PCS Ltd. ProCompositeSolutions

MURATORI

The Vertical Revolution for panel processing


# ALU BENDER

Automatic multipurpose edge milling/bending machine
for the edges of architectural panels

# MAIN SECTORS
## WHERE OUR CUSTOMERS OPERATE

### BUILDING, CONSTRUCTION, ARCHITECTURAL FACADES
The architectural facade or cladding sector comprises the external cladding of a building, which creates its aesthetics and provides protection, thermal and acoustic insulation, and is also sustainable and long lasting.

### SIGN MAKING, SHOPFITTING
If the sign making sector is geared towards the design and manufacture of signs and signage of various types, shopfitting covers the outfitting and furnishing of exhibition areas, shops, showrooms and points of sale.

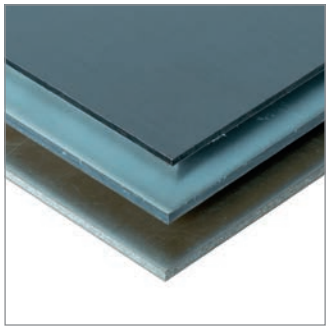
### FURNITURE, INTERIOR DESIGN
Different materials are used in the furniture industry and the choice between wood, metal, glass and composite materials depends on style, environment, durability, maintenance and cost.

### TRANSPORT INDUSTRY
The large transport sector includes the construction of trains, boats in general, and aerial transport cabins such as cable cars. The most commonly used materials are steel, Aluminum, plastic and composites.

# PROCESSABLE MATERIALS

## PANELS THAT CAN BE PROCESSED BY ALU BENDER

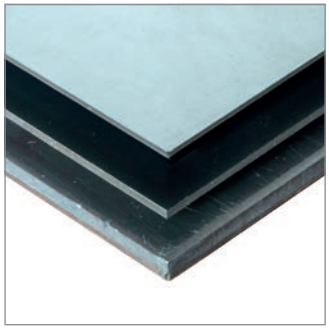
### ACM/ACP



ALUCOBOND®
LARSON®
ALPOLIC®
STACBOND®
ARCONIC®
ALUBOND®

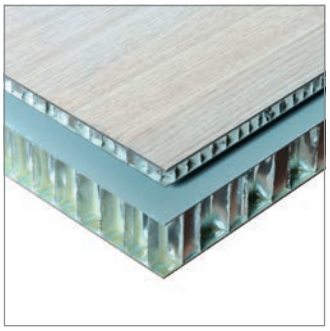
ALBOND®
SIBALUX®
VITRABOND®
ALUPANEL®
NEOBOND®
.....

### Solid Aluminum



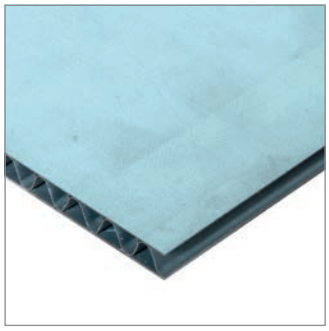
VITRADUAL®
LUXE COAT®
ALUCOLUX®
FUTURAL®
.....

### Aluminum Honeycomb



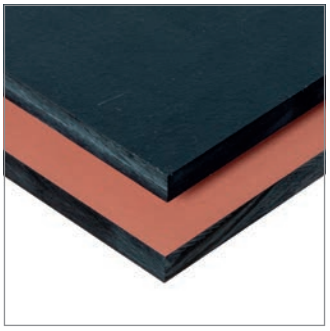
ALUCORE®
LARCORE®
PLASCORE®
STARCELL®
CELCOMPONENTS®
HONYLITE®
.....

### Corrugated Aluminum



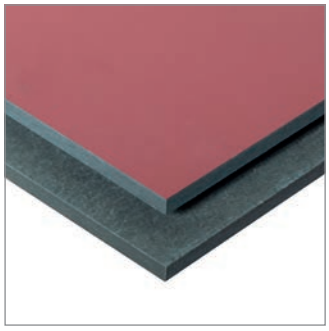
METAWELL®
DOLUFLEX®
.....

### HPL



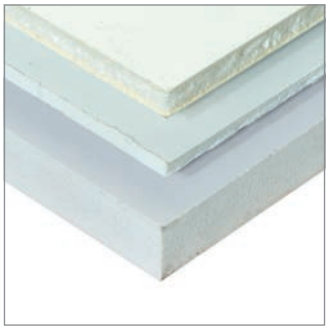
TRESPA®
MAX EXTERIOR®
POLYREY®
RESOPAL®
FUNDERMAX®
.....

### Fibre Cement



CEMBRIT®
EQUITONE®
COPANEL®
SWISS PEARL®
.....

### PVC Foam/Forex

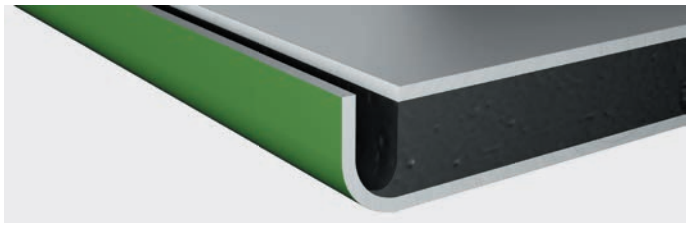


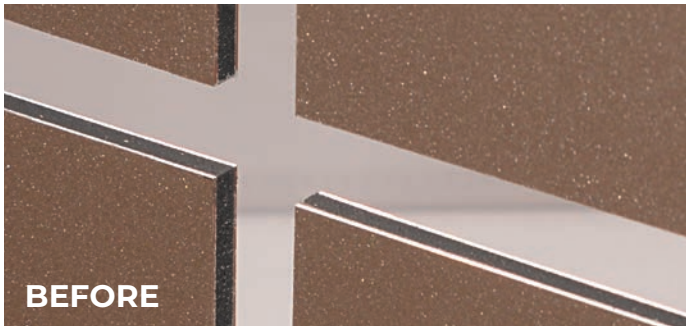
FOREX®
STADUR®
SIMONA®
PALOPAQUE®
.....

