

SANDWICH PANEL MACHINERY AND ASSOCIATED EQUIPMENT

Advanced Sandwich Panel Machinery

- ♦ Polyurethane (PU)
- ♦ Mineral Fibre
- ♦ Polystyrene (EPS)



PANELTEC
INTERNATIONAL

LEADING EDGE OF TECHNOLOGY

Paneltec International Ltd was formed in 2005 by leading engineers from the Sandwich panel industry. The directors from Newcastle upon Tyne, UK have over 30 years experience of both manufacturing the Sandwich panels and also producing the machinery that makes the panels. We have produced in excess of 10 million square metres of Sandwich panels for many applications and environments. This knowledge of Sandwich panels and there uses has given our research and development design team the solid foundation in designing machinery that produces Sandwich panels of the highest quality and specification.

The machines are designed with the latest 3D CAD/CAM software packages to produce sound working solutions to customers concepts. We are active in investigating the new technologies from Europe associated with Sandwich panels and we adopt these in our designs this, ensures we are always producing machines with the latest specifications and keeps us ahead of the field.

The components of the machines are sourced from world leading suppliers. Paneltec machines will give many years of service with little maintenance. All parts should be readily available from stockists and distributors in most cities around the world.

Our UK after sales agents can be called upon to give good and speedy advice on all aspects of the machinery maintenance and operation. Each machine is available with complete set of operations manuals which has detailed information of the machinery and maintenance procedures to ensure that the machines operate efficiently without excessive wear.

On completion of the manufacture of the machinery we invite the customer to our factory to inspect the line and we will run the complete line prior to shipping, samples of the panels are produced for the customers inspection. The customer will then sign the acceptance certificate. Our UK installation engineer will ensure the machines are installed to the customers satisfaction and we will train the customers operatives in the operation of the equipment.

We are extremely proud of our achievements and we are confident that should you decide to place your order and trust with Paneltec International you will have invested in the right machinery to enable you to develop a high class, respectable and profitable business.

B A Russell

Chairman





WORLD LEADER

Paneltec International is a leading manufacturer of high quality Sandwich Panel Machinery. The machines are built to the highest European standards with components from world leading suppliers. European engineers design the machines to the highest Quality Standard

WALL PANELS * ROOF PANELS * SECRET FIX PANELS

Applications for Sandwich Panels

- **Housing**
- **Warehouses, Industrial**
- **Hospitals and Clean Rooms**
- **Food Processing Factories**
- ⇒ **Cold storage and Chill stores**
- ⇒ **Fire Safe Buildings**
- ⇒ **Oil Industry buildings**
- ⇒ **Office Partitioning**
- ⇒ **Site Cabins**
- ⇒ **Leisure facilities**

