

ONDUCLAIR[®] PC

Single-skin daylighting system in polycarbonate

INSTALLATION GUIDE

Transparent
Fire Rating
Impact Resistant



ONDUCLAIR® PC



ONDUCLAIR® PC sheets are made of polycarbonate resin (thermoplastic resin).

ONDUCLAIR® PC sheets are designed for translucent or opaque roofing and cladding (flat or curved) for any type of buildings (agricultural, industrial and public-access buildings).

ONDUCLAIR® PC is an ideal solution for greenhouses.

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DESCRIPTION

BASIC MATERIALS

ONDUCLAIR® PC sheets are made of coextruded polycarbonate resin. The external layer contains specific additives providing the sheet with an excellent U.V. protection.

APPLICATION

ONDUCLAIR® PC sheets are designed for translucent or opaque roofing and cladding (flat or curved). They can be used for all types of low or medium hygrometry buildings located at an altitude of less than 900 m, under usage conditions defined by the present Installation Guide. Over 900 m, take into account the local conditions of implementation of the construction.

CHARACTERISTICS

Appearance characteristics: ONDUCLAIR® PC sheets come with the following features:

Standard colours	
Crystal (translucent/clear)	Opaque white
Opal 66% and opal 46% light transmission	Smoked brown

Other colours upon request.

Light colour variations may appear from one production to another, this is why it is advised not to divide orders which are dedicated to a specific project. Moreover, shades and light transmission are depending on the thickness. Opacity can not be guaranteed on certain colours or thicknesses.

Dimensional characteristics

(at 20°C) in compliance with EN-1013 standard

Cover width tolerance	+/- 0,8 %
Corrugation height tolerance	+/- 2 mm
Average thickness tolerance	+/- 10 %
Length tolerance	< 2.50 m - 0 + 20 mm > 2.50 m - 0 to + 0,8%

General characteristics

Density	1,20 g /cm ³
Modulus of elasticity in flexion	22 000 daN/cm ²
Linear expansion coef. at ambient T°	6.5 x 10 ⁻⁵ m/m° C
Thermal conductivity coef.	0,16 W/m.k
Softening point Vicat under 5 kg	145° C
Fire classification	Euroclass B-s1, d0
Resistance to hail	75 m/sec
Service temperature	- 40° C to + 110° C
Marking/Traceability	Ink-printing

Optical characteristics

In compliance with NF EN 1013 standard, the global light transmission of new ONDUCLAIR® PC sheets is:

- Crystal: 90 %,
- Opal: 66 % or 46 %.

Note: A slight attenuation of light transmission may appear over time.

Values are given for a thickness of 1mm.

Chemical characteristics

CHEMICAL CLASS	EFFECTS
Acids (Mineral)	No effect under most conditions of concentration and temperature.
Alcohols	Generally compatible.
Alkalis	Acceptable at low concentration and temperature. Higher concentrations and temperatures result in etching and attack as evidenced by decomposition.
Aliphatic Hydrocarbons	Generally compatible.
Amines	Surface crystallisation and chemical attack.
Aromatic Hydrocarbons	Solvents and severe stress-cracking agents.
Detergents and Cleaners	Mild soap solutions are compatible. Strongly alkaline ammonia materials should be avoided.
Esters	Cause severe crystallisation. Partial solvents.
Fruit Juices and Soft Drinks	Compatible at low stress levels. Some concentrates not recommended.
Gasoline	Not compatible at elevated temperatures and stress levels.
Greases and Oils	Pure petroleum types generally compatible. Many additives used with them are not, thus materials containing additives should be tested.
Halogenated Hydrocarbons	Solvents and severe stress-cracking agents.
Ketones	Cause severe crystallisation and stress cracking. Solvents.
Silicone Oils and Greases	Generally compatible up to 80°C.

*Characteristics are provided in good faith, according to internal tests.
For other substances or different conditions, samples can be provided upon request for testing.*

IMPLEMENTATION - GENERAL

PRINCIPLE

ONDUCLAIR® PC sheets will be installed in accordance with the local standards in force as well as good practice.

On roofs, the sheets will always be installed with the ribs running down the slope of the roof. The parts whose base is located within 2 m of a floor must be protected by a device to avoid their possible deterioration. For thermal expansion, shrinkage and handling reasons, the length of installed sheets will never be greater than 6 m.

ACCIDENT PREVENTION

The implementation of ONDUCLAIR® PC sheets requires compliance with the local Health and Safety regulations for access to lightweight material roofs in force.

In particular, devices for the distribution of loads over the purlins must be systematically used for installation or for maintenance in order not to use the panels directly for support.

In the case of the installation of accessible cladding or roofing, ONDUCLAIR® PC sheets cannot on their own act as a parapet wall. Protective devices must be installed according to the standards in force.

U.V. PROTECTION

Because of its external coextruded UV protection layer, the ONDUCLAIR® PC sheet face marked «COTE CIEL/THIS SIDE UP/ESTA LADO PARA ARRIBA» will always have to be installed with the marking normally readable from the outside of the building.

FIRE SAFETY

ONDUCLAIR® PC sheets are used in different categories of premises while complying with potential implementation and sizing rules established by the regulations in force. It is the user's responsibility to ensure that the fire classification of the product is complying with the classification requested for the building.

IMPACT RESISTANCE IN SPORT FACILITIES, ANIMAL PROTECTION

ONDUCLAIR® PC sheets have a great resistance to impacts outdoors as well as indoors.

However, in specific cases, the use of a protective net may be necessary in order to avoid the degradation of the material due to intensive shocks.

In order to avoid incipient cracking at the location of the fixings due to the frequency and intensity of the shocks from balls, the installation of a stretched protective net between the posts is recommended. This precaution is essential if tennis is practiced. In the area of bird protection, specific devices may be used in order to avoid bird impacts on ONDUCLAIR® PC crystal sheets.

STORAGE

Storage of packages of ONDUCLAIR® PC sheets must be done in a ventilated shelter (covered store, light coloured cover). Packages must be slightly inclined horizontally to promote their drying and they must be separated from the ground using cushioning, thus providing sufficient space to allow good ventilation while avoiding any permanent deformation of the sheets.

NEVER FORGET THESE SAFETY RULES:

- NEVER STACK TWO PALLETS ON ROOFING.
- SECURE THE STACKS IN THE EVENT OF VIOLENT WIND.

INCOMPATIBILITY BETWEEN POLYCARBONATE, PVC AND FIBRE CEMENT DUST

Polycarbonate is not compatible with PVC. This is why, when ONDUCLAIR® PC sheets are combined with steel sheets having a Plastisol coating (or any other PVC-based paint), the overlaps must be protected with a sealing band (Alu-butyl type or equivalent) in order to avoid the contact between polycarbonate and PVC that could lead to chemical deterioration.

The use of PVC washers (so as any other material containing PVC and in direct contact with ONDUCLAIR® PC) is thus prohibited. In association with fibre cement sheets, special care is required for cleaning the possible fibre cement dust in order to avoid alkaline chemical migration that could lead to cracking and deteriorating the mechanical properties of ONDUCLAIR® PC sheets.

