

iso-<sup>®</sup>técnica



## Our Competences

Since the regional cold storage house construction boom of the 1960's -70's, South America has accumulated plenty of experience and is among today's leaders in Prefabricated Panel manufacturing, design and construction.

Fast installation, tightness, hygienic surfaces, insulation without thermal bridges, etc. make metallic or plastic skinned Sandwich Panels suitable for the construction of warehouses, facilities, schools and commercial and residential buildings, in addition to walk-in freezer and refrigerated depot construction.

From the time of Isotecnica's founding in 1999, our goal has been to fulfil the necessities of our customers and partners in the areas in which we excel, and those which concern and motivate us today.

Our team aims to grow with you.

## Engineering and Experience

Adding decades of activity of our principals, our team's experience is constantly improved upon through the international conferences that we organize for -and with- our customers, worldwide. This ongoing exchange provides us with very important feedback and keeps us updated and linked to the dynamic reality of

- Machinery
- Foam + Panel Technology
- Global market tendencies
- Prefabricated building systems
- Engineering and production of bespoke machinery
- Layout design for the manufacturing of foams and structural sandwiches

## Conferences

Successful design, production and application require a certain basic knowledge. At Isotecnica, in addition to updated machinery and technology, you will find the appropriate seminars to obtain qualified answers to your various questions.

Our conferences and seminars will put you and your company in a successfully prepared position for the production of foams and SIPS or, at least, for improving your knowledge thereof.

These seminars are designed for both newcomers to these technologies and for those who wish to gain a qualified dialogue partner for project or technical development discussions.

We are pleased to offer tailor-made seminars for individual companies, worldwide, or supportive (motivational) conferences for your customers.

Our staff is also available for hire as consultants for the following needs:

- In-company or on-site training
- Expert witness and technology transfer
- Conferences in sustainable architecture, thermal insulation and Sandwich Panel design, manufacturing and application
- Marketing and motivation seminars

**Machinery, commissioning and start-up of facilities for both Foam and Sandwich Panel production with different cores, skins and joint options**

**Technology transfer based on decades of experience with the manufacturing, transformation, on-site application and marketing of insulation materials and Sandwich Panels**



**Our goal is to assure our customers both trouble-free access to Foam and Sandwich Panel production, as well as to increase their actual performance**

# Why Sandwich Panels ?

## Creative

Sandwich panel -or prefabricated construction, do not represent a limitation to Architects Imagination and leave to the Architects a lot of creative margin.

## Long lasting

Sandwich elements are of low maintenance and durable. Modern coatings of the employed metallic surfaces offer a very good protection against corrosion, UV, and vapor diffusion. Smart designed joints avoid the falling into fire of the skins and therefore a spread of fire. All these proprieties ensure a stable value.

## Modern

Sandwich elements allow contemporary construction. The materials are easily available. Technically mature specification, allow an easy design. Updated 3R concepts and next generation materials, make environmental protection feasible. Insulated sandwich panels turn the use of alternative energies feasible.

## Flexible

A broad scope of panel thicknesses and -lengths; a diversity of external skins and surface treatments and a plurality of core materials: whether flat or profiled, colorful or drab, slot and tongue joining, they all are the corner stone of their flexibility. Whether wall or roof, SIP's are suited for almost all kind of constructions.

## Economy and ecology

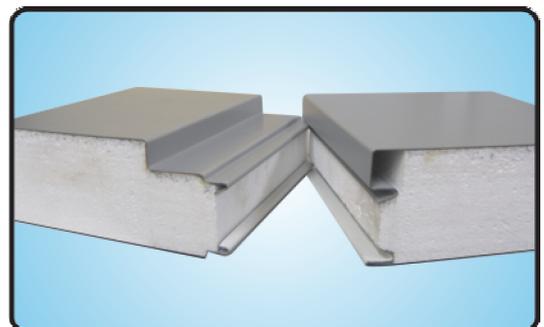
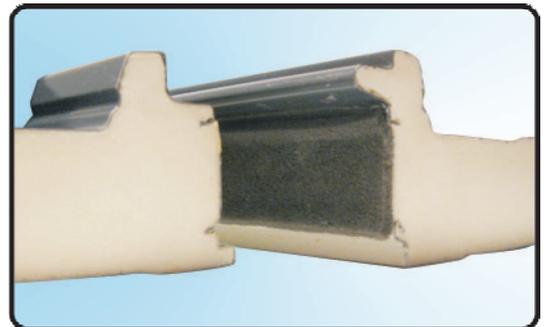
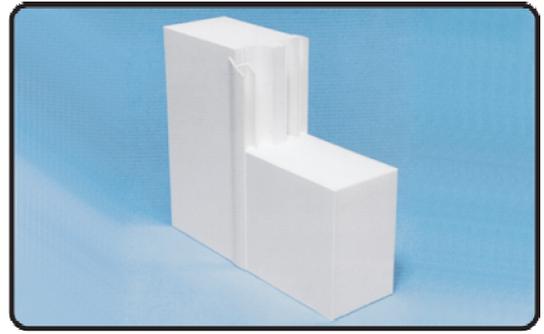
Constructions built with SIP's are immediately serviceable. The installation is almost artless and on the building lot ...no impact with environmental burden. The excellent insulation values provide energy savings and protect the natural ressources.