Customer Reference from 2005

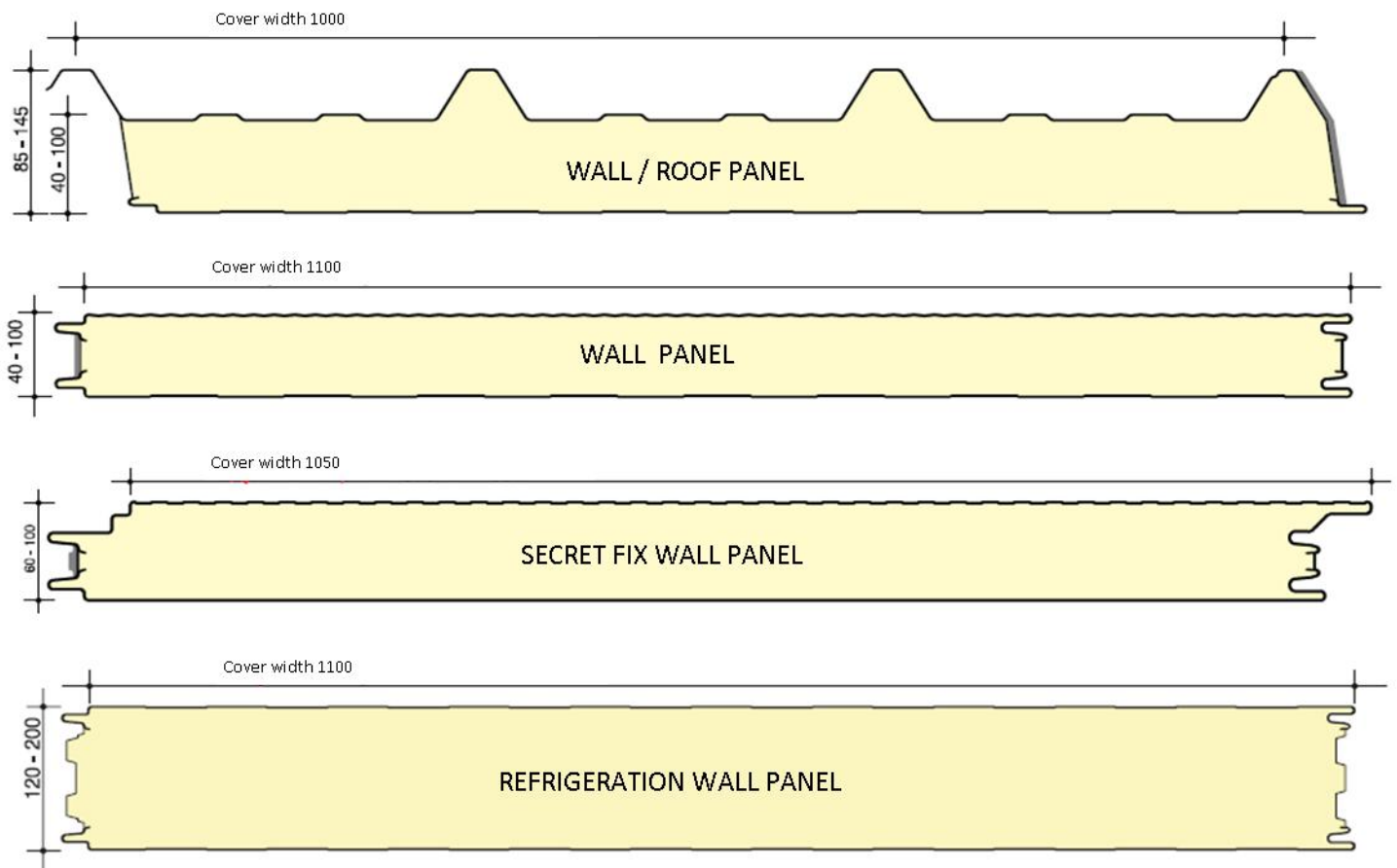
- **Kazakhstan, complete Sandwich panel line**
- **Smolensk, Russia, Sandwich panel line**
- **Ternopil, Ukraine, complete Sandwich panel line**
- **Moscow, Russia, complete Sandwich panel line**
- **Lithuania, Sandwich panel machinery**
- **Moscow, Russia, complete Sandwich panel line**
- **Orsk, Russia, complete Sandwich panel line**
- **Moscow, Russia, complete Sandwich panel line**
- **Kiev, Ukraine, complete Sandwich panel line**
- **Vladimir, Russia, complete Sandwich panel line**

Main Products

Sandwich panel Machinery and Associated equipment

- **Laminating press, Caterpillar or Roller Types, PU continuous Sandwich panel line**
- **Complete lines to make Sandwich Panels with Polyurethane, Mineral Fibre, Polystyrene insulation**
- **Wall and Roof panels, Secret Fix, Aluminium and Steel faces, Aluminium Foil face**
- **Polyurethane Chemical plant and foam processing equipment**
- **Complete Mineral Fibre processing and cutting line including waste extraction**
- **Automatic loading machines for Insulation materials. Panel Stacking and Wrapping machinery**
- **Roll forming machinery for various profiles**

POLYURETHANE SANDWICH PANEL MACHINERY



TYPICAL WALL AND ROOF PANELS

Paneltec manufactures PU and PIR continuous Sandwich Panel Lines, options are available offering the customer different technical parameters. Complete lines available include a Basic Polyurethane (PU) line to produce Wall and Roof panels to the more complex PIR line to make Sandwich panels with high fire resistance.

