COOTE

PRECAST CONCRETE MACHINERY

PRODUCT RANGE

COOTE

PRECAST CONCRETE MACHINERY

Coote Engineering Ltd. are a family run business in the heart of Ballygawley, Northern Ireland. The Coote family have been designing and manufacturing machinery and steel moulds for the precast concrete industry **since 1977.**

Ronnie Coote

COOTE ENGINEERING LTD

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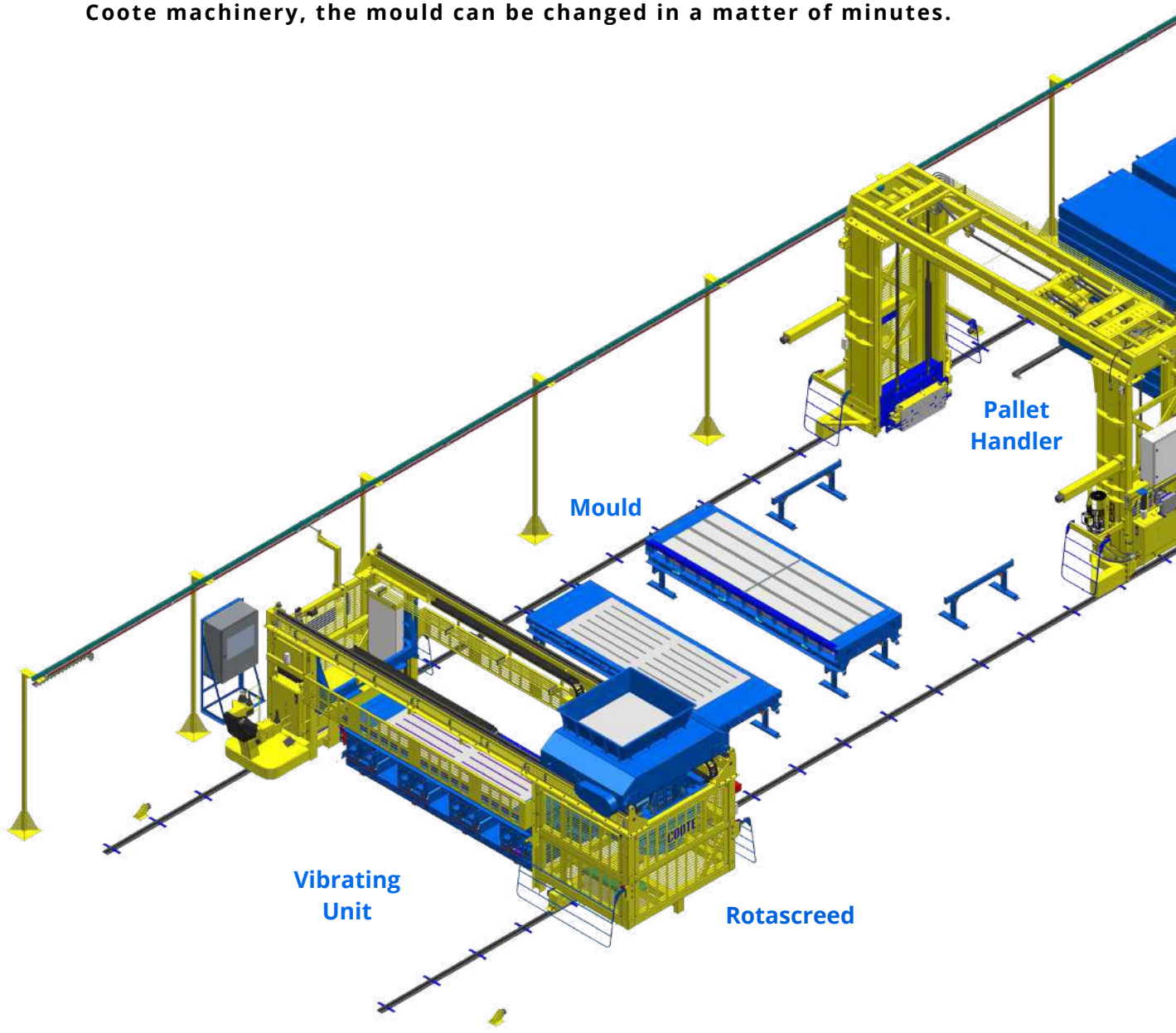
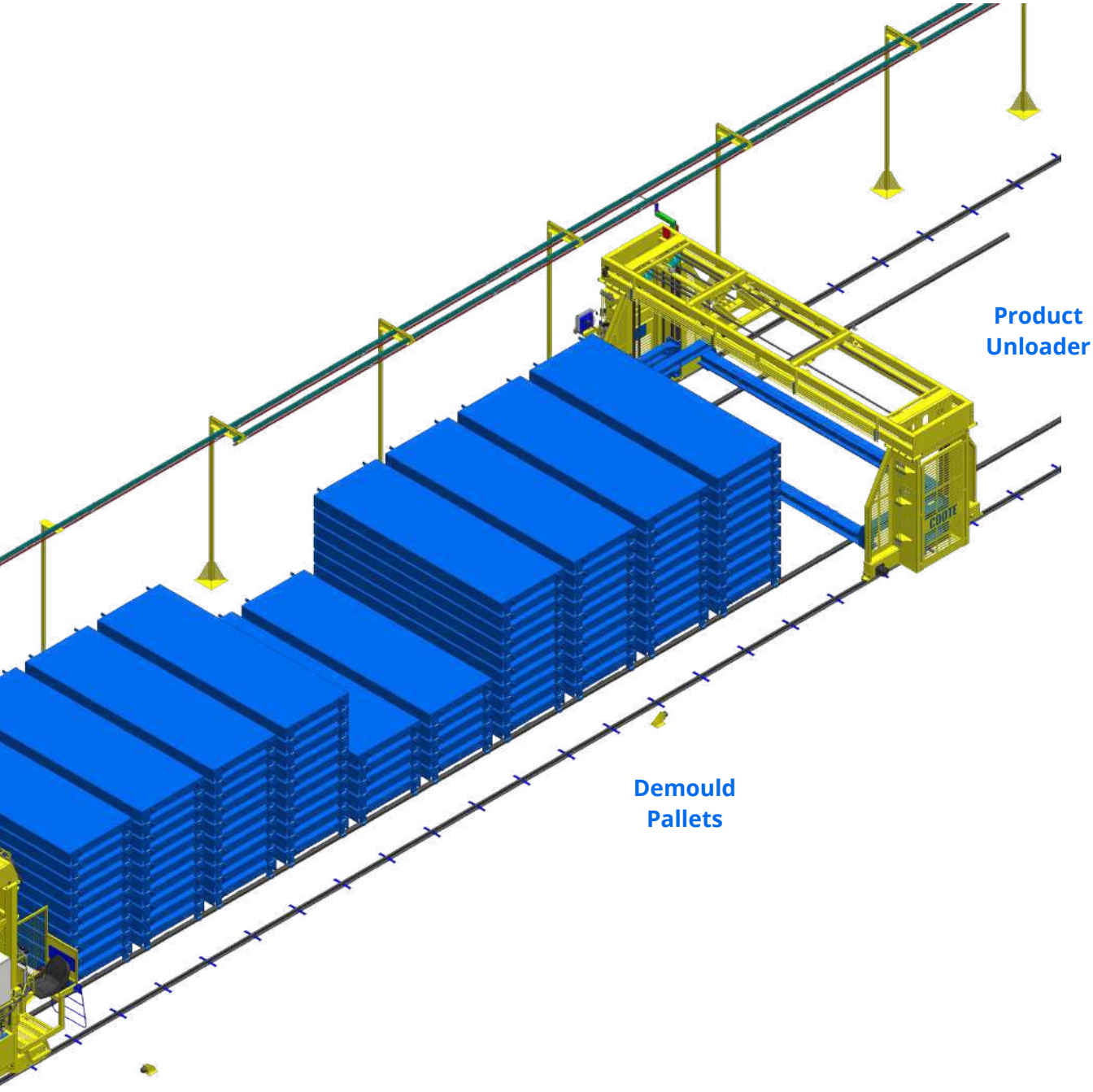
FULL DRYCAST SYSTEM

