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PU Plants

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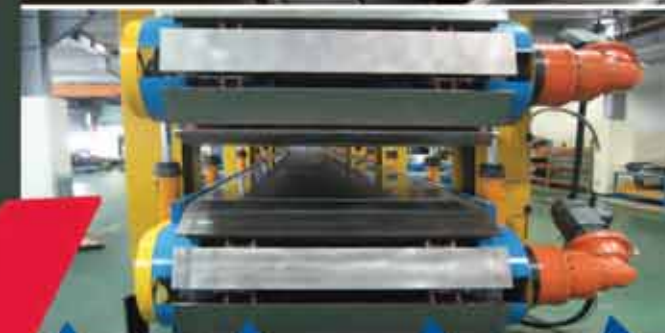
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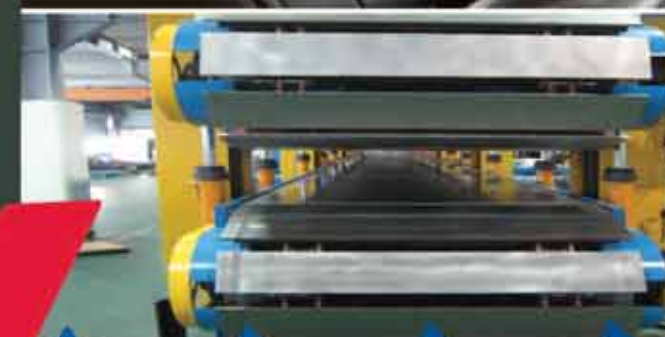
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PU Plants

Production Process

The production process starts with uncoiling of the upper and lower sheet layer. The two uncoiling groups with two uncoilers each together with an automatic strip connection machine allow a coil change without any plant stop.

The Roll Forming machine forms the layer to the required shape. The setup of rolls for the lower sheet layer on a coil car enables the production change from wall to roof profiling on the shortest possible time.

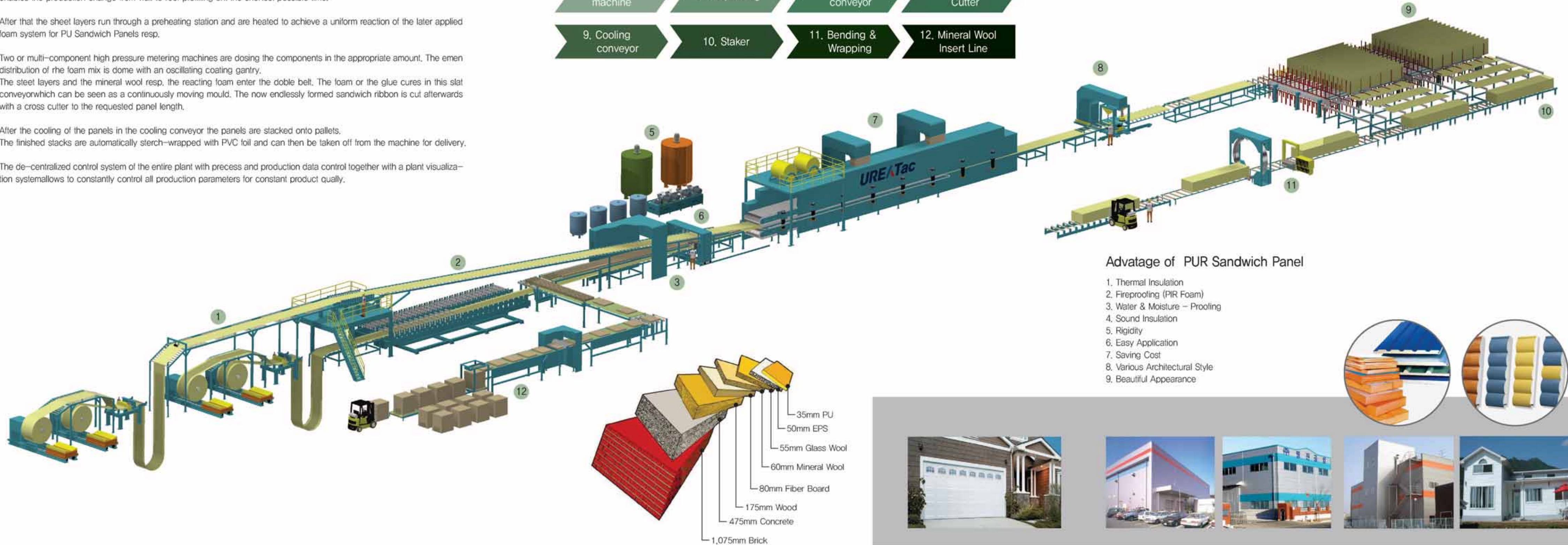
After that the sheet layers run through a preheating station and are heated to achieve a uniform reaction of the later applied foam system for PU Sandwich Panels resp.

Two or multi-component high pressure metering machines are dosing the components in the appropriate amount. The even distribution of the foam mix is done with an oscillating coating gantry. The steel layers and the mineral wool resp. the reacting foam enter the double belt. The foam or the glue cures in this slot conveyor which can be seen as a continuously moving mould. The now endlessly formed sandwich ribbon is cut afterwards with a cross cutter to the requested panel length.

After the cooling of the panels in the cooling conveyor the panels are stacked onto pallets. The finished stacks are automatically stretch-wrapped with PVC foil and can then be taken off from the machine for delivery.