# TYPE OF PROCESSING

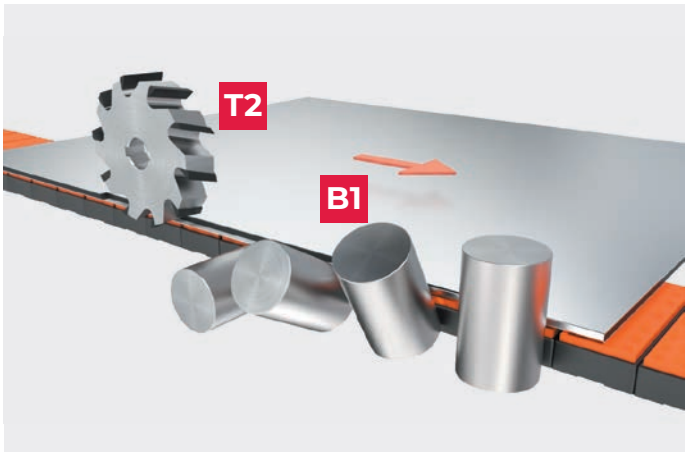
## ACM / ACP

## EDGE HEMMING



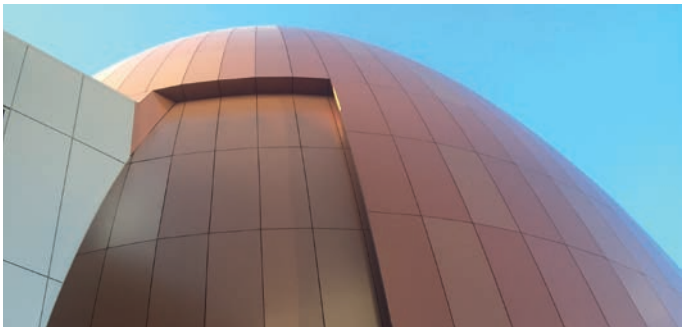






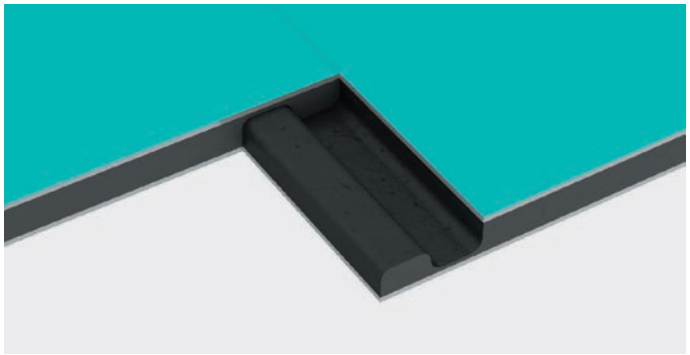

**T2** Edge Milling

**B1** Bending from 0° to 90°



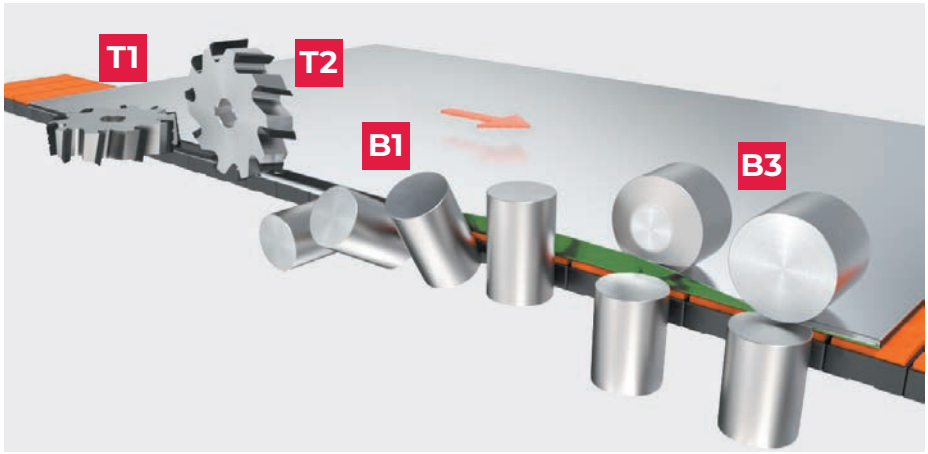
"College Football Hall of Fame", Atlanta, Georgia, USA. Fabricated by MillerClapperton using the ALU BENDER