PRECONDITIONS REQUIRED FOR INSTALLATION

General conditions

Minimum slopes are directly given by the metal or wood load-bearing framework. They are prescribed in the paragraph «Roofing implementation» (page 9). Installation on concrete or masonry framing is done on a secondary metal frame (insert) as defined by the standards in force as well as by the professional implementation rules.

ONDUCLAIR® PC sheets do not contribute to the general stability of buildings and cannot perform the function of the bracing or anti-misalignment of purlins.

Special support conditions

Support surfaces

The installation can only take place if the support surfaces are flat, parallel, continuous and without projections, on the same plane as the roofing or cladding. The use of extension brackets on the purlins may be necessary.

Minimum dimensions of the supports

For open or hollow steel profiles:

- minimum width: 40 mm
- minimum thickness: 1,5 mm

For wooden purlins or ribbon strips:

- minimum width: 60 mm
- minimum anchorage height: 50 mm.

Spans and working loads

Please refer to the technical data sheets available upon request to our Technical Service (example in appendix).

Technical data sheets resume:

- Product denomination
- Profile plan
- Material information
- Sheet information
- Admissible spans and loads on two or three supports for pressure and depression. The allowed spans are limited following the French DTU 40-35: maximum span 1500mm and destruction safety margin greater than or equal to 3.
- The calculated spans have to be adapted to the norms and rules in force at the location of the building.

Tools

Drilling

Mandatory pre-drilling.

Drilling at the location of the fixings is made with a centre drill. Because of the coefficient of expansion of the material, drill the fastener holes to a diameter 4 mm larger than the fastener diameter. **ONDUCLAIR® PC** must be drilled on the top of the corrugation, rib or trough (stitching) and always at a minimum distance of 50 mm from the sheet edge. A deburring and dust removal must be performed to remove the shavings that could impede the proper application of the bonded washer.

Sawing

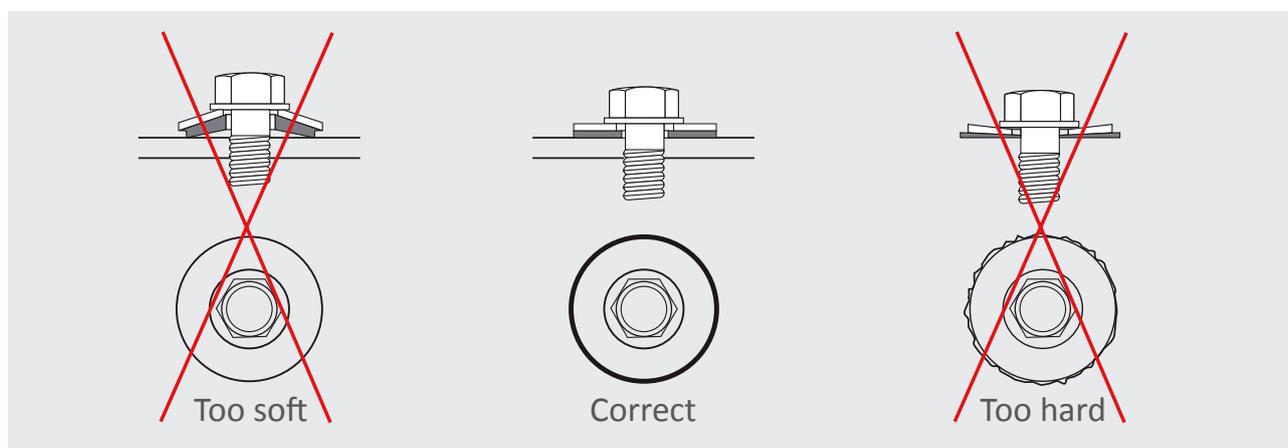
ONDUCLAIR® PC sheets can be cut with a separating disc or a fine tooth saw (5 teeth/cm).

Screwing

Self-tapping, thread-cutting screws, coach screws etc., must be installed with the appropriate tools equipped with a torque limiter and depth stop.

Tightening must be sufficient to ensure the water tightness of the fixing system, but must in no case be excessive to avoid blocking the free expansion of the sheets. The use of gun-nailing and riveting is prohibited.

Example of fastening



Refer to the installation instructions at the end of the Installation Guide.

Penetrations

Any penetration (tubes, chimney vent, lifeline supports etc.) through **ONDUCLAIR® PC** sheets is prohibited. Cross-section stringers may be compulsory.

SPECIAL CONNECTION PARTS

The ridge caps, edge protectors, roofing penetrations, etc., will be carried out using shaped parts in compliance with the local rules in force and will have to be adapted to the corrosivity of the environment.

These accessories will be installed in compliance with local rules and in a way that will avoid any wind pressure that could tear the sheets off.

Gutters cannot be fastened to **ONDUCLAIR® PC** sheets.

FIXING ACCESSORIES

General

The fasteners and accessories employed as roofing or cladding elements must meet minimum characteristics of mechanical strength, leak tightness and durability, in accordance with the requirements of the local rules in force and Professional Rules.

These minimum requirements concern:

- Types, shapes and dimensions,
- Materials and means of protection against corrosion,
- Mechanical resistance.

The main fasteners are always located at the top of each corrugation or rib, and at each purlin or strip.

The side lap stitchings are made at the top of the longitudinal corrugation or rib overlap (side lap):

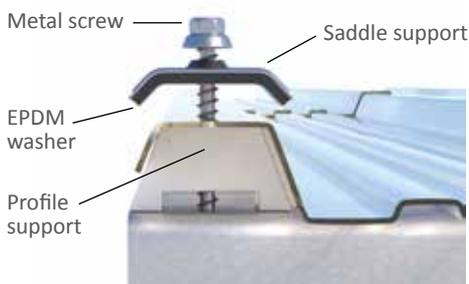
- at mid-span for types G.O. (177/51), P.O. (76/18) and GRECA,
- with a maximum spacing of 500 mm for ribbed technical profiles (ie. Nervesco 1000).

Types of fixings

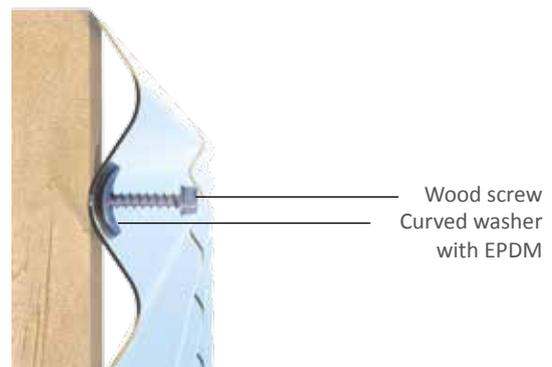
Main fixings

To be defined according to the manufacturer's requirements.

Example of fastening with a metal screw on a steel purlin (in roofing)



Example of fastening with a wood screw on a wooden support (wall cladding)



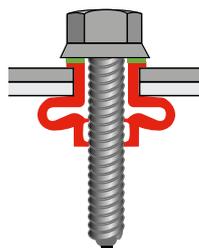
PVC washers are prohibited.

Side lap stitching accessories

Side lap stitching is vital at the longitudinal overlaps, regardless of the region, the site and the slope.

Specification: at the top of the rib with a maximum spacing of 500 mm.