The de-centralized control system of the entire plant with process and production data control together with a plant visualization system allows to constantly control all production parameters for constant product quality.

Manufacturing Process



Advantage of PUR Sandwich Panel

- 1. Thermal Insulation
- 2. Fireproofing (PIR Foam)
- 3. Water & Moisture – Proofing
- 4. Sound Insulation
- 5. Rigidity
- 6. Easy Application
- 7. Saving Cost
- 8. Various Architectural Style
- 9. Beautiful Appearance



PUR & Mineral Wool Sandwich Panel Production Line

1. Uncoiler



Uncoiler & Coil car

Uncoiler for lower and upper facing. Uncoiler units including coil loader, pressing rollers, band edge control system, band delivery drivers, end sheers, band connecting stations, looping stations, delivery roller table.

Advantage : Time-saving (and therefore also cost-saving) continuous coil and band exchange for lower and upper metal width without standstill of the facility.

5. PU Foaming Machine & Tank Station



Mixing Machine



Machine Tanks

PU Foaming Machine Axial piston, series piston, single piston and diaphragm pumps to process the different components. Design of the entire "Wet part" complying with the environmental requirements.

6. PU Pouring



2. Roll Forming



Upper roll forming



Upper roll forming

Roll Forming machines to shape surfaces and edges of the wall, roof and sectional door elements.

Advantage : Good accessibility and minimum profile exchange times by the serial installation of the profiling machines. Driving the profiling tool sets by means of DC motors including electronic control guarantees the synchronous inlet of the two metal widths into Double Conveyor facility without tension or thrust.

7. Double Slat Conveyor



Double slat conveyor



Side block storage



Double slat conveyor

3. Pre Heating



Pre Heating

4. Potal & PU Foaming



Foaming potal

Foaming Potal to apply the raw material mixture by means of the oscillating mixhead.

VARIOCONTROL drive including integrated mass balance, longitudinal travelling mechanism for highly accurate adaptation to the production speed, adjustment for the mixhead as to height, exhaust system for reaction gas.

7-1. Heating System



Double Conveyor Guarantees optimal surface quality of the facings.

Advantage : Torsionally rigid framework construction permits maximum foaming pressure. Precise production accuracy guarantees exact evenness and parallelism of upper and lower conveyors. Ground supporting steel lates prevent geometric impressions on the facings. Special surface treatment of the plate surface prevents metal marking in case of metal facings without protective foil (option) to a very large extent.

8. Cross cutter



Cross cutter.

Cross Cutter to cut the continuous element hank to preprogrammed lengths. Belt saw for longitudinal and transverse movements, including intergrated circular saw and cut edge cleaning machine as well as sound insulation cabin, exhaustion device and filtering installation.

Cross cutter

9. Cooling conveyor



Stacker crosshead design for separate stacking of 1A and 2A rated products.

Advantage : Program controlled stacking to optimize stacks of elements to meet product users' requirements.

Use of vacuum suction devices to treat element surfaces with care as well as for

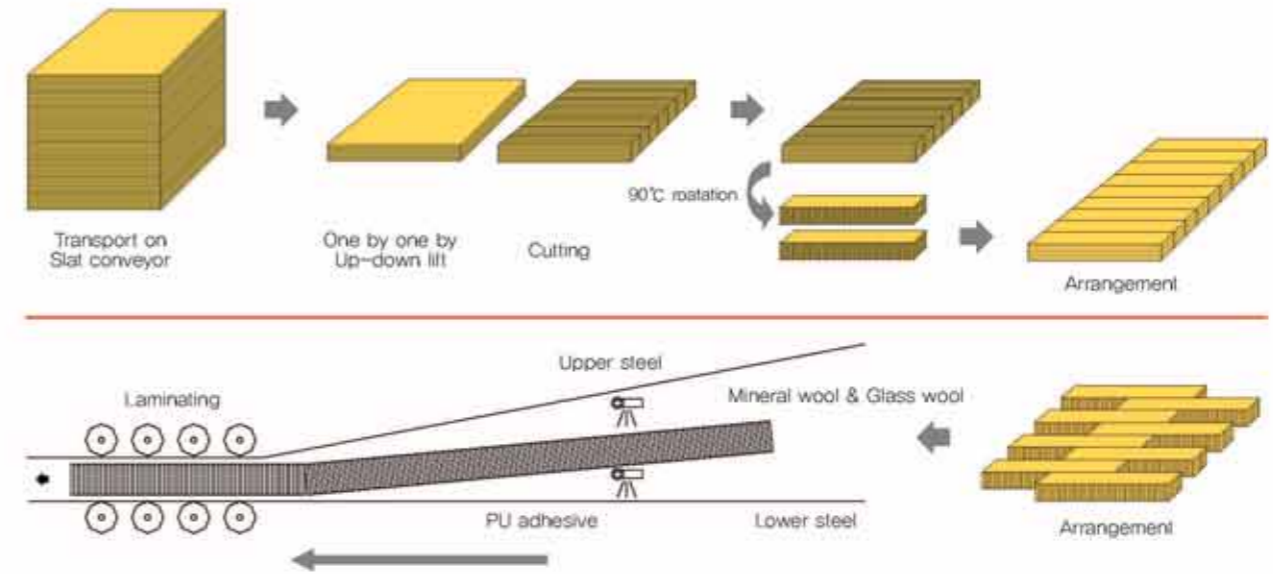
11. Bending & Wrapping



Bending & Wrapping Unit



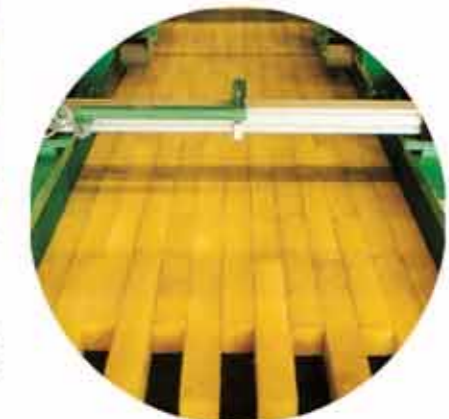
12. Manufacturing process of Mineral wool (glass wool) Panel



