

LANGUAGE
EN

ISOFARM

SANDWICH PANELS FOR AGRICULTURAL-ZOOTECHNICAL USE















ISOPAN

INSULATING DESIGN

Isofarm

Sandwich panels for agricultural-zootechnical use

Conventional warranty of metal supports

ENVIRONMENT	MAX. DURATION OF THE WARRANTY *	Ext. Supports**	Int. Supports **	PANEL	PAG
 <p>HIGHLY AGGRESSIVE ENVIRONMENTS High concentration of ammonia and humidity ex: Pig farms, plant storage, etc.</p>	 <p>Up to 30 years</p>	Extreme-H (Roof) Extreme-P (Wall)	PVC ULTRA	Isocop Topclass Isobox Topclass	8 12
	 <p>Up to 20 years</p>	Extreme-H (Roof) Extreme-P (Wall)	PVC TOPCLASS	Isocop Topclass Isobox Topclass	8 12
	 <p>Up to 10 years</p>	PVDF PUR-PA	PVC TOPCLASS	Isocop Topclass Isobox Topclass	8 12
 <p>MEDIUM AGGRESSIVE ENVIRONMENTS Controlled levels of ammonia and humidity Ex: Cattle farms, grain storage, etc.</p>	 <p>Up to 30 years</p>	PVDF PUR-PA	PVC TOPCLASS	Isocop Topclass Isobox Topclass	8 12
	 <p>Up to 20 years</p>	PVDF PUR-PA	Metal Sheet PRESTIGE	Isocop Farm Coat	6
	 <p>Up to 10 years</p>	PVDF PUR-PA	Vetroresina	Isovetro Isovetro Plus	2
 <p>GENERIC AGRICULTURAL-ZOOTECHNICAL USES Controlled levels of ammonia and humidity Ex: Poultry farms, warehouses, etc.</p>	 <p>Up to 30 years</p>	PVDF PUR-PA	Metal Sheet PRESTIGE	Isocop Farm Coat	6
	 <p>Up to 20 years</p>	PVDF PUR-PA	Vetroresina	Isovetro Isovetro Plus Isobox Farm Plus	2 4
	 <p>Up to 10 years</p>	PS polyester	Vetroresina	Isovetro Isovetro Plus Isobox Farm plus	2 4

* **CONVENTIONAL WARRANTY** - ISOPAN S.p.A. offers end user buyers (hereinafter referred to as "Customers") of products from the ISOFARM range who request it, a conventional warranty (hereinafter referred to as "Conventional Warranty") which guarantees the maintenance of the essential functional characteristics of ISOFARM products (namely thermal insulation, tightness against rainwater and static capacity). The duration and the content of the Conventional Warranty vary according to the specific characteristics of the ISOFARM products purchased by the Customer in each case, of the use they are intended for and the type of environment they are used in, assessed for each case, based on the declarations made by the Customer in the Environment Questionnaire (that the Customer needs to fill in and hand in to ISOPAN at the time of purchase, or in any case send in to ISOPAN within 30 days of the receipt of the Products, which is a condition of validity and effectiveness of the Conventional Warranty)). The terms of duration of the Conventional Warranty stated in the table above represent the maximum duration of the Conventional Warranty that can be abstractly offered by ISOPAN in relation to each type of product in the ISOFARM range, in the environmental and operating conditions, based on the declarations made by the Customer in the Environment Questionnaire, deemed by ISOPAN as optimal, without prejudice to ISOPAN's right to grant, based on each individual case, (and at its sole discretion), a conventional warranty with a shorter duration based on the specific characteristics of the environment and the effective intended use of the products purchased by the Customer. The full contents of the Conventional Warranty and the conditions for its issue and validity can be consulted from pages 14 to 17.

** For more information on the types of metal supports, refer to Technical Document HOW TO CHOOSE THE RIGHT PREPATED PRODUCT available on website www.isopan.com.

Isovetro & Isovetro Plus

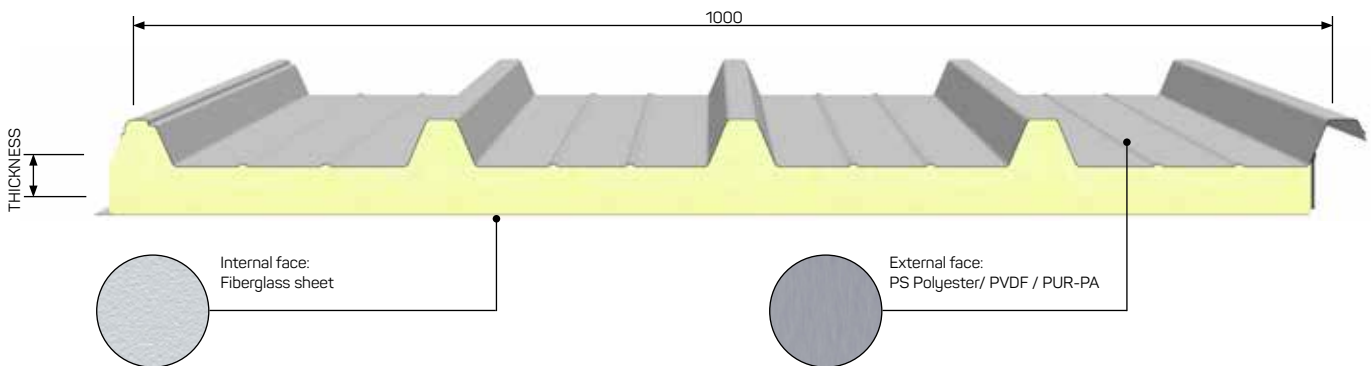
WARRANTY - Up to 30 years



Produced in: Italy, Spain, Germany, Romania

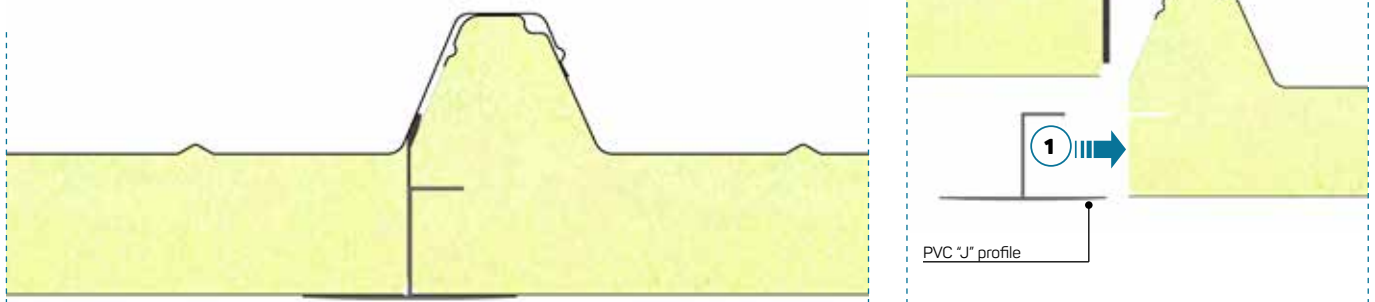
ISOVETRO

Simple skin roof panel with polyurethane foam insulation, featuring an internal fibreglass sheet that provides excellent resistance to the aggressive agents of agricultural-zootechnical environments. Pre-painted PVDF supports can be used on the external face, based on the characteristics of the environment and design. If the internal and external ambient conditions and the ventilation are not particularly adverse, it is also possible to use a pre-painted PS Polyester supports.



ISOVETRO PLUS

With the Isovetro PLUS version it is possible to install a specifically shaped PVC cover strip that reinforces the joint seal and the durability of the roof when there are aggressive chemical agents, as with livestock farms for example.



ISOVETRO & ISOVETRO PLUS: Available supports

Durability	- +	
External Support	Prepainted sheet PS polyester	Prepainted sheet PVDF / PUR-PA
Insulation	Polyurethane foam	
Internal Support	Fiberglass sheet	

AVAILABILITY OF METAL SUPPORTS

For information on other types of supports, on the actual availability, on thicknesses and any other technical information pertaining to panel coatings, contact Isopan.

