



# The best choice for corrugated sheets and cardboard



**The best modular belt systems for  
the corrugated sheet and cardboard industry –**

**plastic modular belt systems  
from uni-chains**



# The perfect for the Corb

## Modern corrugated plant

A corrugated packaging production plant can be divided into 4 different sections:

- The corrugated production plant
- The product transfer stations
- Finishing machines
- Stock of finished goods incl. packing and shipping

Modern corrugator machines operate at high speeds. Corrugated sheets can be produced at a feed rate of 400 m/min (1310 ft/min) placing a high demand on downstream conveyor and handling systems. On a corrugator outfeed corrugated sheets are automatically cut to length and stacked ready for further processing.

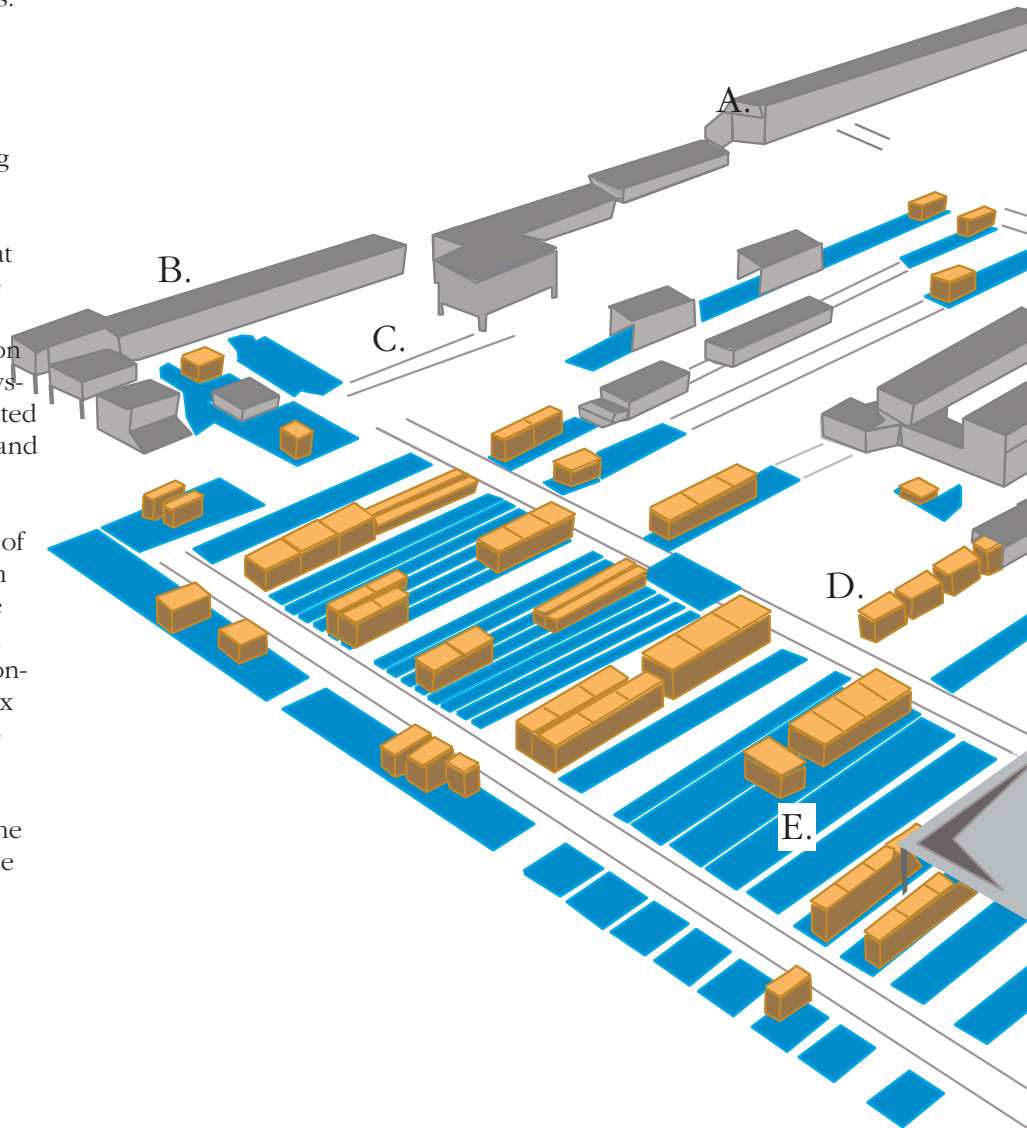
In state-of-the-art plants, the transport of these stacks of cardboard sheets which can be up to 2 m (6.6 ft) high is made without pallets and in fully-automated, computer-controlled systems. These control systems track and manage complex order schedules automatically and balance workflow around the plant.