Mineral wool, rock wool and glass-wool sandwich panels are widely used in world wide because it has excellent non-flammability, sound absorption and high strength, and it doesn't make a toxic gas against fire.

UREATac mineral wool and rock wool sandwich panel production line is a fully automation equipment system to produce various shapes of sandwich panels continuously and efficiently using mineral wool, glass wool and rock wool as a core material.

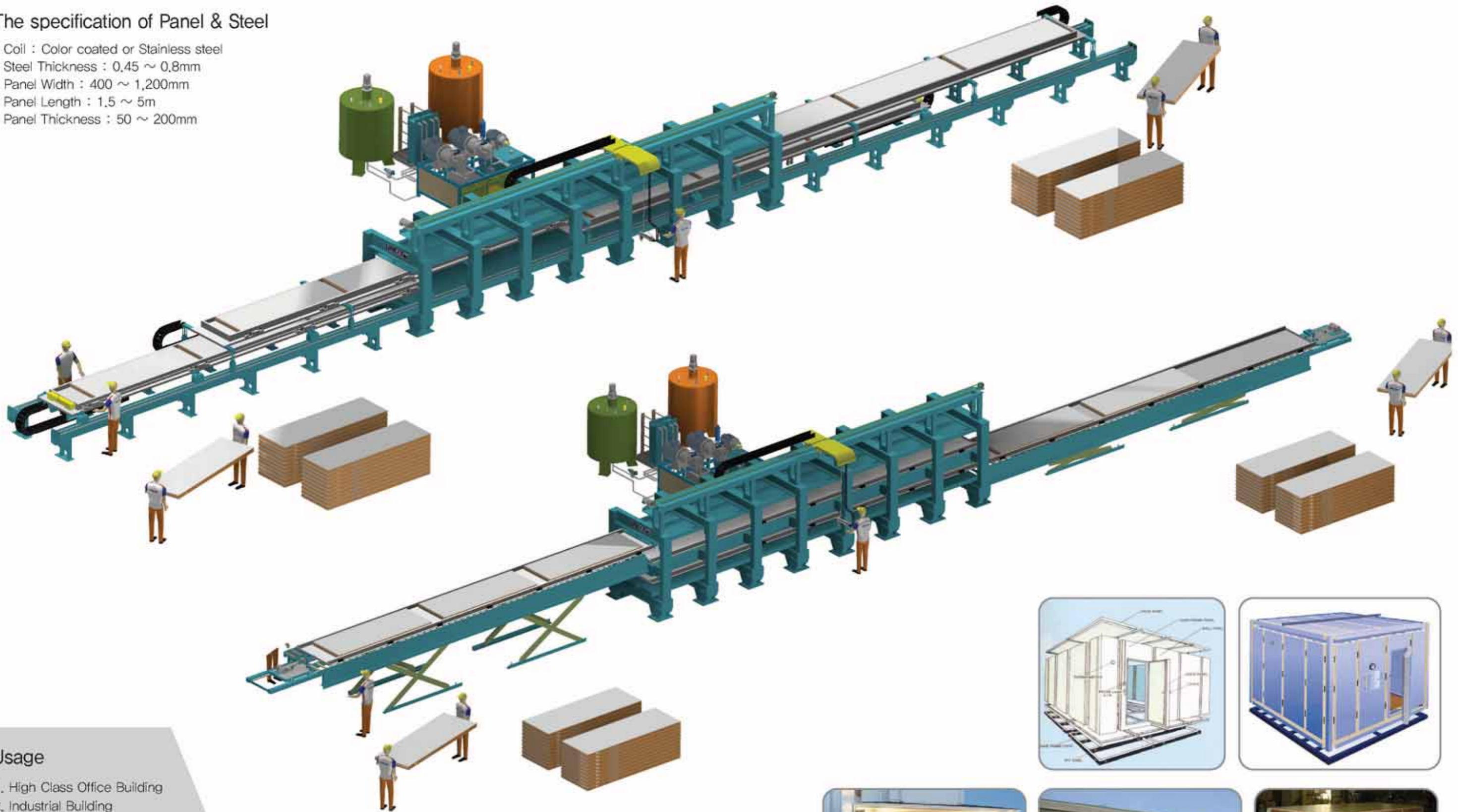
UREATac mineral wool and rock wool sandwich panel production line are already recognized its value by sandwich panel producing companies with various technical researches and a high level services.



