyethylene) with expanded net, with closed cells.

Thermal conductivity coefficient at 40 °C (λ) l = 0,0372 [W/mK] = 0,032 [kcal/hm°C]

Resistance coefficient for water vapour diffusion (mi) m > 2.000

Without CFC.

Fire reaction class I - CSI (Certificati Istituto Giordano) 214506/RF4582 214507/RF4583 - Homologation of the Home Office PD2229C50D100008

PA-P4 rolls in polyolephine (polyethylene) with expanded net with external protection in smooth aluminium 50µm thick.

Thermal conductivity coefficient at 40 °C (λ) l = 0,0372 [W/mK] = 0,032 [kcal/hm°C]

Resistance coefficient for water vapour diffusion (mi) m > 65.000

Without CFC.

Fire reaction class I - CSI (Certificati Istituto Giordano) 214573/RF4589 214572/RF4588 - Homologation of the Home Office PD2229C50D100009.

All above indicated documentation may be viewed in electronic form in Italian with prior agreement with the Technical Department.

IMPORTANT:

ALL FIRE REACTION DATA REFERSTO THE CURRENT ITALIAN NORMATIVE

PA-P1 - ADHESIVE INSULATION IN PE CLASS I

Thickness	Code	Ø roll [mm]	Roll Surface [m ²]	Roll development [m]	roll nr per pallet	Pallet dimensions
05 mm	PA-P1-05-15-100	670	100	66,67	4	1300 x 1300 x 1650
08 mm	PA-P1-08-15-65	670	65	43,33	4	1410 x 1410 x 1650
10 mm	PA-P1-10-15-50	690	50	33,33	4	1450 x 1450 x 1650
12 mm	PA-P1-12-15-43	690	42,5	28,33	4	1450 x 1450 x 1650
15 mm	PA-P1-15-15-32	690	32,5	32,50	4	1450 x 1450 x 1650
10+10 mm	PA-P1-20-15-50	690	30	33,33	4	1450 x 1450 x 1650

PA-P 4 - ADHESIVE INSULATION IN PE AND SMOOTH CLASS I

Thickness	Code	Ø roll [mm]	Roll Surface [m ²]	Roll development [m]	roll nr per pallet	Pallet dimensions
05 mm	PA-P4-05-15-100	670	100	66,67	4	1300 x 1300 x 1650
08 mm	PA-P4-08-15-65	670	65	43,33	4	1410 x 1410 x 1650
10 mm	PA-P4-10-15-50	690	50	33,33	4	1450 x 1450 x 1650
12 mm	PA-P4-12-15-43	690	42,5	28,33	4	1450 x 1450 x 1650
15 mm	PA-P4-15-15-32	690	32,5	32,50	4	1450 x 1450 x 1650
10+10 mm	PA-P4-20-15-50	690	50	33,33	4	1450 x 1450 x 1650







ISOLANTI IN ROTOLI

SERIE
PA-P

CODICI

Descrizione	Codice
Adhesive insulation in polyethylene, Cl. I and thickness 03 mm	PA-PI-03-15-170
Adhesive insulation in polyethylene, Cl. I and thickness 05 mm	PA-PI-05-15-100
Adhesive insulation in polyethylene, Cl. I and thickness 08 mm	PA-PI-08-15-65
Adhesive insulation in polyethylene, Cl. I and thickness 10 mm	PA-PI-10-15-50
Adhesive insulation in polyethylene, Cl. I and thickness 12 mm	PA-PI-12-15-43
Adhesive insulation in polyethylene, Cl. I and thickness 15 mm	PA-PI-15-15-32
Adhesive insulation + smooth aluminium protection, in Cl. I and thickness 06 mm	PA-P4-06-15-85
Adhesive insulation + smooth aluminium protection, in Cl. I and thickness 08 mm	PA-P4-08-15-65
Adhesive insulation + smooth aluminium protection, in Cl. I and thickness 10 mm	PA-P4-10-15-50
Adhesive insulation + smooth aluminium protection, in Cl. I and thickness 12 mm	PA-P4-12-15-43
Adhesive insulation + smooth aluminium protection, in Cl. I and thickness 15 mm	PA-P4-15-15-32