Example: expanding rubber grommet fastener, diam. 9/25 mm, with screw diam. 5 mm



Sealing

Sealing (waterproofing) accessories to use for connecting **ONDUCLAIR® PC** sheets together must comply with local specifications in force. For example type polyisobuthylene (butyl) preformed bands.

The installation of sealant must be done on clean and dry surfaces.

ROOFING IMPLEMENTATION

INSTALLATION DIRECTION

The installation is carried out with the ribs (or corrugations) running down the slope of the roof (longitudinal and transversal overlaps).

Horizontal laying direction

Opposite direction of the prevailing wind. The sheet to be installed covers, along the adjacent longitudinal edge, the sheet installed previously.

Vertical laying direction

From the bottom up. The downslope lap (cut back) of the top sheet covers the lower sheet already installed. Other possibility: double longitudinal overlap (side lap) with sealing and side lap stitching on the top of the ribs in case of isolated installation between two metal sheets.



Install the sheets from the eaves to the ridge, starting from the opposite direction of prevailing winds.

FIXING SPECIFICATION

Main fasteners

In roofing: the fixings must include following accessories (waterproofing and loads distribution):

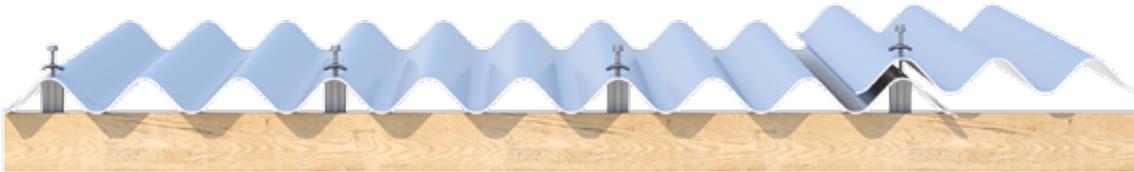
- **Sealing washers.**
- **Saddle supports or curved washers** adapted to the profile, in galvanized steel, prelacquered, in aluminum or stainless steel, depending on the site corrosivity.

Examples

Onduline95 profile



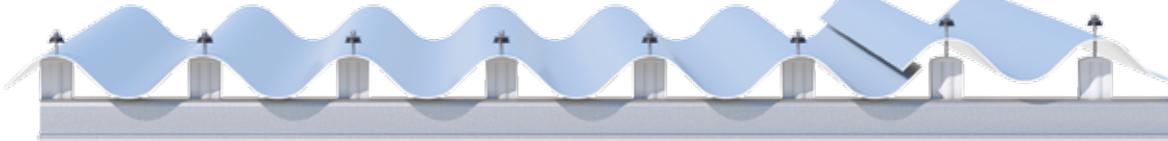
One fastener each two corrugations at the top and the bottom of the sheet plus one fastener at sidelap.



One fastener each three corrugations at each intermediate support (purlin) plus one fastener at sidelap.

GO (177/51) profiles

- At the eaves



The fasteners must be installed on each corrugation top at the eaves (this is valid for both profiles: GO110 - 177/51 and GO92 - 177/51 with 6,5 and 5,5 corrugations).

- In the slope of the roof, at intermediate supports (the location of the fixings will depend on the width of the profile so as on the sidelap).

GO110 profile (177/51 with 6,5 corrugations)

- GO110 profile installed with a half-corrugation sidelap (normal site):



Fasteners are located on the top of the 1st, 3rd, 4th and 6th corrugations.

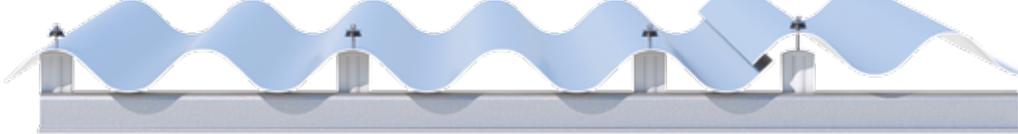
- GO110 profile installed with a corrugation and a half sidelap (exposed site):



Fasteners are located on the top of the 1st, 3rd and 5th corrugations.

GO92 profile (177/51 with 5,5 corrugations)

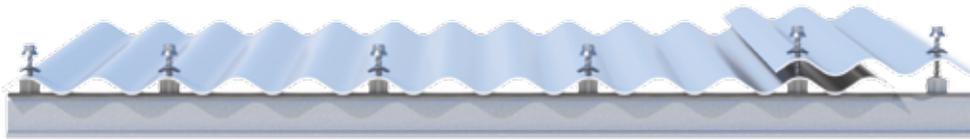
- GO92 profile installed with a half-corrugation sidelap:



Fasteners are located on the top of the 1st, 3rd and 5th corrugations.

PO112 profile (76/18)

- PO112 profile installed with two corrugations sidelap:



Fasteners are located on the top of the 1st, 3rd, 6th, 9th and 12th corrugations.

Ribbed technical profiles in roofing installation



Main fasteners are always located on the top of each rib (corrugation) and on each support (purlin).

Side lap stitching

The side lap stitchings are made at the top of the longitudinal corrugation or rib overlap (side lap):

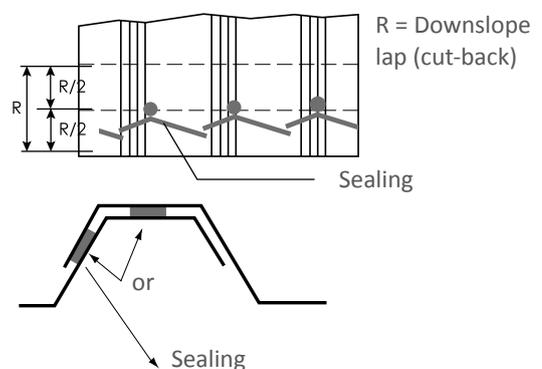
- at mid-span for types G.O. (177/51), P.O. (76/18) and GRECA,
- with a maximum spacing of 500 mm for ribbed technical profiles (ie. Nervesco1000), cleverly distributed between the main fixings.

SEALING

Transversal (sealing at end laps) and longitudinal (sealing at side laps) sealing is mandatory for slopes less than or equal to 25% for all the profiles (even when installation direction respects the prevailing wind).

Transversal (sealing at end laps) sealing is made over the support at around 30 mm under the fastener's line and must be installed discontinuously, in a herringbone installation (zigzags), in order to allow potential condensation evacuation, particularly in case of insulated roofing.

Longitudinal (sealing at side laps) sealing is compulsory for profiles G.O. (177/51), P.O. (76/18) and GRECA. For the ribbed technical profiles, transversal sealing is made depending on the zone, slope and site (refer to local snow and wind standard).



LONGITUDINAL OVERLAP

The longitudinal overlap (side-lap) is always made in the opposite direction of the prevailing wind.

- Profile G.O. (177/51): normal or protected site = half corrugation, exposed site = one and half corrugation.
- Profile P.O. (76/18): two corrugations in all situations.
- Profile GRECA: two ribs in all situations.
- Ribbed technical profiles: one rib.

TRANSVERSAL OVERLAP

The transversal overlap (downslope lap) is made over the support. Its minimum length is depending on the profile, the slope and the climatic zone.