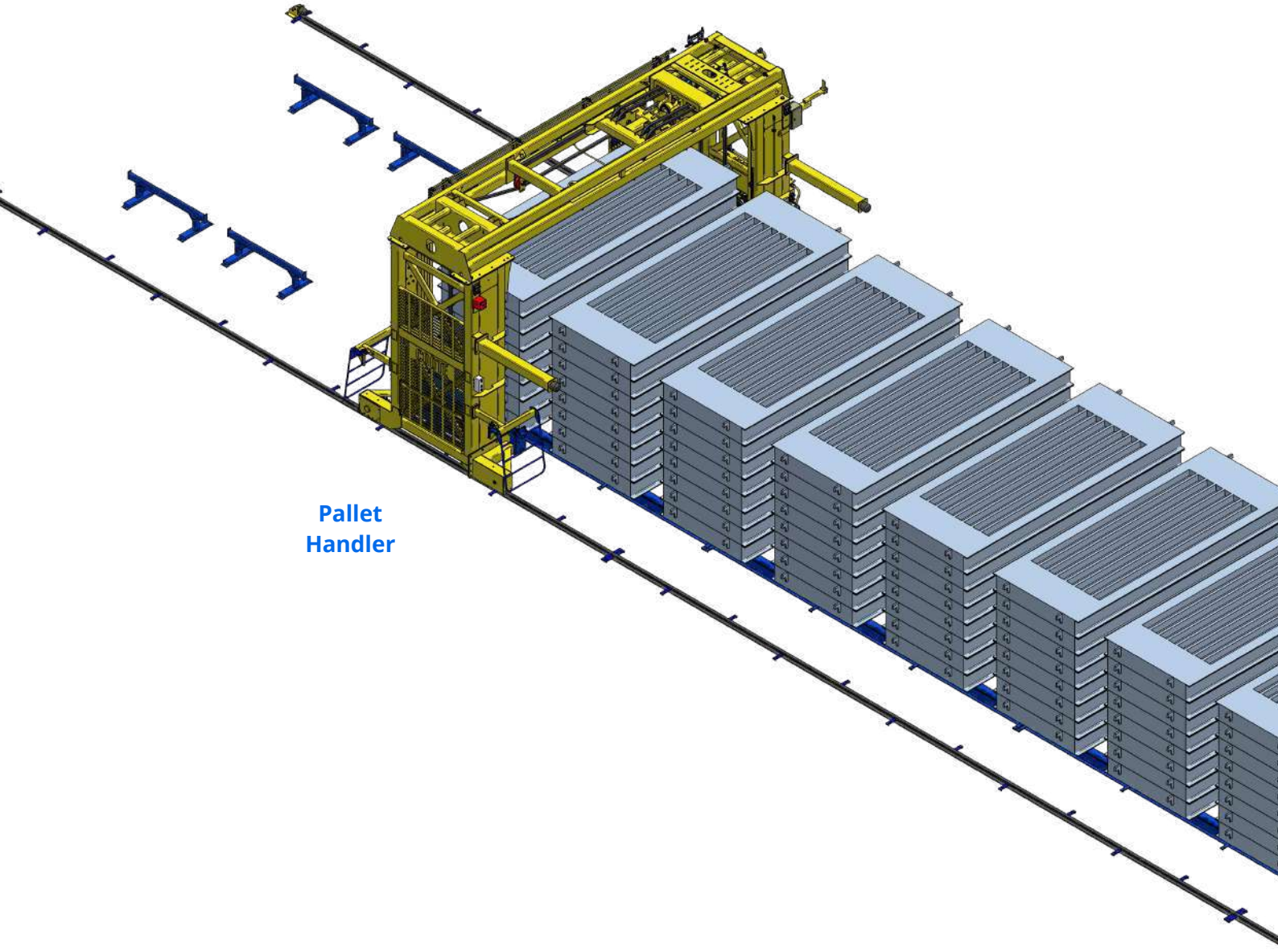
A dry or semi dry mix of concrete is used throughout the dry casting process. The concrete used can have a variable slump to suit the product requirements.

The dry cast process is often referred to as an “instant demould” process. The mould is filled with concrete and finished with a screed disc before being demoulded onto a steel pallet for the curing process to take place. This method of production means that a single mould can produce a large amount of product in a single shift. To produce a different product, the mould needs to be changed. With Coote machinery, the mould can be changed in a matter of minutes.





Potential DryCast Products

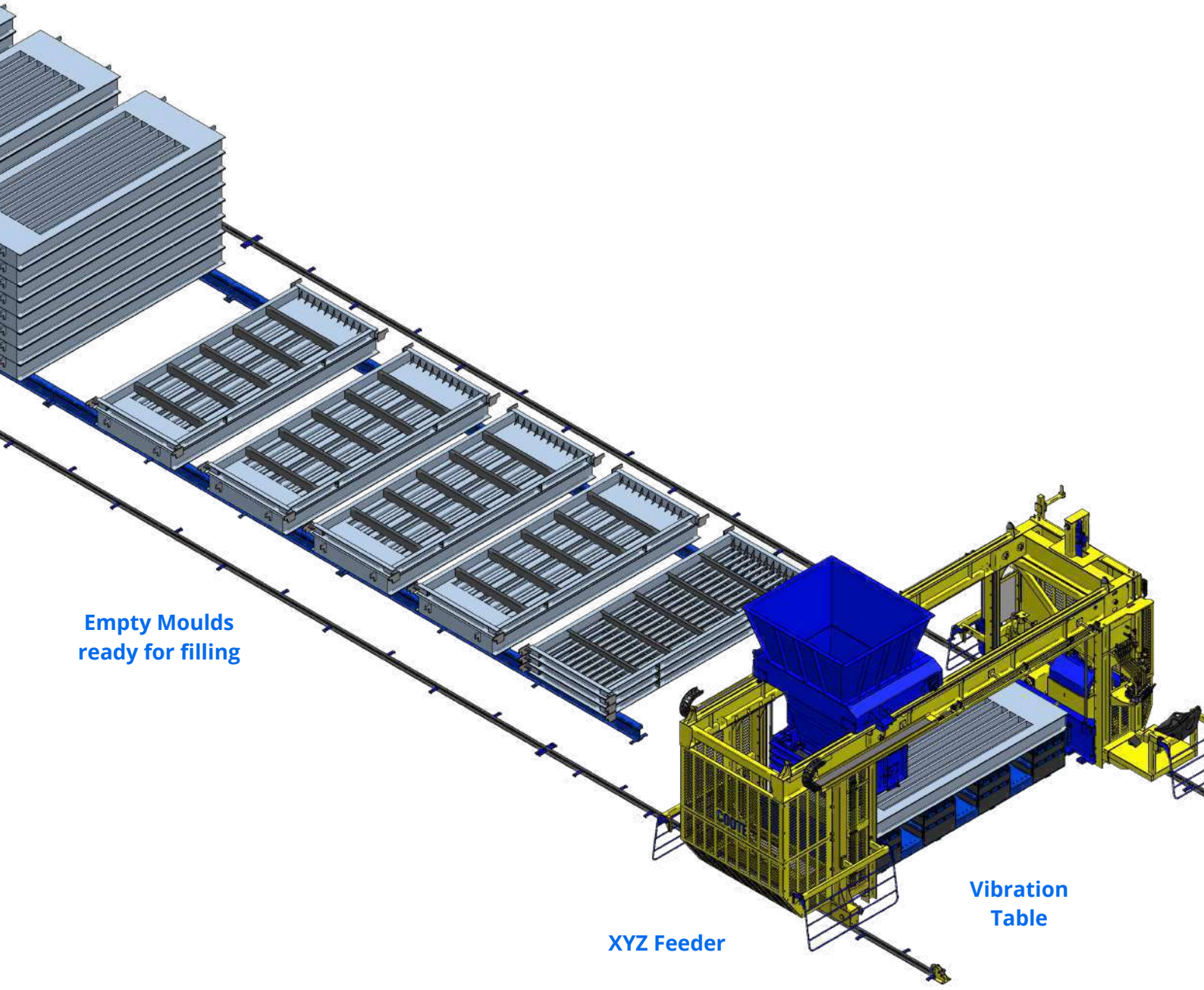


Potential WetCast Products

FULL WETCAST SYSTEM

A wet mix of concrete is used for this process. The concrete can have a variable slump to suit the product requirements. This type of production is often chosen when a high quality surface finish is required.