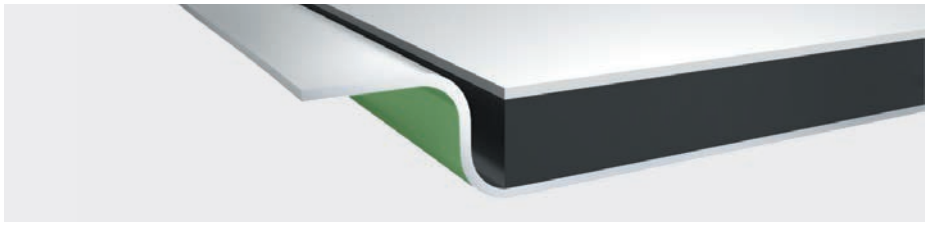
## EDGE PROFILING – INTERLOCK




**T2** Interlock Milling

## DOUBLE OUTSIDE BENDING



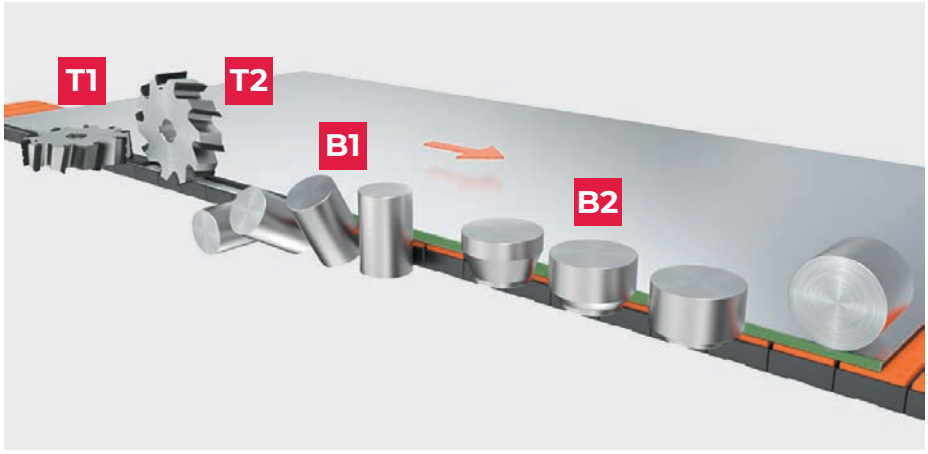
**T1** Edge Milling

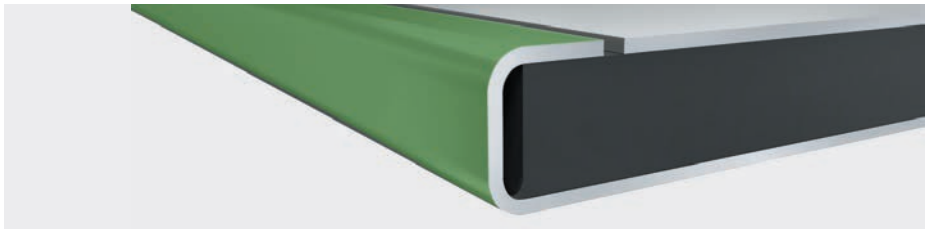
**T2** Edge Milling

**B1** Bending from 0° to 90°

**B3** Bending from 90° to 0°

## DOUBLE INSIDE BENDING



**T1** Edge Milling

**T2** Edge Milling

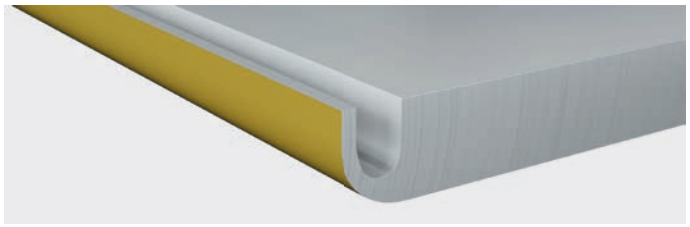
**B1** Bending from 0° to 90°

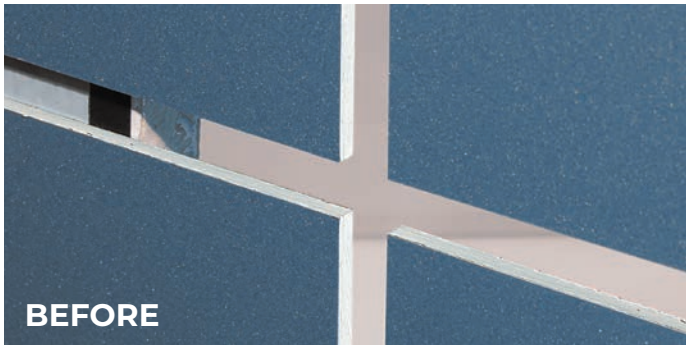
**B2** Bending from 90° to 180°

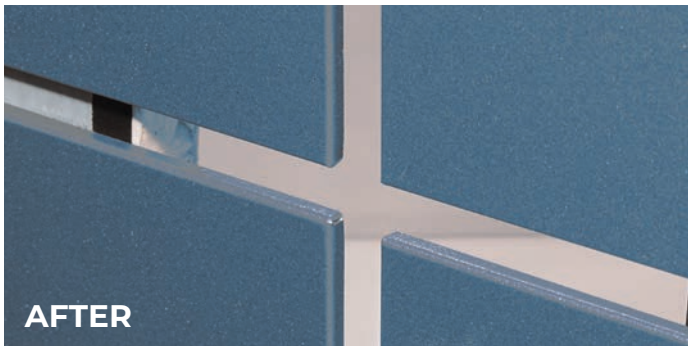
TYPE OF PROCESSING

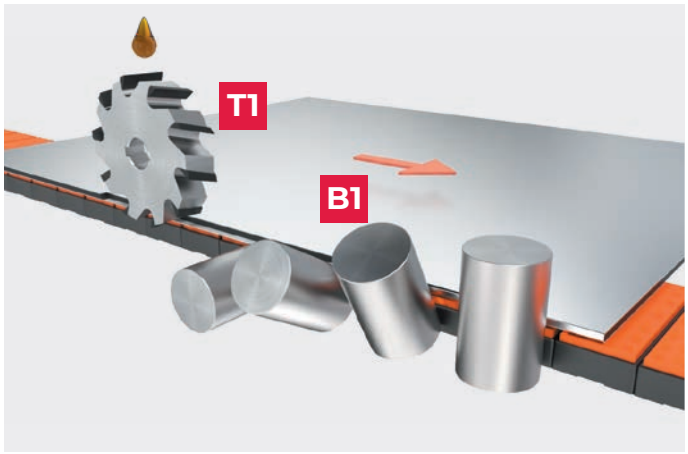
# SOLID ALUMINUM

## EDGE HEMMING





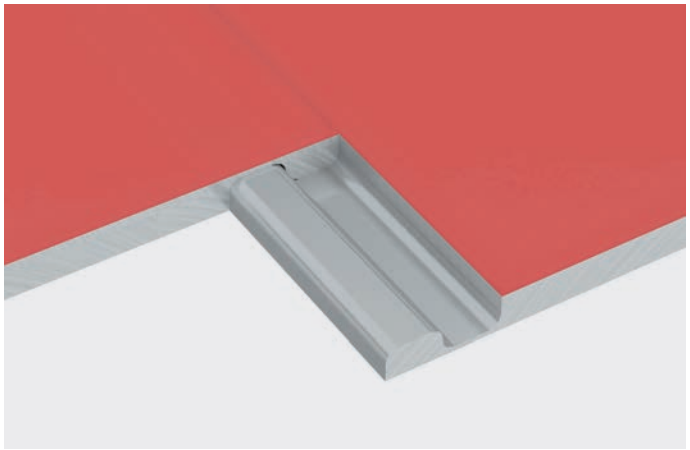




**T1** Edge Milling

**B1** Bending from 0° to 90°

Tool lubrication