OVERLOAD SPANS

STEEL SHEET										
UNIFORMLY DISTRIBUTED LOAD	THICKNESS SHEETS mm					THICKNESS SHEETS mm				
	0,5	0,6	0,7	0,8	1,0	0,5	0,6	0,7	0,8	1,0
	MAX SPANS cm					MAX SPANS cm				
kg/m ²	220*	235	250	265	285	250*	270	285	295	320
100	200*	220*	235	245	265	200*	245*	260	275	295
120	180*	200*	215*	230	250	200*	225*	240*	260	280
140	165*	185*	200*	215*	235	185*	205*	225*	240*	265
160	155*	170*	185*	200*	225	175*	195*	210*	225*	255

ALUMINIUM SHEET									
UNIFORMLY DISTRIBUTED LOAD	THICKNESS SHEETS mm				THICKNESS SHEETS mm				
	0,6	0,7	0,8	1,0	0,6	0,7	0,8	1,0	
	MAX SPANS cm				MAX SPANS cm				
kg/m ²	160*	170	180	190	180*	190	200	220	
100	140*	155*	165	180	160*	175*	190	205	
120	130*	140*	155	170	145*	160*	185	190	
140	120*	130*	140*	160	135*	150*	160*	180	
160	110*	120*	130*	150	125*	140*	150*	170	

* Values with stress limitations. Deflection limit 1/200 ℓ

PANELS WEIGHT

THICKNESS SHEETS mm	kg/m ²	PANEL NOMINAL THICKNESS mm		
		30	40	50
0,6	kg/m ²	7,3	7,7	8,1
0,7	kg/m ²	8,3	8,7	9,1
0,8	kg/m ²	9,1	9,7	10,1

DIMENSION TOLERANCE

DEVIATION mm	
Length	± 10
Working length	± 5
Thickness	± 2
Orthogonality and rectangularity	± 3

THERMAL INSULATION

In accordance with the new standard EN 14509 Annex 10

U	PANEL NOMINAL THICKNESS mm		
	30	40	50
W/m ² K	0.71	0.54	0.44
kcal/m ² h °C	0.61	0.47	0.38

According to the calculation method EN ISO 6946

K	PANEL NOMINAL THICKNESS mm		
	30	40	50
W/m ² K	0.55	0.44	0.36
kcal/m ² h °C	0.48	0.38	0.32



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the technical data sheet available on www.isopan.com under the section "technical data sheet" and the "recommendations for the assembly of ribbed sheets and metal faced insulating panels" defined by ISOPAN.



FIRE PERFORMANCES

For further informations, please consult the synthesis available at www.isopan.com.



*** WARRANTY CONDITIONS**

The full contents of the Conventional Warranty and the conditions for it issue and validity can be consulted from pages 14 to 17.

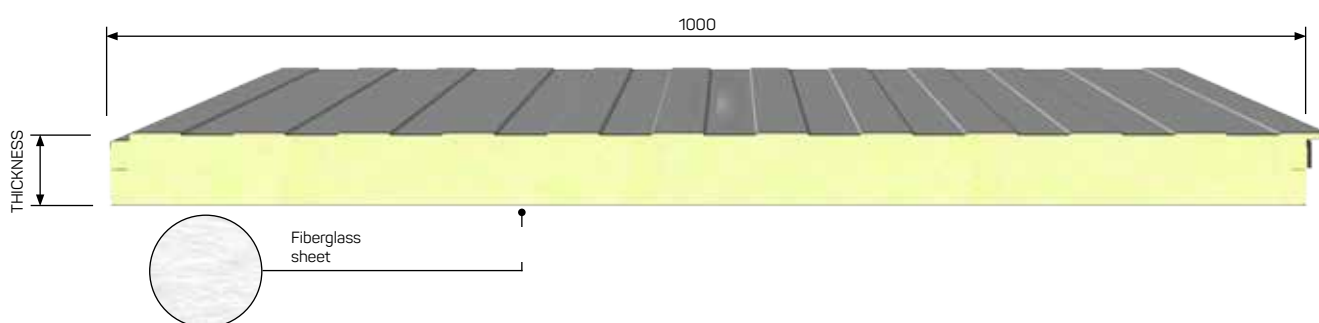
Isobox Farm Plus

Produced in: Spain

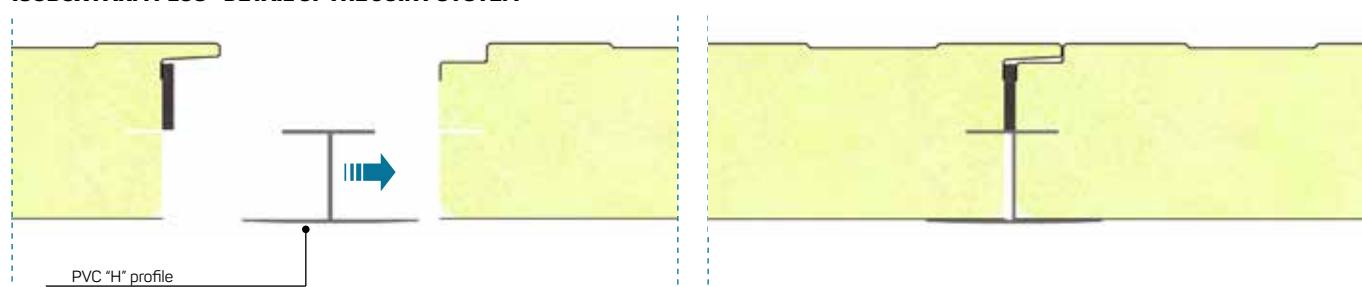
WARRANTY - Up to 30 years



Simple skin wall panel with polyurethane foam insulation. The internal face is made with particular internal fiberglass sheet that provides excellent resistance to the aggressive agents of agricultural-zootechnical environments. The male side of the joint is fitted with a shaped PVC closing element.



ISOBOX FARM PLUS - DETAIL OF THE JOINT SYSTEM



THERMAL INSULATION - K

K	PANEL NOMINAL THICKNESS mm			
	40	50	60	80
W/m ² K	0,50	0,40	0,34	0,26
kcal/m ² h °C	0,43	0,34	0,29	0,22

RECOMMENDED CENTRE-DISTANCE BETWEEN SUPPORTS (width supports: from 50 to 120 mm)

RECOMMENDED CENTRE-DISTANCE	PANEL NOMINAL THICKNESS mm			
	40	50	60	80
mm	400	800	1000	1200

Maximum producible length (recommended) of the panels: 7000 mm.

ISOBOX FARM PLUS: Available supports

Durability



External Support	Prepainted sheet PS polyester	Prepainted sheet PVDF / PUR-PA
Insulation	Polyurethane foam	
Internal Support	Fiberglass sheet	

AVAILABILITY OF METAL SUPPORTS

For information on other types of supports, on the actual availability, on thicknesses and any other technical information pertaining to panel coatings, contact Isopan.



ATTENTION

During the design phase we recommend setting up installation conditions that protect the panels so that they are not in direct contact with the animals and/or highly aggressive and damaging substances, to keep the coatings intact.



* WARRANTY CONDITIONS

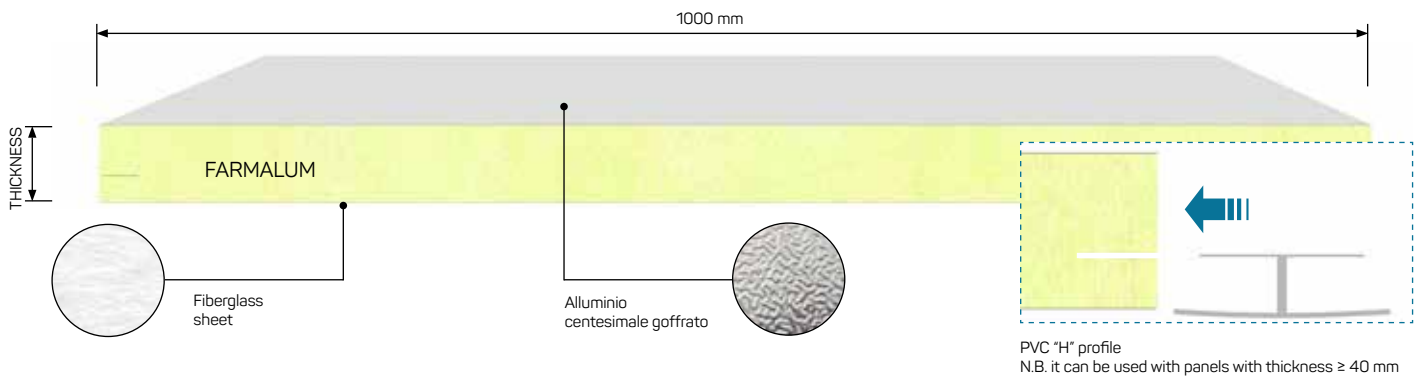
The full contents of the Conventional Warranty and the conditions for its issue and validity can be consulted from pages 14 to 17.

