HELEX

PRECISION BY DESIGN

FLAT LAMINATION LINES

Semi-Automatic PUR Flat Lamination Line

Furniture panels · Wall decoration panels · Door panels · Flooring

Single-side flat lamination of films and sheets on flat panels with PUR reactive hot-melt adhesive: pre-heating and dust cleaning, five-roller glue coating, pneumatic laminating, film trimming and protective film application in one line.

MODEL HE 1400 B

3–60 mm	**5–10** m/min	**15–40** g/m²	**5** main rollers
PANEL THICKNESS	WORKING SPEED	ADHESIVE APPLIED	GLUE COATING



HE 1400 B — view from the infeed side

/ Application & Use

The HELEX HE 1400 B is a semi-automatic production line for single-side flat lamination of panels with PUR reactive hot-melt adhesive. It processes roll materials and rigid sheets on the same line: PET high-gloss or super-matt film, PVC, PP and aluminium film, HPL / CPL fireproof sheet and acrylic sheet, on particle board, MDF, bamboo fibre board, plywood, polymer plastic board, metal board, foam board and other flat panels for furniture, wall decoration, doors and flooring. The declared panel formats are 1220 x 2440 mm and 1220 x 2750 mm, the panel thickness 3–60 mm and the panel weight up to 100 kg. Transparent PET lamination requires a dedicated adhesive grade.

The line has six sections: infeed conveyor with pre-heating oven and dust cleaning, five-roller PUR glue coating machine, conveyor with sheet feeding table and oven, pneumatic film and sheet laminating machine with gantry film loading crane, outfeed with film long-side trimming and protective film device, and the PUR drum melter. The whole line runs at 5–10 m/min with stepless frequency-converter speed control from a PLC with touch screen.

/ Raw Materials & Products

RAW MATERIALS

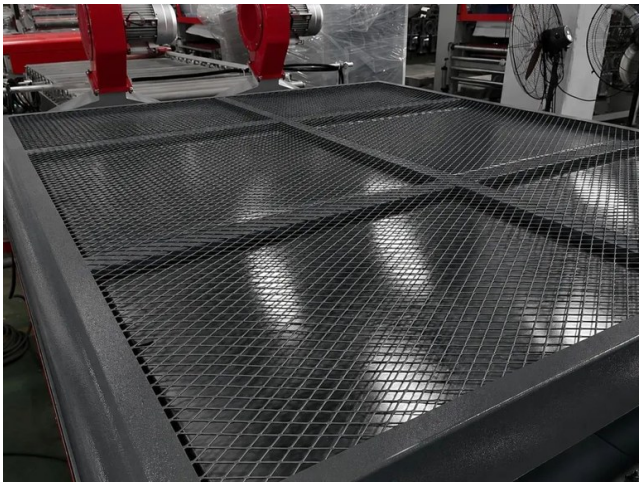
- Particle board, MDF, bamboo fibre board, plywood
- Polymer plastic board, metal board, foam board
- PET, PVC, PP and aluminium film, HPL / CPL and acrylic sheet

FINISHED PRODUCTS

- Laminated furniture panels
- Wall decoration panels and door panels
- Flooring and other flat board products



HE 1400 B — view from the outfeed side, with laminating machine, trimming and protective film section



Protective mesh guard



Conveyor rollers Ø 56 x 1410 mm

/ Structure and Configuration

1 **Infeed conveyor, pre-heating oven and dust cleaning**
Roller conveyor 4 m, rubber rollers Ø 56 x 1410 mm, 0.75 kW drive with cushion guide; enclosed infrared pre-heating oven with 3 independently and steplessly adjustable lamp groups, 27 kW; belt-brush cleaner with 2 upper and 1 lower brush belt (0.55 kW), dust blower with 1220 mm air knife (1.5 kW) and adhesive dust-removal roller.

2 **PUR glue coating machine, 5 main rollers**
Coating and bottom silicone rollers Ø 240 x 1400 mm, chrome-plated dosing steel roller Ø 216 x 1400 mm, sweeping steel roller Ø 240 x 1400 mm with ceramic surface; drives 4 x 1.5 kW + 0.75 kW, lifting 0.37 kW, oil heating 3 x 7.5 kW with roller surface temperature uniformity within ±3 °C; electric panel thickness adjustment, manual two-side glue amount adjustment, 15–40 g/m²; all rollers reversible for cleaning.

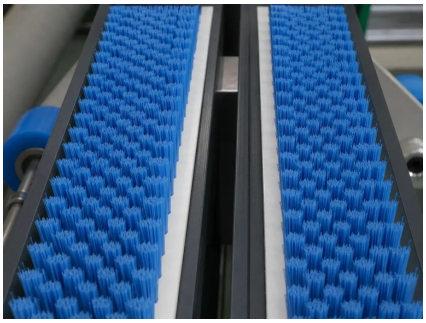
3 **Conveyor, sheet feeding table and oven**
Conveyor 3.6 m with obliquely mounted rollers Ø 56 x 1410 mm and side guide, 0.75 kW; infrared oven 9 kW for glue surface temperature compensation at low ambient temperature; manual sheet placement with foot switch for sheets of 2440 / 2750 mm.