In wet cast production, concrete must be left to cure In the mould. Unlike dry cast where the product can be instantly demoulded onto a demould pallet.



Rotascreed

Dry Cast Filling System

Specifications

Hopper Capacity:
1.25m³ Hopper Capacity as standard, can be extended if required

Typical Cycle Time:
Approx 210 - 330 seconds (product dependant)

Available Sizes:
4m / 5m / 6m

Installation:
Machine arrives with "Plug + Play" for ease of installation

Operations:
Vibrating Table Start/Stop and Speed Control possible from Operators Seated position

Controls:
Manually operated proportional controls

Max product depth:
0.4m (dependant on vib table position in floor)

Efficiency:
Load Sensing Piston Pump used for greater machine efficiency and control

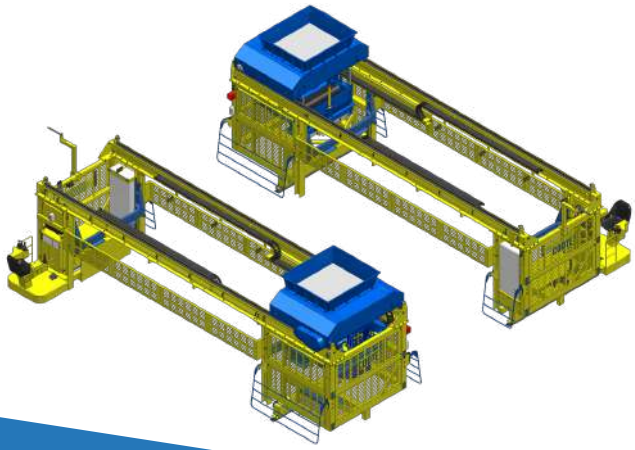
Safety:
Typical Coote Safety system with collision barriers in conjunction with safety relaying camera system to give all round view

Finishing System:
Disc mounted on Rear of Hopper or on a separate finishing unit

Screedbars:
Mounted on Rear or on a separate finishing unit

Production Run

1. The concrete holding hopper is filled with concrete.
2. The operator moves the Rotascreed over the mould that is on the vibrating table.
3. The operator lowers the feed tray to the vibrating table and then starts the hopper belt. This runs the concrete from the hopper into the feed tray. Agitators located in the feed tray assist in the dispersion of the concrete and increase concrete flow.
4. The feed tray and hopper are then moved along the mould in order to completely fill the mould with concrete. The vibrating table is running at this stage in order to help consolidate the concrete into the mould.
5. Once the mould has been suitably filled, the feed tray is raised and the finishing disc is lowered. The disc rotates at a high speed and is moved along the top of the mould several times.
6. Once the operator is satisfied with the finish given by the disc, it is raised and the hopper unit is moved into the park position of the Rotascreed. The operator then moves the mould that has just been filled to a demould position. An empty mould is then brought back to the vibrating table by the Rotascreed and is ready to be filled while the previous mould is demoulded.



This machine carries out a complete dry cast process, it uses a belt feed and hopper for fast filling, powerful linear vibration and employs a unique rotary screeding process.

Shuttle Feeder

Dry Cast Filling System

Shuttle Feeder Specifications

Product Cycle Time:
300 - 600 Seconds (Product Dependant)

Hopper Capacity:
1.25 m³ (Options Available)

Max Mould Width:
1.7m

Fitment Options:
Finishing Disc or Screed Bars

Hopper Cross Feed:
15m/min

Control Banks:
Danfoss

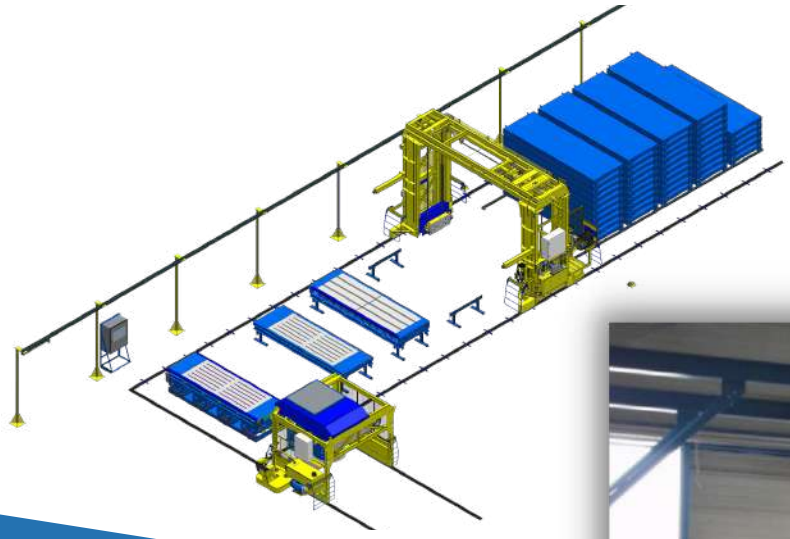
Safety System:
Typical Coote Safety system with 4 collision barriers in conjunction with safety relays

Safety System:
Typical Coote Safety system with 4 collision barriers in conjunction with safety relays

Max Mould Depth:
1m

Main Frame Cross Feed:
20m/min

Controls:
Manually operated Proportional



Shuttle Feeder XL

The Shuttle Feeder XL works through the same processes however can work to a higher volume. The Shuttle Feeder XL also has some additional parts and accessories to aid the increased production.

Production Run

1. The Shuttle Feeder is a rapid filling system designed for use with a pallet handler.

2. The Shuttle Feeder sits in a parked position while the pallet handler places a mould onto the vibrating table.

3. As the Shuttle Feeder traverses the mould, the concrete is fed into it from the holding hopper via a belt conveyor.

4. The mould is then vibrated before being finished with the Coote Finishing Disc.

5. The Shuttle Feeder then returns to the park position where the holding hopper can be refilled and the demoulding process takes place.

6. A standard Shuttle Feeder fills a mould on a vibrating table, before creating a smooth finish with the Coote Finishing Disc.

XY Feeder

Wet Cast Filling System

XY Feeder Overview

- A main frame
- A hopper for holding the concrete
- An underslung vibratory feeder / Auger Filling / Sliding Plate Doors
- Pendant arm controls / Radio Control/ Seat mounted controls
- A mould lifting system
- A vibrator mounted onto the underside of the door to allow the steady flow of wet concrete.
- Hopper and distribution system for SCC concrete

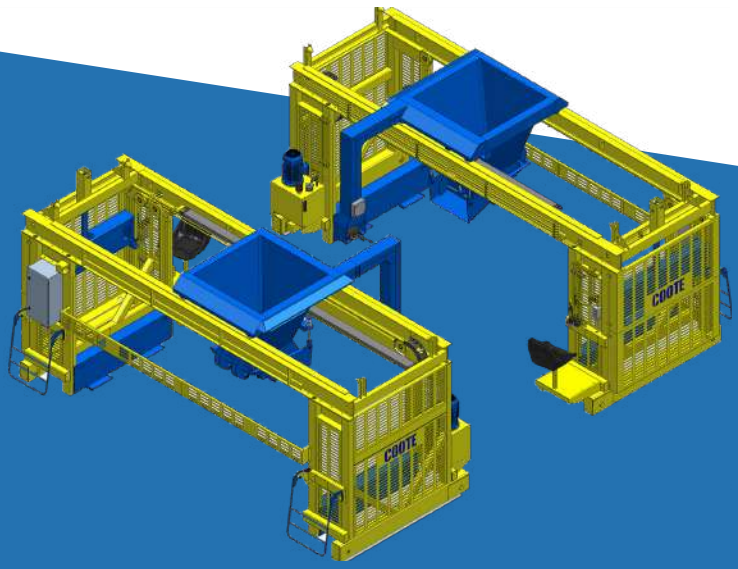
Variations

XYZ Feeder

- Max product depth of 1m (dependant on Vibrating table position in floor)
- Typical Coote Safety system with collision barriers in conjunction with a safety relay
- Hopper Lift of 0.8m to lower to smaller moulds or raise to deeper moulds
- Radio Control Unit utilised for ease of operation, manual controls still available

XY Belt Feeder

- The XY Belt Feeder is a filling system that utilises a skirted belt to move the concrete from the hopper into the mould.
- Direction flaps can be individually controlled to allow the operator to accurately position the drop point of the concrete from the belt into the mould.
- A drier mix can be used with this machine when needed.
- Mould Lift of up to 1.8m allows transport and stacking of filled and empty moulds



Production Run

1.The concrete holding hopper is filled with concrete.