The chemical system is an integral part of the whole line and the machinery is available to produce different foam formulations. 2 , 5 and 7 part component systems are available.



The infeed section incorporates the Steel de-coilers , Rollformers for the Wall and Roof profiles and the PVC film application device.



The Double belt conveyor is generally considered the most important part of the line as this controls the finished quality of the Sandwich panel.

POLYURETHANE SANDWICH PANEL MACHINERY

- Speed of product line: maximal speed: 10m/min(frequency conversion to adjust speed)
- The total line length is approx 120 m lg x 18m w x 3.5m h
- Total power of the product line: about 350 KW
- Single shift can produce 1,200,000 m² (the line can operate 24 hours per day)
- Thickness of panel from 30mm up to 200mm
- Width from 600mm up to 1200mm
- Foam system Polyurethane (PU) and Polyisocyanurate (PIR)
- Blowing agents R141b, Pentane

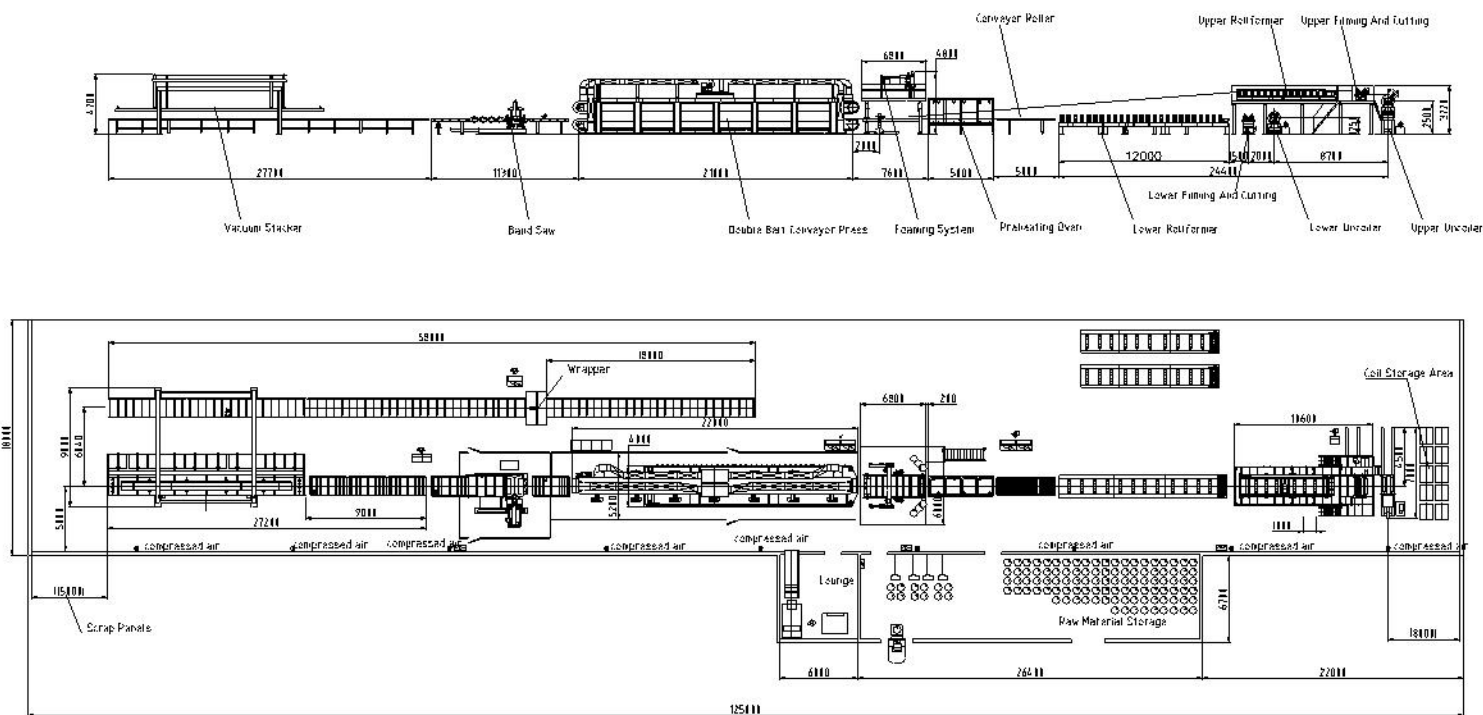
The Polyurethane Sandwich Panel line has benefits over traditional laminating line configurations.