## EDGE PROFILING – INTERLOCK

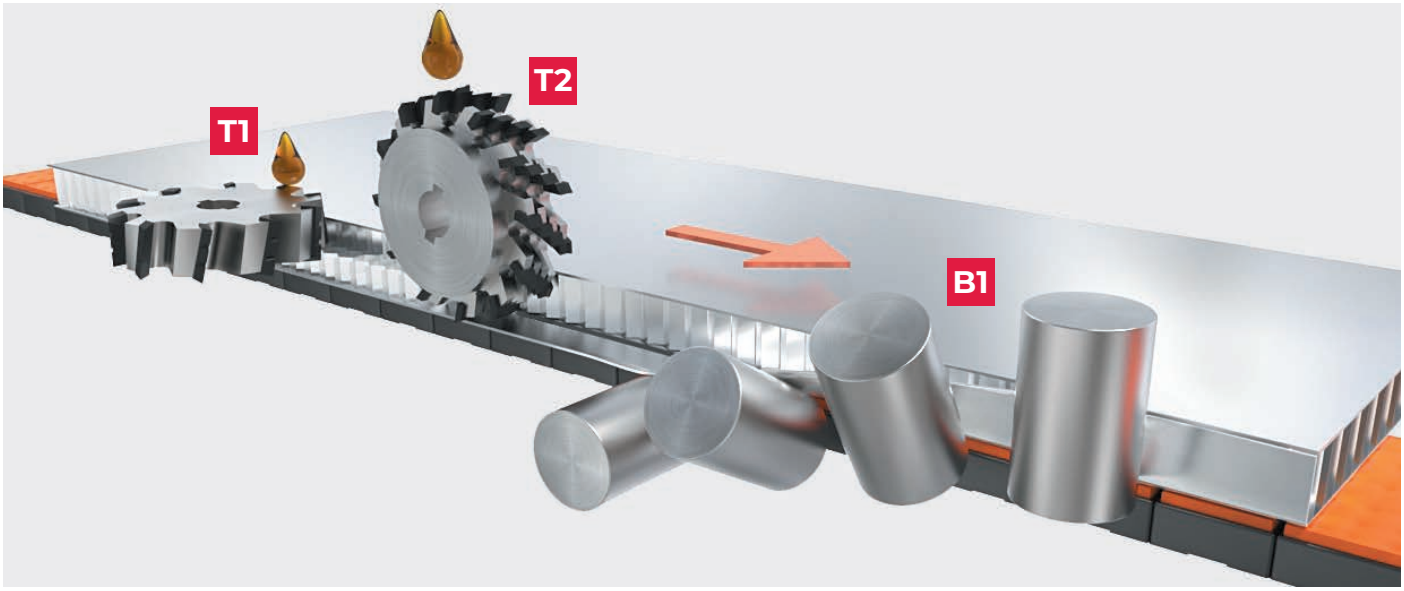



**T2** Milling of the edge – Interlock

TYPE OF PROCESSING

# ALUMINUM HONEYCOMB / CORRUGATED ALUMINUM

## EDGE BENDING



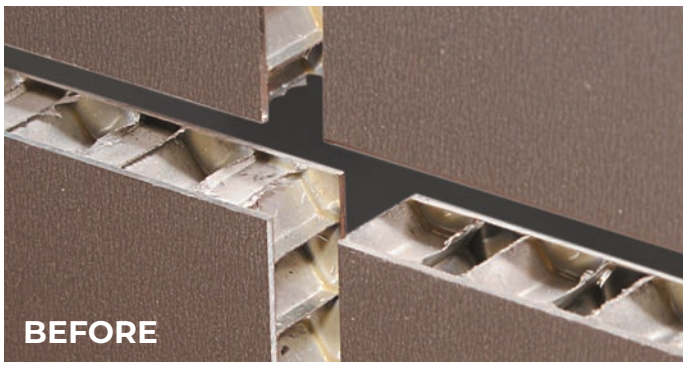

**Aluminum Honeycomb panels**

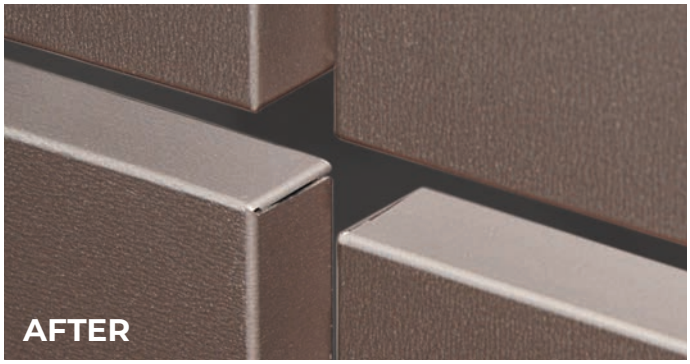
**T1** Edge Milling

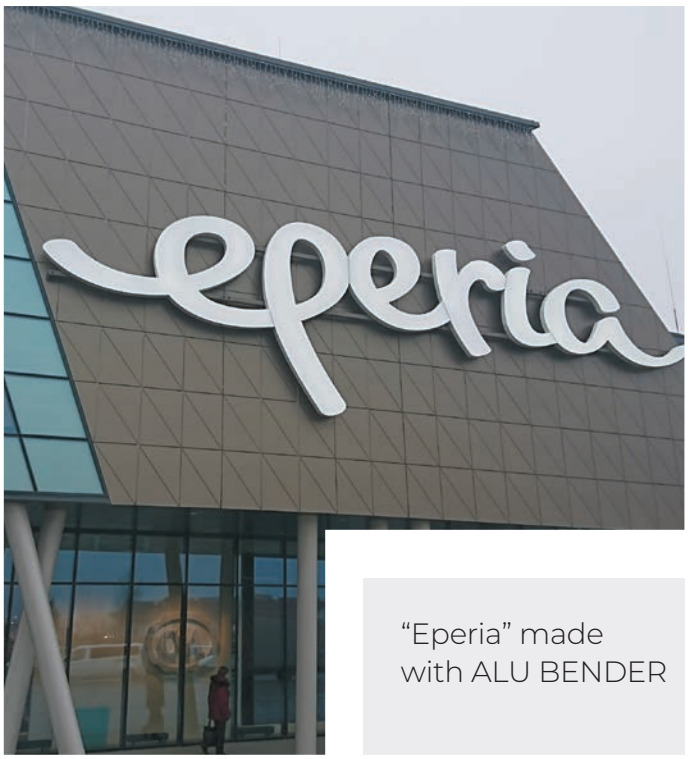
**T2** Edge Milling

**B1** Bending from 0° to 90°

Tool lubrication



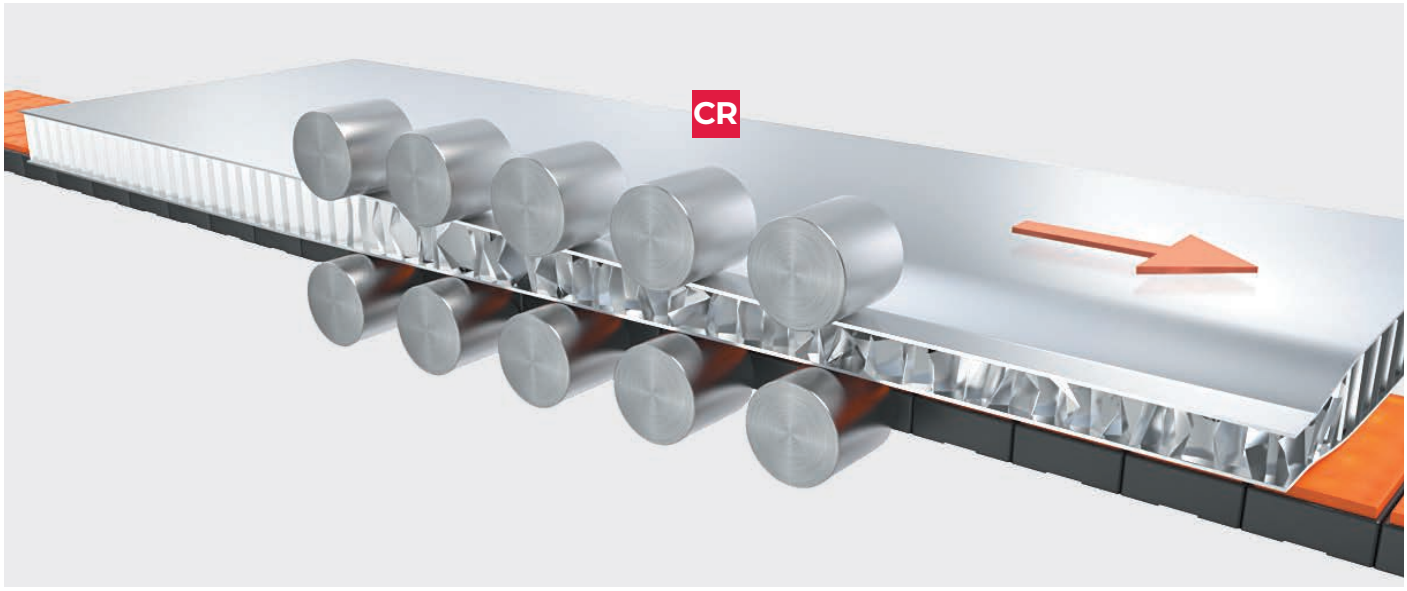




"Eperia" made with ALU BENDER

TYPE OF PROCESSING

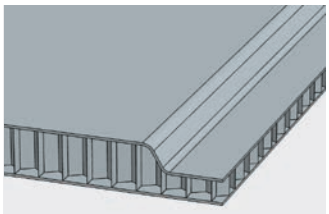
# ALUMINUM HONEYCOMB

## EDGE CRUSHING

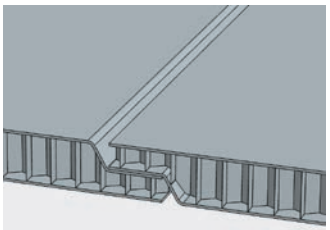



**Aluminum Honeycomb panels**

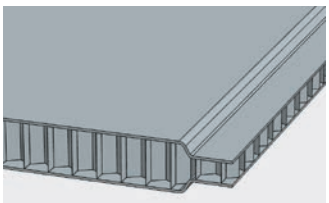
**CR** Continuous crushing



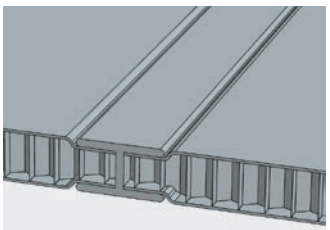
ASYMMETRIC CRUSHING