2.The operator moves the XY Feeder over the mould that is located on the vibration system.

3.The operator positions the hopper over the top of the mould. The hopper door is then opened to the correct level and the vibrator begins the flow of concrete.

4.The hopper is moved along the mould filling it with concrete, when a suitable level has been filled the operator starts the vibration system from the controls located on the pendant arm.

5.The concrete is levelled with the vibration and any low spots in the mould are filled by the operator.

6.Once the mould has been suitably filled, the hopper is parked in the park area of the main frame. The XY Feeder then lifts the mould and brings it to the set down position in front of the first stack. The pallet handler will collect the filled mould from this position.

7.An empty mould is lifted from the correct position and it will be taken to the vibration system to be filled and vibrated.

Megacast

Wet Cast Filling System

The Megacast clamps, lifts and rotates through 180 degrees allowing moulds to be placed into and removed from the stack, and product to be easily stripped from the mould onto demoulded pallets.

The lifting of the clamp units is restricted to 1.4m, which leaves the stacking height at 1.0m. The standard Coote Engineering clamping and rotating system is utilised in this system.

Specifications

Production Capacity:
25 - 30 gangs per shift

Hopper Capacity:
1.0 m^3 of Concrete

Max Lift Capacity:
4,000 kg

Max Mould Lift:
1.4 m

Max Product Depth:
0.4 m

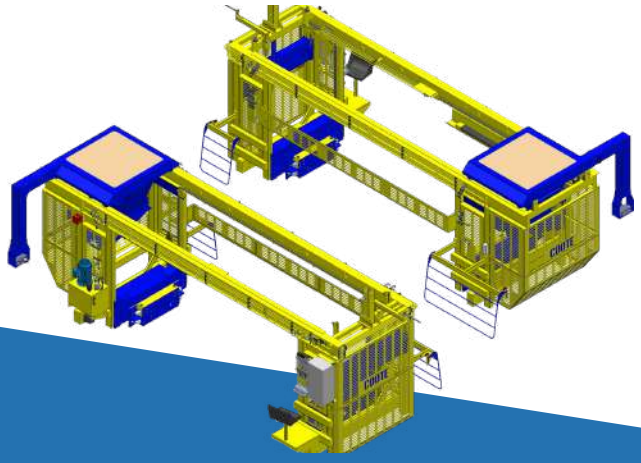
Controls:
Manual operation with Danfoss lever valve bank

Safety System:
Collision barriers - 4 barriers mounted in conjunction with safety relay

Vibrator Mounted on Chute:
Included

Production Run

1. The concrete holding hopper is filled.
2. The operator moves the Megacast over the mould that is located on the vibration system.
3. The operator positions the hopper over the top of the mould. The hopper door is then opened to the correct level and the vibrator begins which provides a steady flow of concrete.
4. The hopper is moved along the mould filling it with concrete, when a suitable level has been filled the operator starts the vibration system from the controls located on the pendant arm.
5. The concrete is levelled with the vibration and any low spots in the mould are filled by the operator.
6. Once the mould has been suitably filled, the hopper is parked in the park area of the main frame. The Megacast then clamps the mould and brings it to the curing area.
7. A cured mould is then selected and is brought to the demoulding position (can either be front or rear with this system). The product is demoulded from the mould which is brought back to the front of the system to be filled with concrete again.
8. Alternatively, all cured moulds can be emptied/demoulded prior to the filling process.



Screw Doser

Wet Cast Filling System

Single or Twin auger Wet Cast Screw Doser's may be supplied in conjunction with a simple vibration system or with a hydraulic pusher or a gravity controlled roller feed on and off lines.

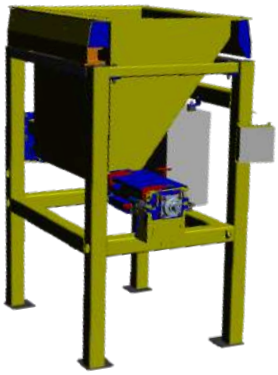
Dosing systems are designed for the wet cast process, or for semi dry cast applications. They can operate as a stand alone system, or be used as part of a complete filling and handling system.

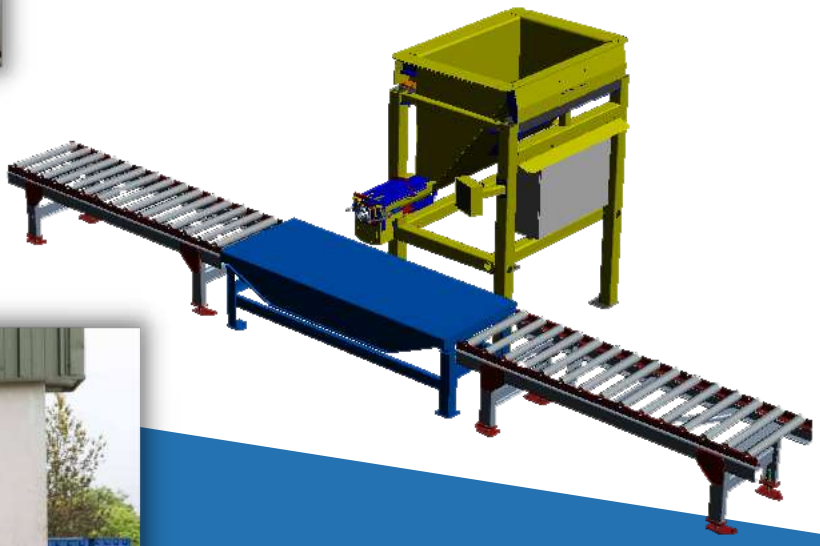
Single Screw, or Twin Screw dosing systems can be supplied with a simple vibrating table and with with feed on/off lines. These systems can be manually operated or a have a pre-set dosing by time or by weight.

Both of these systems give an accurate, repeatable and dependable mould fill for better quality products. The Screw Doser gives a flexible solution to rapid filling of hand moulds and individual paving moulds, with the ability to change quickly from one product to another.

Screw Doser Overview

- Holding Hopper
- Removable Screw (s)
- Roller / Hydraulic Pusher
- Manual Dosing / Timed Dosing / Weighed Dosing





Vibration Systems

Tables, Trestles and Custom Options

Vibration System Range

The Vibration Systems range from various sizes in order to satisfy customer requirements with custom sizes available:

- **3 / 4 / 5 - Piece Trestle System** = Rotary or Linear Vibration
- **3 / 4 / 5 / 6 - Piece Trestle Table** = Linear Vibration
- **4m – 6m vibrating table** = With optional speed controller and clamping system, ideal for dry cast products
- **Other** = Custom Tables Available on Request

Specifications

Max Load:
4,000 - 8,000 kg

Noise Reducing Vulcanised Pads:
Included

Trestle Table Fitment:
Huck Fastened together to minimise welded joints and therefore reducing fracture possibilities

WetCast Product Vibration:
1.35 to 13 tonnes of centrifugal force.