The process has a higher rate of production, therefore capacity is very high. The Sandwich panel is made from only 2 components, Steel or Aluminium faces and the PU or PIR insulation core.

Polyurethane / Polyisocyanurate has superior thermal properties to both EPS Polystyrene and Mineral Fibre

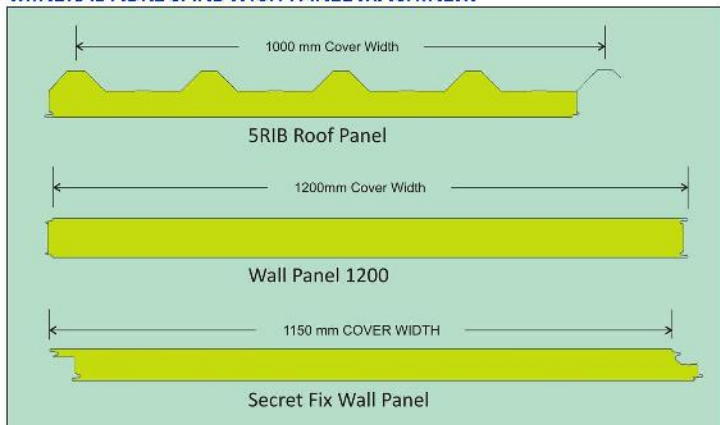


Typical arrangement showing Chemical Plant equipment



Typical Sandwich Panel Layout (Polyurethane)

MINERAL FIBRE SANDWICH PANEL MACHINERY



Mineral Fibre Sandwich panels have excellent thermal and fire proof properties (non combustible), the panels can be used for many fire safe applications, they also have excellent sound reduction properties.

Paneltec manufactures a complete range of machinery to process the Mineral Fibre straight from the pallet.



Mineral Fibre Sandwich Panels are non-combustible and the panels can be used to create 1 and 2 hour Fire proof constructions.