Farmalum & Farmafarm

Produced in: Spain

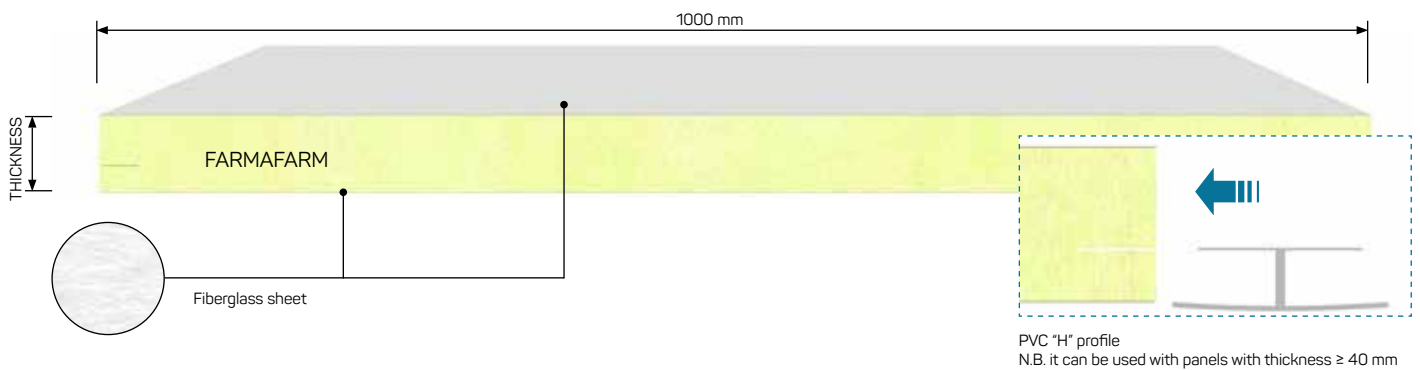
FARMALUM

Polyurethane foam insulating panel, suitable for building false ceilings and lining walls. The linings are comprised of a protected centesimal embossed aluminium face on one side and a fibreglass face on the other



FARMAFARM

Polyurethane foam insulating panel, suitable for building false ceilings and lining walls. Thanks to the double lining of fibreglass sheeting, it provides excellent resistance against the action of aggressive chemical agents.



FARMALUM E FARMAFARM - THERMAL INSULATION - K

K	PANEL NOMINAL THICKNESS mm		
	30	40	50
W/m ² K	0,64	0,50	0,40
kcal/m ² h °C	0,55	0,43	0,34

FARMALUM & FARMAFARM: Available supports

Durability	- +	
External Support	Alluminio Centesimale (Farmalum)	Fibreglass sheet (Farmafarm)
Insulation	Polyurethane foam	
Internal Support	Fibreglass sheet	

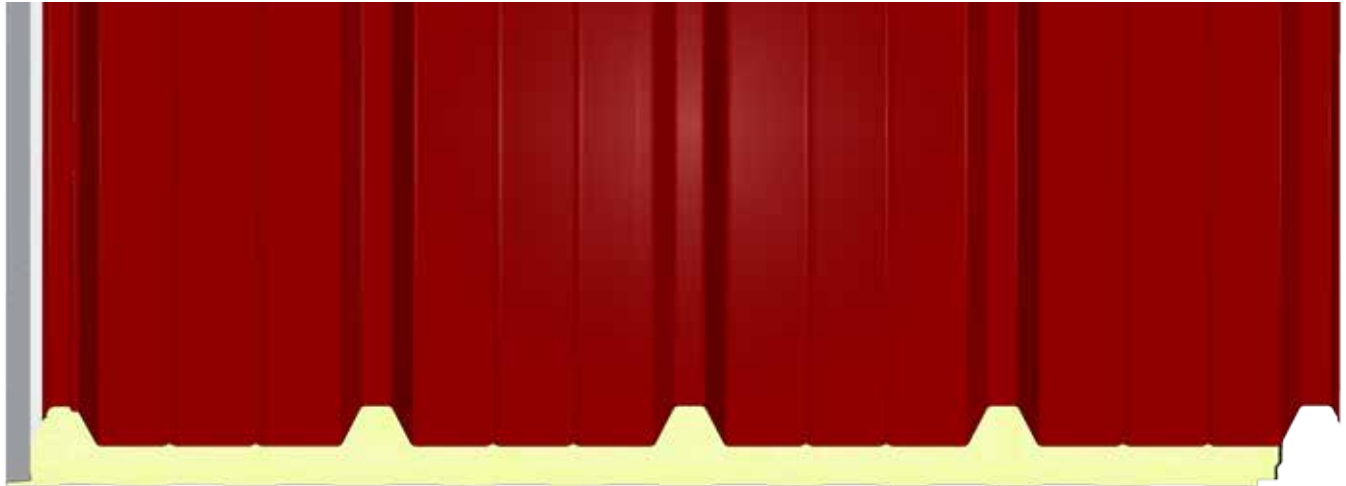
Isocop Farm Coat

Produced in: Italy, Spain, Germany, Romania

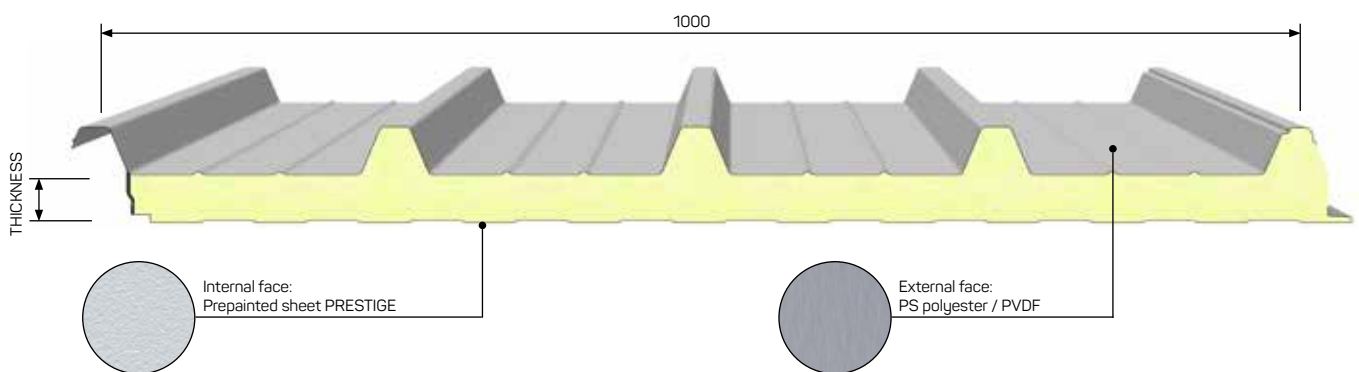
WARRANTY - Up to 30 years



On request*



Double skin roof panel with polyurethane foam insulation, that guarantees good capacity values and suitable fire-resistance performance. The internal face is comprised of a PRESTIGE high durability pre-painted sheet characterised by high resistance values against corrosion and any existing chemical agents. Pre-painted PVDF supports can be used on the external face, based on the characteristics of the environment and design. If the internal and external ambient conditions and the ventilation are not particularly adverse, it is also possible to use a pre-painted PS Polyester support.



ISOCOP FARM COAT: Available supports

ISOCOP FARM COAT: Available supports		
Durability	-	+
External Support	Pre-painted sheet PS polyester	Pre-painted sheet PVDF / PUR-PA
Insulation	Polyurethane foam	
Internal Support	Pre-painted sheet ad alta Durability PRESTIGE	

AVAILABILITY OF METAL SUPPORTS

For information on other types of supports, on the actual availability, on thicknesses and any other technical information pertaining to panel coatings, contact Isopan.