COUPLED ASSEMBLY



SYMMETRIC CRUSHING

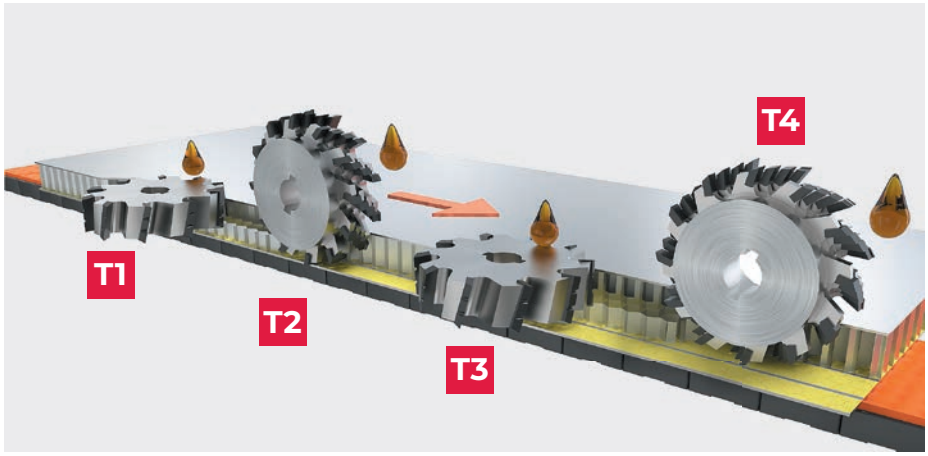


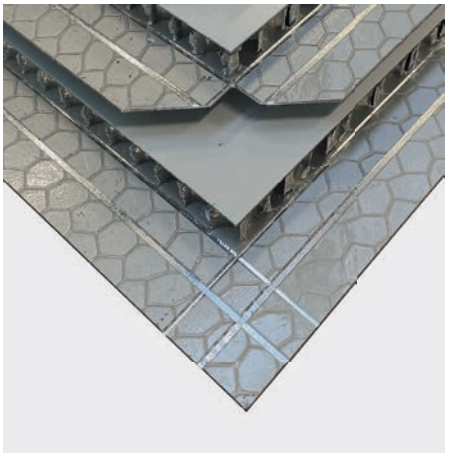
"H" PROFILE ASSEMBLY

TYPE OF PROCESSING

# ALUMINUM HONEYCOMB

## DOUBLE INSIDE BENDING



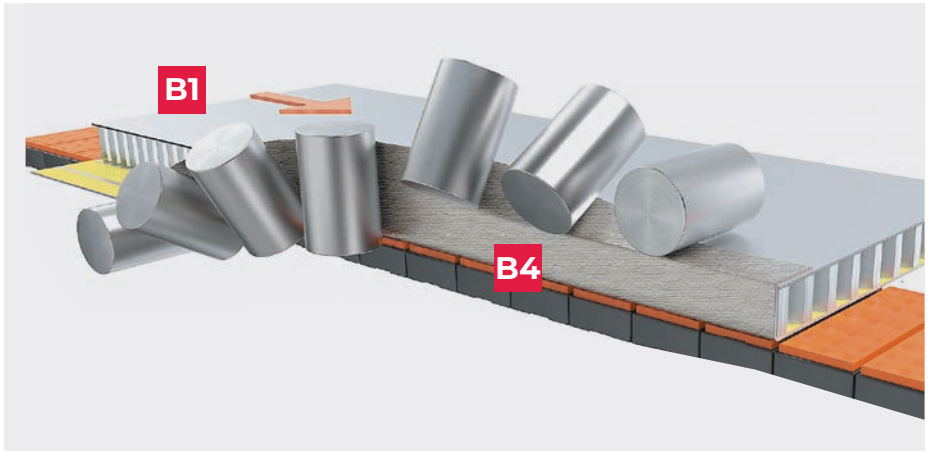



**T1** Edge Milling

**T3** Edge Milling

**T2** Edge Milling

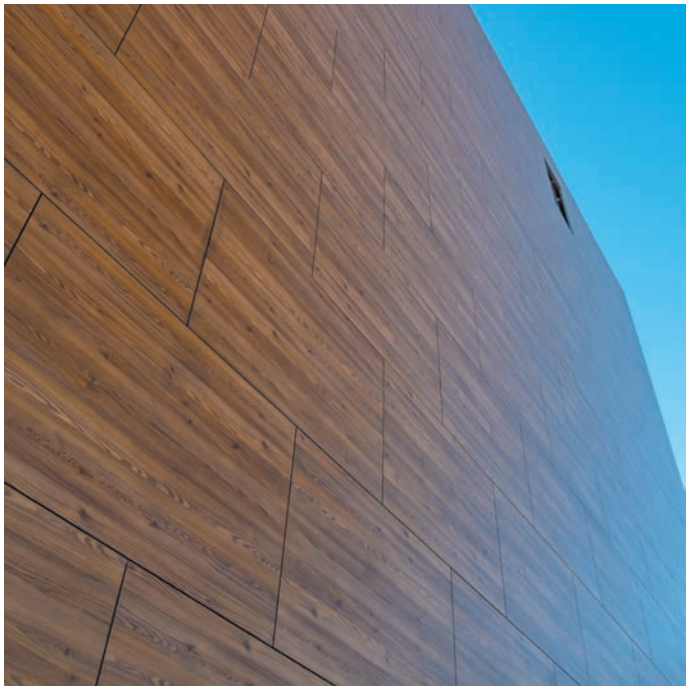
**T4** Edge Milling

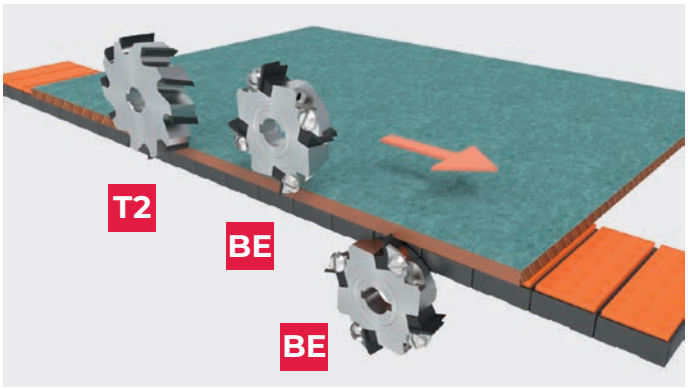



**B1** Bending from 0° to 90°

**B4** Bending from 90° to 180°

## MILLING/CLEANING OF THE EDGE AND TOP – BOTTOM BEVELLING

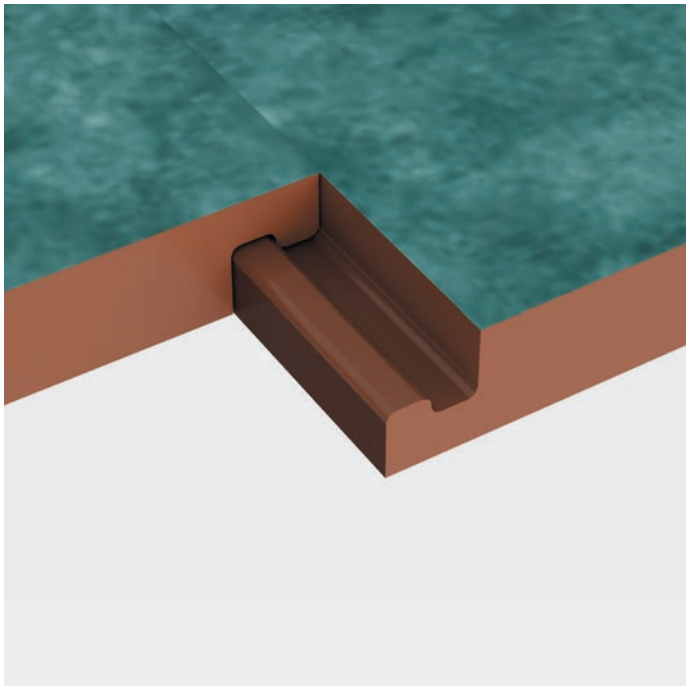





**T2** Milling/Cleaning of the edge

**BE** Top – Bottom bevelling

## EDGE PROFILING – INTERLOCK




**T2** Milling of the edge – Interlock

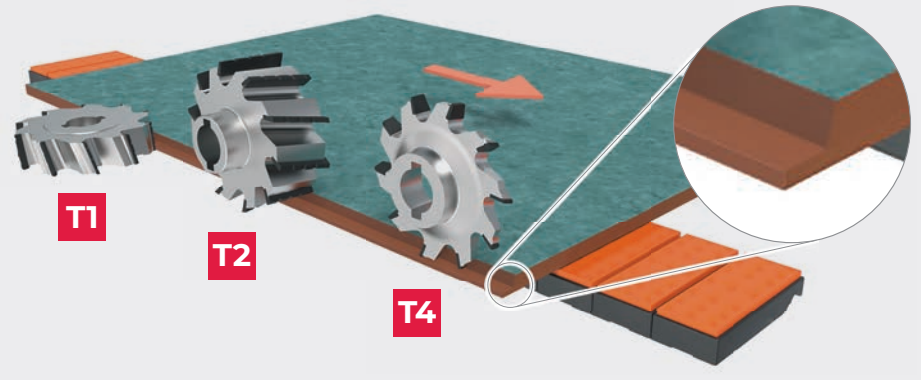
# EDGE PROFILING “TONGUE & GROOVE”