Arrangement

The specification of Panel & Steel

- Coil : Color coated or Stainless steel
- Steel Thickness : 0,45 ~ 0,8mm
- Panel Width : 400 ~ 1,200mm
- Panel Length : 1,5 ~ 5m
- Panel Thickness : 50 ~ 200mm



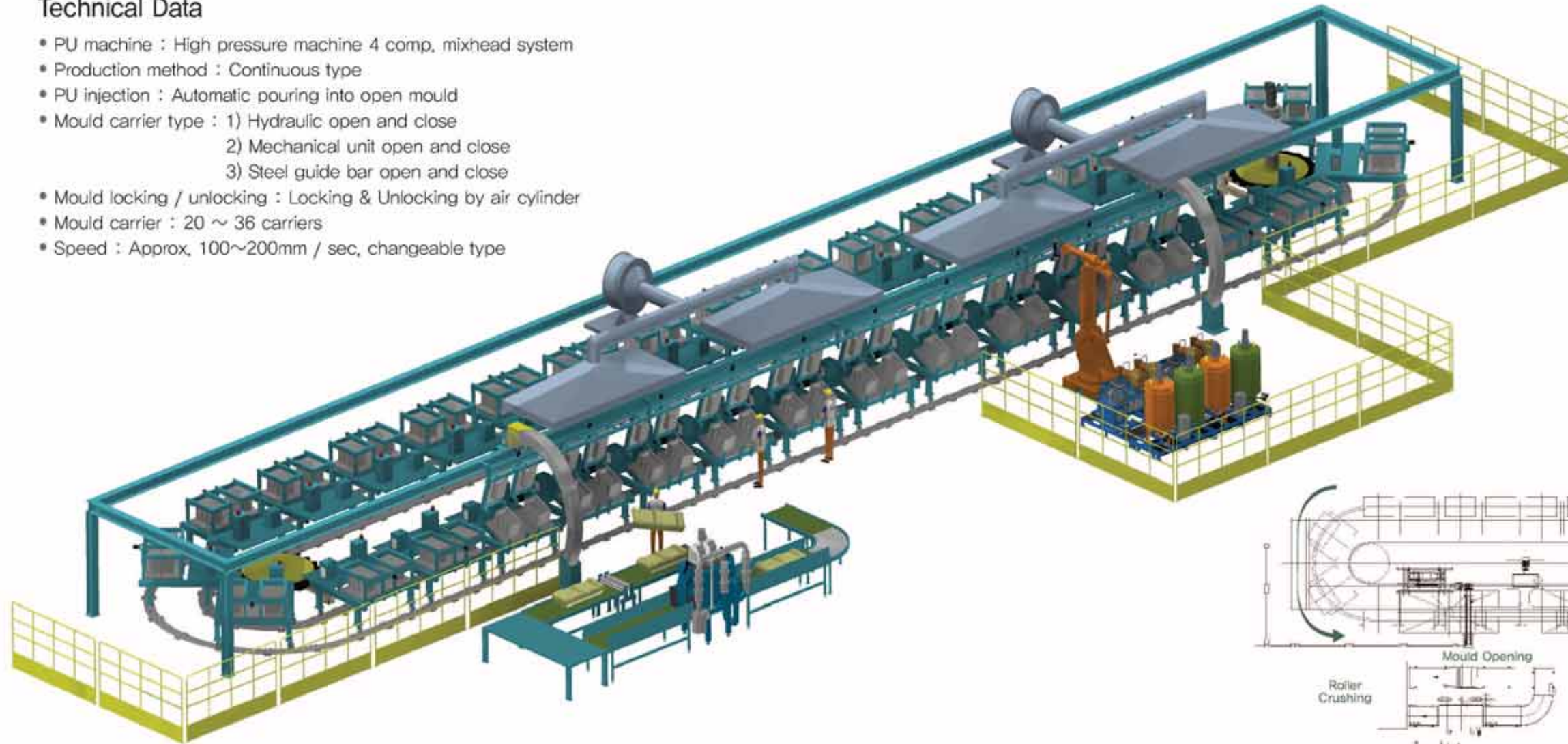
Usage

1. High Class Office Building
2. Industrial Building
3. All Kind Of Factory
4. Cold Storage
5. Door & Garage Door
6. Clean Room
7. Reefer Container



Technical Data

- PU machine : High pressure machine 4 comp. mixhead system
- Production method : Continuous type
- PU injection : Automatic pouring into open mould
- Mould carrier type : 1) Hydraulic open and close
2) Mechanical unit open and close
3) Steel guide bar open and close
- Mould locking / unlocking : Locking & Unlocking by air cylinder
- Mould carrier : 20 ~ 36 carriers
- Speed : Approx. 100~200mm / sec, changeable type