Isocop Farm Coat



Cattle farm
Roofing with Isocop Farm Coat



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the technical data sheet available on www.isopan.com under the section "technical data sheet" and the "recommendations for the assembly of ribbed sheets and metal faced insulating panels" defined by ISOPAN.



FIRE PERFORMANCES

For further informations, please consult the synthesis available at www.isopan.com.



* WARRANTY CONDITIONS

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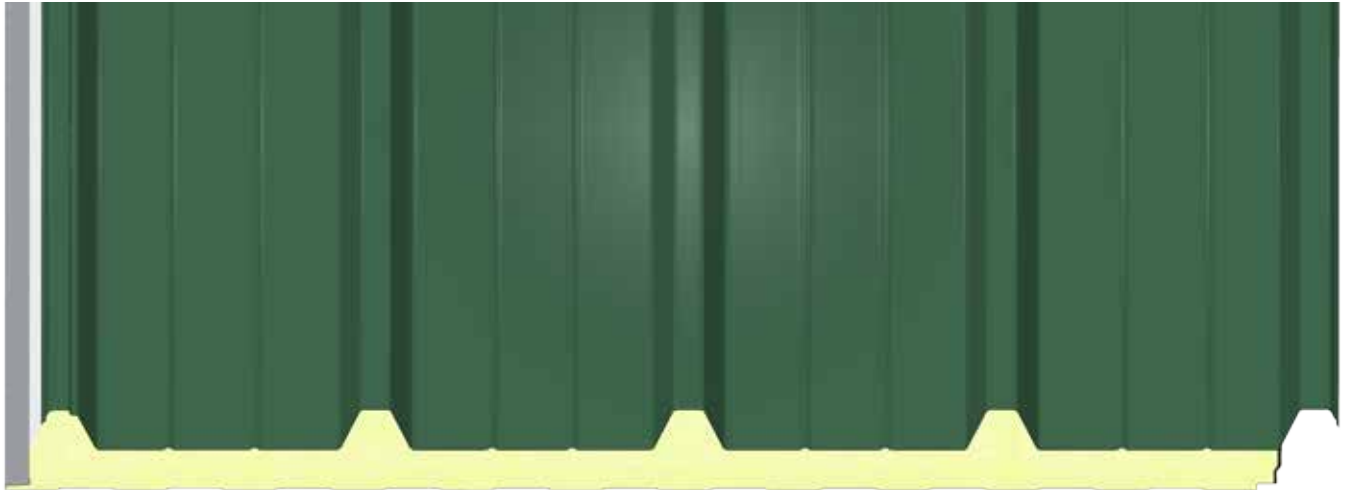
Isocop Topclass

Produced in: Italy, Spain, Germany, Romania

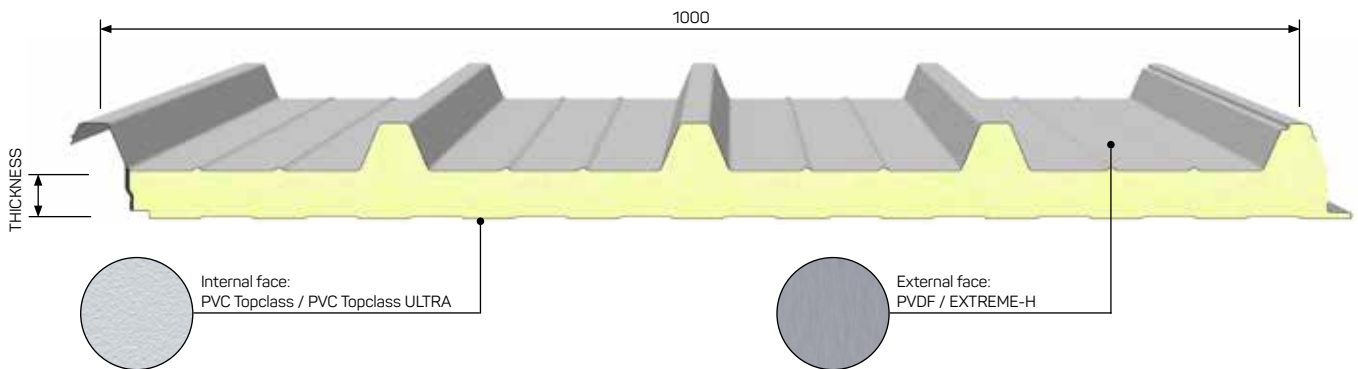
WARRANTY - Up to 30 years



On request*



Double skin roof panel with polyurethane foam insulation, that guarantees good capacity values and suitable fire-resistance performance. The internal face features a micro-ribbed steel sheet lined with Topclass PVC, suitable for environments with aggressive chemical agents, such as agricultural-zootechnical facilities. Pre-painted Extreme supports can be used on the external face, based on the characteristics of the environment and design. If the internal and external ambient conditions and the ventilation are not particularly adverse, it is also possible to use a pre-painted PS Polyester support.



ISOCOP TOPCLASS: Available supports

Durability



External Support	Pre-painted sheet PVDF / PUR-PA	Pre-painted sheet EXTREME-H
Insulation	Polyurethane foam	
Internal Support	Metal Sheet PVC Topclass	Metal Sheet PVC Topclass ULTRA

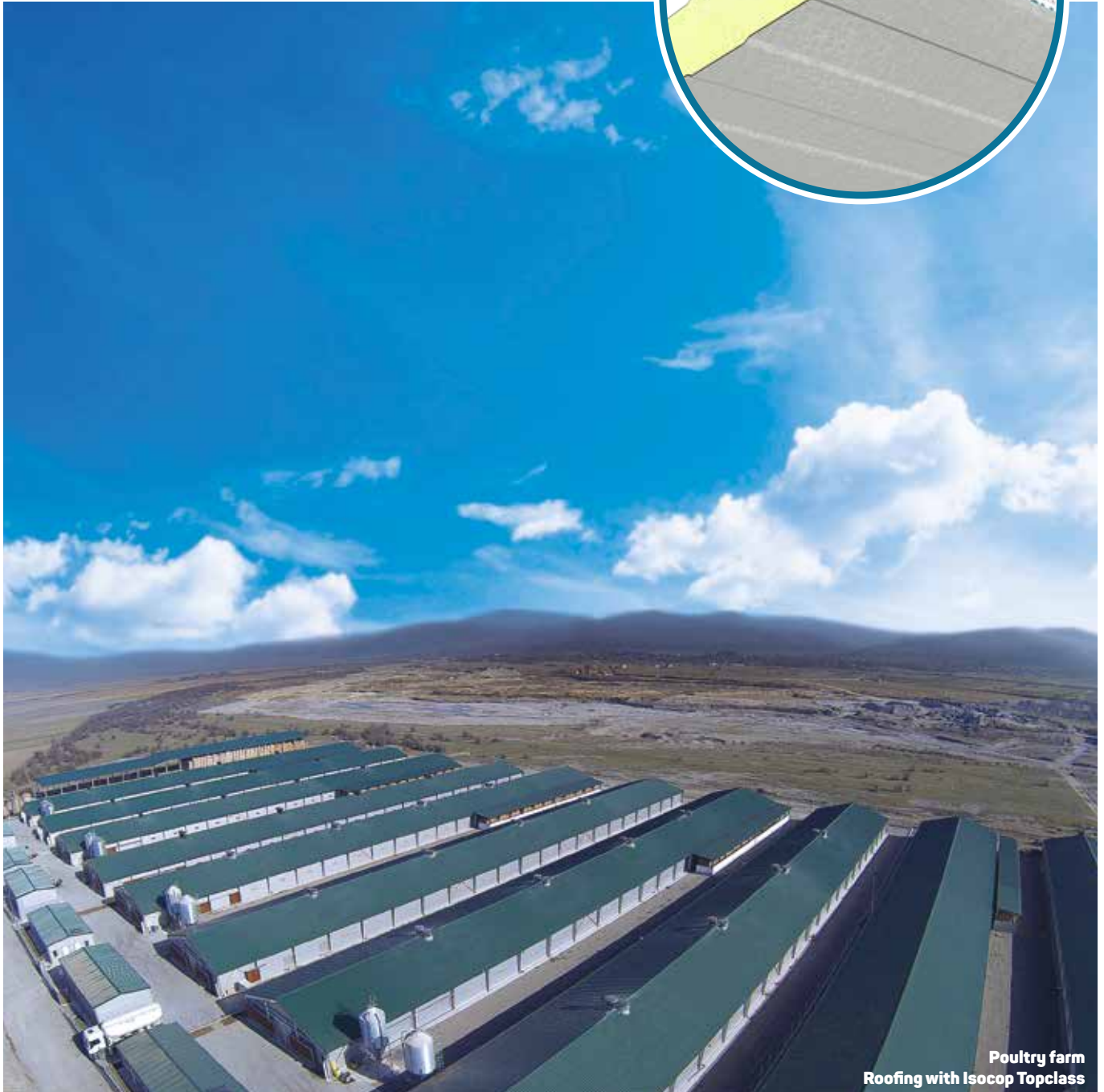
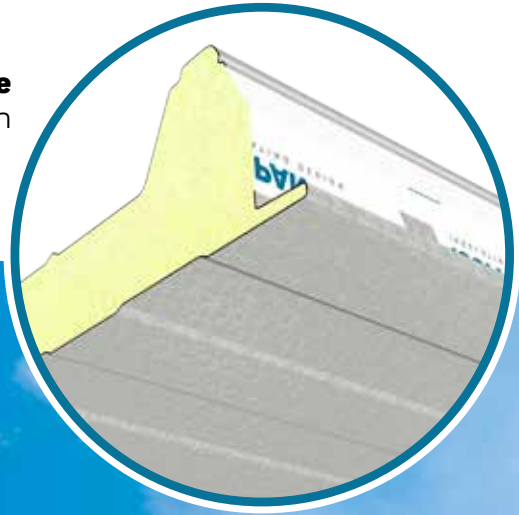
AVAILABILITY OF METAL SUPPORTS