Stacks of products are moved across the plant by transfer cars. These are mobile conveyors which connect the different plant sections automatically.

Storage areas from several 100 m<sup>2</sup> (1100 ft<sup>2</sup>) to more than 2000 m<sup>2</sup> (21500 ft<sup>2</sup>) are likewise equipped with automatic conveyors to ensure a quick and direct handling of orders (work in progress) between corrugator and finishing operations. The storage area acts as a buffer to balance corrugator and final production processes.

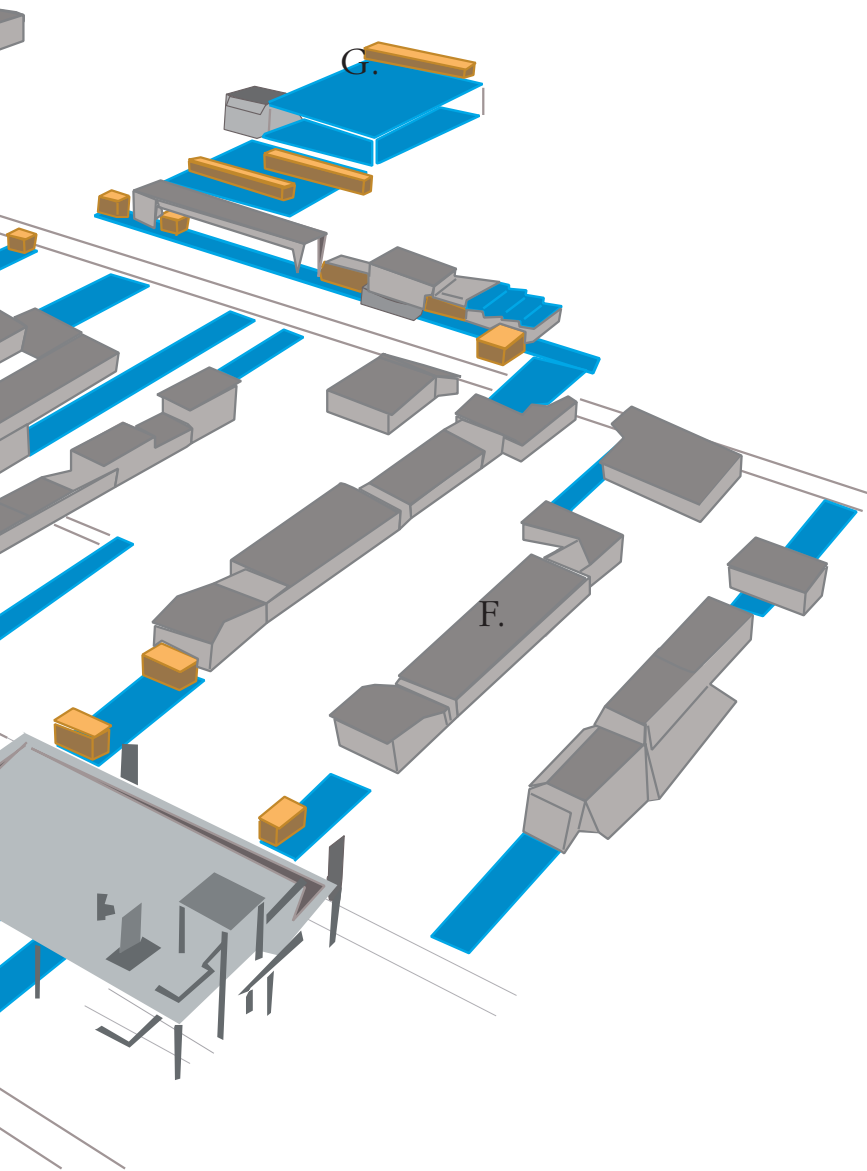
Finishing or converting machines complete the production process, with operations such as die-cutting, printing, folding and gluing.