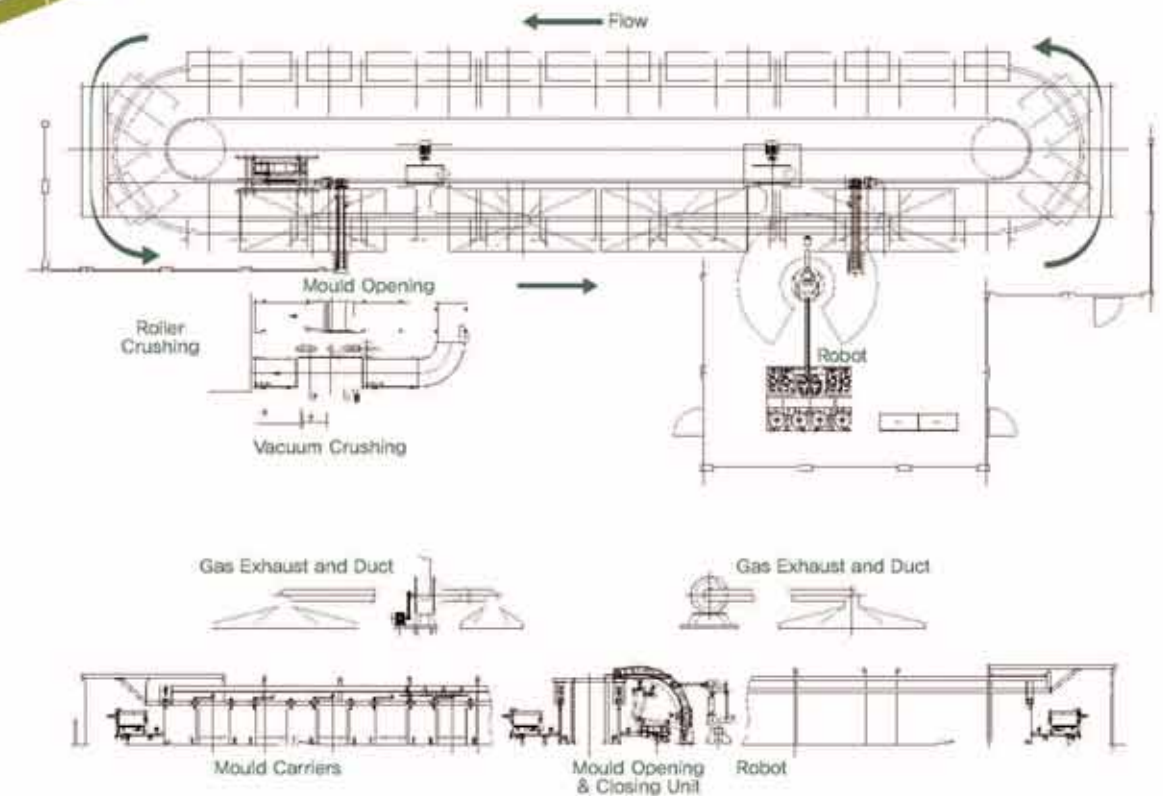
The consist of seat line

- High pressure PU foaming machine, 4 comp. & Mixing Head, MXL-4C
- 3 sets machine tanks, 250L ~ 500L
- Industrial Robot
- Electric control

Oval conveyor line

- Mould carrier & Moulds
- Mould open & close system
- Mould heating system
- Vacuum crushing machine
- Safety system for working zone
- Gas exhaust and duct system

- Cycle time : Approx. 10~15 sec
- PU Curing time : Approx. 3.5 ~ 4min
- Heating unit : 4 kw/h (2carrier / one heating unit), Hot water by electric heating
- Seat weight : Approx. Min 310g ~ Max 3,200g
- Seat consists : Front cushion and back Rear cushion and back