For information on other types of supports, on the actual availability, on thicknesses and any other technical information pertaining to panel coatings, contact Isopan.

Isocop Topclass

GREATER PROTECTION? ULTRA LINING!

Isocop Topclass can come with a **PVC ULTRA internal face (thicker sheet and PVC lining)**, to ensure greater durability in heavy duty conditions



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the technical data sheet available on www.isopan.com under the section "technical data sheet" and the "recommendations for the assembly of ribbed sheets and metal faced insulating panels" defined by ISOPAN.



FIRE PERFORMANCES

For further informations, please consult the synthesis available at www.isopan.com.



* WARRANTY CONDITIONS

The full contents of the Conventional Warranty and the conditions for its issue and validity can be consulted from pages 14 to 17.

Isocop Farm Coat & Topclass Technical Data

OVERLOAD SPANS

UNIFORMLY DISTRIBUTED LOAD kg/m ²	STEEL SHEETS 0,4 / 0,4 mm - Support 120 mm								STEEL SHEETS 0,5 / 0,5 mm - Support 120 mm							
	PANEL NOMINAL THICKNESS mm								PANEL NOMINAL THICKNESS mm							
	30	40	50	60	80	100	120	150	30	40	50	60	80	100	120	150
	MAX SPANS cm								MAX SPANS cm							
80	270	290	310	340	390	440	470	500	320	350	390	420	500	570	630	730
100	250	260	280	300	350	390	440	480	295	320	360	390	450	510	580	670
120	230	245	260	280	320	360	400	460	270	300	330	360	420	480	540	620
140	210	230	255	260	290	330	370	420	235	280	315	340	390	450	500	580
160	200	220	230	255	285	310	340	390	210	260	300	320	370	420	480	550
180	185	215	220	230	270	290	320	370	185	235	280	300	355	400	450	520
200	160	200	210	220	260	270	300	340	170	210	250	290	330	380	430	500
220	140	190	200	210	230	260	280	320	150	190	230	270	320	360	410	470
250	115	170	190	200	220	240	260	300	130	170	205	240	300	340	385	445

Calculation for static sizing according to the Annex E of the UNI EN 14509 standard. Deflection limit 1/200 ℓ.

DIMENSION TOLERANCE (EN 14509)

DEVIATIONS mm		
Length	L ≤ 3 m	± 5 mm
	L > 3 m	± 10 mm
Working length	± 2 mm	
Thickness	D ≤ 100 mm	± 2 mm
	D > 100 mm	± 2 %
Deviation from perpendicularity	6 mm	
Misalignment of the internal metal faces	± 3 mm	
Bottom sheet coupling	F = 0 + 3 mm	

L = working length, D = panels thickness, F = sheets coupling

PANELS WEIGHT

THICKNESS SHEETS mm	kg/m ²	PANEL NOMINAL THICKNESS mm							
		30	40	50	60	80	100	120	150
0,5 / 0,5	9,9	10,3	10,7	11,2	11,9	12,7	13,5	14,7	
0,6 / 0,6	11,7	12,1	12,5	12,9	13,7	14,5	15,3	16,5	

THERMAL INSULATION

In accordance with the new standard EN 14509 Annex 10

U	PANEL NOMINAL THICKNESS mm							
	30	40	50	60	80	100	120	150
W/m ² K	0,71	0,54	0,44	0,37	0,28	0,22	0,19	0,15
kcal/m ² h °C	0,61	0,47	0,38	0,32	0,24	0,19	0,16	0,13

According to the calculation method EN ISO 6946

K	PANEL NOMINAL THICKNESS mm							
	30	40	50	60	80	100	120	150
W/m ² K	0,55	0,44	0,36	0,31	0,25	0,20	0,17	0,15
kcal/m ² h °C	0,48	0,38	0,32	0,27	0,22	0,17	0,15	0,13



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the technical data sheet available on www.isopan.com under the section "technical data sheet" and the "recommendations for the assembly of ribbed sheets and metal faced insulating panels" defined by ISOPAN.



FIRE PERFORMANCES

For further informations, please consult the synthesis available at www.isopan.com.

Assembly instructions

In order to protect the sheets suitably without jeopardising the validity of the Warranty (see page 16 and following), it is necessary to be particularly careful of critical areas of the roof, such as the joints between panels and the cut edges of the pre-painted sheets.

JOINTS BETWEEN PANELS

During the design phase it is therefore necessary to carefully assess the choice for both pre-painted faces of the roof panel, as the build-up of harmful substances coming from areas inside the agricultural-zootechnical facilities can attack the external skins and unpainted faces, unless duly protected.

Based on the characteristics of the building and the internal and external environmental conditions, the design-engineer has the task of choosing the most suitable types of linings and that can guarantee the best functional durability and appearance of the roof

Apply strips of sealant or gaskets as illustrated in Figure 2. This prevents vapours from the indoor environment (ex. ammonia vapour) from leaking out and settling on the outside of the roof.

Isopan can provide, on request, a special **Roof Panel Tool** (Figure 3), for facilitating the assembly phases of roof panels, in particular during the operations of tightening of joints between panels (represented in Figure 4). Through the correct use of the Roof Panel Tool, it's possible to simplify the assembly operations of roof panels, that must be performed in a workmanlike manner and in accordance with Isopan Technical Manuals.

The Roof Panel Tool can be used with ribbed roof panels. For further informations, please contact Isopan.

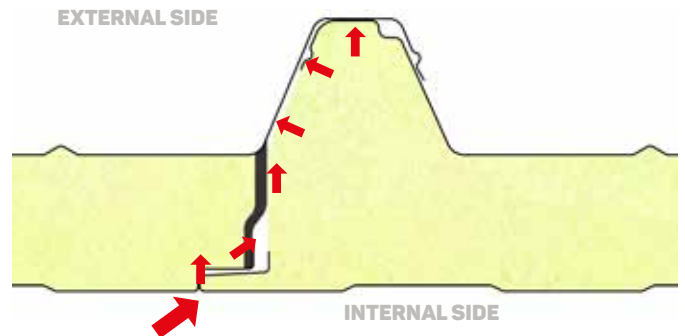


Figure 1: when there are assembly errors or imperfectly closed joints the substances in the indoor environment can penetrate and attack the bottom, unprotected face of the sheets.

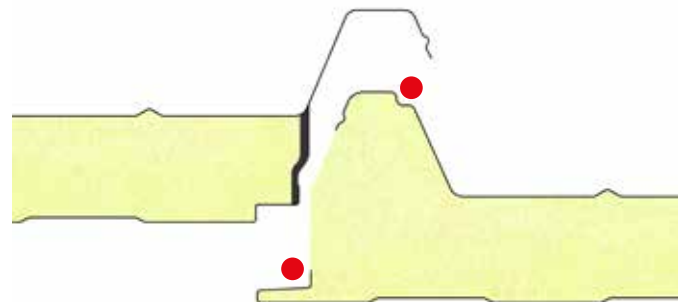


Figure 2: red marks the areas where it is necessary to apply sealant or additional gasket.