	Adhesive gasket for connections of flanges of ducts in Cl I, 5 mm thick, 14 mm wide, 10 m long.	PA-P9-05-14-10
	Adhesive gasket for connections between profiles in steel in Cl I, 2,5 mm thick, 14 mm wide, 10 m long.	PA-P9-02-14-10
	Adhesive gasket for connections between profiles in aluminium and steel panels, in Cl I, 2,5 mm thick, 20 mm wide, 10 m long.	PA-P9-02-20-10
	Adhesive gasket for connections generally between walls in polyethylene (Plenum connections), in Cl I, 2,5 mm thick, 56 mm wide, 10 m long.	PA-P9-02-56-10



GENERAL PIPEFITTINGS
OVERVIEW
CONSTRUCTION CHARACTERISTICS

SERIE
RR 80
CM-WC

OVERVIEW :

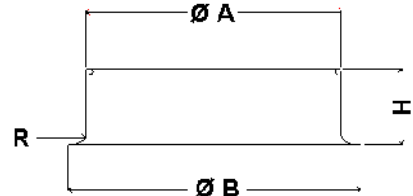
The range of pipefittings includes the general pipefittings for plenum and square and rectangular ducts (RR80), couplings for junction on circular ducts (CM-WC-RACC) and the reduction for circular ducts (CM-WC-RID). The couplings and junctions for circular duct are used for the installation of circular fire dampers series WWCP. All the connection are made in galvanised steel with the sizes indicated here below.

CHARACTERISTICS :

Series RR 80

\varnothing_{nom} [mm]	100	125	150	160	180	200	250	300	315	355
$\varnothing A$ [mm]	93	124	144	158	177	198	248	298	313	347
$\varnothing B$ [mm]	133	158	185	203	219	240	300	345	358	389
H [mm]	60	60	60	60	60	60	60	90	60	90

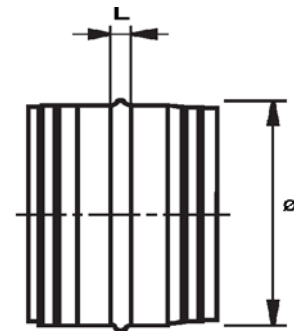
RR 80 Figure no. 1



Series CM-WC-RACC

\varnothing [mm]	200	250	300	315	355	400	450	500
L [mm]	10	10	10	10	10	10	10	10
Peso [kg]	0,3	0,5	0,6	0,6	0,7	1,3	1,4	1,6

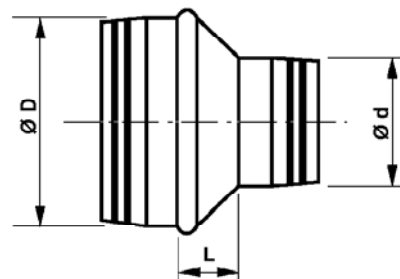
CM-WC-RACC Figure no. 2



Series CM-WC-RID

\varnothing_{nom} [mm]	100-200	125-200	160-200
$\varnothing d$ [mm]	100	125	160
$\varnothing D$ [mm]	200	200	200
L [mm]	58	46	26
Peso [kg]	0,4	0,4	0,3

CM-WC-RID Figure no. 3







CONNECTORS IN ABS

RR10
SERIES

OVERVIEW CHARACTERISTICS

OVERVIEW :

RR10 is a special connector in ABS class V0, with quick fixing for flexible duct.

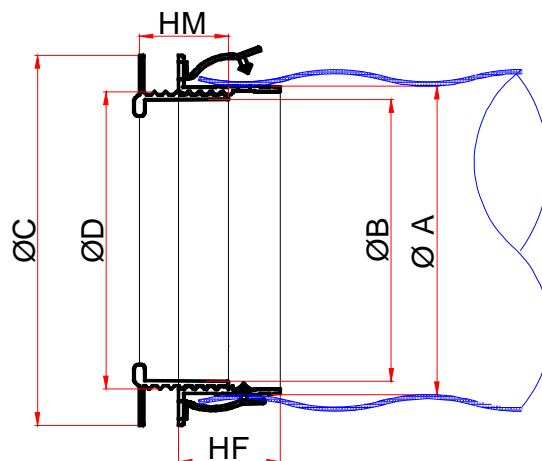
Its particular design allow to quickly install with a few simple steps the flexible duct and fixing it with clips, without the need tightening strips. Designed to be used with the polystyrene plenums and is very adequate when using plenums and ducts made of expanded polyurethane.