## Fast and safe

Sandwich panels are lightweight and easy to convert or adapt to local circumstances or construction side specifics. They can be installed regardless of weather conditions. The correct disposition of layers and the "bauphysical" characteristics of these elements, offer a high degree of certainty and a predictable performance of the final building.

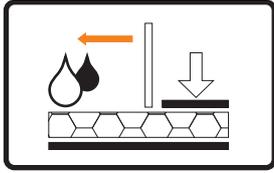
## Technically mature

The physical proprieties of SIP's are by far better than the individual values of each layer added. Sandwich panel not only can bear loads like a beam, they also can transfer loads, in dependence of the skin and core materials and thicknesses.



# How to make sandwich panels

## L&ST



Almost 60 % of all Sandwich panel producers in the world did start this way.

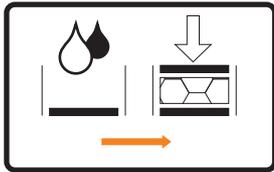
Advantage: All kind of Structural Insulated Panels and compounds can be manufactured.

Disadvantage: Physical proprieties and/or quality are up to manpower skills and mood.

Not suited for big scale production, in spite that some of our customers produce –on a reliable way- up to 700 m<sup>2</sup> a day.



## DISC



PUR or PIR injection.

A good option for newcomers.

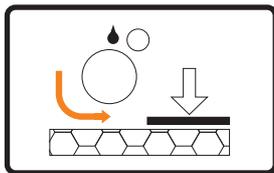
Advantage: Lower investment.

Disadvantage: Due to curing process of the foam: discontinuous proceeding.

Higher production levels, require the existence of mold batteries. Length limited to press size.



## LAMD

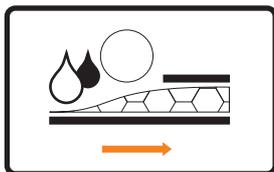


Parting from slab cores and skin plates. Stick together by one component, moisture curing or hotmelt adhesives. Very popular in the manufacturing of OSB (oriented structural board) faced SIP's. Mobile homes, trailers, tailor made SIP's for residential purposes.

Advantage: Precise adhesive metering and distribution. Predictable quality. Disadvantage: Unless automation, higher production levels are strongly dependent on manual handling, and on a reliable Foam core supplier.



## CONT



PUR or PIR continuous panel production. High scale equipment. High investment.

Advantage:

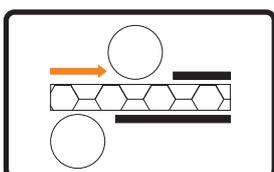
High productivity in terms of m<sup>2</sup>/min

On site foam manufacture

Disadvantage: Poor flexibility, regarding quick switches to different skin, core, panel thickness and edge options.



## LAMC



Mainly coil delivered skins, like Pre-painted steel, Aluminum, Stainless Steel, Reinforced Polyester, plywood.