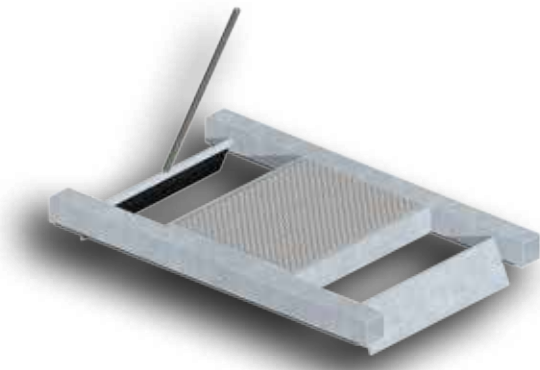


Figure 3: Roof Panel Tool.

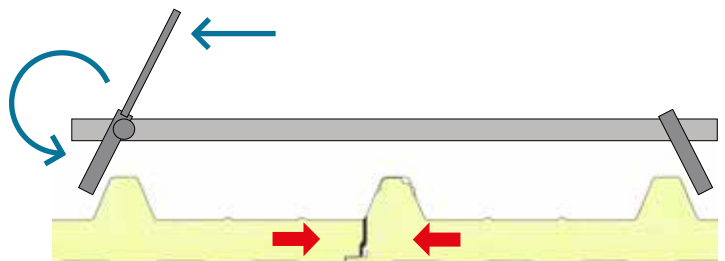


Figure 4: Roof Panel Tool's using scheme: system of tightening of joints between panels.

PROTECTION OF CUT EDGES, METAL SURFACES AND INSULATING LAYERS

Isopan suggests using Protective Liquid Sheath to protect cut edges, exposed insulating material and galvanised metal sheets.

It is a non-inflammable, non-toxic, ready-to-use waterproofing liquid elastomer sheath, made with acrylic polymers, that maintains characteristics of elasticity, even at low temperatures, and is resistant to UV rays. It can also be used to improve the watertightness of the critical areas of roofs. Contact Isopan for more information on Bitumen Liquid Sheath and its application methods.



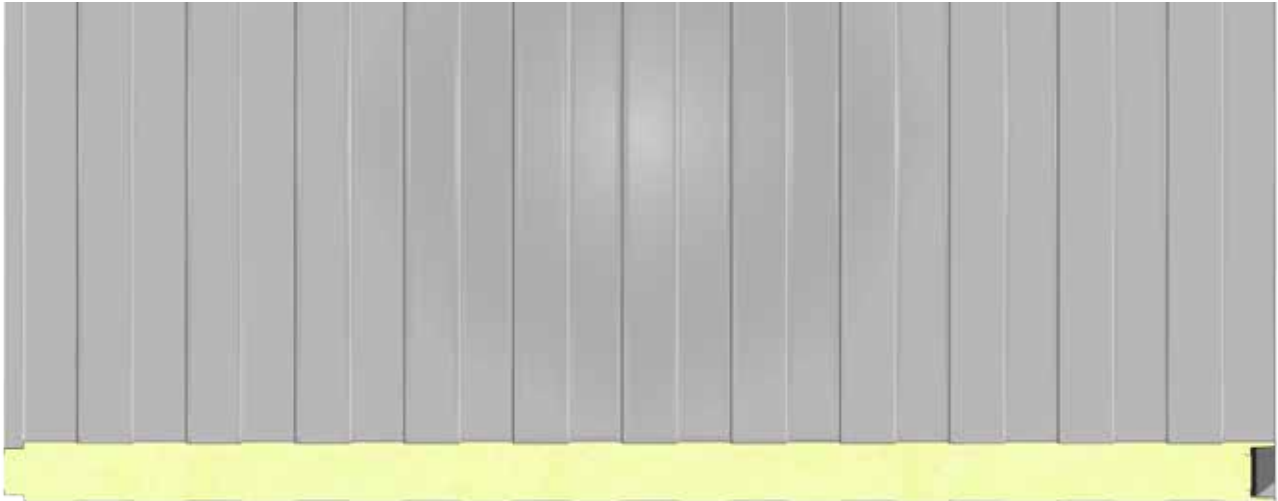
Isobox Topclass

Produced in: Italy, Spain, Germany, Romania

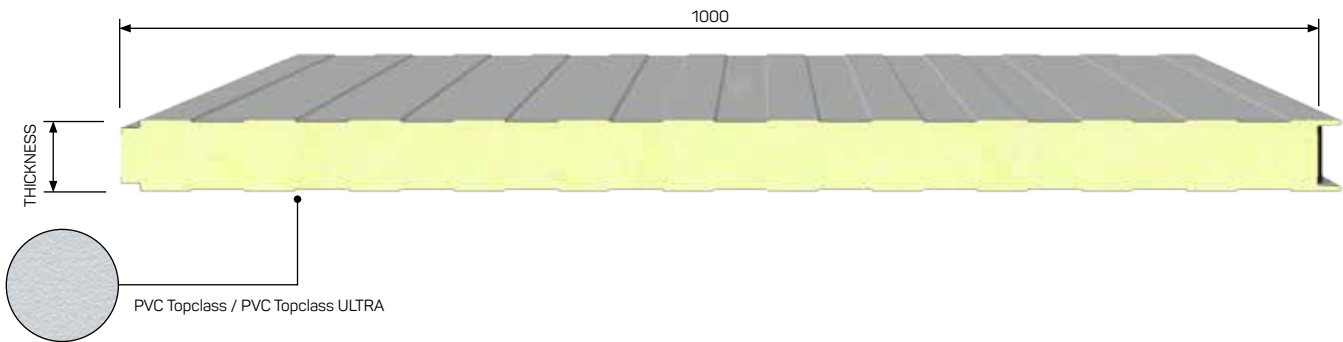
WARRANTY - Up to 30 years



On request*



Double skin wall panel with polyurethane foam insulation. The internal face is comprised of a micro-ribbed steel sheet lined with PVC film which provides the panel with excellent resistance against the action of aggressive chemical agents. Thanks to the presence of the double metal lining, it provides better capacity values and excellent fire-resistance performance.



GREATER PROTECTION? ULTRA LINING!

Isobox Topclass can come with a **PVC ULTRA internal face (thicker sheet and PVC lining)**, to ensure greater durability in heavy duty conditions

ISOBOX TOPCLASS: Available supports		
Durability	- +	
External Support	Prepainted sheet PVDF / PUR-PA	Prepainted sheet EXTREME-P
Insulation	Polyurethane foam	
Internal Support	Sheet PVC Topclass	Sheet PVC Topclass ULTRA *

AVAILABILITY OF METAL SUPPORTS

For information on other types of supports, on the actual availability, on thicknesses and any other technical information pertaining to panel coatings, contact Isopan.

OVERLOAD SPANS

STEEL SHEETS THICKNESS 0,5 / 0,5 mm - Support 120 mm																
UNIFORMLY DISTRIBUTED LOAD kg/m ²	PANEL NOMINAL THICKNESS mm								PANEL NOMINAL THICKNESS mm							
	25	30	40	50	60	80	100	120	25	30	40	50	60	80	100	120
	MAX SPANS cm								MAX SPANS cm							
50	220	260	320	380	440	550	640	730	260	300	380	450	520	650	740	800
60	215	240	300	350	410	500	590	680	240	270	340	410	470	590	660	710
80	180	205	260	310	350	440	520	600	200	230	290	350	410	500	550	600
100	155	180	230	275	320	395	470	540	170	200	260	310	360	440	490	510
120	140	165	210	250	290	360	430	490	140	170	230	280	320	390	430	460
140	125	150	190	230	265	330	395	455	130	150	200	250	295	360	390	420
160	115	135	175	210	245	310	370	425	120	130	185	220	265	330	360	385
180	105	125	165	195	230	290	345	400	110	120	160	200	240	305	340	360
200	100	115	155	185	215	270	325	375	100	110	145	180	215	285	315	335

Calculation for static sizing according to the Annex E of the UNI EN 14509 standard. Deflection limit 1/200 ℓ.

