Contact Information

Address 607-4BL, Banwol National Industrial Complex
137, Haebong-ro, Danwon-gu, Ansan city, Gyeonggi-do,
Republic of Korea
Tel. +82 31 508 2103
Fax +82 31 508 2104
E-mail kindus@naver.com

www.**kindus**.com


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KINDUS®

The most reliable metal working equipment manufacturer in the world market.

www.**kindus**.com

K INDUSTRIAL CO., LTD.

Devote for customer's success
Innovate for company & world
Trust & Duty for relation

Contents

KINDUS

About KINDUS®

When sandwich panel first produced in Republic of Korea since 1979, K INDUSTRIAL CO., LTD. had established with 20 years of wide experience in sandwich panel production, maintenance and also various know-hows at construction site.

Our ultimate goal is to supply the most reliable sandwich panel production line which is practical and convenient with best quality & productivity.

KINDUS, who makes ceaseless research and effort for the advanced sandwich panel production technology, we had touched success to localization of the whole continuous polyurethane and polyisocyanurate sandwich panel production line through design, manufacturing, installation and commissioning for the first in Korea, 2003.

Since then KINDUS plays a leading role in Korea and has been continued to supply the Korean sandwich panel production line at domestic and foreign companies.

Finally in 2008, we had accomplished to export our continuous PUR/PIR sandwich panel production line to Europe, the home of sandwich panel. Also, it was the first time in Korea and that production line was totally 450meters long with 7componants PUR/PIR foaming system include pentane mart.

On the basis of such experience, KINDUS be only a Korean company who can produce all kinds of sandwich panel production machinery such as various forming machines, laminating system, high/low pressure PU/PIR foaming machine and so on by us and the superiority & quality is recognized internationally based on S. Korea, Asia and CIS region.

KINDUS, we will continue effort to supply more perfect service anywhere in the world through remote control & management system and provide a higher level sandwich panel production line which can show outstanding performance under in any environmental condition.

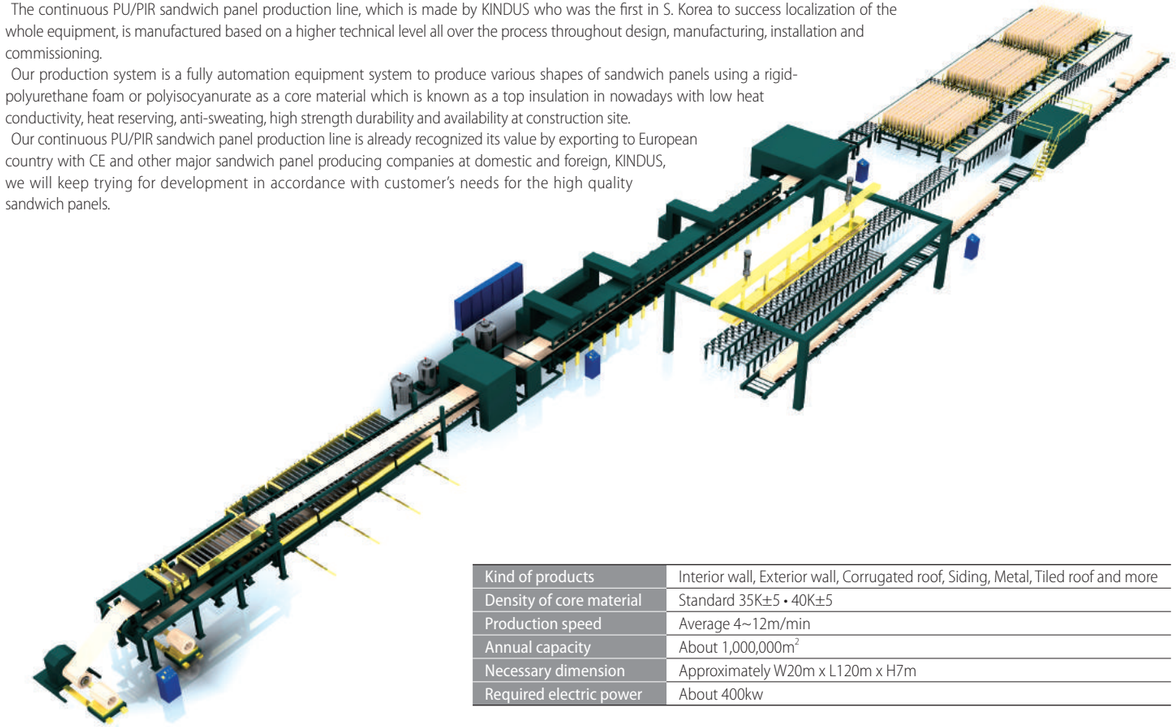
Hak Ryoul Lee | President of KINDUSTRIAL CO., LTD.

PU/PIR Sandwich Panel Line Continuous Type

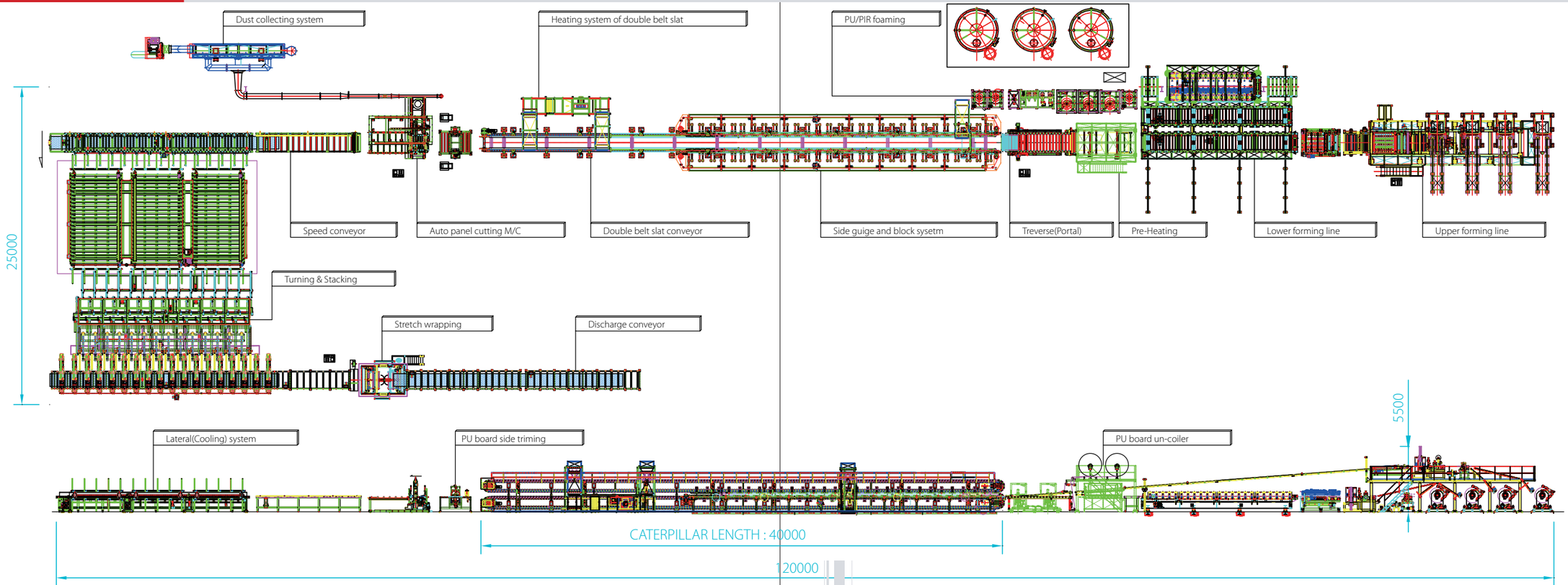
The continuous PU/PIR sandwich panel production line, which is made by KINDUS who was the first in S. Korea to success localization of the whole equipment, is manufactured based on a higher technical level all over the process throughout design, manufacturing, installation and commissioning.

Our production system is a fully automation equipment system to produce various shapes of sandwich panels using a rigid-polyurethane foam or polyisocyanurate as a core material which is known as a top insulation in nowadays with low heat conductivity, heat reserving, anti-sweating, high strength durability and availability at construction site.

Our continuous PU/PIR sandwich panel production line is already recognized its value by exporting to European country with CE and other major sandwich panel producing companies at domestic and foreign, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality sandwich panels.