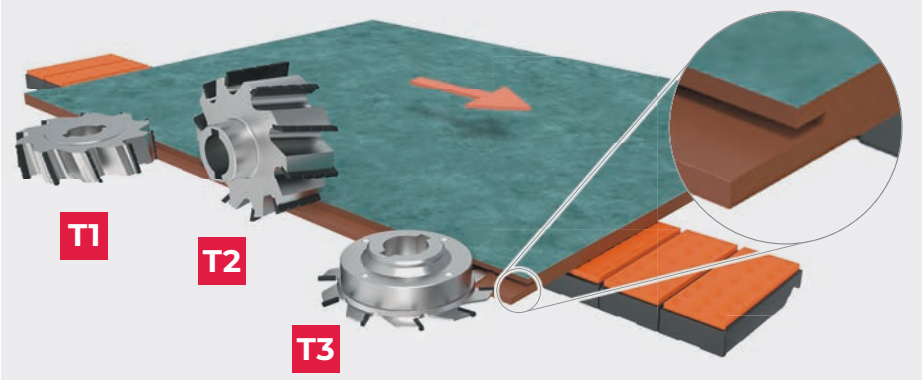
## TONGUE PROCESSING

**T1** Edge Milling

**T2** Edge Milling

**T4** Edge Milling



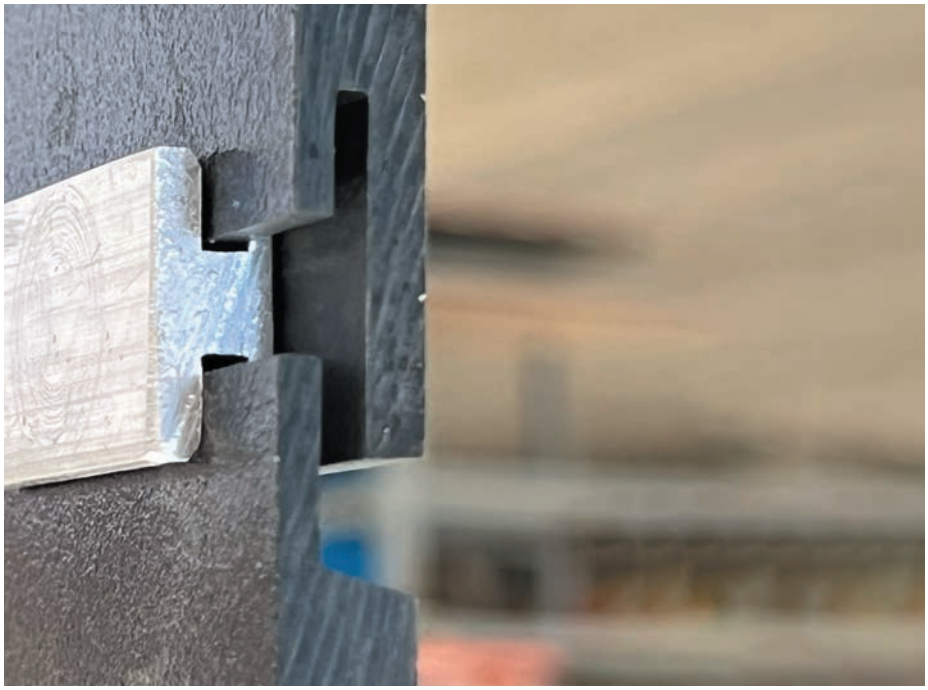




## GROOVE PROCESSING

**T1** Edge Milling

**T2** Edge Milling

**T3** Edge Milling

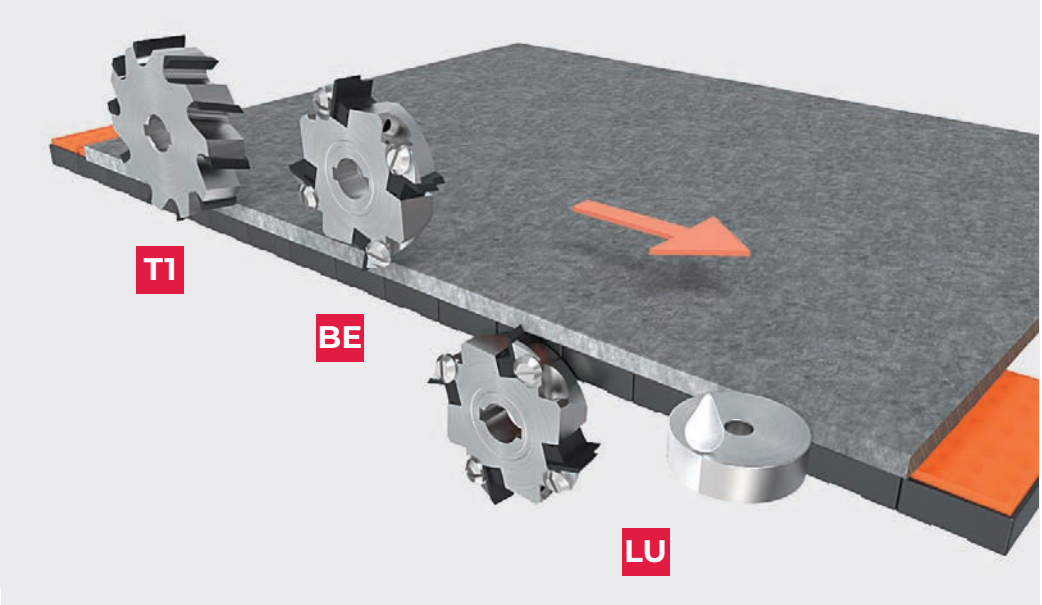


“Tongue & Groove” installation example

TYPE OF PROCESSING

## FIBRE CEMENT

# MILLING/CLEANING OF THE EDGE AND TOP – BOTTOM BEVELLING. AUTOMATIC SPREADING




**T1** Edge Milling/ Cleaning

**BE** Top – Bottom bevelling

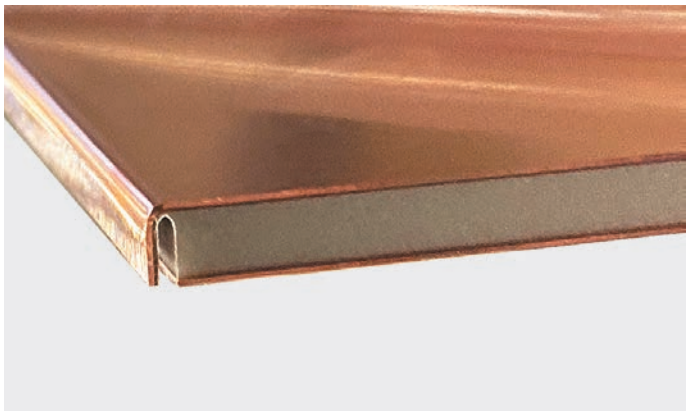
**LU** Luko® liquid automatic spreading

Fiber Cement facade

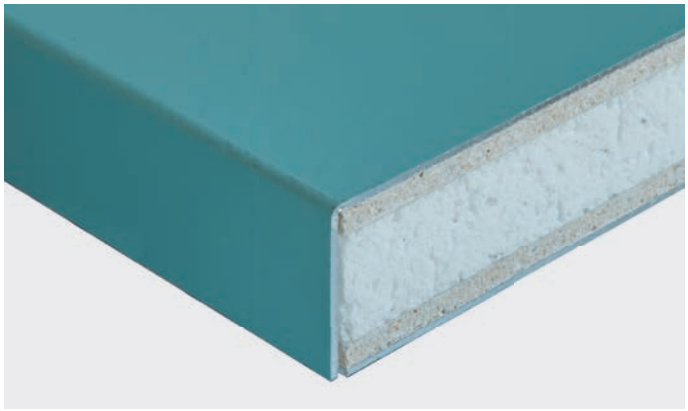
# OTHER APPLICATIONS

Interlock on Forex®

Interlock on foamed Forex®



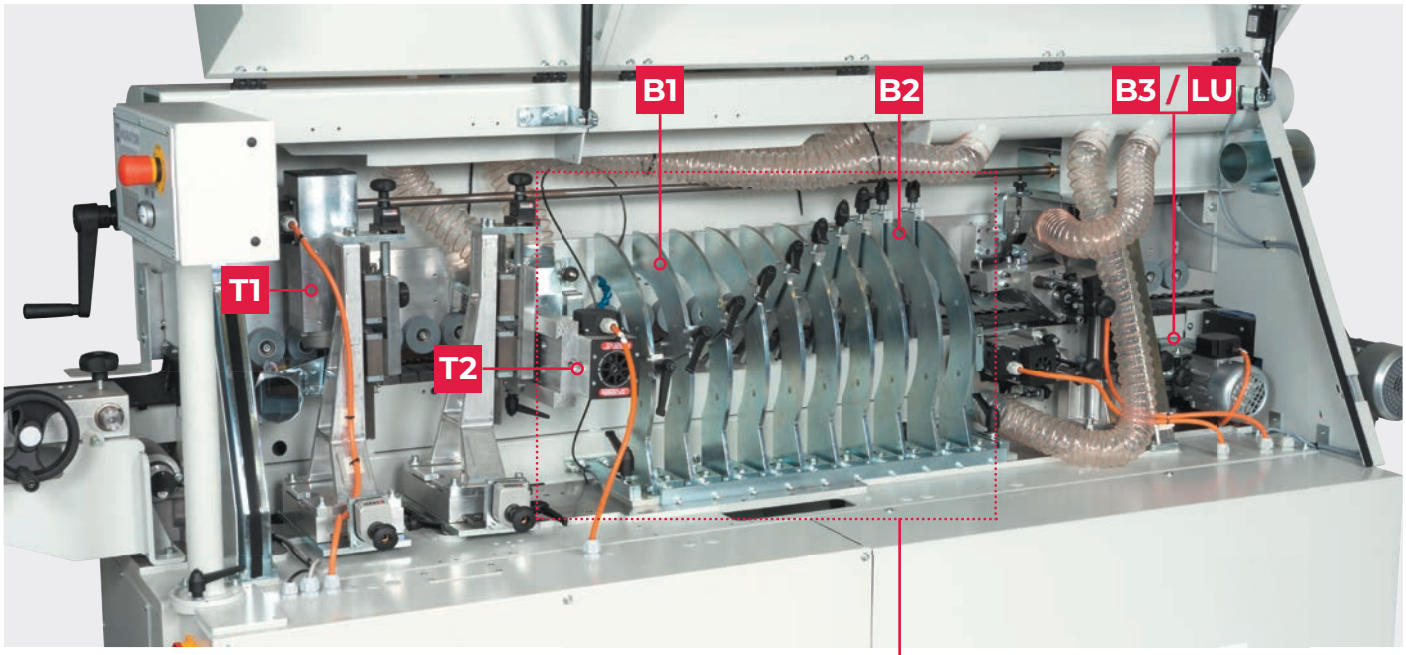
Edge hemming on copper composite panel



Edge Hemming on aluminum-fiber cement-polystyrene panel


Edge hemming on printed Dibond®