Finally, products are automatically strapped and palletised ready for despatch.





# Best solutions for the board industry



## Typical Plant Layout

- A. Corrugator Machine
- B. Downstacker
- C. Corrugator Take Off
- D. Transfer Car
- E. WIP Storage
- F. Finishing Machines
- G. Strapping and Palletising



Transfer Car



Downstacker



Corrugator Take Off



WIP Storage

## Problems in traditional conveyor systems

Large parts of the corrugated sheet and cardboard industry still work with the traditional roller tracks, belt over roller and roller-slat chain conveyor combinations.

These can all exhibit problems such as: stack creep – resulting in an ‘elephant’s foot’ stack profile, stack instability, snagging and toppling of stacks. Also when running on traditional handling systems lower layers in stacks frequently have to be written off because of contact pressure points and running marks.

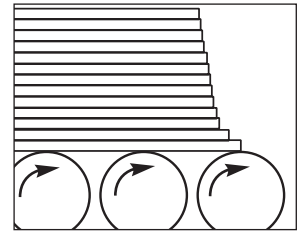
With these traditional systems there can be vast production losses and wasted goods that cannot be reused.

Added to this are the lengthy production standstills needed to re-erect toppled stacks.

Not forgetting the consequences of staff accidents, where personnel try to stand or walk across static or moving roller conveyors.

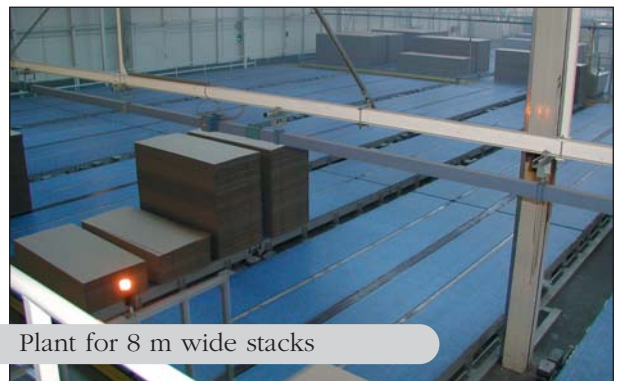


....Lower sheet creep



## Demands from corrugated production lines

- Steady running for a secure stack conveying
- Stack height minimum three times stack width and possibly much higher
- Secure conveying of the smallest stacks
- No deterioration of the lower sheets, no impact on sheet quality
- No sheet creep
- Conveying of all existing qualities with weights up to 1200 kg/m<sup>2</sup> (245 lb/ft<sup>2</sup>)
- High conveying and storage capacity
- Bi-Directional travel
- Speeds up to 40 m/min (130 ft/min) smooth run, soft start and stop
- High operational safety, long service life, minimum maintenance costs
- Simple quick installation
- Easy to clean contact surfaces



Plant for 8 m wide stacks



Sheet feeder plant





Stack turning



WIP Storage



Right angle station



Turntable

## Conveyor solutions from uni-chains

uni-chains offers solutions from corrugator take-off to final product despatch.

- If you would like to lower the costs caused by conveying damage
- If you want to ensure flatness of the support of your sheets
- If you want to reduce possibilities of the bottom sheets creeping out of the stack
- If you want to reduce the waste of the bottom sheets
- If narrow sheet stacks tilt
- If you want to increase safety for personnel walking across conveyors

Talk to uni-chains about plastic modular belt solutions.

## Advantages of uni modular belt systems

Strong, reliable, but simple conveyor medium.

Assembled from hinged modules in brick-layed pattern.

Can be made in many different widths, lengths, pitches and surface types.

Suitable for heavy-duty applications with load of up to 1200 kg/m<sup>2</sup> (245 lb/ft<sup>2</sup>) already in operation.

Smooth-running speeds up to 40 m/min (130 ft/min) with soft start and stop.

Long service lifetime. Low maintenance.

Clean flat surfaces for improved product quality.

## The best result .....

With uni-chains you will have the complete solution to all your internal conveying problems - from stacker to loading, conveyance to and from the various feed units and the intermediate warehouse, and the final conveyance from the production plant.

The systems can also handle corner transitions with 90° direction changes with maximum precision.