Intaloc Wall Panel joint

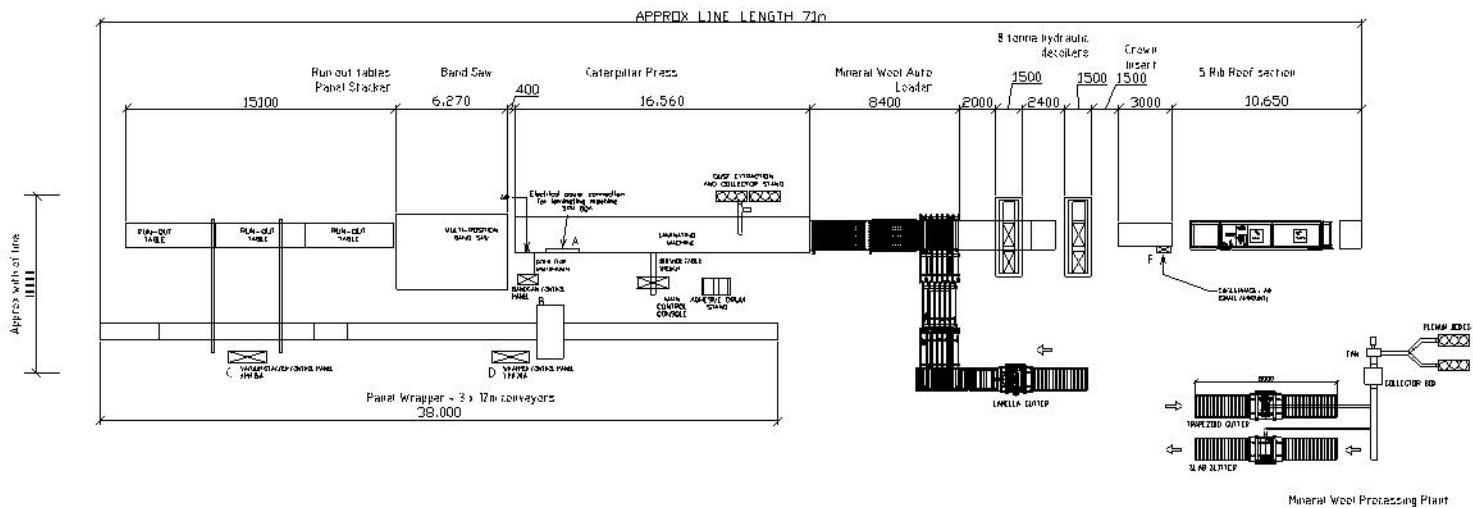


5Rib Roof Panel

Mineral Fibre Sandwich Panel Machine Components

- Mineral Fibre Insulation Loader
- Fully automatic Mineral Fibre loader from pallets
- Lamella Cutting Saw
- Slab Slitter for Roof Panel trapezoid infill's
- Trapezoid saw for Roof Panel trapezoid infill's
- Waste Extraction system
- Slab milling machine for accurate thickness control of the Mineral Fibre slab

MINERAL FIBRE SANDWICH PANEL MACHINERY



Typical Sandwich Panel Layout (Mineral Fibre)



LAMELLA CUTTER

The Lamella Cutter cuts boards of mineral fibre into lamella strips. The strips need to be turned 90° to make Sandwich Panels. The Automatic mineral fibre loader does this automatically and feeds the material directly into the laminating machine.



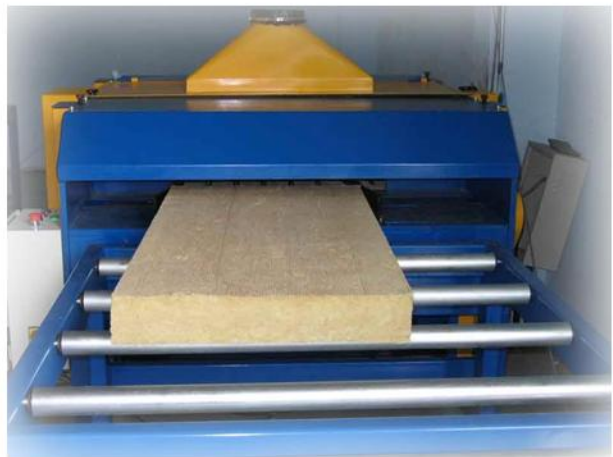
TRAPEZOID SAW

The Trapezoid Saw machine cuts insulation sheets to produce the trapezoid insulation infill sections which go into the Roof panel crowns. The infill pieces are fully glued into place with the Crown Insertion unit.



WASTE EXTRACTION PLANT

The waste extraction plant takes the cutting waste from the machines and puts it into bags or hoppers for easy disposal or recycling.



SLAB MILLING

The Slab Milling machine grinds the mineral fibre boards to accurately set the thickness ($\pm 1\text{mm}$). This ensures the high quality of the Sandwich Panels.

MACHINE ELEMENTS



MINERAL FIBRE DOUBLE BELT CONVEYOR CATERPILLAR PRESS

The laminating press is the heart of the process and is where the components of face materials and insulation are brought together and laminated under heat and pressure to form the Sandwich panel. The panel joint roll-formed edges are also formed within this section of the line.

For aesthetic requirements additional face profiles form various light profiling of the faces.

The final quality of the panel is determined by the strength of the lamination between the facing materials and the insulation core, the visual appearance of the facing materials and the accuracy of the interlocking panel joint.



CATERPILLAR PRESS

The Caterpillar Press incorporates moulded plastic sections which are interchangeable for wall and roof panels. The speed of the press is controlled by the frequency inverter, the press is milled insitu to ensure a high level of surface flatness.