# MACHINE CONFIGURATIONS




**T1** Vertical Milling Unit

**T2** Horizontal Milling Unit

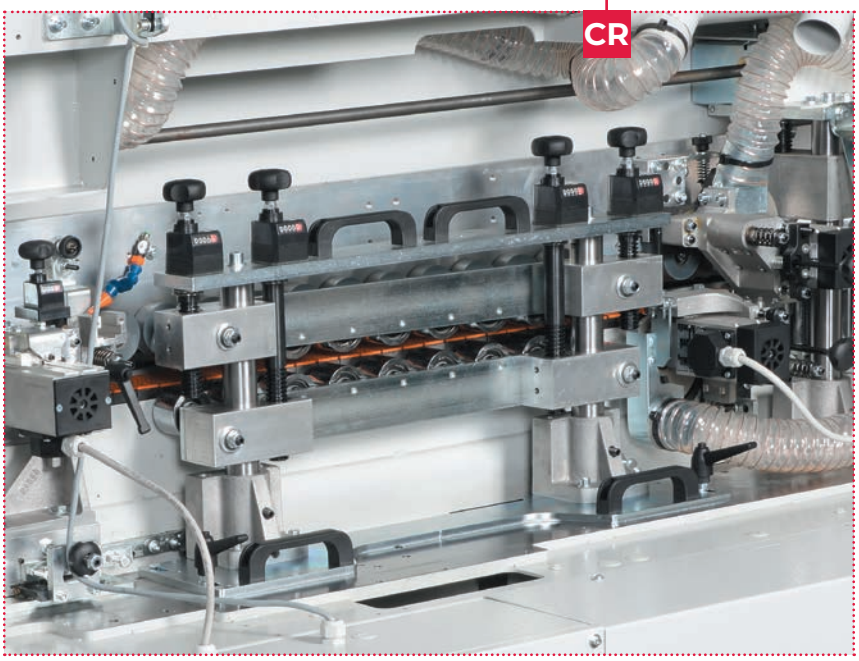
**B1** Bending from 0° to 90° unit

**B2** Bending from 90° to 180° unit

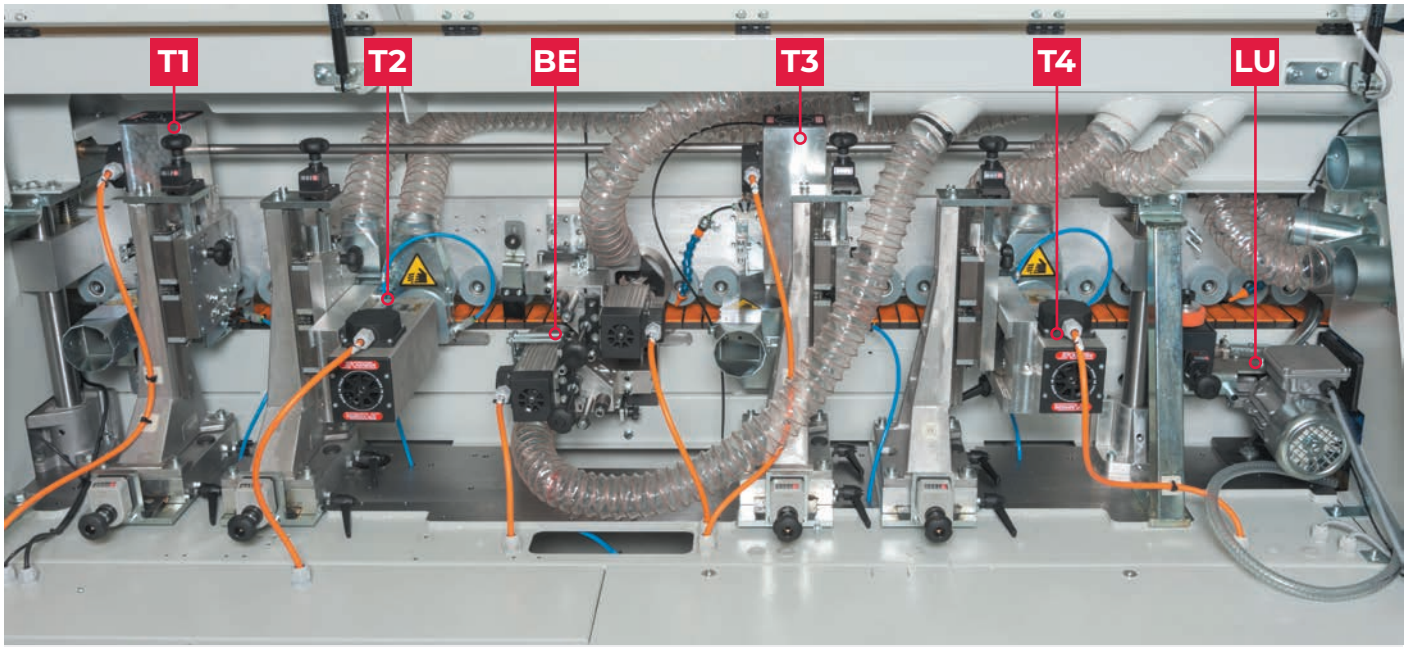
**B3** Bending from 90° to 0° unit

**LU** Luko® unit

**ALTERNATIVELY:**




**CR** Crushing unit




**T1** Vertical Milling Unit

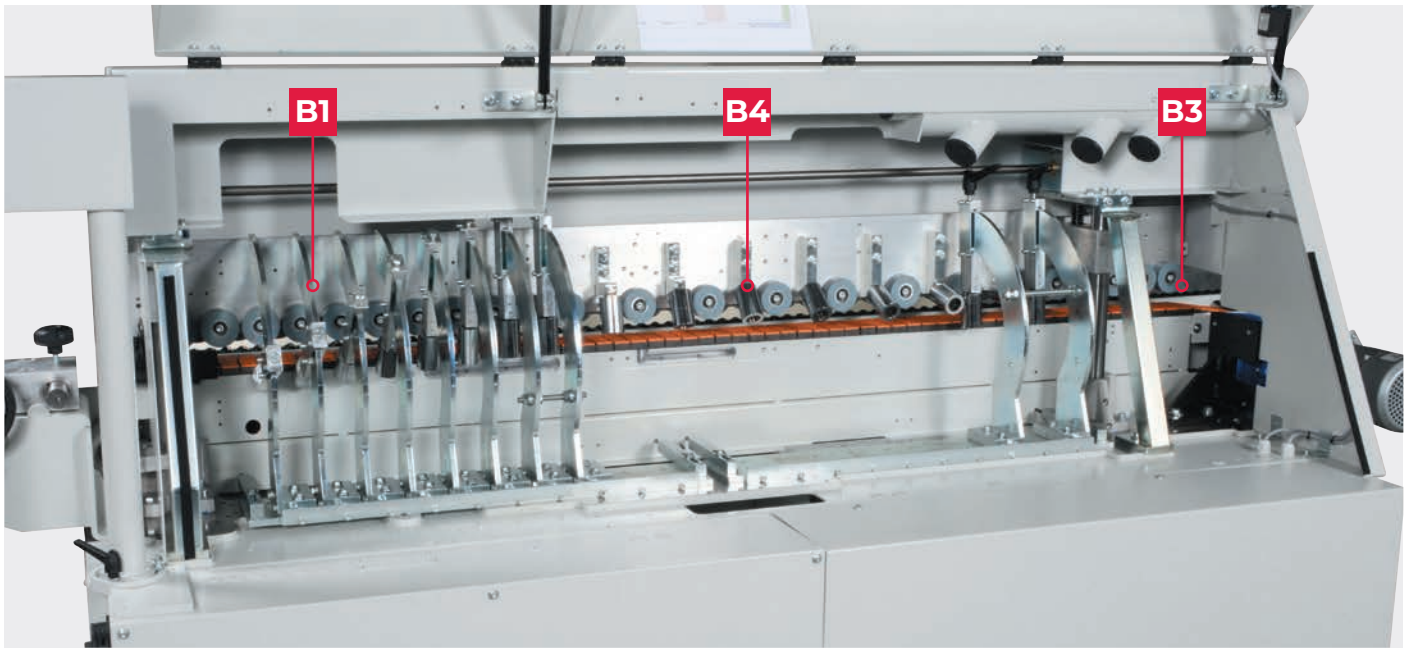
**T3** Vertical Milling Unit

**BE** Bevelling unit

**T2** Horizontal Milling Unit

**T4** Horizontal Milling Unit

**LU** Luko® unit




**B1** Bending from 0° to 90° unit

**B3** Bending from 90° to 0° unit

**B4** Bending from 90° to 180° unit

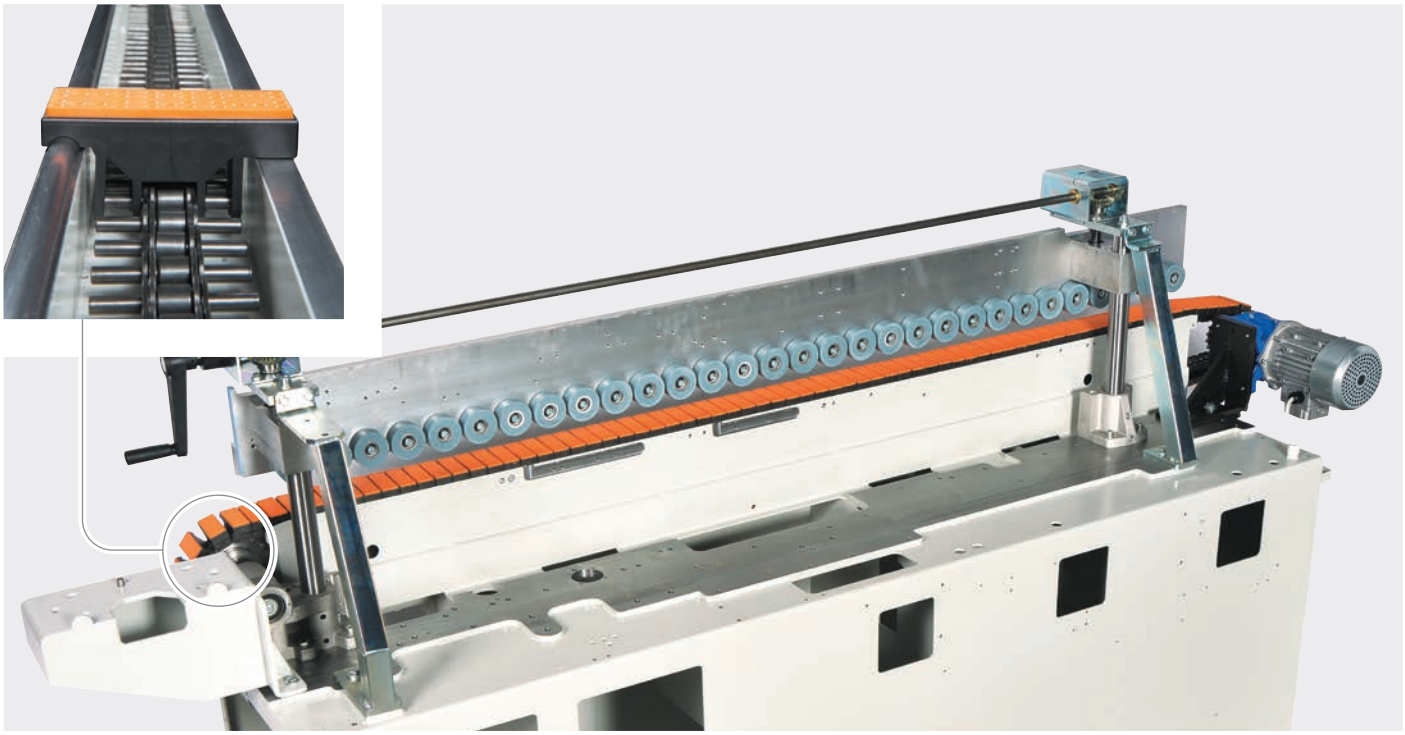
# PANEL FEEDING

Non-slip pad guarantees a firm grip of the panel. Double row of rubber rollers are assembled on a very sturdy beam to manually adjust the pressure placed on the panel.

