PU and rock wool sandwich panel production line

(RTM-SPR-1)
About Rontech
Rontech Company is an independent member of Rontech Group which is specialized in industrial equipments manufacturing and technical service, especially in the field of construction material machinery, mechanical manufacturing and contracting. Among the first few players in the construction material industry, Rontech set its foot in this field in the early 80s and noticeably contributed to the growth and development of China construction material industry. As business strategy and market expanded, Rontech has also become mature in core fields of mechanical manufacturing and contracting for other green construction material machinery, including mineral wool production line, mineral fiber ceiling panel, sandwich panel production line, etc.
Setting quality benchmarks and redefining customer satisfaction has always been the essence of Rontech. Over the last 30 years, Rontech stood the test of tide and time always as the same icon. By leveraging the experience of the rich past, Rontech touched and enriched the lives of millions across boundaries by continuously improving ideas and finding new ways to diversify and enhance its product lines and service. The ability to produce commercial innovations and lead the industry on a continuous basis has been the foundation of our success. We have built up a worldwide customer base in a myriad of countries spanning almost all continents.

1. Introduction
The PU and rock wool sandwich panel has features of heat insulation, sound absorption, waterproof, etc, so that it is widely used as roof panel and wall panel in architecture. It could also be used in the field of freeze storage and thermal-control container.
With the development of steel structure building system, the sandwich panel is demanded much more because of its convenient transporting, easy construction, beautiful appearance and good heat preservation features.
2. Production process
The PU and rock wool sandwich panel production line could produce high quality sandwich panel. The steel panel will be processed in the up and down roll forming machine according the demand of panel drawing. The rock wool panel will be cut into scraps and regrouped to reach the intensity demand. Then the foaming material will be injected between the upper and lower metal sheet. Next they will be sent into double belt conveyer to be solidified. After cutting, stacking and packing, the final sandwich panel will be done and transported to the warehouse for using.

3. Equipment composition
Steel panel decoiler
This production line includes two sets of decoilers, used for up and down roll forming machine separately. Each set of decoiler is consisted of coil car, V type material holder, hydraulic station, assistant supporter and main decoiler.

Feeding and filming device
It has the function of conveying steel panel and at the same time wrapping a layer of plastic film for protecting the surface of steel panel to avoid scratch.

Up roll forming machine
It is mainly used for producing inner surface of sandwich panel. Generally, it could produce the panels for public use to meet the requirements of wall panel and roof panel. For special joint panels, it could adopt quick-changing assembly or double-station roll forming unit to change the profiles.

Down roll forming machine
Down roll forming machine is used for forming outer panel, which will influence the surface quality of sandwich panel. This is the first step to guarantee the high quality of sandwich panel.

Steel panel preheating system
The panel preheating system is consisted of heating device, control cabinet, temperature measurement system, pre-heating house, and panel conveying roller path, etc. It could properly heat the up and down panel. The
temperature of pre-heated panel is very important which could influence the reaction time of the mixture between the panels.

**PU high pressure foaming machine**

The foaming machine is the key unit of the whole production line. It is mainly used for polyurethane sandwich panel continuous foaming and also suitable for flexible substrata and rigid substrata equipment.

**Double belt conveyor**

It is the core machine to produce the high-quality composite panel. It is used to solidify and convey the sandwich panel. It is made up of belt plate, driving system, skeleton guide rail system, up and down hydraulic lock system, side seal modules system, bottom moulds replace system.

**Heating system of double belt conveyor**

Polyurethane composite foaming is mainly physical foaming, in order to make the foaming agent gasification and gas rapid growth, the foaming cavity of double belt conveyor needs heating control. The heating type of double belt conveyor machine has electric heating, oil heating, gas heating, and steam heating, etc.

**Saw cutting machine**

The saw cutting machine is used to make fixed-length cutting online when the double belt conveyor continuously supplies the panel. It has high cutting precision, low noise and long service life.

**Mineral wool system**

The mineral wool system is the whole system, which changes the fiber direction of mineral wool panel through slitting, conveyer and over turn, then through arrangement, edge milling, up and down glue spraying, and then cohesive with up and down steel sheet to meet the demand of construction composite panel.

The mineral wool system includes storing lift, slitter, steering conveyor, turnover device, arrangement and feeding device, milling device, high pressure glue spraying device, tray conveying and stacking machine and dust collector, etc.

**Panel cooling system**

Cooling system is one of the most important equipment of the sandwich panel production line. It is used for those panels which just come out from the double belt and the core parts of which are not completely solidified even still in a reaction. It could avoid a series of problems caused by the non-uniform heat dissipating of the sandwich panel which stack immediately.

**Automatic stacking system**

Automatic stacker is used to stack single panels. This system adopts manipulator turning-over type which could avoid surface damage of panels in the conventional chuck type stackers. It could greatly improve the productivity and reduce the production cost.

**Packing machine**

The packing machine is the equipment that used to pack the neatly stacked panels with plastic film. It is of good tightness and automaticity and could pack the six sides of sandwich panels and blocks at one time.

### 4. Technical Parameter

1. **Surface material**: painted steel panel,
2. **Core material**: PU and rock wool,
3. **Thickness of steel panel**: 0.4-0.8mm,
4. **Thickness of final products**: 50-200mm,
5. **Length of double-belt conveyor**: 26.8m, designing speed is 2-12m/min,
6. **Annual output of production line**: 2 million m².
5. Final products