PROFILE TYPE	Slope %	Transversal overlap (mm)		Transversal overlap (mm)
		Zone 1 Normal protected sites	Zone 2 Normal protected sites	Zone 1 & 2 - Exposed sites Zone 3 - All sites
G.O. (177/51) (sealing)	9 to 31	200	200	200
	> 31	140	140	140
P.O. (76/18) (sealing)	25 to 29	130	140	140
	30 to 39	110	130	130
	40 to 49	100	120	130
	> 49	100	110	120
GRECA (sealing)	15 to 19	200	200	-
	20 to 30	200	200	200
	>30	150	150	150
RIBBED TECHNICAL PROFILES	7 to 35	200	200	200
	>35	150	150	150

The table below defines the need for sealing (example: France)

SLOPE (%)	Minimum transversal overlap (mm)	Zone 1 Normal protected sites	Zone 2 Normal protected sites	Zone 1 & 2 - Exposed sites Zone 3 - All sites
7 ≤ P < 20	200	Yes	Yes	Yes
20 ≤ P < 25	200	Yes	Yes	Yes
25 ≤ P < 35	200			Yes
P > 35	150			

Exposed situation

• Close to the sea:

The shoreline to a depth of about 5 km, the tops of cliffs, islands or narrow peninsulas, estuaries and bays that are deeply embanked and deeply cut into the land.

• Within the country:

Narrow valleys where the wind rushes isolated and high mountains and some passes.

Snow and wind

Refer to the local rules in force.

Following standards give means of calculating wind and snow loads.

France (DTU-NV65)

Austria (B4013)

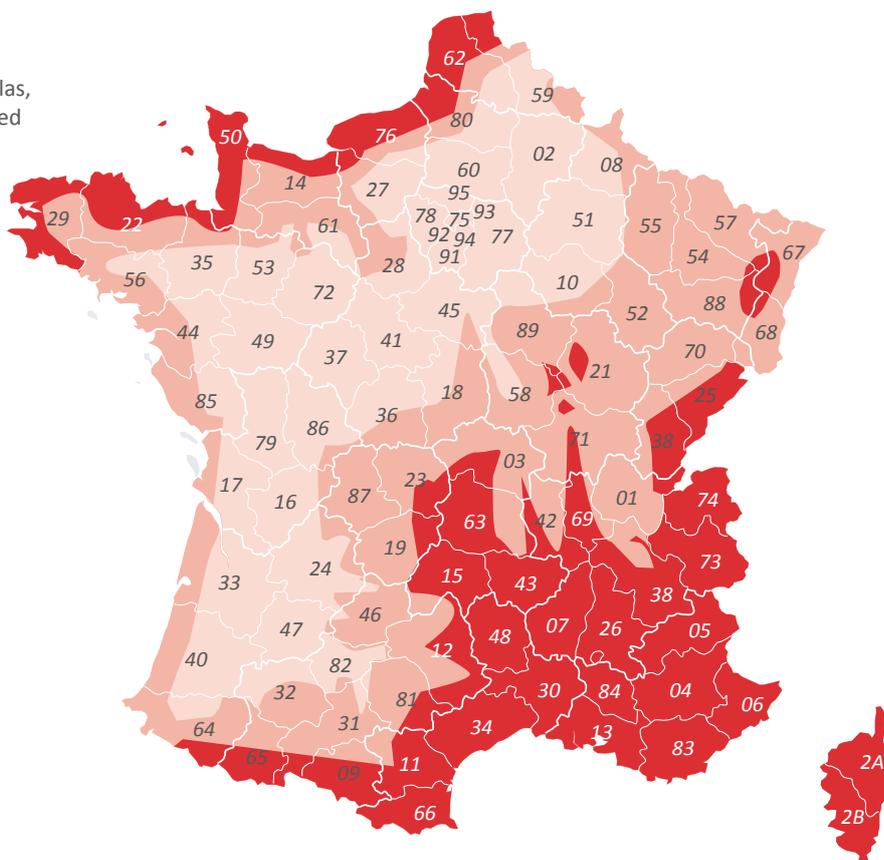
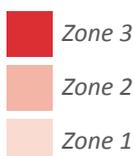
Denmark (DS410.2)

Germany (DIN 1055)

The Netherlands (NEN 3850)

Norway (NS1-1991-1-4)

Czech Republic (CSN EN 1991-1-3, 1-4).



Eurocodes:

Snow: EN 1991-1-3

Wind: EN 1991-1-4.

The information contained in this Installation Guide cannot substitute for prevailing standards. Illustrative map.

CLADDING IMPLEMENTATION

INSTALLATION DIRECTION

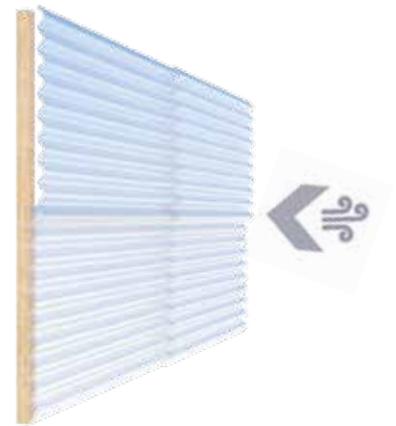
The installation is carried out with longitudinal and transversal overlaps.

Horizontal laying direction

Opposite direction of the prevailing wind. The sheet to be installed covers, along the adjacent longitudinal edge, the sheet installed previously.

Vertical laying direction

From the bottom up. The downslope lap (cut back) of the top sheet covers the lower sheet already installed.



FIXING SPECIFICATION

Main fasteners

In wall cladding: the fixings must include following accessories (waterproofing and loads distribution):

- Sealing washers.
- Saddle supports or curved washers adapted to the profile and to the type of installation, in galvanized steel, prelacquered, in aluminum or stainless steel, depending on the site corrosivity.

Because of their flexibility, the principle is to not rely on the geometry of **ONDUCLAIR® PC** sheets. It is advisable to realise a prior marking of the fixing points with usual building tools (plumb line, laser, gauge...). In some cases, a mixed installation with profile supports located at each sheet side lap (longitudinal overlap) is advised.

If the use of an anchored to the wall scaffolding is necessary, **ONDUCLAIR® PC** sheets which are located at the anchoring points will have to be installed later with the use of a gondola, once the scaffolding is removed. Surrounding **ONDUCLAIR® PC** sheets will be temporarily fixed so as to avoid any wind pressure that could tear them off.

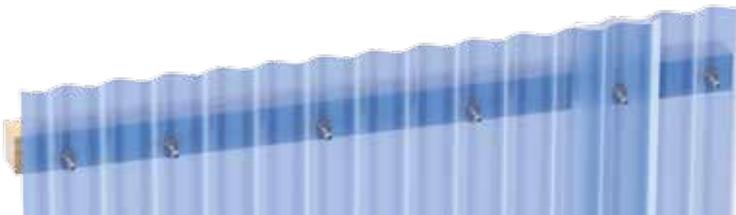
Side lap stitching

The side lap stitchings are made at the top of the longitudinal corrugation or rib overlap (side lap):

- at mid-span for types G.O. (177/51), P.O. (76/18) and GRECA,
- with a maximum spacing of 500 mm for ribbed technical profiles (ie. Nervesco1000), cleverly distributed between the main fixings.