Kind of products	Interior wall, Exterior wall, Corrugated roof, Siding, Metal, Tiled roof and more
Density of core material	Standard 35K±5 • 40K±5
Production speed	Average 4~12m/min
Annual capacity	About 1,000,000m^2
Necessary dimension	Approximately W20m x L120m x H7m
Required electric power	About 400kw


Dust collecting system
Heating system of double belt slat
PU/PIR foaming
25000
Speed conveyor
Auto panel cutting M/C
Double belt slat conveyor
Side guige and block sysetm
Treverse(Portal)
Pre-Heating
Lower forming line
Upper forming line
Turning & Stacking
Stretch wrapping
Discharge conveyor
5500
Lateral(Cooling) system
PU board side triming
PU board un-coiler
CATERPILLAR LENGTH : 40000
120000

KINDUS's roll forming system enables to produce the various shapes exquisitely by using the self-developed roll design program. And we manufacture it, which has adjustable width from 500mm to 1,200mm, with customer's needs.

The customer can choose a fixed type or a move on the rail type according to the number of product's shapes and also, it can be manufactured as a dual type or a cassette type by customer's needs, who want to produce various shapes with low price.

A dual type roll forming machine has two sets of forming rollers in one machine and a cassette type roll forming machine normally has four cassettes for one shapes. In this case, the base frame will be shared and cassettes can be changed easily by overhead crane in any time.

Roll forming machine with press

Cassette type roll forming machine

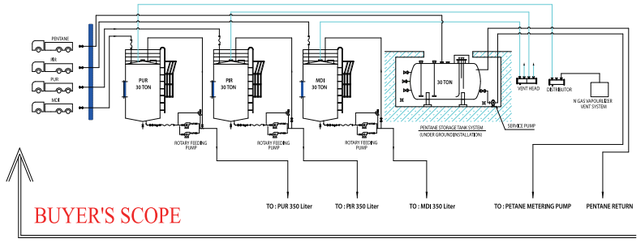
PU/PIR foaming system, which is manufactured by KINDUS, based on the high precision and technical skills, is manufactured by imported main parts from German and Japan and we can sat its value is already recognized by exporting to European country with CE and other major sandwich panel producing companies at domestic and foreign.

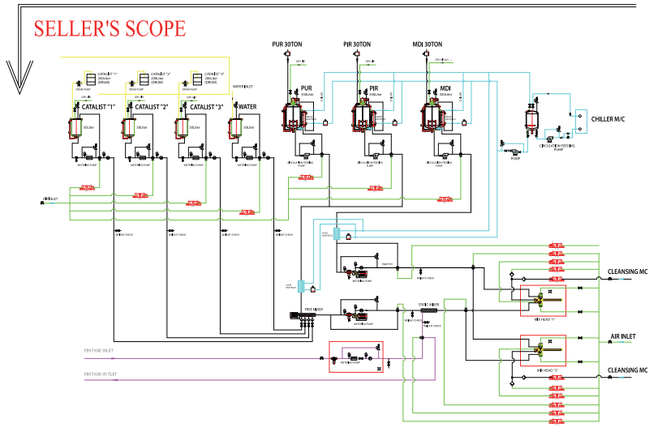
This equipment is to foam the supplied chemical products after measuring and mixing. 141B or pentane can be used as a blowing agent and when the pentane uses, separated pentane mart and gas detecting system are needed.

It is possible to enter or change the recipe easily through the touch screen. And remote control can be done by industrial computer. Also, it makes enable to check and print out an input of chemical products, temperature change and other data.

PU/PIR Metering system - 7components with Pentane system

Working tanks with stainless steel jacke





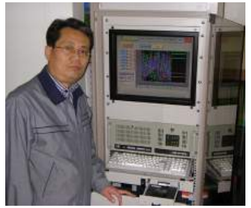
Storage tanks for PU/PIR & Pentane

Working tanks

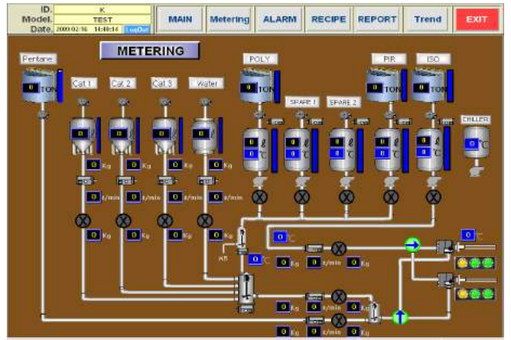
Metering & Foaming system

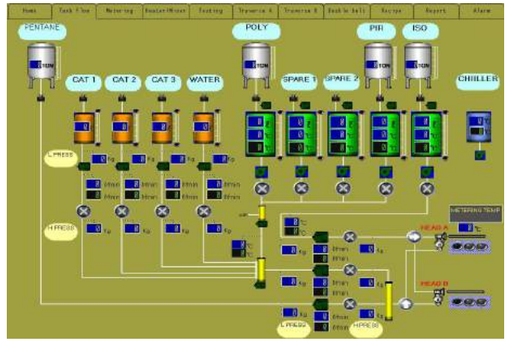
Storage tanks for PU/PIR & Pentane

Working tanks



Metering & Foaming system





Double belt slat conveyor, in other words caterpillar system, its function is to help to get high quality polyurethane foam by keeping the proper temperature and applying or absorbing the pressure.

Caterpillar system is a main part of the whole sandwich panel production line and the production speed will be decided according to its length.

It can be divided into upper and lower mechanically and each part needed own driving system. Because of this, synchronization of both parts is a very important factor to get a high quality of sandwich panels. Also, surface flatness of slat is important, too.

It is possible to adjust the height according to the producing the sandwich panel's thickness and the side block system will be included to contrast the thrust of polyurethane foam.

Double belt slat conveyor(Caterpillar)

Double belt slat conveyor with main heating system

Touch screen & buttons

Touch screen


Industrial computer


Easy handling(360° revolution)


Stand type

Piano type

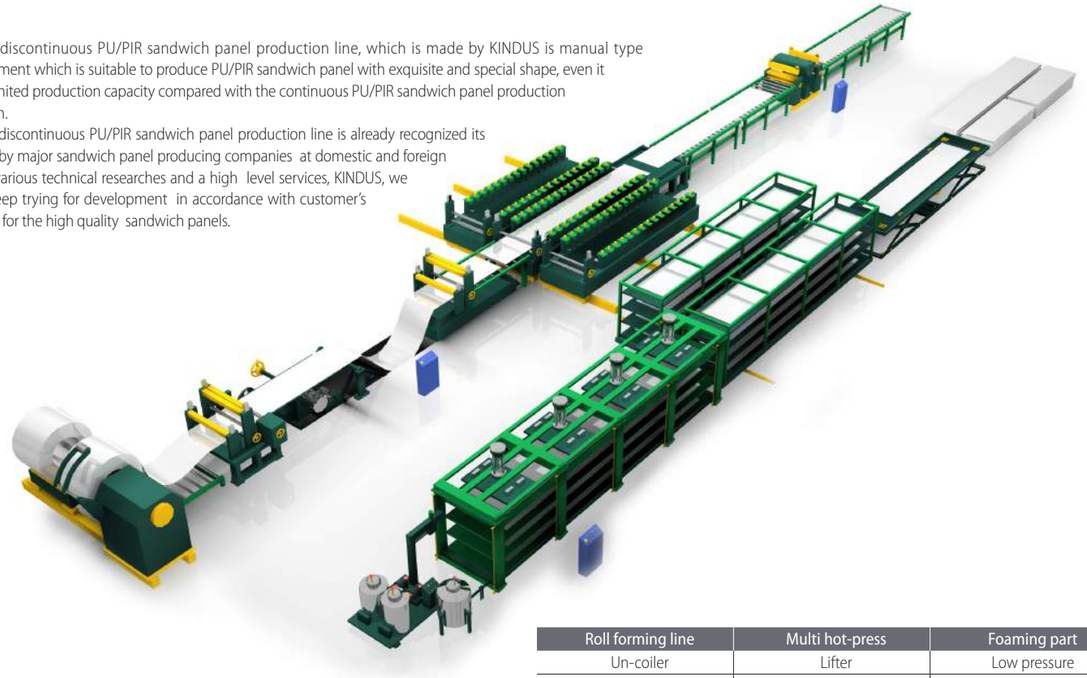

Emergency stop


Power distributor

PU/PIR Sandwich Panel Line Discontinuous Type

The discontinuous PU/PIR sandwich panel production line, which is made by KINDUS is manual type equipment which is suitable to produce PU/PIR sandwich panel with exquisite and special shape, even it has limited production capacity compared with the continuous PU/PIR sandwich panel production system.