The whole press section is supplied in one section to reduce installation time.





BANDSAW

The Automatic Bandsaw cuts all panel types cleanly and accurately, the panel length is set in the computer program and each panel is cut exactly. The Saw unit clamps onto the panel and travels at the same speed as the panel whilst smoothly cutting the panel.

The blades are easy to replace and can cut Mineral Fibre, PU and EPS.

The Bandsaw blade can be rotated 180° and cut in the reverse direction



▶ The Paneltec control panel has a windows based program that controls the laminating line and Bandsaw.

The steel and insulation is loaded into the machine at the start up positions and all the parameters are set in the computer i.e. Temperature, speed of production, the lengths of panels and number required. The auto start function then runs the line automatically.

The central control panel can control the (PU) foaming plant. The PLC adjusts the speed of the line and the volume of PU foaming chemicals injected onto the bottom steel.



CONTROL PANEL

STEEL LOADING SECTION AND ROOF PROFILE MACHINE



Basic 8 tonne coil stand with 8 tonne steel coils and manually operated hydraulic mandrels.



8 tonne coil stand and hydraulic mandrel for Roof profiling machine



The 5 Rib Roof Profile machine produces the steel faces for the Roof Sandwich Panel. The speed is interlinked into the main computer control system through the PLC.

Different profiles can be produced to the customers specification.

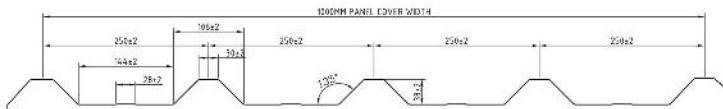
The machine includes, guides for accurate guidance of the steel and a sheet cut off unit.

Steel thickness

0.4mm up to 0.7mm



8 tonne hydraulic mandrel and coil car



5 RIB ROOF PROFILE

INSULATION LOADING AND INFEED SECTION



The Mineral Fibre Insulation Loader can load pre cut mineral fibre lamellas, into the automatic infeed Pusher table. This machine can also be adapted to load sheets of Polyurethane and Polystyrene (EPS). The speed is matched to the line speed by the Inverter to ensure constant supply of insulation sheets to produce the Sandwich Panels, the loader places the sheets of insulation or Mineral fibre lamellas onto the Pusher table

INSULATION LOADER

Automatic Mineral Fibre Loader will process boards of Mineral Fibre straight from the pallet. The boards are passed through the Lamella saw unit which cuts the boards into lamella strips which are then turned and are automatically fed into the laminating machine, the machine staggers and pushes the insulation into the laminating machine.

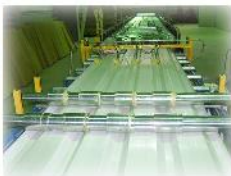


AUTOMATIC MINERAL FIBRE LOADER



INSULATION PUSHER TABLE

This machine pushes the insulation into the laminating machine automatically. Mineral Fibre, PU and Polystyrene will be loaded this way. The pneumatic ram keeps the insulation sheets pushed tightly together, offset pins creates a stagger in the Mineral, for improved panel strength.



CROWN INSERTION

This machine glues the trapezoid insulation pieces into the roof profile crowns, used for Mineral

Fibre, PU and Polystyrene Roof Panels. This ensures the panel is completely bonded which improves panel strength



INSULATION LOADER

This unit combines with the insulation loader to feed Polyurethane and Polystyrene sheets onto the Pusher Table which feeds the laminating machine. The process reduces manpower requirements and increases line efficiency

MAIN MACHINE INFEED AND PRESS

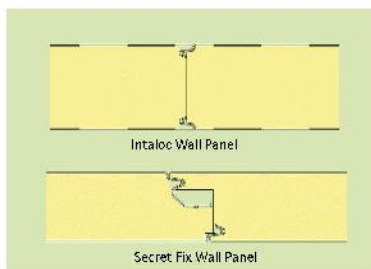


Press section

Adhesive section

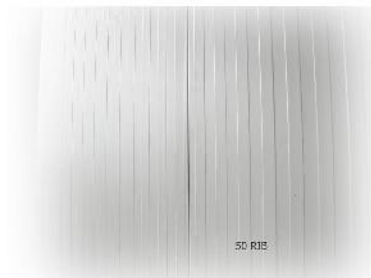
Wall Panel Joint Roll
Forming and face
profiling