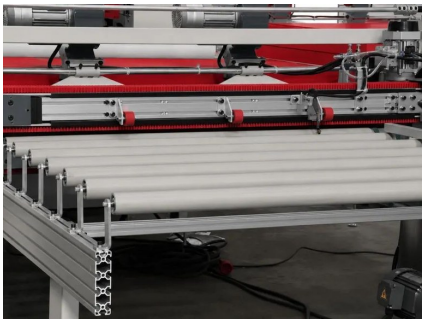
4 **Film and sheet laminating machine with film loading crane**
Silicone laminating roller Ø 240 x 1400 mm and chrome-plated steel roller Ø 240 x 1400 mm with pneumatic pressing; drives 3 x 1.5 kW; infrared film pre-heating 2.5 kW; electric thickness adjustment 0.37 kW; gantry film loading crane 0.55 kW with lateral travel, air-expansion shaft with manual deflection adjustment; automatic panel detection, anti-pinch stopper and emergency brake.

5 **Outfeed conveyor, film long-side trimming and protective film device**
Outfeed drive 0.55 kW; natural rubber rollers Ø 120 x 1300 mm, release paper roller Ø 75 x 1400 mm, air-expansion shaft with pneumatic brakes and manual thickness adjustment; protective film applied after lamination, tension decoupled from the main line; trimming for panels from 9 mm thick.

6 **PUR drum melter**
Output 30 kg/h, 2 heated transfer hoses, motor speed 0.5–60 rpm; 15 kW, 380 V, 50/60 Hz; 1660 x 650 x 2240 mm, 305 kg.


Dust blowers with air knife


Brush belts of the dust cleaner


Film trimming and outfeed conveyor

/ Technical Data

SPECIFICATION

Model	HE 1400 B
Machine type	**Flat lamination line**
Workpiece thickness, min.–max.	**3–60 mm (film trimming from 9 mm)**
Workpiece length	**declared panel formats 1220 x 2440 mm and 1220 x 2750 mm**
Maximum workpiece weight	**100 kg**
Substrate materials	**particle board, MDF, bamboo fibre board, plywood, polymer plastic board, metal board, foam board and other flat panels**
Covering materials: foils and sheets	**PET high-gloss / super-matt film, PVC film, PP film, aluminium film, HPL / CPL fireproof sheet, acrylic sheet; in rolls or sheets**
Adhesive or finishing product	**PUR reactive hot-melt adhesive (dedicated grade for transparent PET)**
Application units: configuration and motor power	**roller coating machine with 5 main rollers: coating and bottom silicone rollers Ø 240 x 1400 mm, chrome-plated dosing steel roller Ø 216 x 1400 mm, sweeping steel roller Ø 240 x 1400 mm with ceramic surface; drives 4 x 1.5 kW + 0.75 kW, lifting 0.37 kW; electric panel thickness adjustment, manual two-side glue amount adjustment; all rollers reversible for cleaning**
Coating weight per unit area	**15–40 g/m² (with / without scraping roller)**
Adhesive or finishing product supply unit	**PUR drum melter and feeding unit: 30 kg/h, 2 heated hoses, motor speed 0.5–60 rpm, 15 kW, 380 V, 50/60 Hz; 1660 x 650 x 2240 mm, 305 kg**
Surface preparation: cleaning and pre-heating	**enclosed infrared pre-heating oven with 3 independently and steplessly adjustable lamp groups, 27 kW; belt-brush cleaner with 2 upper and 1 lower brush belt, 0.55 kW; dust blower with 1220 mm air knife, 1.5 kW; adhesive dust-removal roller**
Drying, curing and heating: type and power	**roller oil heating 3 x 7.5 kW, roller surface temperature uniformity within ±3 °C; infrared oven 9 kW at the sheet feeding table; infrared film pre-heating 2.5 kW**
Pressing and laminating unit	**silicone laminating roller Ø 240 x 1400 mm and chrome-plated steel roller Ø 240 x 1400 mm, pneumatic pressing; drives 3 x 1.5 kW; electric thickness adjustment 0.37 kW; automatic panel detection with stop and restart**
Covering material feeding: foil or sheets	**film coils up to 1300 mm wide; gantry film loading crane 0.55 kW with lateral travel; air-expansion shaft with manual deflection adjustment; sheet feeding table for sheets of 2440 / 2750 mm, manual placement with foot switch**
Covering material cutting	**film long-side trimming at the outfeed (panels from 9 mm thick)**
Protective film application	**protective film applied after lamination; natural rubber rollers Ø 120 x 1300 mm, release paper roller Ø 75 x 1400 mm; air-expansion shaft with pneumatic brakes, manual thickness adjustment; tension decoupled from the main line**
Feed system	**roller conveyors Ø 56 x 1410 mm: infeed 4 m with 0.75 kW drive and cushion guide, 3.6 m conveyor with obliquely mounted rollers and side guide (0.75 kW), outfeed conveyor 0.55 kW; line direction left / right**
Feed speed	**5–10 m/min**
Safety devices	**anti-pinch stopper and emergency brake at the laminating machine**
Control system	**PLC with touch screen; whole-line stepless speed control by frequency converter**
Electrical supply	**380 V, 50/60 Hz, three-phase**
Total installed power	**approx. 94 kW (drive power 33 kW, heating power 61 kW)**
Machine weight	**approx. 5000 kg**

Data according to the technical documentation of the machine. The supplied configuration, the capacity, the overall dimensions, the compressed air requirements and the installation requirements are specified in the quotation. Technical changes reserved.

/ Configuration on Request

- Line direction (left or right) to suit the workshop layout
- Adhesive grade for transparent PET lamination
- Panel formats and covering materials to be confirmed with your own samples

SUPPLIER

PROMACH LTD
Str. Kolednitsa 2, et. 1
7002 Ruse, Bulgaria
VAT BG208556296

CONTACT

www.promach-machinery.com
contact@promach-machinery.com
BG +359 87 6832151
RO +40 755 023 024