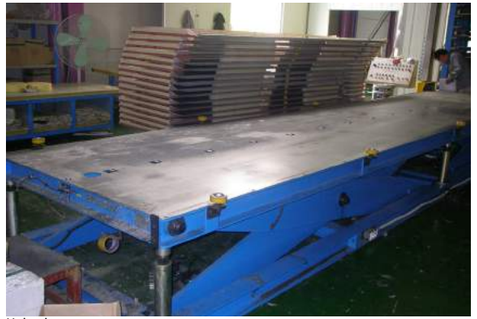
Our discontinuous PU/PIR sandwich panel production line is already recognized its value by major sandwich panel producing companies at domestic and foreign with various technical researches and a high level services, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality sandwich panels.



Roll forming line	Multi hot-press	Foaming part
Un-coiler	Lifter	Low pressure
Roll former	Loader and Un-loader	High pressure
Cutter	Multi hot press	
Stacker		

Loader

Hot press



Unloader

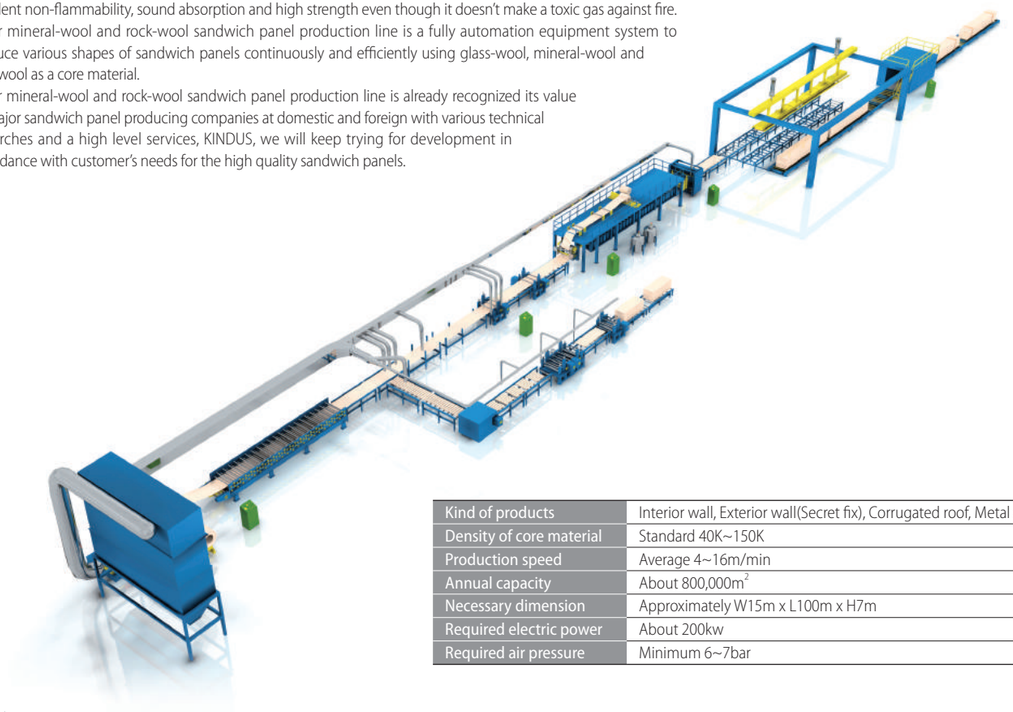
PU/PIR foaming device

Mineral-wool Sandwich Panel Line

Mineral-wool, rock-wool and glass-wool is widely used(USA : 84%, Europe : 42%) since 1930s as an insulation due to it has excellent non-flammability, sound absorption and high strength even though it doesn't make a toxic gas against fire.

Our 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 glass-wool, mineral-wool and rock-wool as a core material.

Our mineral-wool and rock-wool sandwich panel production line is already recognized its value by major sandwich panel producing companies at domestic and foreign with various technical researches and a high level services, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality sandwich panels.



Kind of products	Interior wall, Exterior wall(Secret fix), Corrugated roof, Metal and more
Density of core material	Standard 40K~150K
Production speed	Average 4~16m/min
Annual capacity	About 800,000m^2
Necessary dimension	Approximately W15m x L100m x H7m
Required electric power	About 200kw
Required air pressure	Minimum 6~7bar

Mineral-wool board feeding system has five processes to feed the supplied mineral-wool board in sandwich panel production line, continuously.

Inserting & Cutting

Turning

PROCESS OF FEEDING SYSTEM

- Inserting
- Cutting
- Turning
- Feeding
- Discharging

Feeding

Discharging

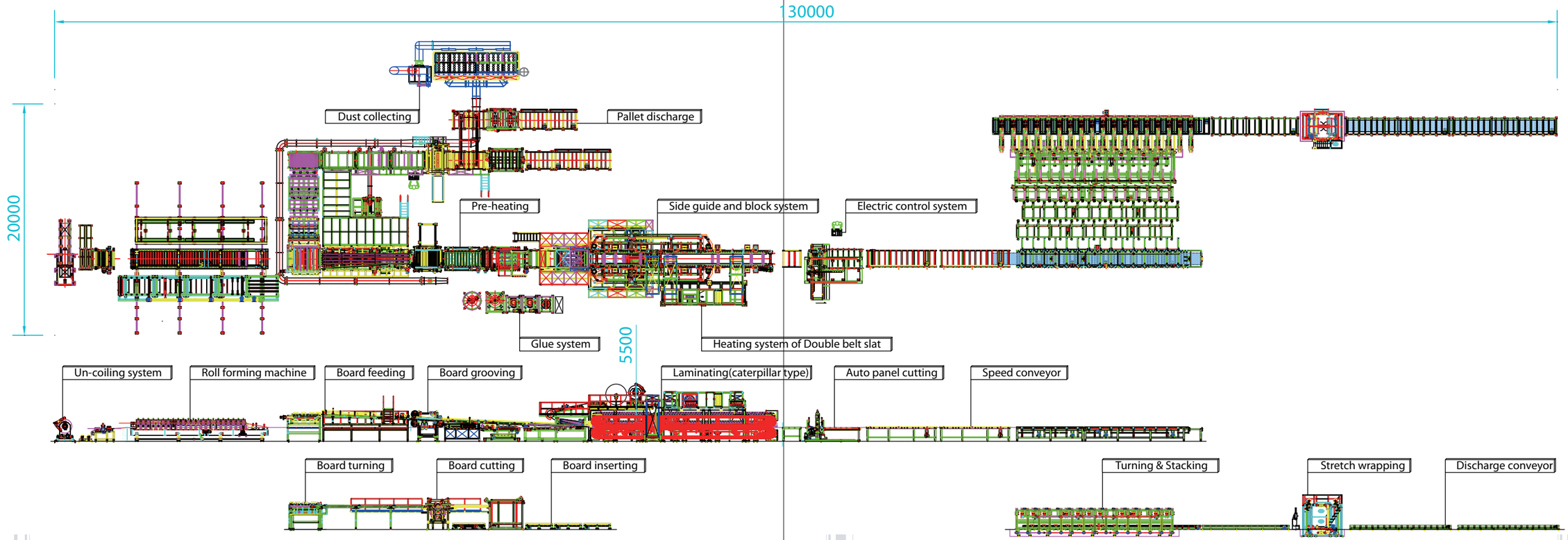
Adhesive system is to applying glue to bond the inserted mineral-wool lamellas or EPS boards to color steel sheet. KINDUS's adhesive system can be manufactured as a wiper type and a spray type.

The wiper type, widely used in the world, mix the applied MDI and Polyol from the nozzles, it is relatively inexpensive and has a good durability.

On the other hand, the spray type has somewhat higher cost than the wiper type, it can save discharge rate and spread volume of bond.

Spray type

Wiper type


130000
20000
5500
Dust collecting
Pallet discharge
Pre-heating
Side guide and block system
Electric control system
Glue system
Heating system of Double belt slat
Un-coiling system
Roll forming machine
Board feeding
Board grooving
Laminating(caterpillar type)
Auto panel cutting
Speed conveyor
Board turning
Board cutting
Board inserting
Turning & Stacking
Stretch wrapping
Discharge conveyor

Side PU injection system is necessary when we produce EPS or mineral-wool sandwich panels with complicated edge shape. It helps to get more structural strength and heat insulation property.