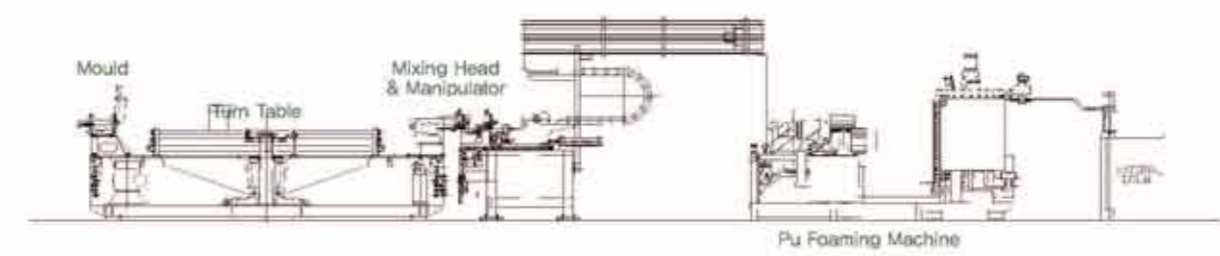
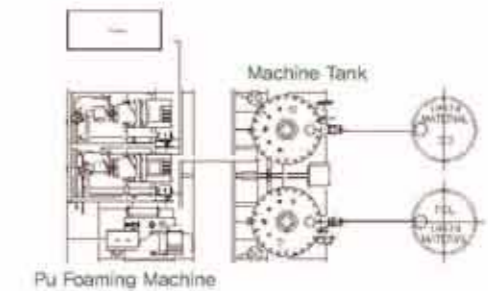
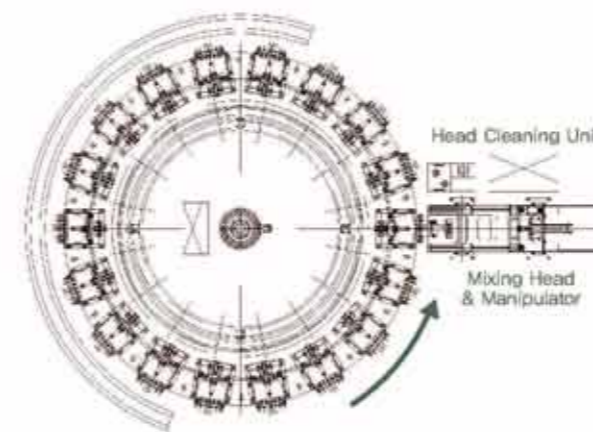
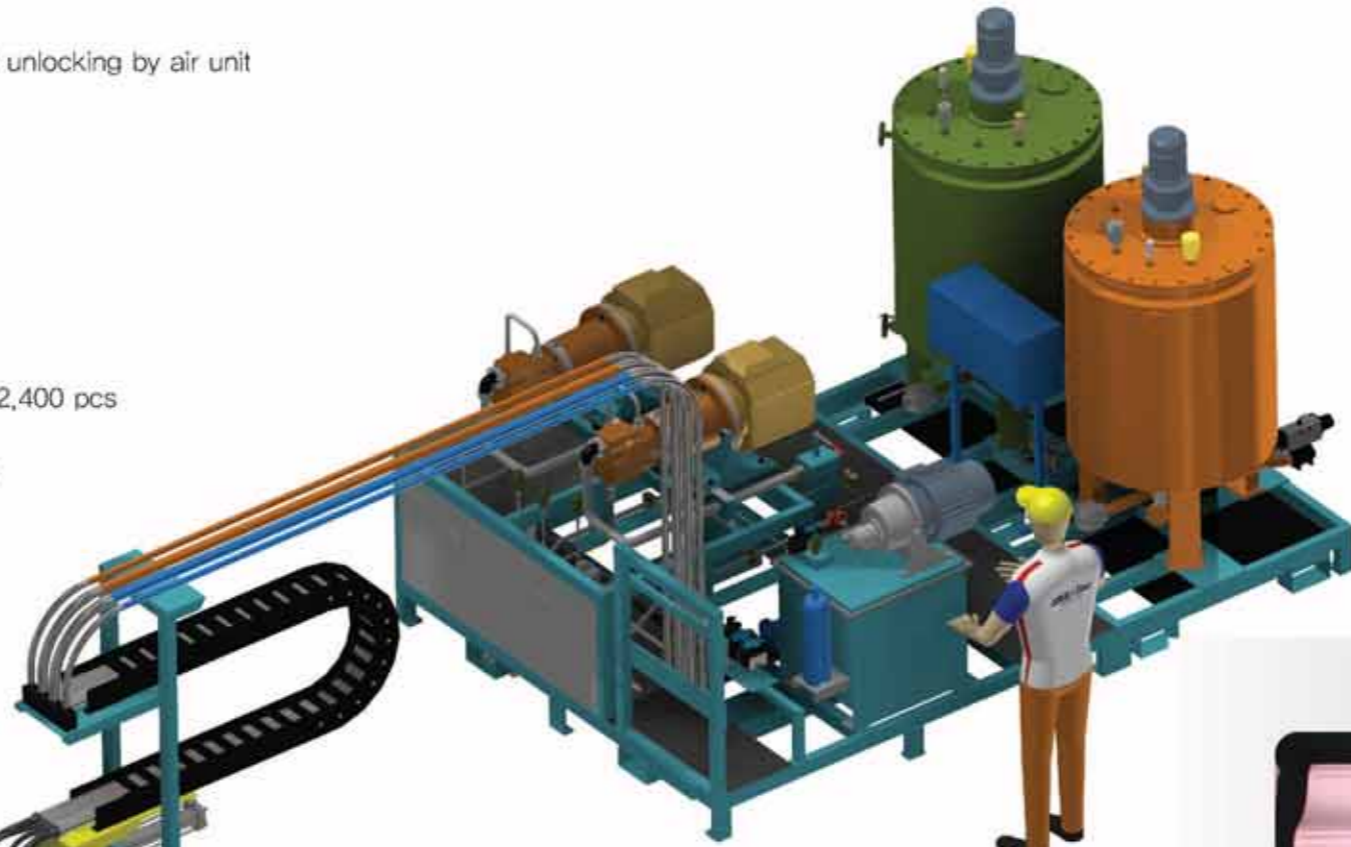
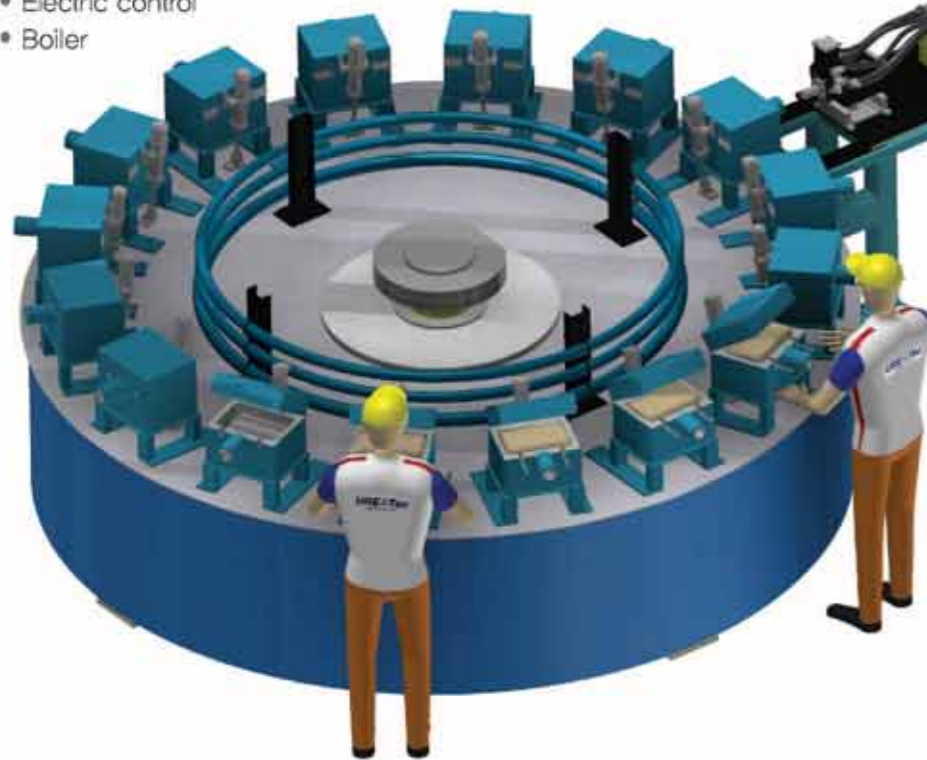