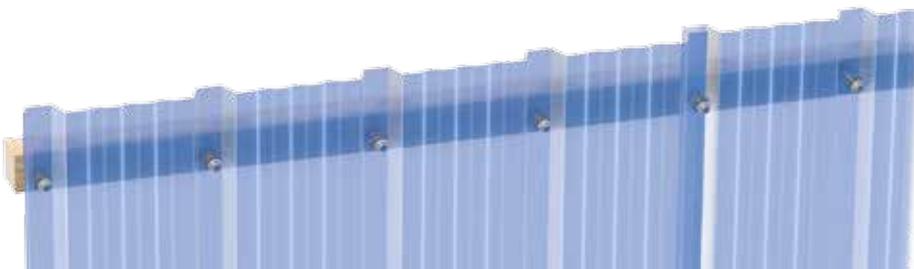
Examples

Profil PO112 (76/18): cladding installation with a two corrugations sidelap



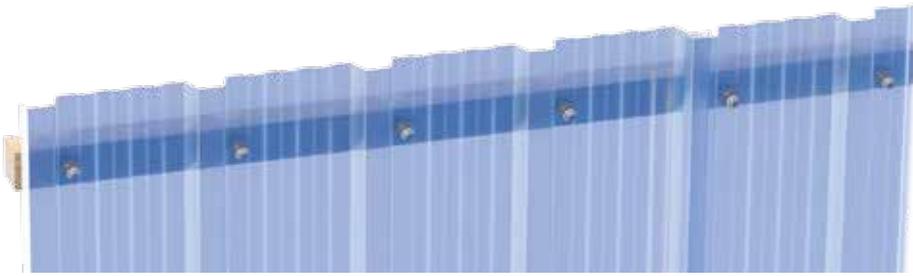
Fasteners are located in the 1st, 3rd, 6th, 9th and 12th corrugations troughs.

Ribbed technical profiles designed for cladding installation (with inverted UV protection)

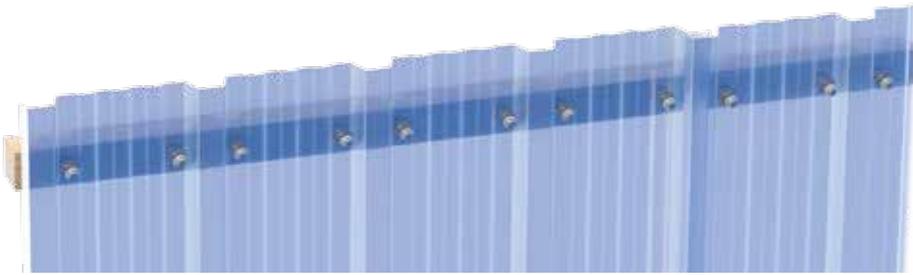


Installation in the rib (or corrugation) trough (one fastener per trough).
Special profile for cladding installation, with UV protection layer on the external side.

Ribbed technical profiles in cladding installation (profiles also suitable for roofing)



*Installation in the profile trough
(normal site: one fastener per trough).*



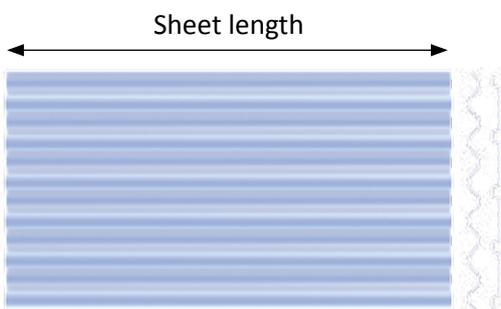
*Installation in the profile trough
(exposed site: two fasteners per trough).*



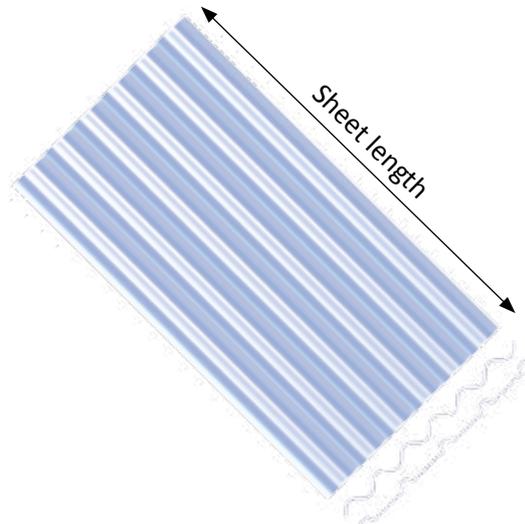
Fixing on the top of the rib (corrugation)