Generally, it composed of two package type for mixed polyol and isocyanate.

The main parts of KINDUS's side PU injection system has been imported from Germany and Japan and we can say its value is already recognized by exporting to European country with CE and other major sandwich panel producing companies at domestic and foreign.

Side PU injection

Traverse(Portal) system with side PU injection

Laminating system is to bond the EPS board or mineral-wool lamellas to the glue applied color steel sheet. The reaction pressure of the polyurethane foam, which used for adhesive, is bearable level with rubber coated rollers at regular intervals. So, it can be used instead of double belt slat conveyor to save the investment cost.

It is possible to adjust the height according to the producing sandwich panel's thickness and when the operator wants to inject the polyurethane at side, the side block system will be included to contrast the thrust of polyurethane foam.

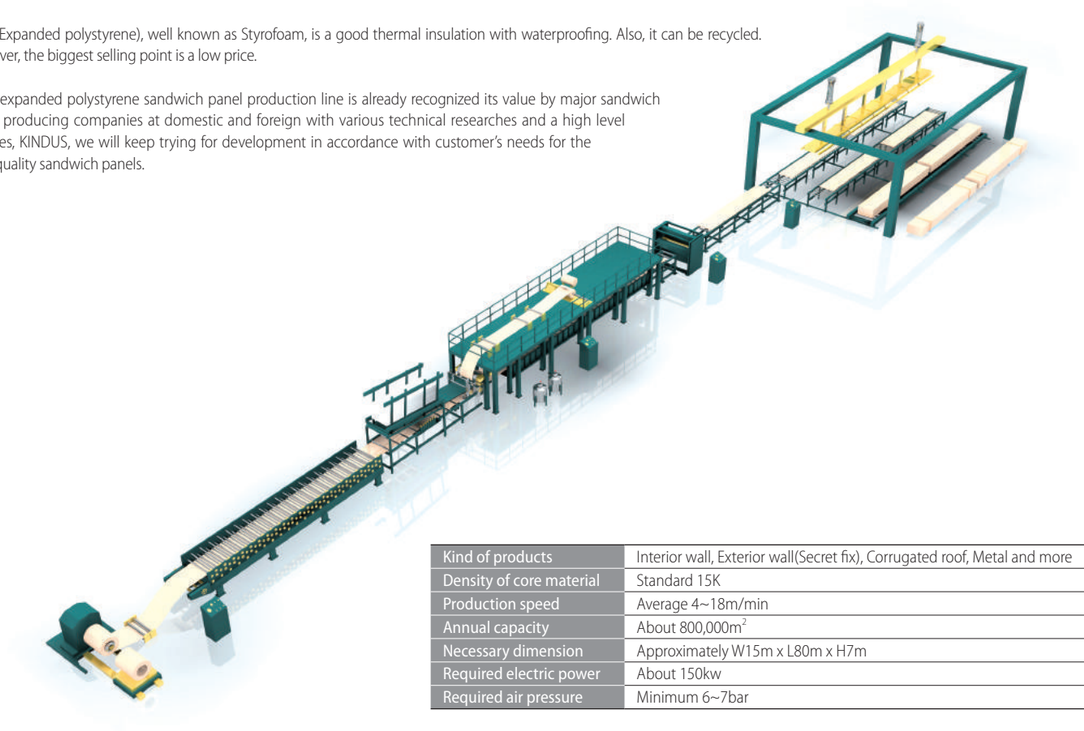
Laminating machine

Laminating machine with side guide & block system

EPS Sandwich Panel Line

EPS(Expanded polystyrene), well known as Styrofoam, is a good thermal insulation with waterproofing. Also, it can be recycled. However, the biggest selling point is a low price.

Our expanded polystyrene sandwich panel production line is already recognized its value by major sandwich panel producing companies at domestic and foreign with various technical researches and a high level services, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality sandwich panels.

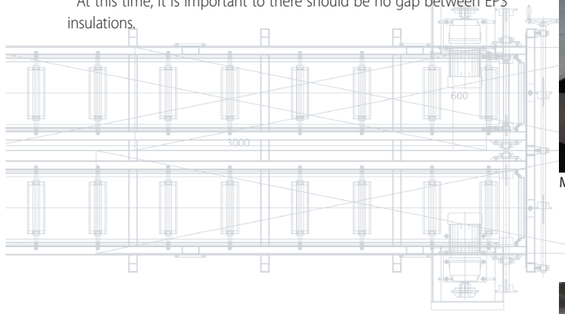


Kind of products	Interior wall, Exterior wall(Secret fix), Corrugated roof, Metal and more
Density of core material	Standard 15K
Production speed	Average 4~18m/min
Annual capacity	About 800,000m^2
Necessary dimension	Approximately W15m x L80m x H7m
Required electric power	About 150kw
Required air pressure	Minimum 6~7bar

This device is necessary to feed the EPS boards bond to color steel sheet and it is located on mezzanine deck.

Normally, if you put the prepared EPS boards on feeding roller manually or automatically, two expanded polystyrene boards will be inserted automatically in zigzags.

At this time, it is important to there should be no gap between EPS insulations.



Manual type - Mezzanine deck

Manual type - 2nd floor

Automatic type - Cross conveying

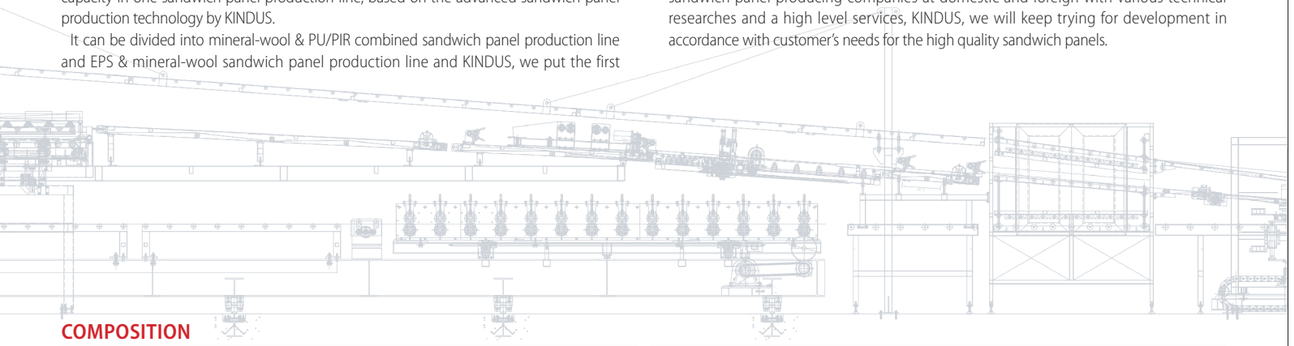
Automatic type - Longitudinal conveying

Combined Sandwich Panel Line

The combined sandwich panel production line is manufactured from customer's needs, who want to produce various kinds of insulated sandwich panels with small production capacity in one sandwich panel production line, based on the advanced sandwich panel production technology by KINDUS.

It can be divided into mineral-wool & PU/PIR combined sandwich panel production line and EPS & mineral-wool sandwich panel production line and KINDUS, we put the first mineral-wool & PU/PIR combined sandwich panel production line on the market in Korea.

Our combined sandwich panel production line is already recognized its value by major sandwich panel producing companies at domestic and foreign with various technical researches and a high level services, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality sandwich panels.