Technical Data

- PU machine : High pressure machine, 2 comp, MXL Mixhead
- Production method : Stop & Go moving type
- Product : Foam in cover head rest or General Head rest
- PU injection : Automatic pouring into close mould by Auto manipulator
- Mould carrier type : Open and close by guide steel bar Auto, locking & unlocking by air unit
- Mould carrier : 10 ~16 carriers
- Turn table size : Approx, 4m(D) x 1.6m(H)
- Mixhead cleaning unit : Hot water or DOP cleaning by brush
- The shot cycle time : Approx, 10 ~ 12 sec
- Curing time : Approx, 60 sec
- Mould Heating : By Electric water boiler
- Head rest weight : Approx, Min 150g~ Max 350g
- The required worker : 1~3 people
- Yearly production capa. : 1 day - 8 hr x 60 min x 60 sec ÷ 12 sec = 2,400 pcs
 1 month - 2,400 x 26 days = 62,400 pcs
 1 year - 624,000 x 12 month = 748,800 pcs

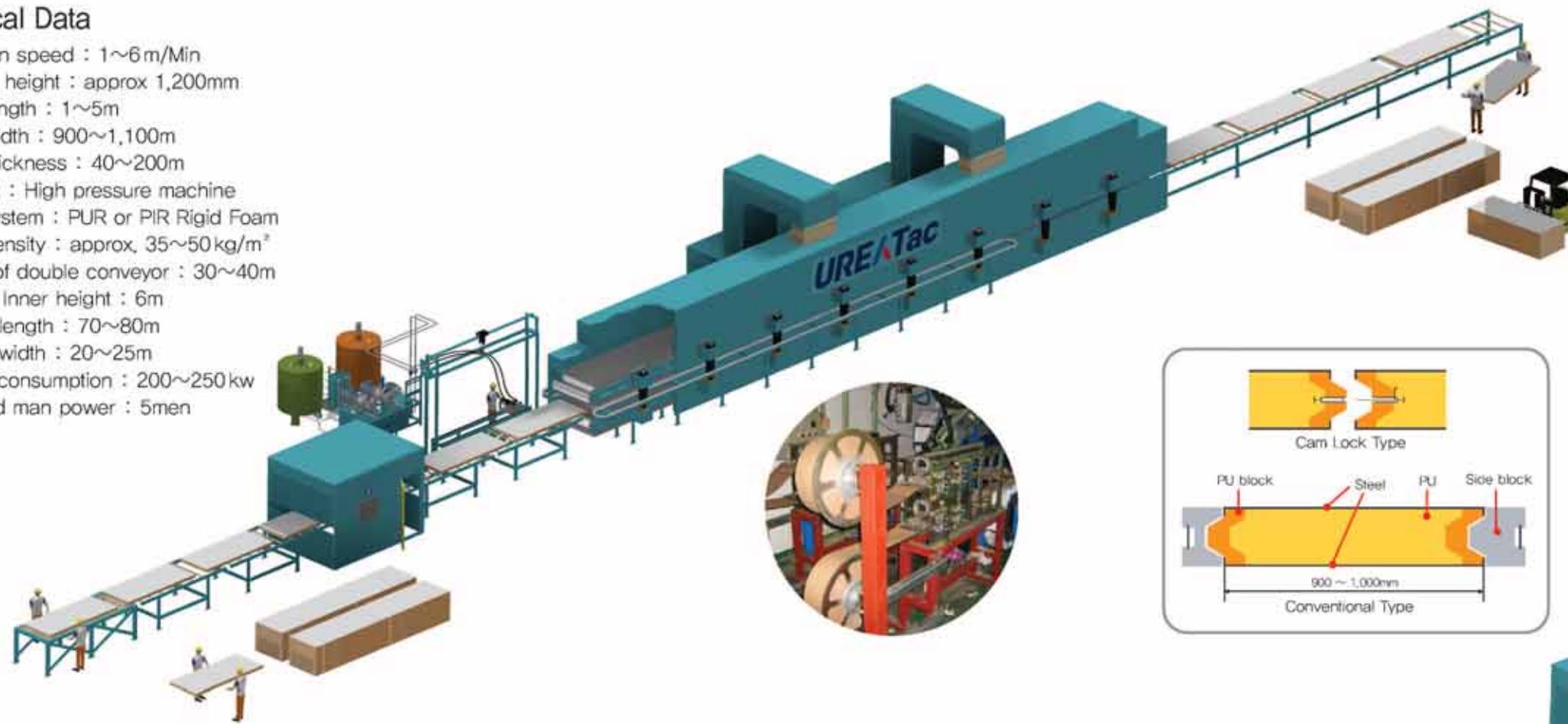
The consist of seat line

- High pressure PU foaming machine, 2 comp, & Mixing Head MXL 1014-2C
- Turn table and moulds
- Auto Manipulator with mixhead cleaning unit
- Mould open & close by steel guide bar
- Electric control
- Boiler