Positioning of the sheets : general installation principles

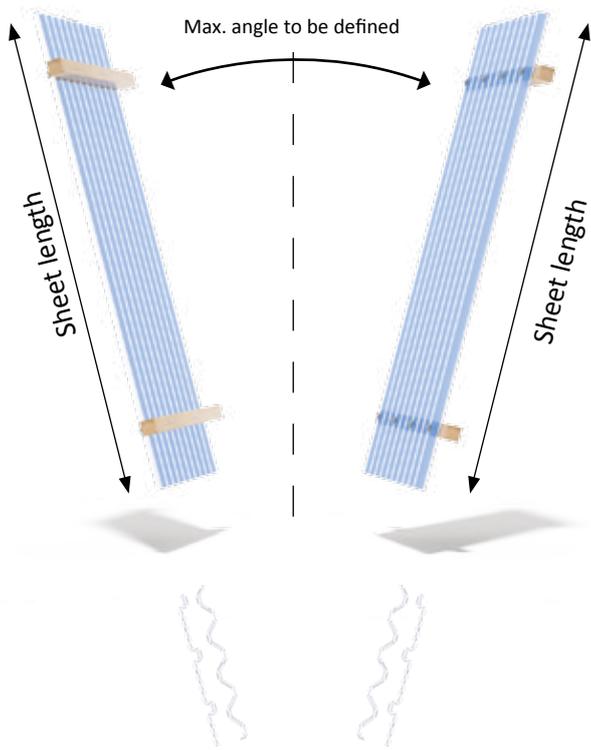
Horizontal installation



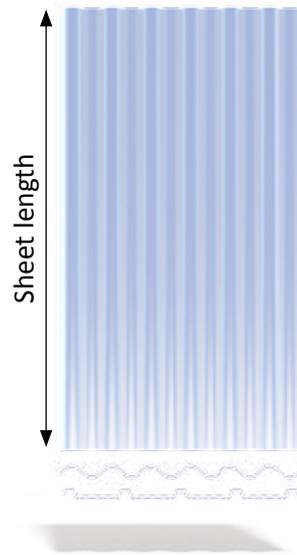
Oblique installation



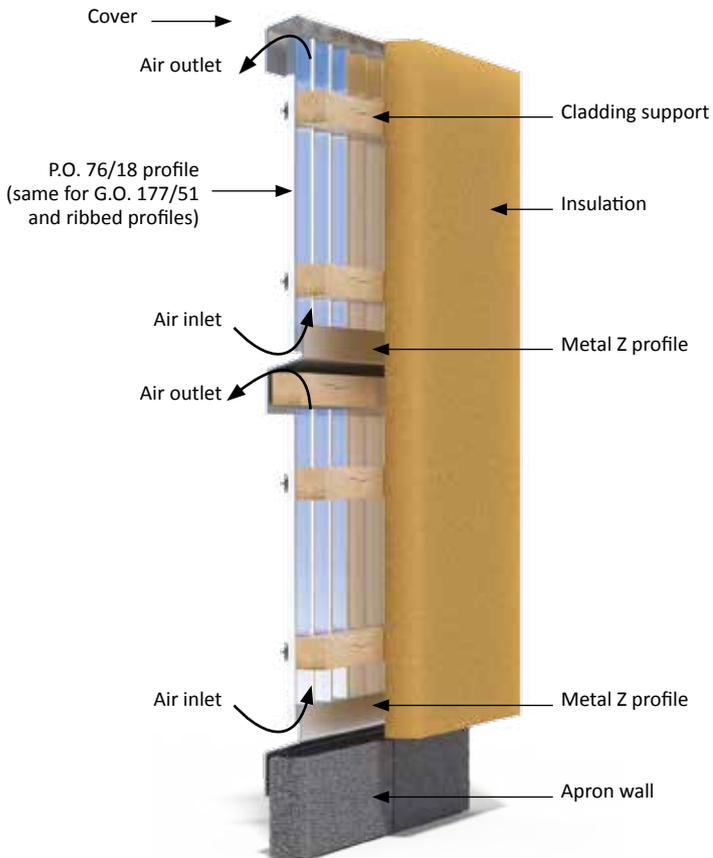
Sloping installation



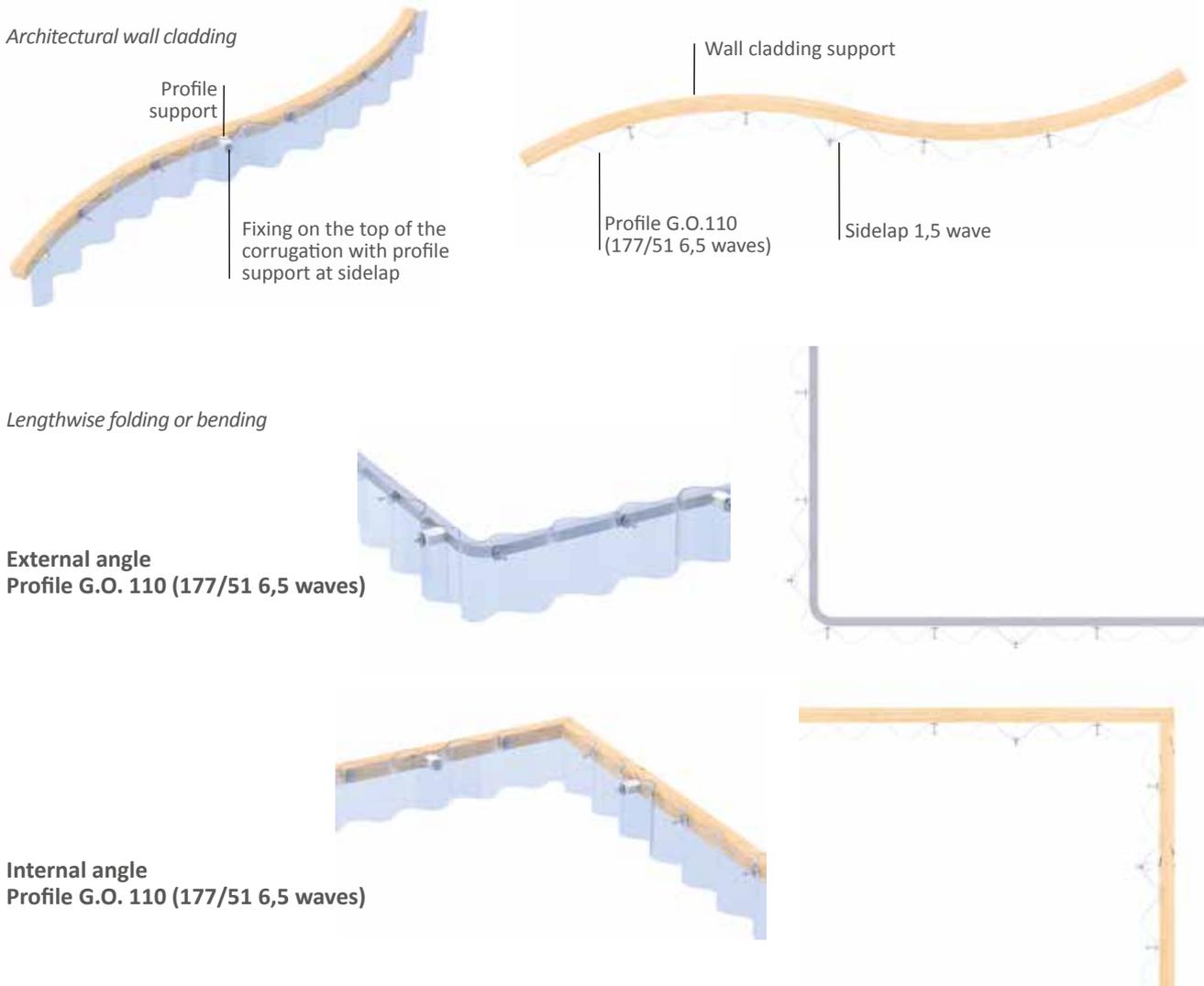
Vertical installation



Ventilation: installation as insulation protection



LENGTHWISE FOLDING OR BENDING



SPECIAL USAGE CONDITIONS

Low end exterior protection

The lightning parts whose base is located within 2 m of the floor must be protected by a device to avoid their possible deterioration.

Length of lightning parts

The surface and localisation of illuminating parts on the wall will be limited by local standards and legislation in force.

TRANSVERSAL OVERLAP

The minimum transversal overlap will be:

- 140 mm for G.O. (177/51) profiles
- 100 mm for P.O. (76/18), GRECA (75 x 18) and ribbed technical profiles

The transversal overlap must take into account the direction of prevailing wind.

SPECIAL SPECIFICATIONS

Foot of cladding

Panels must not rest on the ground. Precautions will be taken to allow the evacuation of runoff and prevent its penetration inside the building. End laps at the extremities will be 200 mm maximum and 100 mm minimum in overlapping the apron wall (see sketch).

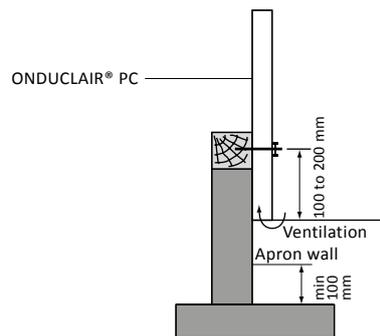
Miscellaneous connections

The V-cut and external angles, the acroterion apices, the high and low head flashings are executed in parts shaped in accordance with local standards in force and adapted to the site corrosivity.

These accessories will be installed in compliance with local rules and in a way that will avoid any wind pressure that could tear the sheets off.

Expansion

The ends of the sheets must never be constrained. Leave a gap of 10 mm with sealing devices in connections with the high and low parts, with an allowance for thermal expansion.



CURVED INSTALLATIONS IN ROOFING

ONDUCLAIR® PC sheets, which are supplied flat, can be used for the realization of continuous or discontinuous curved roofs (translucent or opaque).