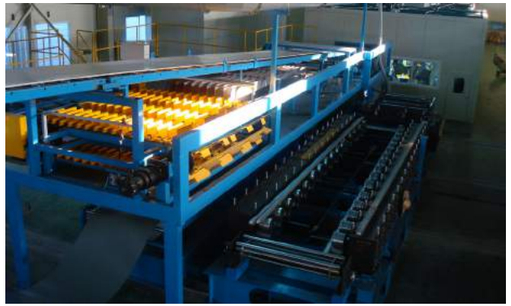


COMPOSITION

Mineral-wool & PU/PIR combined sandwich panel line
Decoiling system
Roll forming system
Mineral-wool board feeding system
Adhesive(Glue) system
Side PU injection system
PU/PIR foaming system
Double belt slat conveyor(Caterpillar) system
Cutting system
Cooling system
Stacking system
Wrapping system

EPS & Mineral-wool combined sandwich panel line
Decoiling system
Roll forming system
Mineral-wool board feeding system
EPS board feeding system
Adhesive(Glue) system
Side PU injection system
Laminating system
Cutting system
Stacking system
Wrapping system

Glass-wool & PIR combined sandwich panel line



Mineral-wool & PU combined sandwich panel line

EPS & Glass-wool combined sandwich panel line

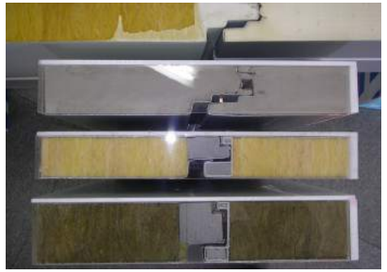
EPS & Rock-wool sandwich panel line

Metal Panel Production System

Metal panel is a kind of sandwich panels and that's because it has simple and modern external appearance, it well used in luxury buildings like stadiums, hotels, airports, etc. You can produce the metal panels in two ways with KINDUS.

One is a second processing type which requires the produced PU or PIR sandwich panels with a separated processing line. And the other one is a continuous type, which has developed by KINDUS for the first in S. Korea, and it enables to produce the metal panels in sandwich panel production line, continuously.

Furthermore, KINDUS has succeeded to automate the whole mineral-wool metal panel continuous process and its value is already recognized by major sandwich panel producing companies at domestic site.



Different kinds of metal panels

Second processing type

Continuous type

EPS Block Production Plant

For the EPS(Expanded polystyrene) sandwich panel production line users, KINDUS, we are able to supply the EPS block production plant to produce the core materials of EPS sandwich panels as well and it is designed to keep the best productivity without prior knowledge and experience.

Regarding this, we support a total care system include from engineering, planning, analysis of establish a new factory at the beginning to manufacturing, cost management, installation, commissioning, test-running, education and maintenance.

Our expanded polystyrene block production plant is already recognized its value by major companies at domestic and foreign with various technical researches and a high level services, KINDUS, we will keep trying for development in accordance with customer's needs for the high quality goods.

EPS Block Production Plant

Pre-expanding system

Pre-expanding process is to foam the EPS granulates(Expanded polystyrene resins) in tanks with hot steam.

Our pressurized batch type pre-expanding system can decrease in a deviation of specific gravity at large and remaining moisture. We have improved it's workability by enabling an operator to control the temperature and pressure easily during the expansion process.

A high density pre-expander or an automatic gravimeter can be included and the silo can be divided into manual type, semi-automatic type and automatic type. Also, it will be composed as to minimize the problems related with static.

Block molding system

Block molding process is to make EPS(Expanded polystyrene) blocks with first foamed EPS granulates(resins).

Our block molding machine is a vacuum horizontal type and through the innovative composition of mold structure, feeding and cooling system, we can get energy-saving and increase production at the same time.

When ordering, you can choose the block size and automatic size control device can be included as necessary.

Block cutting system

Our block cutting line is a continuous electric hot wire type and that's because dimension and method are decided by the final goods, the production efficiency is maximized. Also, we set a range of cutting size as much as possible to avoid the problems in cutting process.

It can be connected with scrap recycling system and the scrap recycling system is composed as a crusher, a dedustor a mixer and a dust compactor.

Shape molding system

Our shape molding machine is a vacuum horizontal type and it is necessary to produce other various EPS goods such as cushions for electronics, fish boxes and so on.

Also, it can be divided into a lost foam type and an insert type.

This tube mill plant equipment is used for making and cutting a pipe through the continuous modeling and welding of the strip materials slit according to the desired standard pipe in the length direction by utilizing a high frequency induction heating device.

KINDUS, we fidelity to mill stand's principles in manufacturing not only the main part but also the front and the rear part and do our best for the high quality by keeping the processing standardization and high accuracy.

GENERAL PROCESS

1. Decoiling : Unrolling the winded skelp.
2. Butt welding : Connecting the both ends if skelp for the continuous production
3. Accumulator : Stacking the connected skelp to decrease the material preparation time
4. Forming : Passing skelp through the roll forming tool
5. Welding : Welding process by electric resistance
6. Cooling : Air and water cooling to uniformalize the heated organization after high frequency heat treatment process
7. Sizing : To accurate the our diameter of pipe
8. Cut-off : Cutting to ordered dimension
9. Straightening : Passing through the correction gap for the straightness
10. End facing : Chamfering & beveling the cut side according customer's order
11. Hydrostatic testing : Checking the water leak and crack
12. Packing : Packing by ordered

SPECIFICATION

Nominal Type(Inch)	Out Diameter(mm)	Square Tube(mm)	Wall Thickness
1″	Ø10 ~ Ø25.4	12x12 ~ 20x20	0.6 ~ 2.0
1 + 1/2″	Ø10 ~ Ø30.1	12x12 ~ 30x30	0.6 ~ 2.6
1 + 3/4″	Ø12.7 ~ Ø50.8	12x12 ~ 40x40	0.8 ~ 3.2
2″	Ø21.7 ~ Ø60.5	15x15 ~ 50x50	1.0 ~ 4.0
2 + 1/2″	Ø25.4 ~ Ø76.3	20x20 ~ 65x65	L:1.0~4.5 / H:2.0~7.0
3″	Ø31.8 ~ Ø89.1	25x25 ~ 70x70	L:1.4~4.5 / H:2.4~9.0
5″	Ø50.8 ~ Ø127	40x40 ~ 100x100	1.4 ~ 6.5
6″	Ø63.5 ~ Ø168.3	50x50 ~ 125x125	L:1.4~6.5 / H:2.4~9.5
8″	Ø89.1 ~ Ø219.1	70x70 ~ 175x175	3.2 ~ 9.5
12″	Ø114.3 ~ Ø323.9	90x90 ~ 250x250	4.5 ~ 12.7


Uncoiler & Coil opener


Accumulator


Tube Forming


HF Welding Jig

HF Welder


Cooling Unit


Saw Cutting


Conveyor Equipment


Straightening


End Facing


Unloading & Packing

SPECIFICATION

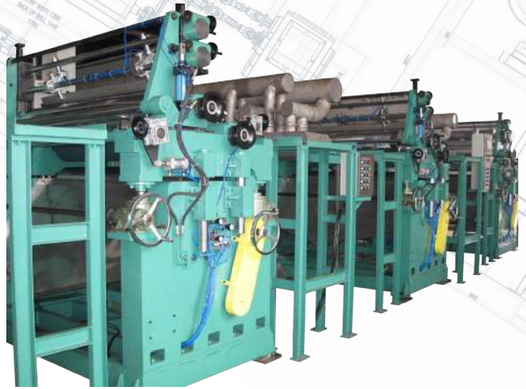
1. Raw material

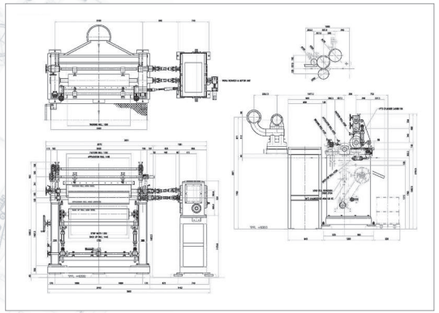
1) Applicable raw material : Zink-coated steel
2) Strip dimension : Width 600 ~ 1,250mm / Thickness 0.4 ~ 0.7mm
3) Coil dimension : Weight Max. 10Ton, Inner Diameter 508/610mm, Out Diameter Max. 1,600mm

2. Coating & Printer

1) Dry thickness
- Back : Max. 10μ(Dry)
- Print : Less than 1μ(Dry) - 3 Colors
- Lower : Primer (Service coating) only
- Primer : Max. 25μ(Dry)(5-7μ Dry Basis)
- Finish : Max 25μ (Dry) (16~18μ Dry Basis)
- Non-volatile : Approx. 40~60% WLI
- Top : Max. 15μ(Dry)(16~18μ Dry Basis)
- Upper : Primer + Top + Print + Finish

2) Coating material : Polyester resin, Acryl resin, Epoxy resin, Silicone resin, Modified polyester resin, Fluoride resin
3. Coating type : Roll coating type - Reverse or Natural
4. Baking oven
- Type : Hot air convection heating type
- PMT(Peak Metal Temperature) : Oven No.1 Max.210°C (Primer)
  Oven No.2 Max.240°C (Top)

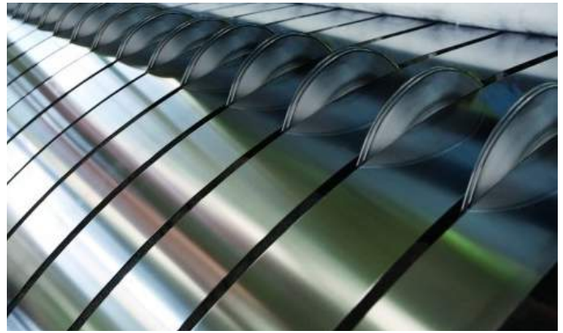




Slitting Line

A slitter, as known as cut to width line, is to cut the coil with various widths and rewind it. The process is consists of coil supplying, cutting, packing and releasing.