High quality, powerful gearbox for an adjustable continuous feed.

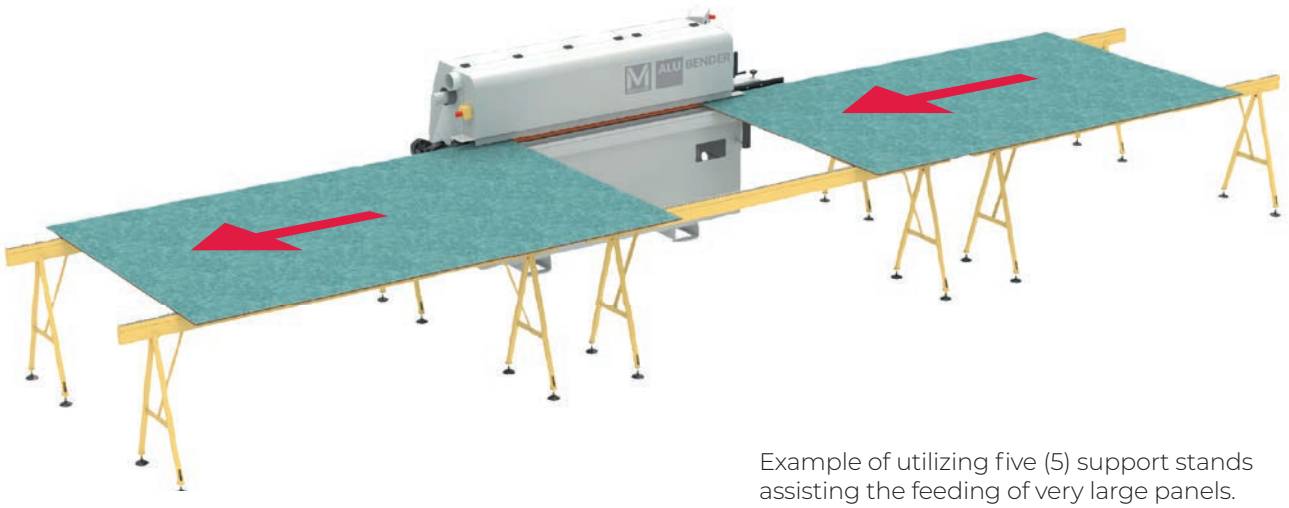
The squareness of the panel feeding is guaranteed by the sliding track which has beenmanufactured with high precision.

Long term reliability and accuracy are insured by the monobloc frame that is manufactured on precision CNC machines.



## Option for large panels

- To guarantee accuracy when processing larger panels, it will be necessary to employ additional supports when feeding the panels into the Alu Bender.
- The supports are equipped with adjustable feet and sliding rollers to create a safe work environment for the operator when processing large panels.



Example of utilizing five (5) support stands assisting the feeding of very large panels.

# DUST COLLECTION

The milling units can create a wide amount of swarfs that can create some problems to the machine. Furthermore panels may result not clean during the feeding.

High efficency dust collection hoods are installed on the milling units and are collected in one hose that can be attached to an efficient dust collection system.



## Industrial dust collector RL 125

- Automatic cleaning of filter
- Max air volume suction 1900 $m^3$/h (1118 cfm)
- Static pressure
- Inlet Ø125 mm - (5'')
- Dust residue level: < 0.1 g/$m^3$
- Filter surface 5 sqm - 53 sq/ft
- Chips' collector capacity - 200 Litres - 52.5 gal
- Compressed air required for filter cleaning system

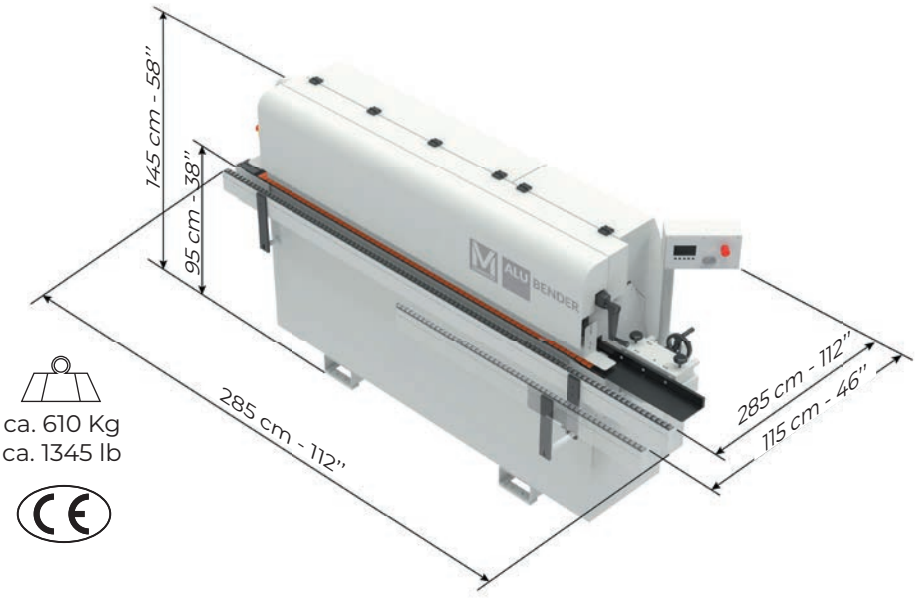
## Industrial dust collector RL 160

- Automatic cleaning of filter
- AMax air volume suction 3200 $m^3$/h (1900 cfm)
- Static pressure 2.400 Pa
- Inlet Ø160 mm - 6'' 19⁄64
- Dust residue level: < 0.1 g/$m^3$
- Filter surface 10 sqm - ca 100 sqft
- Chips' collector capacity - 400 Litres (2 x 200) - 105 gal (2 x 52.5)
- Compressed air required for filter cleaning system

# FEATURES

| | |
|---|---|
| **Panel thickness min-max – ACM** | min 3 mm (1/8) - max 60 mm (15/64) |
| **Skin thickness – ACM** | min 0.3 (0.012'') - max 0.5 mm (0.020'') |
| **Panel thickness – Solid Aluminum** | min 2 mm (3/32) - max 3 mm (1/8) |
| **Panel thickness min-max AHP (Aluminum Honeycomb) mills and bends** | min 6 mm (15/64) - max 25 mm (63/64) |
| **Skin thickness – AHP (Aluminum Honeycomb) mills and bends** | min 0.5 mm (0.020'') - max 1 mm (3/64) |
| **Panel thickness min-max – AHP (honeycomb) crushing** | min 6 mm (15/64) - max 35 mm (1'' 3/8) |
| **Panel thickness min-max – HPL** | min 8 mm (5/16) - max 13 mm (33/64) |
| **Panel thickness min-max – Fiber Cement** | min 8 (5/16) - max 12 mm (15/32) |
| **Min Width** | 110 mm (4'' 21/64) |
| **Min Length** | 120 mm (4'' 23/32) |
| **Panel Feeding Speed** | adjustable on PLC from 2 to 6 mt/1' (6.6 to 20 fpm) |
| **Chain Feeding motor** | 0.73 Kw |
| **Milling motor T1, T2, T3, T4** | cad. 1.8 Kw - 200 Hz. - 12000 RPM |
| **Flush and bevel trimming motors – top-bottom** | cad 0.22 Kw - 200 Hz. - 12000 RPM |

We reserve the right to make modifications. The illustrated machines may show some units which are not included in the standard version.
For photographic reasons some units are without protections. The use of the machine must be made with all protections installed.



# MURATORI MACHINES

## ABOUT US

For three generations, the Muratori family has been manufacturing first woodworking machines, and then processing machines for panels made of solid Aluminum, ACM, HPL, fibre cement and plastic, which are used in a variety of sectors, including architecture, industry, transport, interior design and visual communication.


**Antonio Muratori** grew up and specialised in the family business where, thanks to his thirty years of experience, he designed and built the technology for handling and processing panels, filing several patents for technological innovations related to Panel Routers and automation systems.

Muratori Machines was thus born from family tradition and know-how and represents the industrial reality in which we design and make innovative technologies, whilst actively listening to the market.

Professionalism, trained eyes and an open mind enable us to meet our customers' needs, while also innovating in the field of automation to respond to their production requirements.

Passionate about work and business, we focus on safety, quality and process efficiency to find solutions that disrupt the status quo and revolutionise traditional design and production paradigms.

### Vision

We disrupt the status quo and revolutionise traditional design and production paradigms with a view to maximising ergonomics, practicality and ease of use.

### Mission

We facilitate our customers' traditional production cycle through innovative technology within everyone's reach to automate processes in composite materials processing.

MURATORI

The Vertical Revolution for panel processing

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