They can either be used on new constructions (single-skin or insulated), or on existing constructions requiring, for example, zenithal lighting.

APPLICATION LIMIT

Minimum curving radius = main corrugation (or rib) height x 200.

Example: ribbed technical profile «Nervesco 1000 x 45» (rib height 45 mm). Minimum curving radius = 45 mm x 200 = 9 m.

IMPLEMENTATION

ONDUCLAIR® PC sheets are installed the corrugations (or ribs) parallel to the development of the vault.

Support surfaces

The surfaces that will support the **ONDUCLAIR® PC** sheets must form a constant radius along the development of the vault, so that the **ONDUCLAIR® PC** sheets rest on a flat surface at any point. Installation is carried out with profile supports such as for flat roof slopes.

The installation is made with the use of profile supports as for a flat roof slope (excepting in the case of greenhouses with the SP SERRE profile).

Transversal overlap

In any case, the transversal overlap between the sheets will be minimum 300 mm, uniformly distributed on each side of the main fixings.

Any crack that could lead to damages due to unusual constraints must be avoided.

Transversal overlap at the ridge is forbidden in order to avoid any infiltration problems.

VENTILATION

General ventilation rules for constructions established by the regulations in force have to be respected.

ONDUCLAIR® PC sheets being single-skin sheets, temporary condensation may appear depending on the climatic and hygrometric conditions.

- Continuous linear ventilation devices are essential at the eaves and the ridge, the top and the bottom of the cladding.
- The bottom layer of the sheets will be ventilated so that the in situ temperature does not exceed 110° C.
- In any case, the minimum section of each ventilation opening (air inlet and outlet) will be equal to 1/500th of the horizontally projected surface of the roof slope, with a minimum of 380 cm²/ml, or in compliance with the local standards in force.

■ **MAINTENANCE**

Normal maintenance involves the periodic removal of leaves, grass, mosses and other deposits or foreign objects. Cleaning of the work done in **ONDUCLAIR® PC** sheets can be done with cold water under low pressure.

It is necessary to ensure the proper state of the building ventilation. If antifoam product or cleaning product is used, it must be chemically compatible with the **ONDUCLAIR® PC** sheets. Do not use abrasives.

■ **TEST REPORTS**

1200 JOULES (Large soft body impact resistance)

- G.O. (177/51): test report n° 3104/5
- P.O. 112 (76/18): test report n° 3104/9
- Cobacier 1004: test report n° 3455/3
- H 3 x 333 x 39: test report n° 3455/1
- Nervesco 1000: test report n° 3455/2

EUROPEAN CLASSIFICATION OF REACTION TO FIRE

File N010415

HAIL IMPACT

Test reports EMPA n°402'450 and N°423'278.

GUARANTEE

ONDUCLAIR® PC sheets are covered by a 10 year third party insurance.

The information contained in this Installation Guide is provided in good faith and cannot substitute for prevailing standards.

This document is a non binding document. The description and characteristics of the products, which may be modified without notice, are provided for informational purposes only. Validity date : 01/01/2017, this document supersedes and replaces all previous versions.

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Onduline®

ONDUCLAIR®



ONDUCLAIR® installation instructions for flat or curved supports

Foreword: The installation of ONDUCLAIR® sheets is always carried out from the eaves to the ridge or from the bottom up for wall cladding (except in case of curved installation).

1 - Determine the line of the greatest slope: this one has to be perpendicular to the purlins. Draw this line at the end of the roof, opposite to the prevailing winds.

2 - Fix the first profile support on the previously drawn line and on each purlin.

3 - 2 possibilities of fixing the profile supports:

1	2
Use a gauge (template) corresponding to the installed profile (either a piece of metal sheet, or a wooden gauge) and place it on the first profile support already fastened on the purlin.	Use a measuring stick reporting the exact pitch of the profile on the highest purlin (the closest to the ridge) so as on the lowest one (at the eaves). Use a « cordex » (marking thread) in order to draw the lines in the right alignment of the pitches (refer to the sketch below).

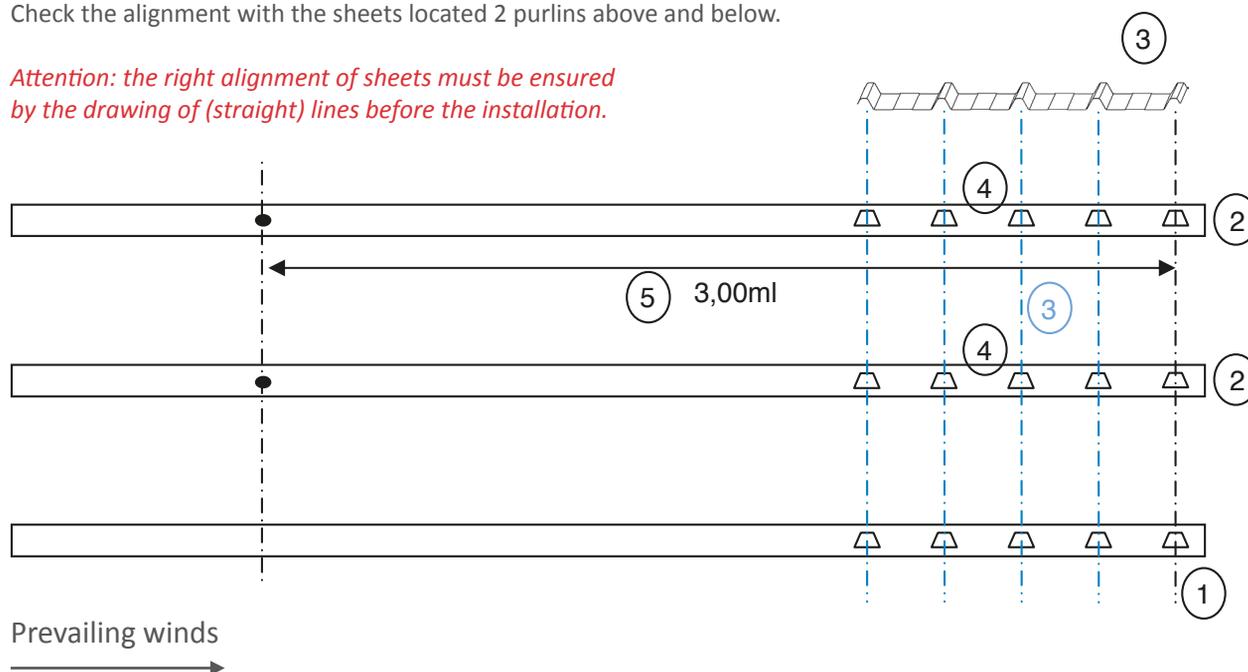
4 - Fasten all the profile supports at each purlin using the gauge or the lines which were drawn with the measuring stick. Respect the curving radius for the sheets to be installed in curve.

5 - In order to check the right alignment, each 3 meters, draw a point on the structure (make a line) in order to rectify the possible gaps between the profile supports (some mm) which may appear despite the use of a gauge.

6 - Fasten the pre-drilled sheet on the profile supports starting with 1 fastener in the middle of the sheet before fastening all the other corrugations that have to be fixed.