Anti-Vibration Mounts:
Included

Controls:
Inverter control panel included to control all trestles with same frequency

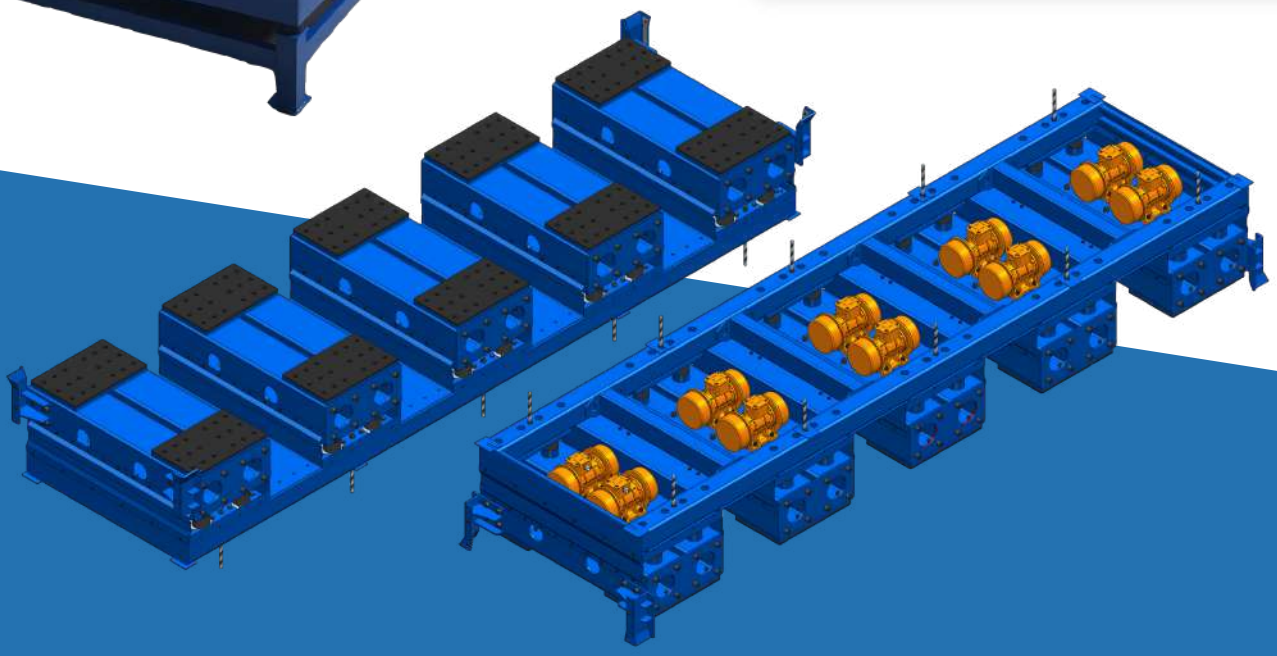
DryCast Product Vibration:
38 tonnes of centrifugal force

Optional:
Offset controller allowing the ability to run each trestle at a different frequency in a master-slave configuration.

Performance

The compaction rate of the **Vibration System** provided by Coote Engineering is possibly one of the most powerful that can be found for concrete consolidation and compaction in precast products.

The **Vibration Systems** for dry cast products can produce in excess of 38 tonnes of centrifugal force while the **Vibration Systems** for the wet cast products start off at 1.35 to 13 tonnes of centrifugal force.



Pallet Handler

Handling System

The Pallet Handler is used to carry, rotate and stack moulds and pallets. The Pallet Handler can be manual, semi-automatic or completely automated to give the customer high output through low investment. All operating options are possible with this highly versatile and reliable piece of machinery.

Pallet Handlers can be either floor mounted or can run on overhead rails. Any Pallet Handler can be fitted with customised attachments specifically designed for the customer's product. These attachments may include hydraulic, pneumatic, electric or vacuum technology in order to clamp and stack certain products.

Specifications

Max Lift Capacity:
4,000 kg - 20,000 kg

Max Lift Height:
Floor - 3.5 m
Overhead - up to 6.0m

Controls:
Manually operated Hydraulic Control Valve Bank

Travel Speed:
Floor - up to 69m/min
Overhead - Up to 110m/min

Oil Cooler:
Included

Turnover Units:
Twin Powered (This produces 12,000 Nm of turning force)

Lift Speed:
9.8m/min

Safety System:
Typical Coote Safety System

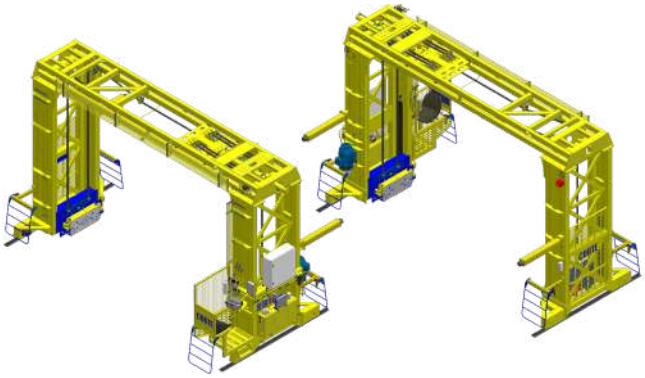
PLC Integrated Safety Control:
Included

HMI System:
Included

Camera System:
Included

Optional Extra's

- Automation
- Electric travel
- Electric Lift
- Product Clamps
- Lift Encoders (Automation)
- 1 Ton Chain Hoist (mounted to machine top section)



Product Unloader

Handling System

The Product Unloader is used for the removal of products from demould pallets to be placed or stacked onto wooden pallets ready for the dispatch yard.

The product Unloader can be manually operated or can be automated to suit different products. The product clamping system may be based upon hydraulic, pneumatic, electric or even vacuum technology and can even include a combination of all.

Specifications

Lift Capacity:
2,000 - 4,000 kg

Max Lift Height:
1.2 m

Controls:
Radio Controlled

Safety System:
Standard Coote Travel Safety with E-Stops mounted on each leg

Mould / Pallet Length:
4 - 6 m

Turnover Units:
Twin Powered

Clamping:
- Long Clamp coming complete with 3 inserts/knives, allows clamping of 4 products up to 1.2m
- Side Clamp

The Product Unloader overview:

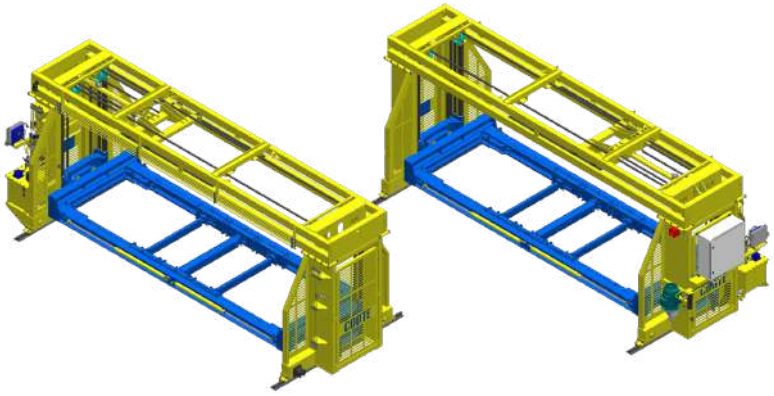
- A standard Coote clamp & rotate system
- Coote safety interlock between lift & clamp functions
- Product gripping / clamping systems

Overhead Product Unloader

The overhead mounted Product Unloaders / Stackers do not (within good reason) have restrictions on width, lift height and load capacities.

Floor Mounted Product Unloader

The Floor mounted Product Unloaders / Stackers can be 4, 5 or 6m in width with a choice from 1.5 to 3.5m lift height. The maximum lifting load for these machines is 4, 6 and 8 tonnes.



Pallet Cleaner

Handling System

The empty pallet is transported under a rotating brush and oiler by the means of a chain conveyor. The oiler sprays a minimal amount of oil onto the pallet during the process. This is to prevent the next product from sticking to the pallet during curing.

The **Pallet Cleaner** reduces the need to manually clean and oil the pallets and ensures a continued level of oiling which can be easily adjusted.