Furthermore, the RR10 is the ideal solution both for steel plenums and for all those uses where the support material is less than 20mm in thickness.

CHARACTERISTICS

Mod.	Ø A	Ø B	Ø C	Ø D	HF	HM
RR10-125	123	112	155	150	51	40
RR10-160	155	143	185	150	51	40
RR10-200	195	183	225	190	51	40
RR10-250	245	233	275	240	51	40

RR 10 Figura n° 1







SANDWICH PANELS

PE SERIES

OVERVIEW TECHNICAL CHARACTERISTICS ACCESSORIES AND EQUIPMENT

OVERVIEW :

The PE Series sandwich panels form an excellent solution for pre-insulated ducts for the transportation of air. The ease of use and the excellent technical characteristics of the PE panels, guaranty high levels of quality and economic benefits.

The pre-insulated air ducts constructed with PE panels are suitable for any use and requirement, both in heating and in conditioning. As a result of the easy handling and reduced weight, it allows for a quick and rational installation, making it easier and better to manage, compared to traditional steel ducts.

Both at the planning and the realisation stage of modern projects of air distribution and movement, this solution enables high energy and construction savings, while at the same time maintaining durability, hygiene, safety and fire resistance.

TECHNICAL CHARACTERISTICS :

Construction: Embossed Aluminium | Polyisocyanurate foam (PIR) | Embossed Aluminium

Dimensions: 4000x1200x20 mm

Weight: 6,5kg

Fire class: 0-1 with reference to D.M. 26/06/1984

Thermal conduction: 0,023W/(m°C)

Foam: expanded rigid polyisocyanurate with closed cells 48 kg/m³ ±2

Aluminium: embossed, 80 µm thickness on both sides.

ACCESSORIES :

Together with the PE sandwich panels, MP3 can also supply a complete range of accessories for the installation of the panels including fixing agents for the assembly of the ducts and application of profiles, adhesive tapes, gaskets, connectors and seals.

For straight duct connections, traditional and hidden flanges may be used and MP3 is able to supply both the flanges and the bayonets for both types, including the fixing and supporting parts.

The connection flanges used for fixing of regulation dampers, fire dampers, supply end units or grilles, 'F' shape, 'U' shape and 'chair' shape profiles are available.

Other products complete this product range and are able to satisfy all pre-insulated duct installation requirements.

EQUIPMENT :


MP3 also supplies a series of simple and professional tools for the realisation of the PE series sandwich like the glue spreading tool, manual and automatic grills, work tops and various tools for all phases of assembly.



SANDWICH PANELS

ACCESSORIES

PE SERIES

PANELS		
Image	Description	Code
	Sandwich panel embossed aluminium 80 micron / PIR / embossed aluminium 80 micron, total thickness 20,5 mm. 10 panel per pack 4,8 m ² ± 2	PE-PA-020






USAGE MATERIALS		
Image	Description	Code
	50m adhesive tapes in aluminium, 40mm thickness, 50mm wide. Acrylic adhesive effective with humidity, low temperatures and up to 130 °C.	CC 7-050
	50m adhesive aluminium tapes, 40mm thickness, 75mm wide. Acrylic adhesive effective with humidity, low temperatures and up to 130 °C. 30 rolls per pack.	CC 7-075
	50m adhesive aluminium tapes, 40mm thick, 100mm wide. Acrylic adhesive effective with humidity, low temperatures and up to 130 °C. 15 rolls per pack.	CC 7-100
	5kg carton of glue for panels.	PE-A2-006
	15kg carton of glue for panels.	PE-A2-007
	Polyuretic glue for aluminium and PVC profiles. Reacts with atmospheric humidity in approx 3 hours above 10 °C. 500 gr pack.	PE-A2-008
	Quick drying cyanoacrylic glue for aluminium and PVC profiles. React also at low temperatures. 50 gr pack.	PE-A2-013