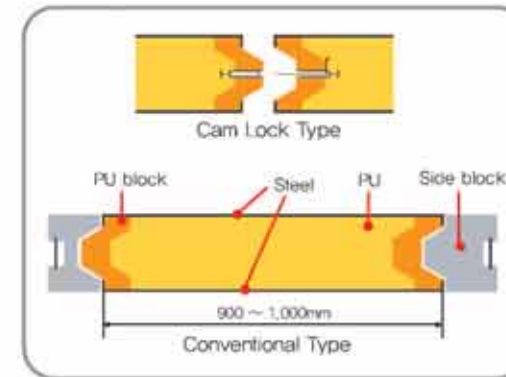
Technical Data

- Production speed : 1~6 m/Min
- Working height : approx 1,200mm
- Panel length : 1~5m
- Panel width : 900~1,100m
- Panel thickness : 40~200m
- Wet part : High pressure machine
- Foam system : PUR or PIR Rigid Foam
- Foam density : approx. 35~50 kg/m³
- Length of double conveyor : 30~40m
- Building inner height : 6m
- Factory length : 70~80m
- Factory width : 20~25m
- Electric consumption : 200~250 kw
- Required man power : 5men

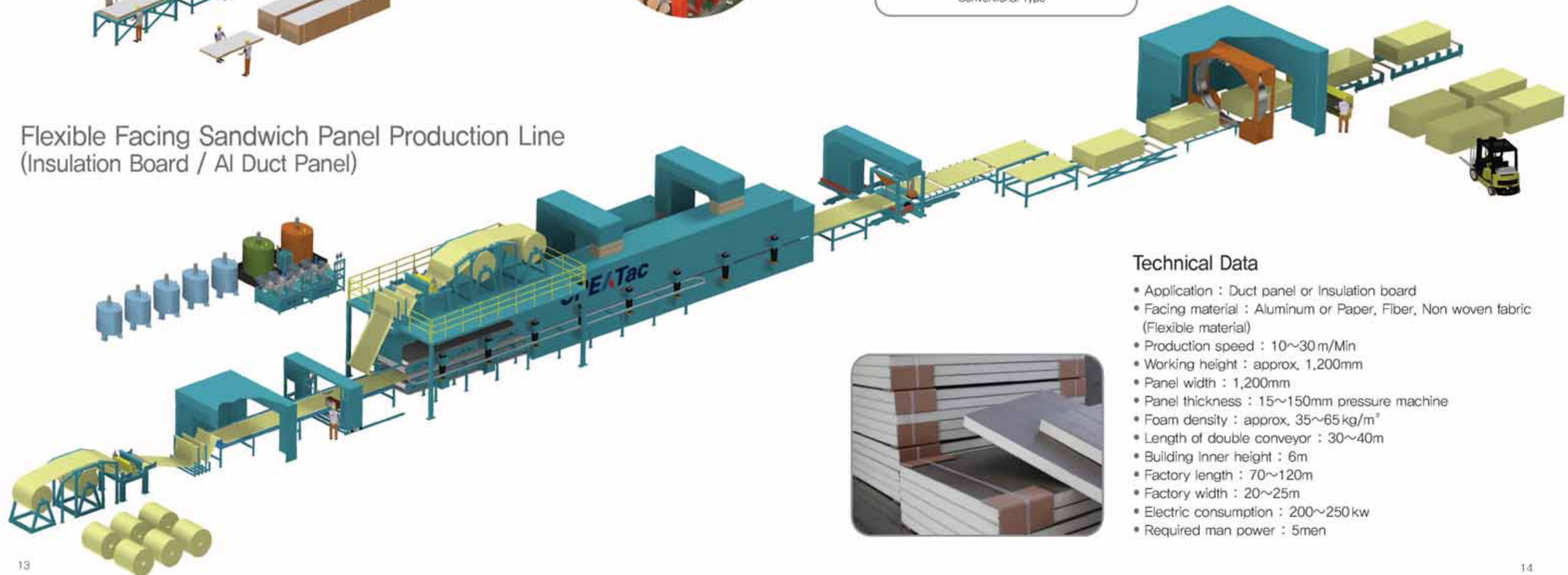


The Strong Points

- The production capacity will be increased about 5~10 times compare to hot press method. (Day light press)
- The manufacturing cost will be reduced over 10% compare to hot press method.
- The consumption of raw material will be reduced about 10%.
- The both Cam lock and Conventional type panel can be produced in this line.
- The operating man power will be decreased about 50%.
- The quality of panel will be fine.
- The inferior goods will be reduced greatly.



Flexible Facing Sandwich Panel Production Line (Insulation Board / Al Duct Panel)



Technical Data

- Application : Duct panel or Insulation board
- Facing material : Aluminum or Paper, Fiber, Non woven fabric (Flexible material)
- Production speed : 10~30 m/Min
- Working height : approx. 1,200mm
- Panel width : 1,200mm
- Panel thickness : 15~150mm pressure machine
- Foam density : approx. 35~65 kg/m³
- Length of double conveyor : 30~40m
- Building Inner height : 6m
- Factory length : 70~120m
- Factory width : 20~25m
- Electric consumption : 200~250 kw
- Required man power : 5men