Specifications

Size:
Ranging to suit system size and pallet width

Debris Collection:
Removable Bins

Oil Pressure Vessel:
Included

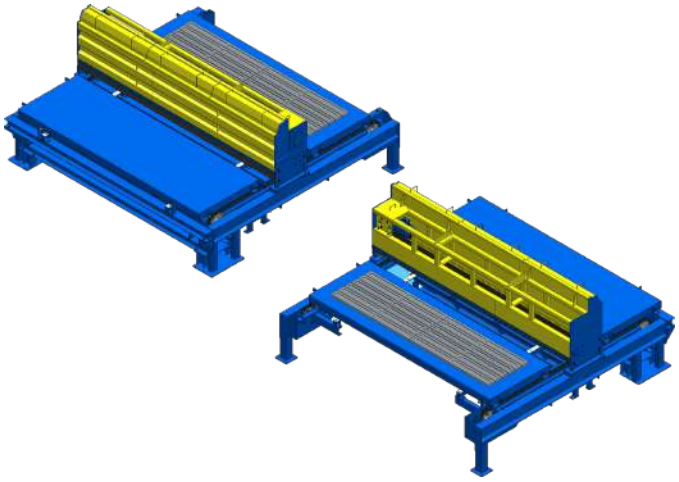
Air Supply:
Required

Operations:
Automated

Oil Drip Tray:
Included

Oil Pressure Vessel Capacity:
40L

Controlled Oiling System:
Included



Pallet Cleaner Overview

- Chain Conveyor
- Rotating brush system
- Oiling hood and tank

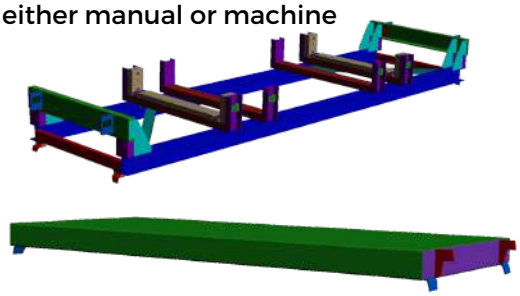
Production Run

1. The Pallet Handler places a pallet with cured product onto the Pallet Cleaner Entry Station and removes the clean and oiled pallet from the Pallet Cleaner Exit Station.
2. The Pallet Cleaner waits for the Product Unloader / Stacker to remove the cured product from the pallet. Once this is removed and the pallet is clear of any product the Pallet Cleaner conveyor will start. This only starts if the Exit Station of the Pallet Cleaner is clear.
3. After the conveyor has run for a certain time the brush starts to rotate. As the pallet moves under the brush, any excess concrete or material is removed.
4. After another time has passed the oiler begins to spray the pallet as it passes under the oiling nozzles. The amount of oil is controllable by putting the nozzles to a required setting.
5. The brush will run for a preset period of time before it stops as does the oiling.
6. The conveyor will stop running when the clean and oiled pallet reaches the Exit Station.
7. The oil is contained in a pressurised vessel that will need to be refilled periodically.

Mouldage and Demould Pallets

Demould Pallets and Demould Frames

- A demould frame can be used in place of a demould pallet to allow the product to be lifted by forks once cured.
- Demould pallets for demoulding product onto which allows for either manual or machine driven removal of product



Product Overview:

- Designed to suit specific customer loading requirements.
- Available in various lengths and widths depending on product
- Stackable using a Coote pallet handler

WetCast Moulds

As well as a large range of standard moulds, we supply custom designed moulds to suit customer requirements. No project is too big or too small.

We strive to produce quality moulds at a competitive price to ensure your concrete products, whether large or small, are produced to the highest possible standard.





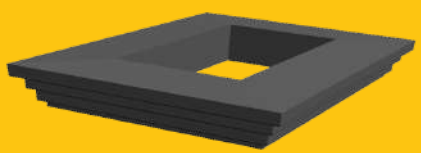
DryCast Moulds

With our own in house design team utilising the latest 3D technology and design software we can design and manufacture any mould to suit your product needs.

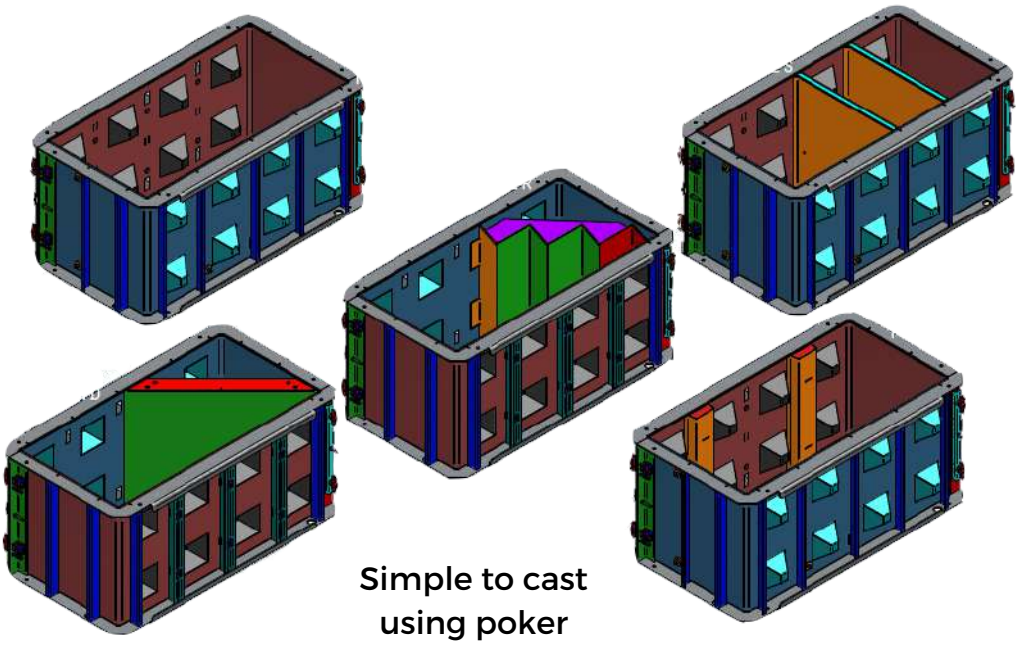
We produce moulds for a vast range of precast concrete products used in many industries such as..

Construction - Road Projects - Railway Projects - Residential Buildings
Commercial Buildings - Agricultural Products - Marine Projects

Product Drawings

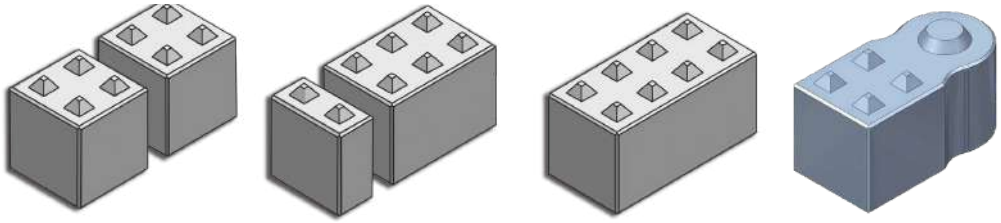
Interlocking Block Moulds



Simple to cast using poker vibration

The 8 nodule design simplifies the stacking process and guarantee's a fixed interlock.

1200x600x600
1600x800x800
1500x600x600
1800x600x600
1600x800x400
2400x600x600



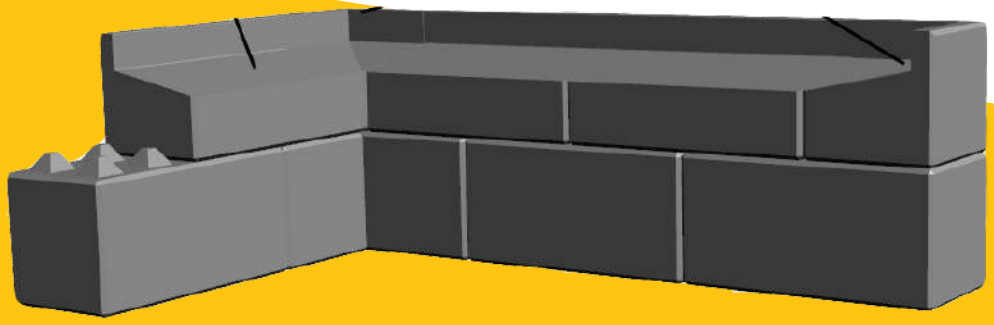
Types of moulds Available:

- Capping Moulds
- Front sloping Moulds
- Stepped Moulds
- Plain Top Blocks
- Dividers
- Multi-angle
- Buttress Style
- Forklift Inserts
- Custom Moulds

Useful For:

- Retaining Walls
- Storage Compartments
- Flood Defence
- Road Calming
- Grain / Aggregate Storage
- Security
- Much More!