KINDUS's slitting machine is manufactured in consideration of automation, high quality, energy saving, productivity and stability. The slitting line can be divided into many kinds but it is composed according to winding type, driving type and winding tension control in general.



SPECIFICATION

Thickness	0.3 ~ 12.7mm
Width	3', 4', 5', 6'(900mm ~ 1,800mm)
Coil weight	10, 15, 20, 25, 30, 35Ton
Cutting type	Drive-cut, Pull-cut
Cutting accuracy	0.5 ~ 0.8mm
Stand change	Stand by cassette
Knife diameter	150mm ~ 580mm
Line speed	60m/min, Max. 250m/min
Material	Mild steel, HGI, GI, CCI, CR, HR

Uncoiler

Slitter

Loop

Tension

Tension & Bridle roller

Bridle roller

Electric MCC

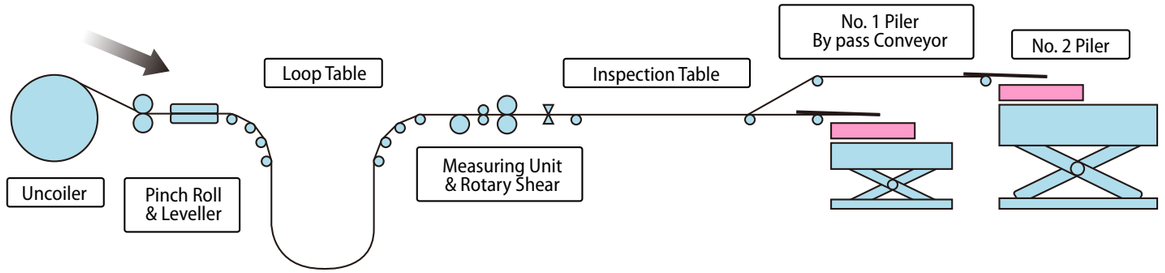
Recoiler

Cut to Length(Rotary Shear) Line

A shearing machine, as known as cut to length line, is to cut the coil with various lengths. Cutting is done by shearing which upper knife engaging with lower knife.
The process is consists of coil supplying, cutting, stacking, packing and releasing.

KINDUS's cut to length line is manufactured in consideration of automation, high quality, energy saving, productivity and stability.

ROTARY SHEAR LINE LAY OUT



SPECIFICATION

Thickness	0.3 ~ 16T
Width	3', 4', 5', 6'(900mm ~ 1,800mm)
Coil weight	10, 15, 20, 25, 30, 35Ton
Cutting length	500 ~ 6,000mm(12,000mm)
Cutting accuracy	0.5 ~ 0.8
Leveler	4 & 6 High leveler(Cassette)
Leveler roll diameter	35mm ~ 180mm
Line speed	30m/min ~ 150m/min
Number of cutting	10cpm ~ 30cpm
Cutting type	Rotary, Up-Cut, Fly-Die-Set(DDS)


Production Factory


Uncoiler & Pinch Roll Leveller


Measuring unit & Rotary shear


Electric control & Inspection table


No.1 Piler by pass conveyor


No.2 Piler

Roof Tile Roll Forming Machine

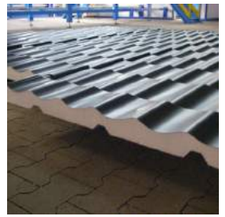
Roof tiles, used for centuries, are greatly durable, sustainable and harmony with nature. Also, roof tiles make reduce expense, because they are easy to storage, transport and construct. That's the reason why roof tiles are very popular all over the world.

Our roof tile roll forming machine is controlled by PLC computer system with inverter, so operators can handle the machinery easily and steadily.

KINDUS, we're keep supplying and trying for development in accordance with customer's needs for the various kinds of roof tile.

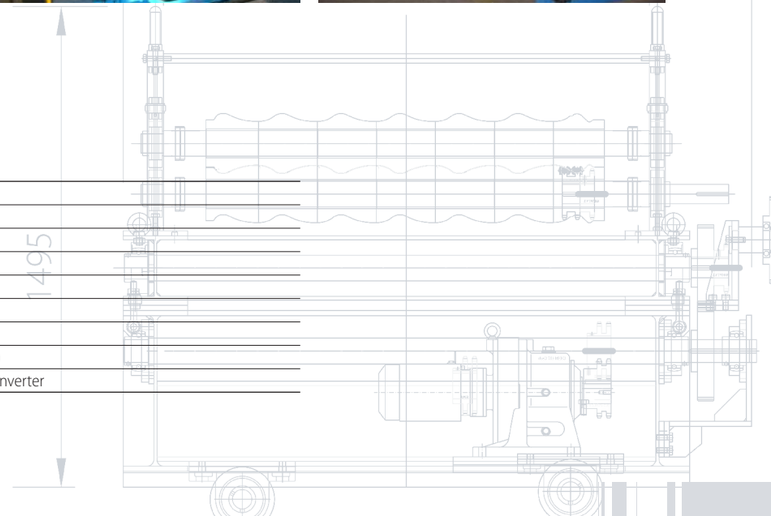
COMPOSITION

- Uncoiler
- Entry shear
- Roll forming machine
- Drawing machine
- Shearing machine
- Run-out conveyor
- Stacking



SPECIFICATION

Material	Al/Zinc/GI/PPGI
Thickness of material	Min. 0.3mm ~ Max. 0.6mm
Width of material	Min. 914 ~ 1,390mm
Production speed	Max. 8 ~ 13m/min
Drawing depth	250mm, 14 ~ 20tiles/min
Drawing height	15 ~ 25mm
Adjustable pitch range	250 ~ 400mm
Drawing and cutting method	By hydraulic(Flying cutting)
Control system	PLC computer control and inverter



Steel Pallet Roll Forming Machine

As environmental regulations are tightening up as time goes by, use of wooden pallets is limiting due to forest resources protection, various kinds of disease and harmful insects. Also, in case of plastic pallets, the production costs are increased with rise of oil prices in these days and it has a main shortcoming that it is impossible to recycle 100%.

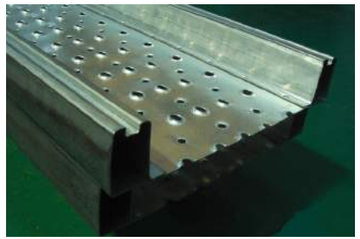
On the other hand, using the steel pallets can reduce the scarce resources and it is semi-permanent and also, it is possible to recycle 100%. So, it is spotlighted in industrial sites in these days.

KINDUS's steel pallet production line is simple with super lightweight structure via all-in-one steel forming system. Also, it has been designed enables you to produce the products which can cope with changing trade policies.

COMPOSITION

- Uncoiler
- Roll forming machine
- DDS cut
- Roller conveyor
- Automatic spot welding

Scaffold Walk Board Roll Forming Machine



Using the scaffold walk board can help ensure workers safety also secure empty place to facilitate carrying materials in the place where workers can frequently fall out during high place working, such as building construction site and a shipyard.

COMPOSITION

- Uncoiler
- NC leveler and feeder
- Press and mold
- Shearing machine
- Roller conveyor
- Roll forming machine
- Out conveyor

Window Reinforcement Steel Roll Forming Machine

Reinforcement steel is a material which plays the backbone by supporting glass weight and the frame, and it is inserted inside the chassis.
This material is indispensable to the chassis and it acts in support of whole chassis in different shapes and thickness for each maker's.

KINDUS's window reinforcement roll forming line is manufactured in standing roll replacement type and it produces architectural finished and equipped materials(T-bar, M-bar, Stud) and chassis reinforcement-bar. And it is composed that can use multi directional roll forming.