PANELS WEIGHT

THICKNESS SHEETS mm		PANEL NOMINAL THICKNESS mm									
		25	30	35	40	50	60	80	100	120	
0,4 / 0,4	kg/m ²	7,3	7,5	7,7	7,9	8,3	8,7	9,5	10,3	11,1	
0,5 / 0,5	kg/m ²	9,0	9,2	9,4	9,6	10,0	10,4	11,2	12,0	12,8	
0,6 / 0,6	kg/m ²	10,6	10,9	11,6	11,3	11,7	12,1	12,9	13,7	14,5	

DIMENSION TOLERANCE (EN 14509)

DEVIATIONS mm		
Length	L ≤ 3 m	± 5 mm
	L > 3 m	± 10 mm 0
Working length	± 2 mm	
Thickness	D ≤ 100 mm	± 2 mm
	D > 100 mm	± 2 %
Deviation from perpendicularity	6 mm	
Misalignment of the internal metal faces	± 3 mm	
Sheets coupling	F = 0 + 3 mm	

L = working length, D = panels thickness, F = sheets coupling

THERMAL INSULATION

In accordance with the new standard EN 14509 Annex 10

U	PANEL NOMINAL THICKNESS mm									
	25	30	35	40	50	60	80	100	120	
W/m ² K	0,83	0,70	0,61	0,54	0,44	0,37	0,28	0,22	0,19	
kcal/m ² h °C	0,71	0,60	0,52	0,46	0,38	0,32	0,24	0,19	0,16	

According to the calculation method EN ISO 6946

K	PANEL NOMINAL THICKNESS mm									
	25	30	35	40	50	60	80	100	120	
W/m ² K	0,75	0,64	0,56	0,50	0,40	0,34	0,26	0,21	0,18	
kcal/m ² h °C	0,67	0,57	0,49	0,44	0,35	0,30	0,23	0,18	0,15	



ATTENTION

During the design phase we recommend setting up installation conditions that protect the panels so that they are not in direct contact with the animals and/or highly aggressive and damaging substances, to keep the coatings intact.



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the technical data sheet available on www.isopan.com under the section "technical data sheet" and the "recommendations for the assembly of ribbed sheets and metal faced insulating panels" defined by ISOPAN.



FIRE PERFORMANCES

For further informations, please consult the synthesis available at www.isopan.com.



*** WARRANTY CONDITIONS**

The full contents of the Conventional Warranty and the conditions for it issue and validity can be consulted from pages 14 to 17.

General Warranty Conditions



1. Premise

This conventional warranty (the "Conventional Warranty") is offered by ISOPAN S.p.A., based in Via Augusto Righi, no. 7, Verona, Italy (hereinafter "ISOPAN"), to the end user buyers of the products in the ISOFARM range who request it, in accordance with art. 4 (hereinafter "Customers").

Pursuant to this article, the "end user buyers" are the natural or legal persons who are the owners of the products in the ISOFARM range (hereinafter "Products"), who use them and who have not purchased them with the intention of re-selling them or installing them at the premises of third parties or for sales purposes.

Based on the applicable regulations regarding the sale of consumer goods, the Conventional Warranty does not replace nor limit the rights of consumer Customers nor any additional rights of the Customer (also non consumers), by law or by the contract signed with the seller of the Products.

This Conventional Warranty is only valid in reference to Products sold and installed within the territory of the European Union.

2. Reference

At the terms and conditions listed below, ISOPAN guarantees to its Customers that, for the entire duration of the Conventional Warranty (as set forth in art. 8), the Products purchased by them will maintain their essential functional characteristics, namely: (i) thermal insulation, (ii) waterproof against rain water (iii) static capacity, as respectively described and specified in the technical sheets relative to each Product.

3. Contents of the Conventional Warranty

If within the duration of the Conventional Warranty, as set forth in art. 8, the Products present functional defects covered by this Conventional Warranty and consisting in the failure of one of the functional characteristics as set forth in art. 2, and under the condition that said defects are promptly reported in writing by the Customer to ISOPAN according to the terms and in the format as set forth in art. 7, as well as recognised by ISOPAN, ISOPAN will, at its own discretion, replace or repair at its own expense, within a reasonable amount of time, the Product that it recognises as defective, or reimburse the relative cost of purchase to the Customer.

The Conventional Warranty only and exclusively covers, and is limited to insuring, maintaining, for the entire duration as set forth in art. 8 the functional characteristics of the Products identified in art. 2 and the

solutions set forth in art 3, and cannot whatsoever be called upon by the Customer outside of these circumstances, nor can Customers claim additional solutions from ISOPAN, with the express exclusion of ISOPAN from any additional responsibility and/or obligation to pay an indemnity and/or compensation for damages in relation to the Customers.

ISOPAN is also expressly excluded, without limited intent, from any responsibility for damage, costs, fees, expenses and responsibilities that the Customer may incur directly or indirectly, due to the defects of the Product covered by the Conventional Warranty.

4. Activation of the Conventional Warranty

The Conventional Warranty on the Products is not automatically applied, rather, it needs to be activated and issued by ISOPAN (by issuing the relative Conventional Warranty certificate) only on specific Customer request.

The application to activate the Conventional Warranty must be completed by the Customer by filling in and signing the activation form, which can be downloaded from the website www.isopan.com ("Activation Form") and must be sent to ISOPAN in writing through registered mail with return receipt or via email to garanzia.italia@isopan.it, no later than 30 (thirty) days from the date of receipt of the Products, certified by the Customer by attaching a copy of the relative invoice and/or delivery note issued by the seller.

5. Environmental Questionnaire

In addition to the provisions of art. 4, the activation, issue, validity, effectiveness and operability of the Conventional Warranty are also subject to:

(i) the fact that, no later than 30 (thirty) days after the Customer received the Products, ISOPAN received from the Customer (through registered mail with return receipt or via email to garanzia.italia@isopan.it) the environmental questionnaire completed on the form provided by ISOPAN and downloadable from www.isopan.com. ("Environmental Questionnaire"), duly compiled in all its parts, and signed by the Customer and the seller (if different from ISOPAN) of the Products; as well as (ii) the accuracy, the completeness and the truthfulness of the information provided by the Customer in this Environmental Questionnaire.

The delivery of the Environmental Questionnaire to ISOPAN, made by the Customer, may also take place during the offer and negotiation phase of the order between the Customer and the seller of the Products, i.e.



prior to the time when the order of the Products is transmitted from the Customer to the seller.

In this case, ISOPAN will let the Customer know, in advance and in writing, the duration of the Conventional Guarantee that - based on the declarations made by the Customer in the Environmental Questionnaire - ISOPAN is willing to grant to the Customer in case of formalisation of the order concerned (without prejudice to any other forecast contained in these general conditions and subject to the fact that, in any case, ISOPAN shall not take on any direct obligations towards the Customer until the date of issuing of the Conventional Guarantee Certificate referred to in art. 6).

6. Issuing the Conventional Warranty certificate

Subject to the Customer's prompt and timely fulfilment of the requirements under articles 4 and 5, and always under the condition that the further requests for the activation of the Conventional Warranty subsist under these General Conditions of the Conventional Warranty, ISOPAN - based solely on the declarations provided by the Customer in the Activation Form and in the Environmental Questionnaire and without performing any preliminary verification - will determine, for each case and at its sole discretion, the specific duration and contents of the Conventional Warranty offered to the Customer for each case, as well as issue and send to the Customer the relative Conventional Warranty certificate.

When ISOPAN issues the Conventional Warranty Certificate it is not recognising the truthfulness of the declarations made by the Customer in the Activation Form and/or in the Environmental Questionnaire.

Therefore, if, after issuing the Conventional Warranty Certificate, the Customer reports to ISOPAN, in accordance with art. 7, the discovery of a defect of the Products abstractly susceptible to being covered by this Conventional Warranty, which ISOPAN expressly reserves to verify - before performing any work under warranty - the truthfulness of the declarations provided by the Customer in the Activation Form and in the Environmental Questionnaire.