The ideal solution for leftover ready-mix or waste concrete.



Standalone Moulds

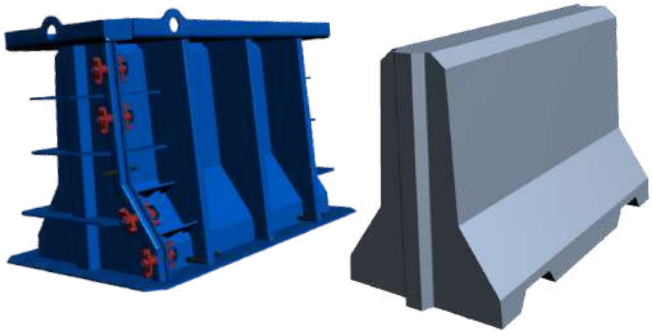
Mould Information

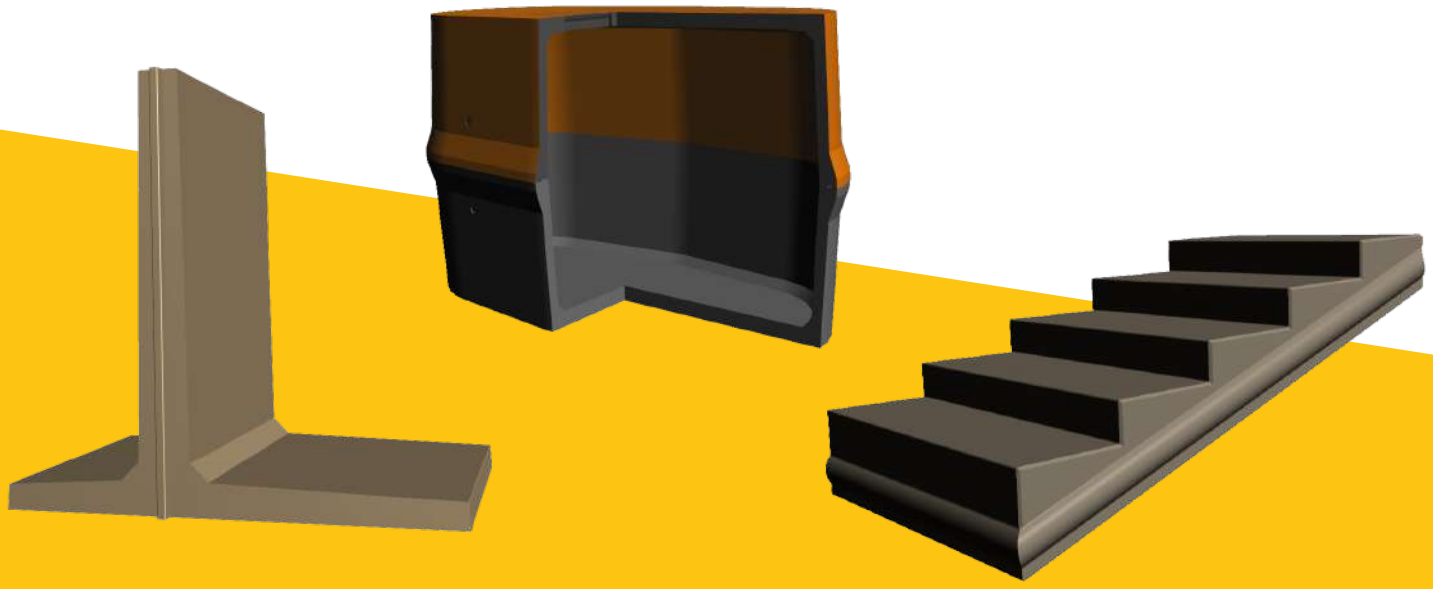
The Standalone Mould is used for large products that can not be used as easily in a Precast Concrete machine. The Standalone Mould is likely to be able to open or roll apart easily in order to reduce the workload of the operators.

All Standalone Moulds are designed and manufactured in-house at Coote Engineering and we pride ourselves on the quality that we produce.

Types of Moulds

- L & T retaining walls
- Bunker Wall
- Livestock Drinkers
- Sea Defence
- New Jersey Barriers
- Junction Boxes / Connection Chambers
- Utility Channels
- Box Culverts
- Feed Troughs
- Septic Tanks
- Many more...





Prestressed

In conventional reinforced concrete, the high tensile strength of steel is combined with concrete's great compressive strength to form a structural material that is strong in both compression and tension.

T BEAM

The T-Beam is a widely used product for the ground and first floors of residential buildings. Combining the T-Beam with in fill blocks, a solid floor can be installed without the need for supporting or the time consuming installation of timber joists.

The Coote Engineering Prestressed T-Beam Bed can be manufactured to any length, can accommodate up to 300 Tonne live load and is manufactured to the highest degree of quality to ensure that your final product is perfect.

LINTEL

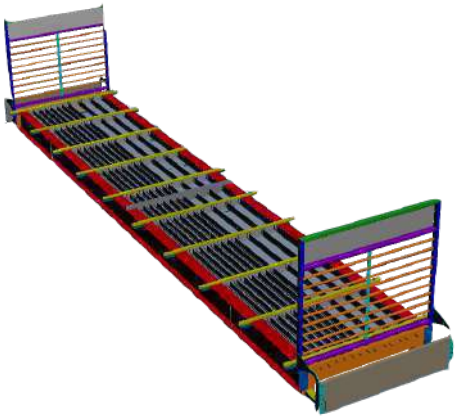
Prestressed Lintel Beds are a low cost and easy way to manufacture a load bearing lintel for the construction market.

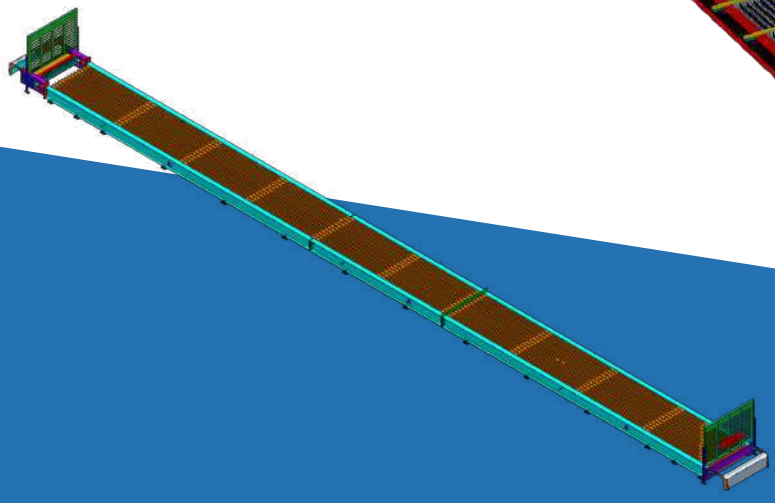
The Coote Engineering Prestressed Lintel Bed can be manufactured to any length, can accommodate up to 300 Tonne live load and is manufactured to the highest degree of quality to ensure that your final product is perfect.

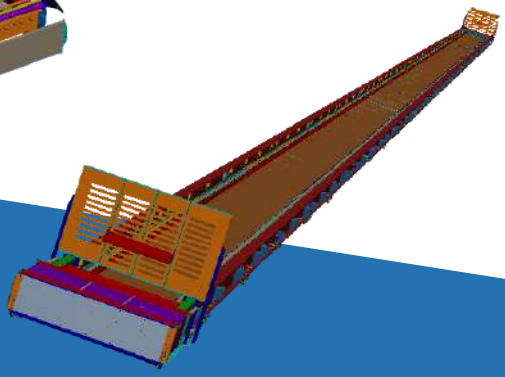
WALL PANEL

With a high standard of build quality coupled with the usability of a versatile product, a Coote Engineering wall panel bed will give customers a quality product that will stand the test of time.