COMPOSITION

Uncoiler
↓
Roll forming machine
↓
Cutting press and cutting mold
↓
Rut-out table
↓
Rack





SPECIFICATION

Material	CR, GI, EGI, PO, HGI
Thickness of material	0.3~3mm
Production speed	20~50m/min
Cutting type	Flying cutting type
Cutting length	300~6,000mm
Length tolerance	±0.5mm

Truck Frame Roll Forming Machine

Truck frame roll forming line produces a frame of cargo box for truck.
KINDUS compose this machinery as a standing roll replacement type and a cassette replacement type, so customers can produce various products quickly and precisely.

In addition, we apply DDS cutting press on equipment, so it can be cutting length accurately and produce high quality forming products.

COMPOSITION

Uncoiler
↓
Roll forming machine
↓
DDS cutting press and cutting mold
↓
Rut-out table
↓
Rack





SPECIFICATION

Material	GI, EGI, PO
Thickness of material	1.2~2.3mm
Production speed	30~50m/min
Cutting type	DDS cutting type(AC servo control)
Cutting length	300~6,000mm
Length tolerance	±0.25mm

Cable Tray and Duct Roll Forming Machine

Cable tray is used to support and protect when wire electricity, electric power, communication control and instrumentation cable. KINDUS compose this machinery as a cassette replacement type or automatic width control type in accordance with product.

And we supply equipment that is suitably designed for the use of product which can be formed after perforating a partition and other panels.

COMPOSITION

- Uncoiler
- NC leveler and feeder
- Power press and piercing mold
- Shearing machine
- Roller conveyor
- Roll forming machine
- Out conveyor

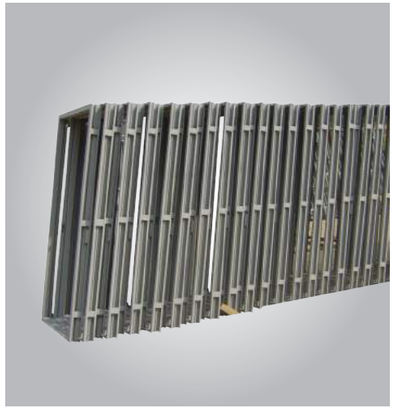
SPECIFICATION

Material	GI, EGI, PO
Thickness of material	0.5~2.3mm
Production speed	8~16m/min
Cutting length	800~6,000mm
Length tolerance	±0.25mm

Doorframe and Fire Door Roll Forming Machine

It can produce a structural doorframe, fire door and clean panel, doorframe roll forming line of KINDUS can automatically control according to the width of product. Moreover, the positioning of punching is easy, regardless of a various size of fire door, inner or exterior plate. Especially, it sequentially process inner and exterior plate, and can lead to following process.

So, fire door manufacturing process can be done continuously and then, it is not only improving productivity significantly but also the cost reduction enables to minimize of subsidiary equipment and space.



SPECIFICATION

Material	Mild steel, GI, EGI, HGI, CCI
Thickness of material	0.8~1.2mm
Production speed	12~16m/min

Heavy Gauge Roll Forming Machine

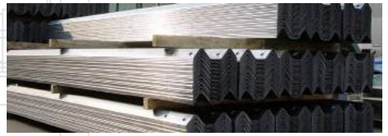
It is a large roll forming line which produces beams, steel pipe piles for heavy-weight building, frame of truck, and so on.


Uncoiler & Leveller


NC Roll feeder


Hydraulic press & Mold


Roll forming machine



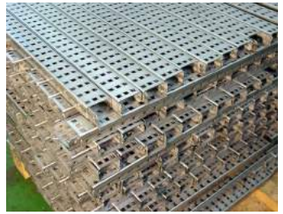
SPECIFICATION

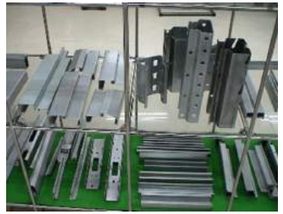
Material	CR, GI, PO, HGI
Weight	Min. 3,000kg ~ Max. 30,000kg
Thickness	Min. 3mm ~ Max. 9mm
Width	Min. 500mm ~ Max. 1,550mm

Rack Beam Frame Roll Forming Machine

The equipment rack beam to produce electric control panel and goods storage for the facility. The cassette changed type made by roll forming and punching facilities.

Made by cassette changed type is much increased productivity. The product of any shape can be designed and manufactured to customer requirements.





SPECIFICATION

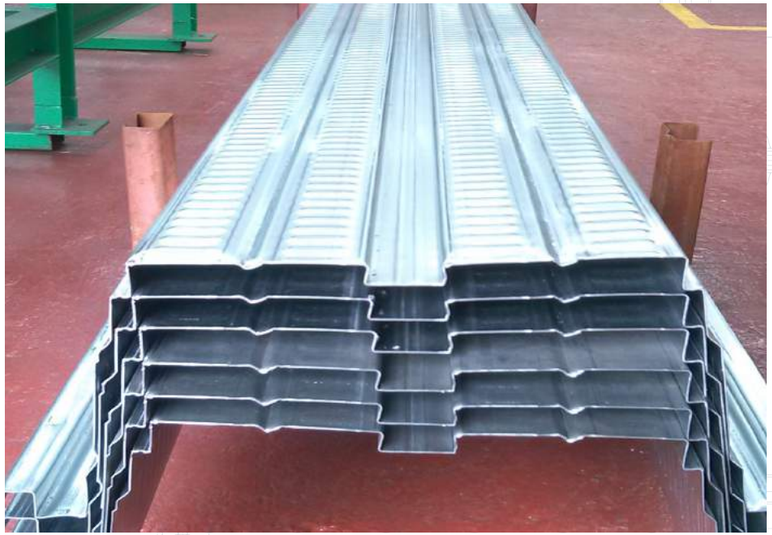
Material	GI, EGI, PO
Thickness	1.0~2.3mm
Production speed	6~12m/min
Cutting type	DDS cutting type(AC servo control)
Cutting length	300~6,000mm
Length tolerance	±0.25mm

Deck Plate Roll Forming Machine

These days, the deck plates system is a well-used as deck slab system for high-rise building construction. And the deck plates can be largely categorized as for the formwork and architectural structures.

When proceeding liquid concrete construction, the deck plate for the formwork plays withstand the self-weight of concrete, before concrete is hardened. And after concrete is hardened, the concrete floor withstands the floor load.

The deck plate for the architectural structures is designed to be able to withstand the self-weight of concrete and the whole floor load even concrete is hardened. So, quantity of reinforcement and thickness of concrete can be reduced because it shows that as effective as adding reinforcement.



Un-coiler

Rough Leveller

Side Guide

Deck Plate Forming

Cutting Press

Stacking & Unloading

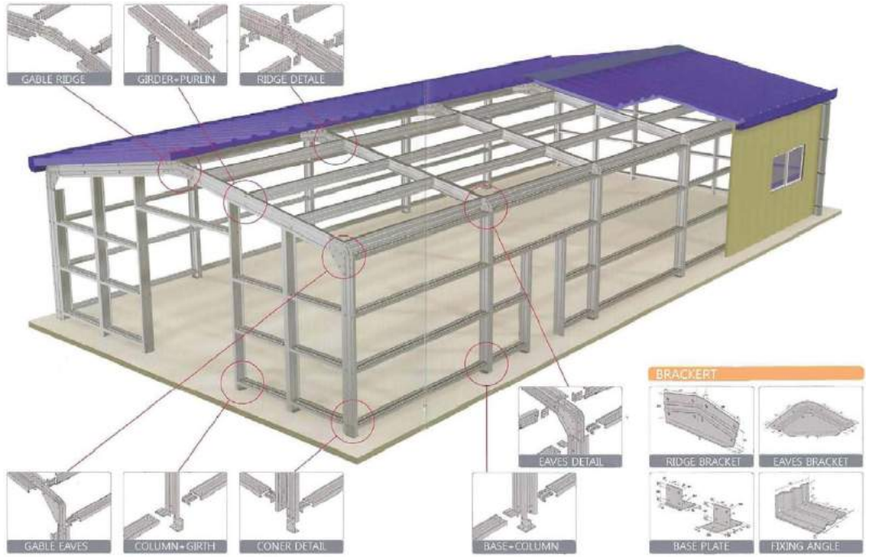
Lightweight steel frame is designed to build small and medium size factory or warehouse.