Edge trim section and
waste extraction



Press Section (Caterpillar Type)

The panel joints are formed by the banks of roll former wheels within the machine, panels can be made from 600mm wide up to 1200mm



The 50 Rib face profile is the standard profile for wall panels and the underside of the roof panels, other face profiles are available on request



The Micro rib profile is suitable for external horizontal wall panels

PANEL STACKING AND WRAPPING



PANEL VACUUM STACKER

The Panel vacuum stacker, stacks the sandwich panels automatically onto the wrapper transfer conveyor. The Stacker can lift panels up to 15m long and maximum weight 800kg. The machine has a safety device which sounds an alarm if the vacuum pressure drops for any reason whilst lifting the panel.



RUN OUT CONVEYOR

The Run out Conveyor is manufactured from individual rubber coated rollers to ensure the faces of the Sandwich Panels are unmarked. The rollers are motorized if the line has the Panel Stacker option.



PANEL WRAPPER

The Panel Wrapper, wraps the pack of panels with a plastic film, this protects the panels from rain, sand and dirty environments. Due to the large diameter of the revolving ring, the panel stack can be 1.8m high.

The pack of panels will be stacked onto a pallet and after wrapping the whole pack can be loaded directly onto the truck and sent to site.

SANDWICH PANEL MACHINE TYPICAL SPECIFICATION

Products

- Wall and Roof Panels with steel or aluminium faces, aluminium foil can also be used
- Insulation core Polyurethane (PU), Mineral Fibre or Polystyrene (EPS)

Machine operating speed

- Polyurethane - up to 10 metres / minute
- Mineral Fibre - 3 to 4 metres / minute
- Polystyrene - up to 5 metres / minute

Thickness of Sandwich Panel

- From 40mm thick up to 300mm thick

Width of Sandwich Panels

- Wall Panels from 600mm up to 1200mm
- Roof Panels 1000mm

Recommended minimum facing thicknesses

- Flat external panels - 0.7mm thick
- Micro rib external panels - 0.6mm thick
- 50 RIB internal panels - 0.5mm thick
- General Purpose panels - 0.35mm thick min

Quality Assurance

ISO 9002

CE Marking available

The machinery can run 24 hours / day

Spares are easily available from Paneltec or directly from the suppliers who have world wide stockists and distributors

Paneltec Machines are manufactured from the World's leading components

Electrical components

- Omron, Japan
- ABB, Siemens, Germany

PLC and Computer

- Omron, Japan
- ABB, Siemens, Germany

Bearings

- SKF, Japan
- INA, Germany

Pneumatics and Air

- Parker, USA
- Festo, Italy
- Norgren, UK

Vacuum

- Becker, Germany
- Parker, USA

Motors

- Nord and Fender, Germany

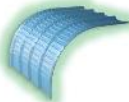




LINTEL ROLLFORMING MACHINE



CURVING MACHINE



CABLE TRAY MACHINE



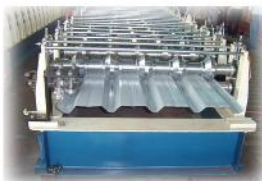
ROOF TILE MACHINE



ZED PURLIN MACHINE



METAL DECKING MACHINE



CORRUGATED PROFILING MACHINE

Various types of machinery are available from Paneltec International. Please contact the sales office



HOSPITAL AND CLEAN ROOM



MODERN ARCHITECTURE



SPORTS AND LEISURE



CHEMICAL PRODUCTION



WAREHOUSE



FOOD PROCESSING FACTORY



OFFICE



COLD STORAGE



HOUSING



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Disclaimer

Due to continual product developments data and therefore distribution change without notice.