Available in up to a 300 Tonne load, Coote Engineering can supply a bed to any length. Standard sections come in 12m lengths but can be manufactured to shorter lengths to accommodate your required size.







Precast Hollowcore Machine

A lightweight flooring solution. Concrete is fed from a holding hopper to the mould via the variable speed conveyor. A scraper bar is mounted to the front of the conveyor and is controlled with a hydraulic cylinder to level off the concrete in the mould.

Specifications

Production Capacity:
Up to 750m² per shift with two operators

Hopper Capacity:
1.25³ cubic meters

Overall Power requirements:
125 kW, 380/415 volt, 3 ph

Vibrators:
10 – MVSI 3/800 S90

Product length:
8.0m

Product width:
0.6m max

Product height:
0.21m max

Controls:
Automatic with manual controls

Pallet Handling:
Automatic

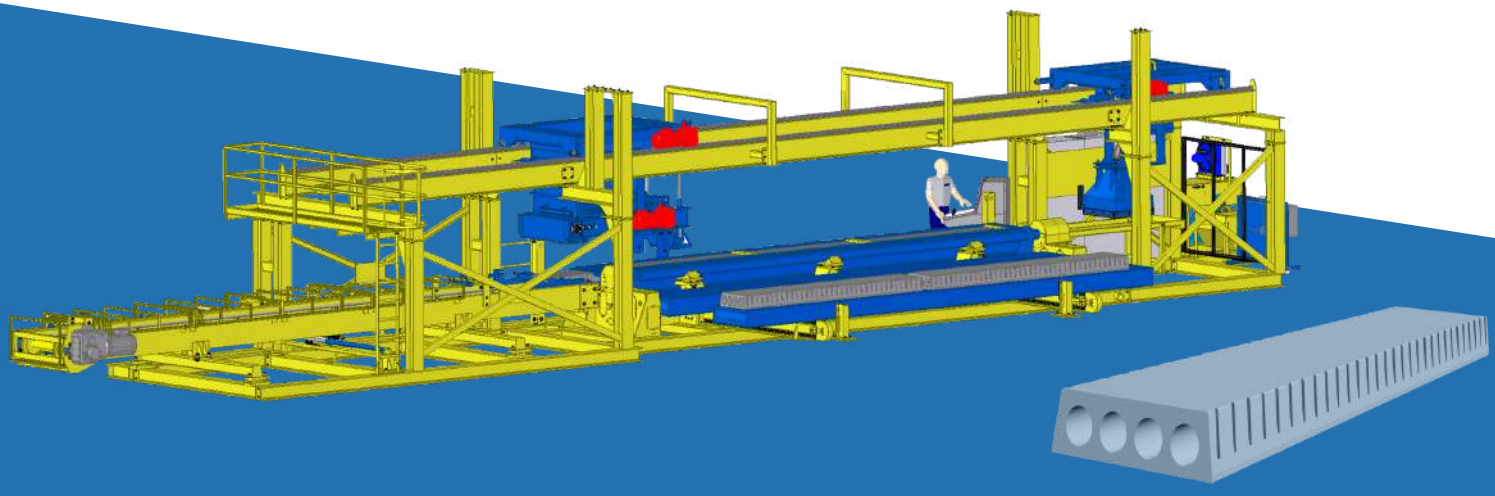
Product Unloading:
Automatic

Production Run

- The hopper travels longitudinally across the mould and is positioned in the parking bay during the de-mould cycle. Concrete is fed from this holding hopper to the mould via the variable speed conveyor.
- A scraper bar mounted to the front of the conveyor and is controlled with a hydraulic cylinder to level off the concrete in the mould.
- Mould, concrete and cores are rotated 180 deg. into the de-mould position; the cores are then retracted from the mould and the freshly manufactured concrete c/w the pallet is lowered uniformly from the mould onto a transfer conveyor.
- A spray booth is mounted within a moving carriage. This carriage travels in the same structure as the feed hopper and is programmed to spray oil directly onto the mould in parallel with the insertion off the cores.
- A 9 meter chain conveyor transfers the cores in and out of the mould. The bogey unit transfers the core removal / insertion conveyor from the casting station to the de-mould station.

Product Benefits

1. Product has no camber
2. Delivery from stock
3. Production can be made in 5cm increments
4. No cutting required
5. Handling of the pallets is automated
6. Product removal once cured is automated



Automation and Custom Solutions

Contact Coote Engineering If you require any form of automation in a process, and take advantage of the years of experience available to you.

Coote Engineering have developed a reputation for being a company that will work with customers in order to design, manufacture and commission machinery that is unique to the customer's needs.

A team of in-house engineers coupled with innovative manufacturing processes and a great understanding of conceptual design, both in mechanical and electrical practices, enables Coote Engineering to utilise our complete in-house ability to provide customers with ideal solutions to bespoke machinery requirements.

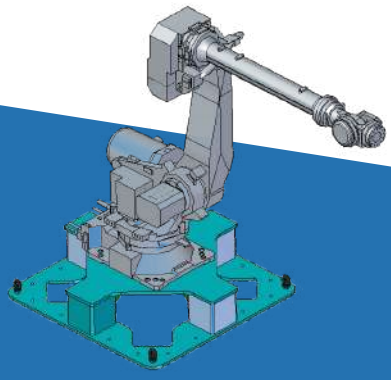
Automation Options

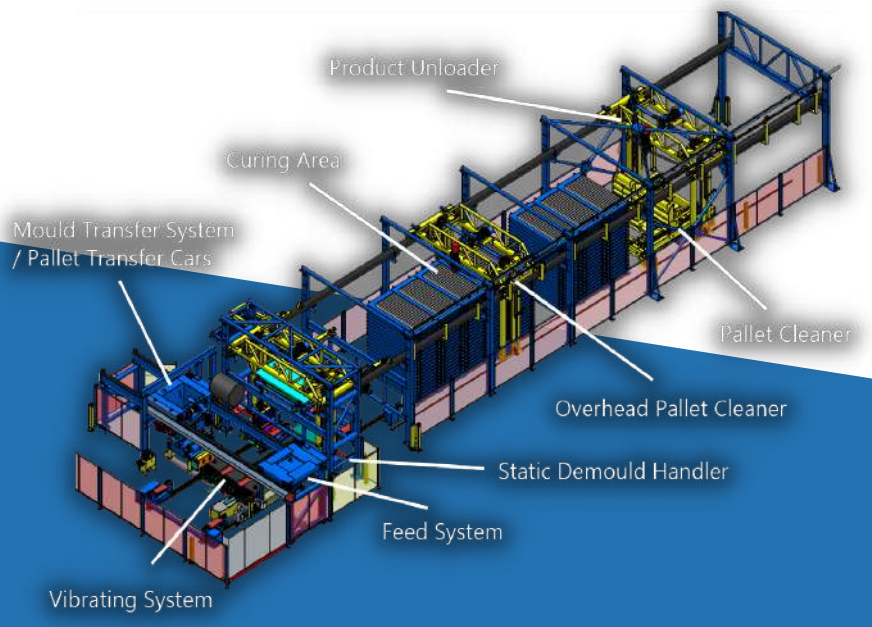
- Complete automation of the plant
- Automation of the handling systems
- Semi-automated systems that work in conjunction with manually operated sequences

Automation Safety

Safety is always treated as a high priority and in any automated system, safety comes first. From Safety Light Curtains to Interlocked Areas, we use many different means of ensuring that each system is safe for the operator but also productive.

- A mixture of Manual filling system with an automated handling and unloading system can bring great flexibility to automated processes.
- The filling is completely controlled by the operator and the moulds can be filled efficiently and quickly by the operator on hand.
- Mould transfer cars can move/swap moulds from the preparation area to the filling area in an automated process, the demoulding and handling of the moulds/pallets can be fully automated along with the unloading of cured products at the rear of the system.
- The use of Robots with various designs of product clamping heads have been utilised to ensure fast and efficient unloading of the products.





Notes:

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