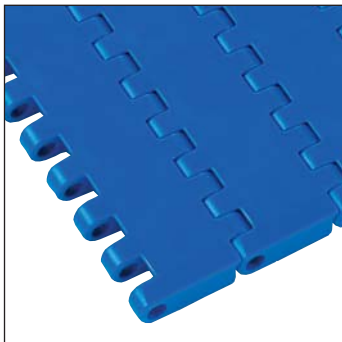
Stacks are turned and positioned accurately for further processing. Transfer trucks and mobile conveyors provide smooth transfer between individual conveyor sections. And if needed the stack flows can be easily sent in any direction using a rotating disk. All using plastic modular belt systems from uni-chains.

**All to improve productivity, safety and efficiency in the corrugated board industry.**

# Belt Specifications

## uni QNB

uni QNB has become very popular in the corrugated and cardboard industry. Its flat, solid, smooth and even surface increases safety for the personnel and eliminates stack tippage, sheet warp, and pressure damage or marking on the lower sheets.



**Standard materials:**

**POM-SLF** **PP**

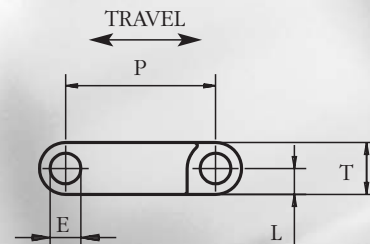
Standard pin materials:  
PP, white and PA6.6, blue or red

**Pitch:** 25.4 mm (1.00 inch)

**Surface opening:**

Closed

**Patent pending**



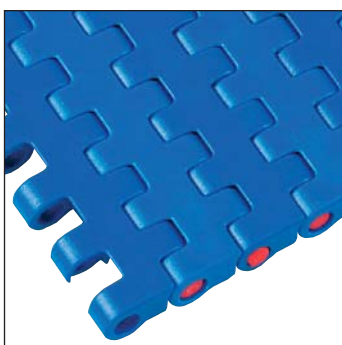
### Permissible Tensile Strength

Belt material	POM				PP			
	PA6.6		PP		PA6.6		PP	
Pin material	N/m	lbf/ft	N/m	lbf/ft	N/m	lbf/ft	N/m	lbf/ft
uni QNB	35000	2400	35000	2400	20000	1370	20000	1370

	mm	inch
E	5.2	0.20
L	4.4	0.17
P	25.4	1.00
T	8.8	0.35

## uni M-QNB

uni M-QNB provides good support for the transport of products in the corrugated industry, where there is a need for a tight transfer capability to eliminate sheet creep.



**Standard materials:**

**POM-SLF** **PP** **PP**

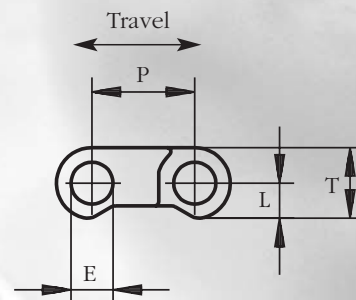
Standard pin materials:  
PA6.6, red and natural

**Pitch:** 12.7 mm (0.50 inch)

**Surface opening:**

Closed

**Patent pending**



### Permissible Tensile Strength

Belt material	POM		PP	
	PA6.6		PA6.6	
Pin material	N/m	lbf/ft	N/m	lbf/ft
uni M-QNB	19000	1300	13000	900

	mm	inch
E	5.2	0.20
L	4.4	0.17
P	12.7	0.50
T	8.8	0.35

## Quality technology

The correct engagement of belt and sprocket is essential to the quality of conveyance. With uni-chains products you are always guaranteed that the belt and sprocket are ideally designed to compliment each other - providing constant safe and smooth conveying.

### Sprockets for uni QNB

The standard material is Polyamide.

The standard sprocket sizes for uni QNB are 10, 12, 15, 18 and 19 teeth. Please contact uni-chains for further information.

The width of the sprockets is 25 mm (1.0 inch), and the tooth width is 10 mm (0.4 inch).

### Sprockets for uni M-QNB

The standard material is Polyamide.

The sprocket standard sizes for uni M-QNB are 10, 19, 28 and 38 teeth, with round and square bore.

Please contact uni-chains for further information.

The width of the sprockets is 20 mm (0.8 inch), and the tooth width is 7 mm (0.3 inch).



uni QNB sprocket



uni M-QNB sprocket

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