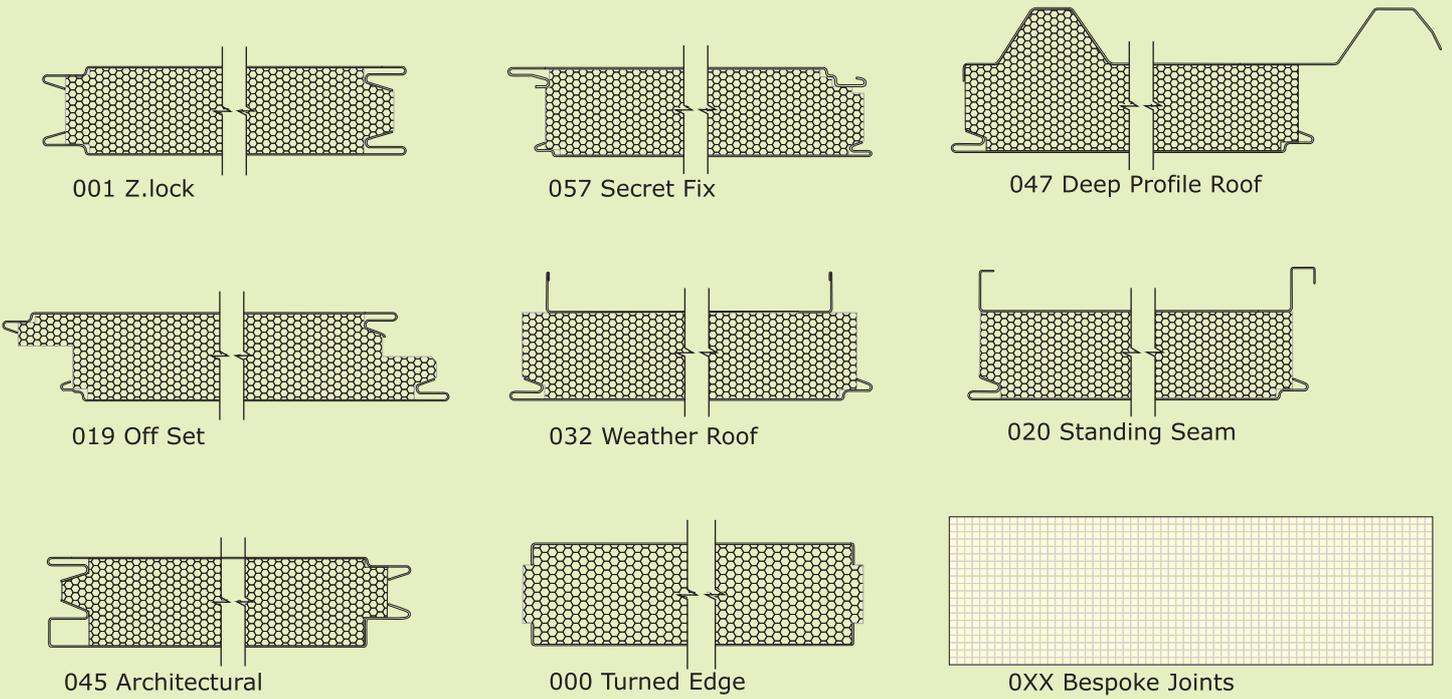
Advantage: flexibility. Quick start up.

Easy switch from: one core material to another; rapid thickness variation; immediate changeover of skin and type of panel (roof/wall).

Disadvantage: Dependency on a reliable foam core supplier.