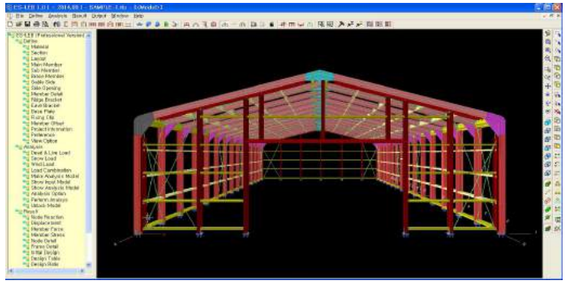
Light steel which produced by automatic punching roll forming machine is using bolted connections. So, it's more safety, economically feasible and environment-friendly compare with H-beam or C-channel. Also, customers can reduce building costs because it can be cut down construction time and prime cost.

And through precise calculations with an exclusive LEB program, a high level of safeness and more importantly economy can be achieved, with cost reductions of up to 30% possible when compared to existing steel structure systems.

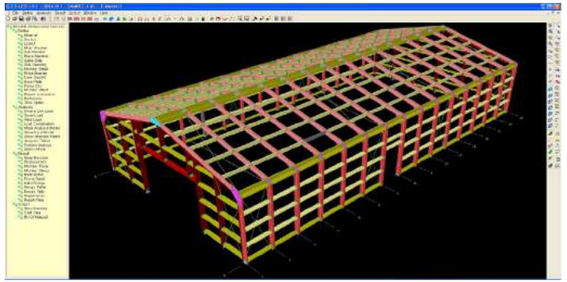
The materials manufactured at the factory can be easily put together on site with only bolts, and direct construction by constructors is also possible. Disassembly is also convenient and it is 100% recyclable

Construction time is also very short, with a 660m^2 sized building taking about 15 days from the order to construction.

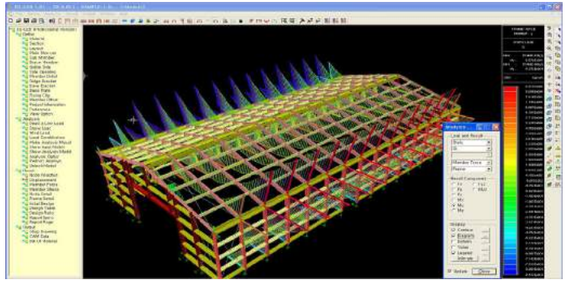




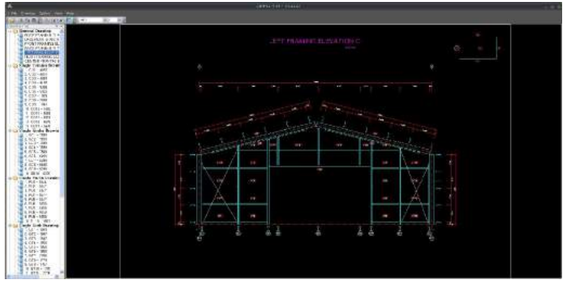
1. Input data : Layout & Section, Gable & Opening, Bracket & Angle



2. Make analysis model : Dead & live load, Wind load, Snow load

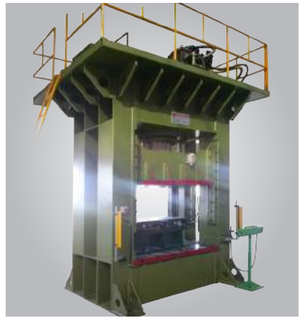


3. Analysis result : Member optimal design, Design report



4. Output data : CAD Data, CAM Data, BOM Data

CS Press PCS-160D



Hydraulic Press KHP-500

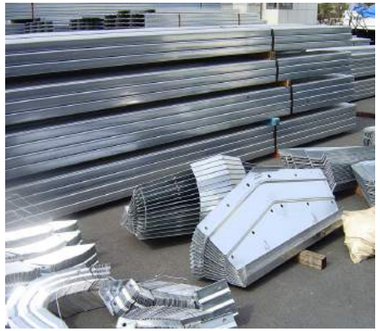
SPECIFICATION

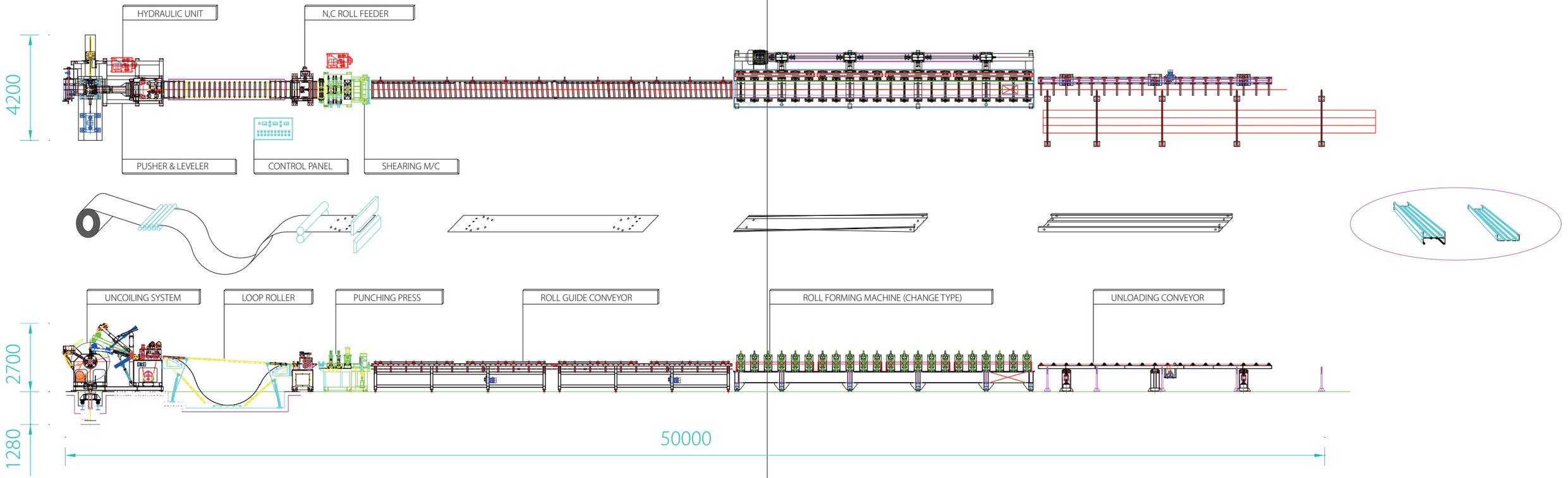
Material	HGI
Weight	Min. 3,000kg ~ Max. 5,000kg
Thickness	Min. 1.6mm ~ Max. 3mm
Width	Max. 550mm
Production speed	Max. 14m/min
Cutting length	Max. 13,000mm

Installation LEB System

BEAM & Bracket

LEB & Sandwich Panel



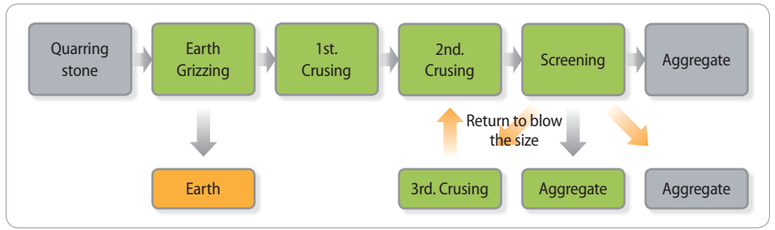

HYDRAULIC UNIT
N,C ROLL FEEDER
PUSHER & LEVELER
CONTROL PANEL
SHEARING M/C
4200
UNCOILING SYSTEM
LOOP ROLLER
PUNCHING PRESS
ROLL GUIDE CONVEYOR
ROLL FORMING MACHINE (CHANGE TYPE)
UNLOADING CONVEYOR
2700
1280
50000

Crushing Plant

Crushing plant of KINDUS have been put it to the prominent stone mountain development sites in the nation and proud of the maximum satisfaction with high productivity and efficiency versus price.

Especially, our products are made of special alloy steel focused on strength, pround of simple structure and powerful crushing capability with constant technology development and allows operation and maintenance.

KEY COMPONENT




Primary unit


Secondary unit


Tertiary unit

KINDUS®