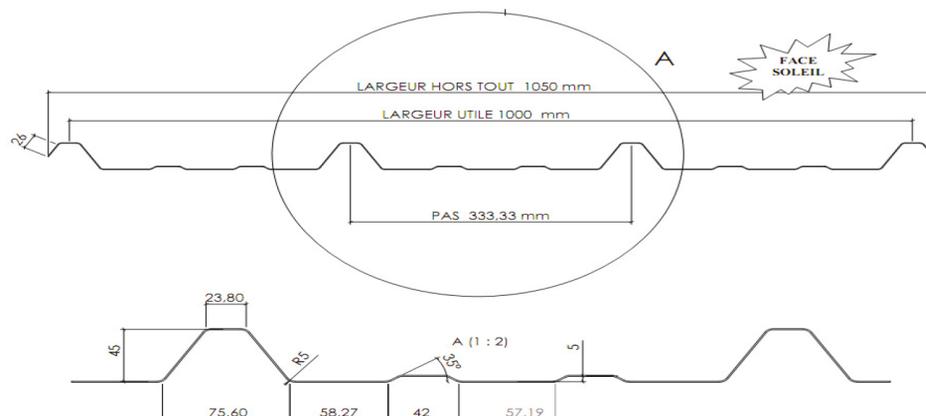
Check the alignment with the sheets located 2 purlins above and below.

Attention: the right alignment of sheets must be ensured by the drawing of (straight) lines before the installation.



Dessin du profil

Profile drawing



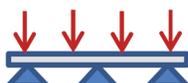
Plan D 56 007

Information Matière *Material Information*

Module d'élasticité <i>Modulus of elasticity</i> (daN/cm ²) :	22000
Coéf. de dilatation <i>Linear expansion</i> (m/m.°C) :	6,5 10 ⁻⁵
Plage de température <i>Service Temperature</i> :	-30 to +130°C
Réaction au feu <i>Fire Performance</i> (Euroclass) :	B s1 d0
Conductivité thermique <i>Thermal conductivity</i> (W/m.°C) :	0,16
Norme de fabrication <i>Manufactured in compliance with norm</i> :	EN 1013 - CE

Information Plaque *Sheet Information*

Tenue à la grêle <i>Resistance to hail</i> (m/sec) :	75 m/s
Test 1200 joules : Veuillez nous consulter <i>Please consult us</i>	
Poids <i>Weight</i> (Kgs/m ²) :	
	PC 08/10 PC 10/10 PC 12/10
	1,190 1,488 1,786
Inertie du profil <i>Profile inertia</i> (cm ⁴) :	
	PC 08/10 PC 10/10 PC 12/10
	24,2438 30,2953 36,3443



Portées et charges sur 3 appuis et plus *Load/Span data for 3 or more supports*

Epaisseur <i>Thickness</i>	Flèche <i>Deflection</i>	daN/m ²									
		40	60	80	100	120	140	160	180	200	
PC 08/10	1/50 mm	Portée retenue ¹	1 500	1 390	1 263	1 172	1 103	1 048	1 002	964	930
		Portée calculée ²	1 591	1 390	1 263	1 172	1 103	1 048	1 002	964	930
	1/100 mm	Portée retenue	1 263	1 103	1 002	930	876	832	796	765	738
		Portée calculée	1 263	1 103	1 002	930	876	832	796	765	738
PC 10/10	1/50 mm	Portée retenue	1 500	1 497	1 360	1 263	1 188	1 129	1 080	1 038	1 002
		Portée calculée	1 714	1 497	1 360	1 263	1 188	1 129	1 080	1 038	1 002
	1/100 mm	Portée retenue	1 360	1 188	1 080	1 002	943	896	857	824	795
		Portée calculée	1 360	1 188	1 080	1 002	943	896	857	824	795
PC 12/10	1/50 mm	Portée retenue	1 500	1 500	1 445	1 342	1 263	1 199	1 147	1 103	1 065
		Portée calculée	1 821	1 591	1 445	1 342	1 263	1 199	1 147	1 103	1 065
	1/100 mm	Portée retenue	1 445	1 263	1 147	1 065	1 002	952	875	875	845
		Portée calculée	1 445	1 263	1 147	1 065	1 002	952	875	875	845

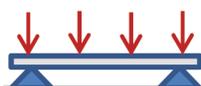
La charge ascendante maximum admissible est limitée à nx36mKg/m². n étant le nombre de fixations par mètre linéaire d'appui.

For depression the maximum allowed load is limited to nx36mKg/m². n being the number of fixations per supported linear meter.

¹ Allowed span

² Calculated span

Valeurs données à titre indicatif. Veuillez adapter les informations contenues dans cette fiche technique aux normes locales en vigueur. Notre Service Technique se tient à votre disposition pour tout renseignement. Values are given for information only. Please adapt the information contained in this technical sheet to local norms in force. Our Technical Department remain at your disposal for any information.



Portées et charges sur 2 appuis *Load/Span data for 2 supports*

Epaisseur <i>Thickness</i>	Flèche <i>Deflection</i>	daN/m ²									
		40	60	80	100	120	140	160	180	200	
PC 08/10	1/50 mm	Portée retenue ¹	1 413	1 234	1 121	1 041	980	930	890	856	826
		Portée calculée ²	1 413	1 234	1 121	1 041	980	930	890	856	826
	1/100 mm	Portée retenue	1 121	980	890	826	777	738	706	679	656
		Portée calculée	1 121	980	890	826	777	738	706	679	656
PC 10/10	1/50 mm	Portée retenue	1 500	1 329	1 208	1 121	1 055	1 002	959	922	890
		Portée calculée	1 522	1 329	1 208	1 121	1 055	1 002	959	922	890
	1/100 mm	Portée retenue	1 208	1 055	959	890	837	795	761	732	706
		Portée calculée	1 208	1 055	959	890	837	795	761	732	706
PC 12/10	1/50 mm	Portée retenue	1 500	1 412	1 283	1 191	1 121	1 065	1 019	979	946
		Portée calculée	1 617	1 412	1 283	1 191	1 121	1 065	1 019	979	946
	1/100 mm	Portée retenue	1 283	1 121	1 019	946	890	845	808	777	750
		Portée calculée	1 283	1 121	1 019	946	890	845	808	777	750

La charge ascendante maximum admissible est limitée à $n \times 36 \text{mKg/m}^2$. n étant le nombre de fixations par mètre linéaire d'appui.
 For depression the maximum allowed load is limited to $n \times 36 \text{mKg/m}^2$. n being the number of fixations per supported linear meter.

¹ Allowed span

² Calculated span

Portées retenues selon conditions de calcul suivant Annexe L (normative) DTU 40-35 (NF P34 205-1).
 Autres pays que France, vérifier les charges admissibles en tenant compte des portées calculées données et des normes et réglementations en vigueur dans le pays d'implantation du bâtiment.
*Allowed spans according to means of calculating following Annex L (normative) DTU 40-35 (NF P34 205-1).
 For other countries than France, check the allowed loads taking into account the calculated spans so as the norms and regulations in force in the country where the construction is located.*

Valeurs données à titre indicatif. Veuillez adapter les informations contenues dans cette fiche technique aux normes locales en vigueur. Notre Service Technique se tient à votre disposition pour tout renseignement. Values are given for information only. Please adapt the information contained in this technical sheet to local norms in force. Our Technical Department remain at your disposal for any information.