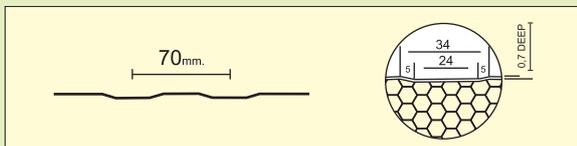
# Some Panel-to-Panel Joint Options



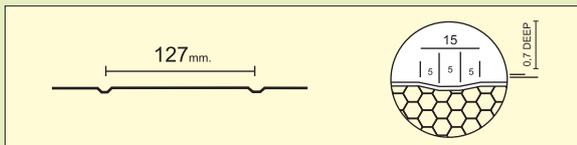
## Metalic Skin Surface Options

## Foam Junctions

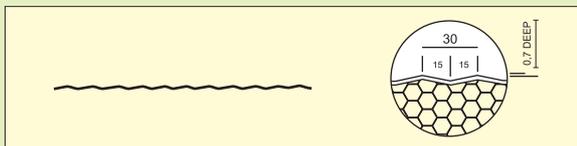
Traditional



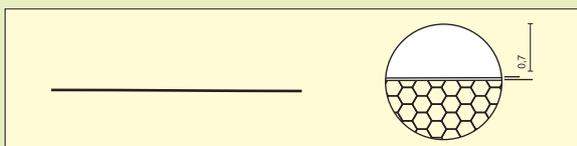
Singapore Groove



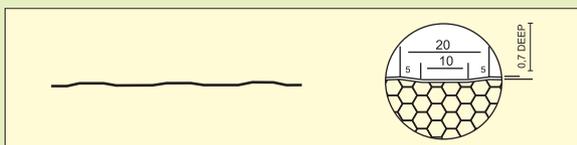
Silk Line



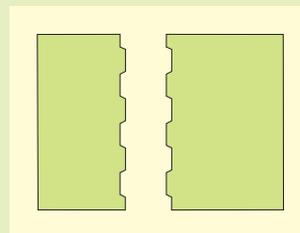
Flat



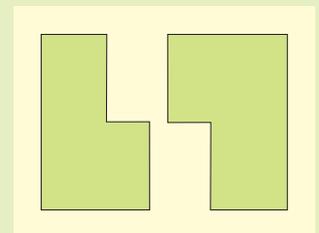
Raised



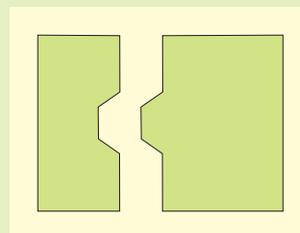
Finger Joint



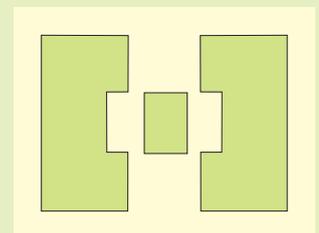
Rebate Lap Joint



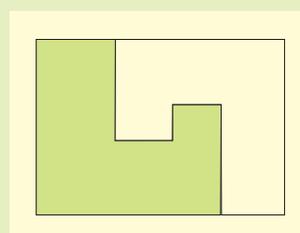
Integrated Spline



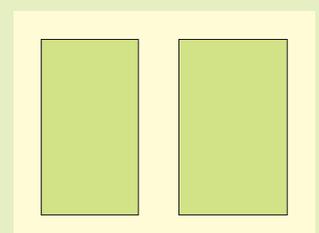
Tongue and Groove



Hook



Straight Bump



# Machinery



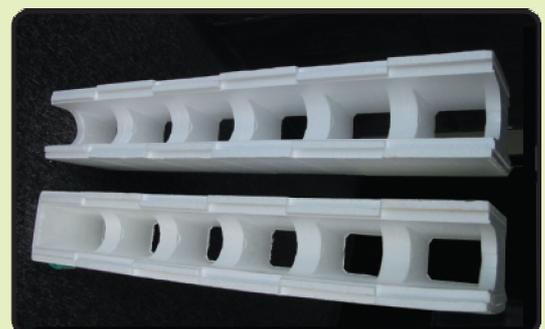
## Present -and Future- Building Procedures

Construction period and quality define the factors of success in the building industry. They constitute the key to cost reduction.

Industrial prefabrication of energy efficient, environmentally friendly homes and building envelopes, signifies the rethinking of working procedures in the construction industry.

At Isotecnica we are committed to achieving this goal by supporting our customers in the following production options:

- PCE Precast Concrete Elements.
- SIP Sandwich Structural Insulated Panels.
- ICF Insulating Concrete Forms.





# R. O. del Uruguay

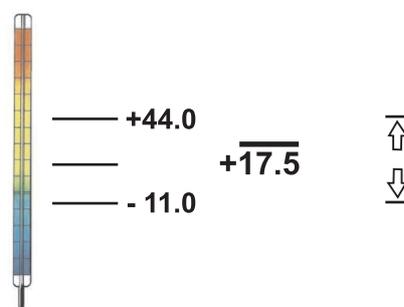
Capital: Montevideo [anno 1724]

 3.300.000

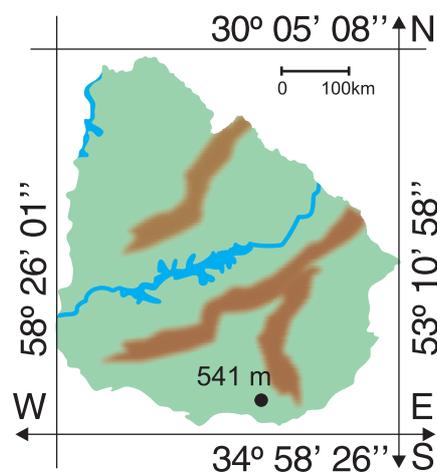
18,8 [h/km<sup>2</sup>]

Surface: 176.320 [Km<sup>2</sup>]

Temperatures [°C]



Humidity



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