SANDWICH PANELS

ACCESSORIES

PE SERIES

Image	Description	Code
	Water dispersion Gray seal Pack container 25 tubes.	CS 1 G 25
	Self adhesive gasket for 10x10x2000 ducts in soft expanded acrylic. 100 ml pack.	PE-A2-016
	Corner reinforcement in nylon for external aesthetic finishing of the corner assembled with the 'chair' type profiles. 200 pieces per pack	PE-A2-017
	Reinforcing galvanized steel bar 12/10. 500 pieces per pack.	PE-A2-005
	Nylon corner covers for the aesthetic finish of the corner joint for the hidden flange. 200 pieces per pack.	PE-A2-004





PROFILES		
Image	Description	Code
	Hidden flange in aluminium for 20mm thick panel. 40m pack (10 x 4m bars).	PE-A2-001
	Aluminium flange for connections for 20mm thick panels. 40m pack (10 x 4m bars).	PE-A2-002
	"H" shape bayonets in PVC for joining hidden or connection flanges. 50m pack (25x2m bars)	PE-A2-003







SANDWICH PANELS

ACCESSORIES

PE SERIES

Image	Description	Code
	"F" shape profile in aluminium for joining to plane surfaces, AHU, fire dampers etc 40m pack (10x4m bars).	PE-A2-009
	"Chair" shape profile in aluminium for joining to AHU, to make inspection panel, for connecting to fire dampets, etc. 40m pack (10x4m bars)	PE-A2-012
	"U" shape aluminium profile for connections to regulation dampers, anti vibration joints, inspection panels, fire dampers, etc. 40m pack (10x4m bars)	PE-A2-010
	Profile for grilles in aluminium for wall installation. 40m packs (10x4m bars)	PE-A2-014



FLEXIBLE DUCT ACCESSORIES		
Image	Description	Code
	Ø 100 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-100
	Ø 150 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-101
	Ø 200 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-102
	Ø 250 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-103

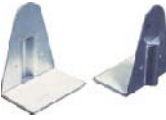







SANDWICH PANELS

ACCESSORIES

PE SERIES

Image	Description	Code
	Ø 300 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-104
	Ø 350 connection collar in aluminium for flexible duct. 10 pieces per pack.	PE-A2-105


ACCESSORIES		
Image	Description	Code
	Support for self adhesive duct. 100 pieces per pack.	PE-A2-018
	Ø 16 mm Tubular aluminium profile for reinforcement. 40m pack (10x4m bars).	PE-A2-015
	Ø 90 mm reinforcing aluminium disk. 100 pieces per pack.	PE-A2-011
	Nylon clips for wing profile. 100 pieces per pack.	PE-A2-019
	Aluminium wing profile 20m pack (10x2m bars).	PE-A2-020
	Fixing guide for aluminium wind profile. 20m pack (10x2m bars).	PE-A2-021










SANDWICH PANELS

ACCESSORIES

PE SERIES

Image	Description	Code
	Self threading screws for reinforcing tube. 200 pieces per pack.	PE-A2-022

TOOLS		
Image	Description	Code
	Comby cutter	PE-B2-100
	Template	PE-B2-101




TOOLS FOR MANUAL TASKS		
Image	Description	Code
	Work table 4.000x1.200 in 2 parts with mat, multilayer wooden top and foldable legs.	PE-B2-001
	4000mm aluminium bar with quick fixing levers.	PE-B2-002
	12000mm aluminium bar with quick fixing levers.	PE-B2-003
	1200mm aluminium square in varnished aluminium.	PE-B2-004
	700mm aluminium square in varnished aluminium.	PE-B2-005




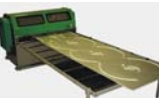


SANDWICH PANELS

ACCESSORIES

PE SERIES

Image	Description	Code
	Tools carry case	PE-B2-006
	Manual bending machine made in varnished steel with guillotine function.	PE-B2-007
	15kg pneumatic glue spreader.	PE-B2-008

TOOLS FOR AUTOMATED TASKS		
Image	Description	Code
	Automatic cutting line.	PE-B2-020
	Automatic folding machine.	PE-B2-021
	Aluminium profile cutter.	PE-B2-022
	Complete cutting line.	PE-B2-023