With the exception of any other provision of the General Conditions of the Conventional Warranty, any inaccuracy, incompleteness or falsity, including partial, of the information contained in the Activation Form and/or Environmental Questionnaire signed by the Customer, at any time are ascertained by ISOPAN, as with the failure or change (after issuing the Conventional Warranty) in the environmental conditions declared by the

Customer in the Environmental Questionnaire, automatically void the Conventional Warranty (retroactively) that may have been issued and/or activated by ISOPAN and causing the Customer to lose any right to it.

7. Reporting defects covered by the Conventional Warranty

When a Customer reports to ISOPAN faults or defects of the products covered by this Conventional Warranty, said report must be made in writing, through registered mail with return receipt or via email to garanzia.italia@isopan.it, on pain of lapse, within 8 (eight) days from the discovery of the fault.

On pain of inadmissibility, the following must be attached to the written notice:

- the invoice (in original or photocopy) relative to the purchase of the products issued by the seller of the Products;
- copy of the Warranty Certificate as per art. 6 relative to the Products in question;
- copy of the maintenance booklet of the Products duly signed by the maintenance technician with every maintenance job;
- full photographic documentation of the claimed defects of the Products.

8. Duration and specific contents of the Conventional Warranty

The duration and the specific contents of the Conventional Warranty offered by ISOPAN to the Customer in relation to each supply of Products are determined by ISOPAN (and stated in the relative Conventional Warranty Certificate), for each case, and at its sole discretion, based on the specific characteristics of the Products purchased by the Customer in each case, as well as on the use and type of environment that the products are intended for, based on the declarations made by the Customer in the Environment Questionnaire and Activation Form.

The terms of duration of the Conventional Warranty stated in the table on page 3 of the ISOFARM catalogue only represent the maximum duration of the Conventional Warranty that can be abstractly offered by ISOPAN in relation to each type of Product, in the environmental and operating conditions deemed by ISOPAN as optimal, compatibly with the intended use declared by the Customer (based on the declarations made by the Customer in the Environment Questionnaire).

In any case there is no prejudice to ISOPAN's right to grant, in each individual case (and at its sole discretion), a Conventional Warranty with a shorter duration, or with limited contents, based on the specific



characteristics of the environment and the effective intended use of the Products.

The Conventional Warranty - once it is activated by ISOPAN by issuing the relative Conventional Warranty certificate - begins from the date that the Customer purchased the Products.

9. Conditions of validity

Without prejudice to any other forecast contained in these general conditions of warranty, the validity and effectiveness of the Conventional Warranty offered by ISOPAN are subject to the subsistence of the following conditions:

- that the ISOFARM Products are installed correctly and to professional standard, and in compliance with all of the instructions contained in the relative technical specifications (including AIPPEG regulations which can be consulted and downloaded from www.isopan.com);
- that the handling, storage, placement and installation methods provided in the manuals and in the ISOPAN technical documentation are strictly observed, and that can be consulted and downloaded from www.isopan.com.
- that the products are set up for a use that is suitable for their nature and intended use and compliant with the contents of the Customer's declaration in the Environmental Questionnaire and the Activation Form and are subject to correct and regular maintenance, in compliance with ISOPAN's provisions.

10. Exclusions

Any functional defects of the Products due to the causes below, are expressly excluded from and not covered by the Conventional Warranty - although abstractly belonging to the field of application of art. 2:

- errors in design, placement, fastening or installation of the products that are not imputable to ISOPAN;
- placement of the Products on roofs with a slope of less than 7% without overhang, or 9% with overhang, or nevertheless not in compliance with the contents of the technical manual;
- the presence of incorrect angles or inflections of any kind, on the structures and/or buildings that the Products are installed on, that do not allow water to drain correctly or that are in any case susceptible to causing pooling and/or the retention of water or the accumulation of debris of any kind;

- installing the Products in contact with metals with a different chemical potential (for example: assembly between pre-painted steel sheets and aluminium, which may cause galvanic corrosion);
- improper use of the Products for purposes other than their intended use;
- movements of the ground or settling of the structure or the roof of the building that the products are installed on;
- exceptional natural events and/or weather (such as, but not limited to, gales, earthquakes, natural disasters, explosions);
- external causes such as pollution, fires, smoke, accidental leaks causing corrosive fumes, etc.;
- assembly of the Products with incompatible and/or potentially harmful materials;
- abnormally high and concentrated surface temperatures;
- transportation, handling, packaging, storage, placement and installation of the Products not in compliance with ISOPAN requirements;
- missing or poor protection of the sheet edges (cut area, joint area) exposed to the aggressive chemicals in the installation site;
- any mechanical damage, scratches, dents, bends, bumps, marks or cracks on the surface of the paint that are not imputable to ISOPAN and that tend to develop oxidation of the metal substrate of the Products or in any case affect the functional characteristics of the Products;
- storage or stocking the Products outdoors and/or in locations that are not suitably protected;
- subjecting Products to chemical treatments or washing with aggressive solvents or products (ex. washing products made with chlorine or caustic soda), which - due to the alkalinity or acidity of the products - could alter the function of the layer of paint on the Products;
- the formation of condensation or other aggressive factors on Products as a result of their incorrect storage;
- failure to remove any protective films applied to the Products within three months of their application, or immediately after setting up the Products;
- improper use, tampering or changes of/with/to the Products;
- intended use or environment not compliant with the declaration made by the Customer in the Environmental Questionnaire and/or Activation Form;



- failure to have a specialised company, at least annually (proven by presenting the maintenance booklet duly signed by the maintenance technician), perform the normal maintenance operations, cleaning (to be carried out using water and soap or neutral detergents and a soft cloth) and controls of the installed Products;
- performing maintenance or cleaning operations on the Products using hypochlorite detergents, solvents (such as acetone, toluene, ethyl acetate, trichloroethylene, perchloroethylene or similar) or abrasive products (such as metal brushes) capable of scratching the coating and damaging the paint;
- inertia and/or negligence by the Customer - after a defect is discovered on Products covered by the Conventional Warranty - in adopting and/or implementing all necessary conduct to limit and prevent the defect from spreading to other Products purchased by the Customer. In this case, the Conventional Warranty - when the conditions subsist - will only apply in relation to the portion of Products affected by the defect originally reported by the Customer, with the express exclusion of all the other Products that the defect spread to due to inertia or the Customer's failure to intervene, and through this negligence partook in the spread of the phenomenon

Any differences in colour or of any other nature that may occur in Products that are replaced and/or repaired under the Conventional Warranty pursuant to art. 3,

in relation to Products previously purchased by the Customer, are not considered Product defects and, therefore, are not covered by the Conventional Warranty. In relation to these differences, therefore, the Customer cannot make any claims, whatsoever, from ISOPAN.

Any flaw, defect or non-conformity of the Products that does not affect the functional characteristics (load transmission, water tightness and thermal insulation of the panel) is also expressly excluded from the coverage offered by the Conventional Warranty, as per art. 2, including (and not limited to):

- aesthetic defects, colour differences and/or variations and/or fading of the paint on the Products;
- mechanical damage, scratches, dents, bends, bumps, marks or cracks;
- any other flaw, defect or non conformity of the products that does not fall within the coverage plan, as per art. 2.

11. Applicable law and jurisdiction

This Conventional Warranty is governed and interpreted under Italian law. Without prejudice to the inviolable consumer rights, any dispute that may arise from, or in relation to this Conventional Warranty, will be under the exclusive jurisdiction of the Court of Verona.



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ISOPAN

INSULATING DESIGN

www.isopan.com



ITALY

REGISTERED AND ADMINISTRATIVE HQ

Via Augusto Righi 7
37135 Verona | Italy
T. +39 045 8088911

ISOPAN SPA

Verona | Italy
T. +39 045 7359111

Frosinone | Italy
T. +39 07752081

WORLD

ISOPAN IBERICA

Tarragona | Spain
T. +34 977 52 45 46

ISOPAN EST

Popești Leordeni | Rumania
T. +40 21 3051 600

ISOPAN DEUTSCHLAND GmbH

OT Plötz | Germany
T. +49 3460 33220

ISOPAN RUS

Volgogradskaya oblast' | Russia
T. +7 8443 2120 30

ISOCINDU

Guanajuato | Mexico
T. +52 1 472 800 7241

SALES OFFICES

ISOPAN FRANCE

Mérignac | France
T. +33 5 56021352

ISOPAN MANNI GROUP CZ

Praha | Czech Republic
contact@isopansendvicovepanely.cz