

# Green Technologies

for building construction



**TARA** Machines  
& Tech Services Pvt. Ltd.

*Building sustainable enterprises  
... creating new markets*

Website: [www.taramachines.com](http://www.taramachines.com)

# Introduction

## Green technology

TARA Machines and Tech Services Private Limited markets green technology solutions for building construction, waste recycling and hand made paper production. Our customers include SME producers, building contractors, corporations and institutions.

TARA Machines delivers green business solutions to small and medium enterprises. The affordable building products manufactured by enterprises using TARA Technologies are green products for supply to local home builders and contractors. TARA Technologies are designed as total solution packages which offer multiple benefits; low risk and profits to TARA Machines customers. More than one million houses in rural India have used building materials produced with TARA Machines technologies.

## GREEN TECHNOLOGY PORTFOLIO

Product Category	TARA Machines
Fly Ash Technology	<b>TARA MechRam<sup>®</sup> -X (1600/1250/1000)</b> High capacity fly ash technology package for high quality bricks...
	<b>TARA MechRam<sup>®</sup> -V</b> Fly ash technology package for high quality bricks...
	<b>TARA Balram-I</b> Technology for stabilized compressed earth blocks...
Eco Concrete Technology	<b>TARA Micron<sup>®</sup></b> Eco concrete technology for high quality, aesthetic roofing tiles...
	<b>TARA GreenCast Floors</b> Technology for high quality, affordable concrete pavers...
	<b>TARA GreenCast Frames</b> Technology for high quality concrete door and window frames...
Paper Recycling Technology	<b>TARA PaperMek<sup>®</sup> -XV</b> Paper recycling technology for community enterprises...
	<b>TARA PaperMek<sup>®</sup> -V</b> High quality paper recycling technology for institutions...
	<b>TARA PaperMek<sup>®</sup> -I</b> Innovative paper recycling technology for schools...
Clay Brick Technology	<b>TARA BrickMek</b> Soft clay moulding technology for high quality clay bricks...



Sankalp Award - 2009



Winners of the  
Changing Market Awards 2013, Istanbul

## Recognition and Awards



Former Chief Minister of Delhi  
inaugurating the Development  
Alternatives World Headquarters, built  
with TARA Machines Technologies



NDTV Toyota Greenies Award 2010 for  
Green Design, Development Alternatives  
World Headquarters presented by  
Hon'ble President of India

# TARA MechRam<sup>®</sup>-X 1600

High capacity production system for quality fly ash bricks

TARA MechRam technology offers state of the art production systems designed to manufacture high quality fly ash bricks. TARA MechRam-MX is a high capacity integrated production system in which the functions of feeding raw materials, including fly ash, and compression of bricks are fully automated.

### New Added Features

1. Improved version of Pan Mixer with
  - High performance, standard gear box with air cooled system and high efficiency resulting in power saving & low maintenance.
  - Upper location of bearing housing resulting in to low breakdowns.
2. Advance control panel with auto & manual PLC control system. The electronic control panel includes cycle counter, phase indication lights, metering circuit, over & under load protections with reputed brand hardware.
3. Removable bushes.
4. Brick removal system. or Roller sliding platform



TARA MechRam<sup>®</sup>-X 1600 work station

### Package Specifications

S. No.	Specifications	TARA MechRam <sup>®</sup> X-1600
1.	Rated Production Capacity	1600 Bricks / hour
2.	No. of Bricks per cycle	4 Bricks / cycle
3.	Brick Size ( standard )	(230x110x75mm)/(250x120x75mm)/(200x95x90mm)
4.	Electrical Power Connection	<b>31.5 HP, 3Phase +Neutral +Separate Earthing:</b> 2Pan Mixer (500 Kg)-20HP, Conveyor-3HP, X- 7.5HP, Control Panel - 1HP, (Water pump-1 HP, provision of water, separate earthing for machine to be provided by customer)
5.	Operating pressure (Maximum)	<b>2200 PSI</b>
6.	Pushing Mechanism	Roller sliding mechanism
7.	Pan mixer capacity	2 No. 500 Kg/Charge
8.	Product Transfer Mechanism	Sliding mechanism on to pallets on roller sliding platform

# TARA MechRam<sup>®</sup>-X 1250

High capacity production system for quality fly ash bricks

TARA MechRam technology offers state of the art production systems designed to manufacture high quality fly ash bricks. TARA MechRam-MX is a high capacity integrated production system in which the functions of feeding raw materials, including fly ash, and compression of bricks are fully automated.

## New Added Features

1. Improved version of Pan Mixer with
  - High performance, standard gear box with air cooled system and high efficiency resulting in power saving & low maintenance.
  - Upper location of bearing housing resulting in to low breakdowns.
2. Advance control panel with auto & manual PLC control system. The electronic control panel includes cycle counter, phase indication lights, metering circuit, over & under load protections with reputed brand hardware.
3. Removable bushes.
4. Brick removal system. or Roller sliding platform



TARA MechRam<sup>®</sup>-X 1250 work station

## Package Specifications

S. No.	Specifications	TARA MechRam <sup>®</sup> X-1250
1.	Rated Production Capacity	1250 Bricks / hour
2.	No. of Bricks per cycle	4 Bricks / cycle
3.	Brick Size ( standard )	(230x110x75mm)/(250x120x75mm)/(200x95x90mm)
4.	Electrical Power Connection	<b>26.5 HP, 3Phase+Neutral+Separate Earthing:</b> 2Pan Mixer (500 Kg-10HP+ 300 kg-7.5HP) Conveyor-3HP, X- 5HP, Control Panel - 1HP, (Water pump-1 HP, provision of water, separate earthing for machine to be provided by customer)
5.	Operating pressure (Maximum)	<b>2200 PSI</b>
6.	Pushing Mechanism	Pushing mechanism with sliding platform
7.	Pan mixer capacity	1 No. 500 Kg/Charge + 1 No. 300 Kg/Charge
8.	Product Transfer Mechanism	Sliding platform (Optional: sliding mechanism on to pallets)

# TARA MechRam®-X

## High capacity production system for quality fly ash bricks

TARA MechRam technology offers state of the art production systems designed to manufacture high quality fly ash bricks. TARA MechRam-X is a high capacity integrated production system in which the functions of feeding raw materials, including fly ash, and compression of bricks are fully automated.

### **New Added Features**

1. Improved version of Pan Mixer with
  - High performance, standard gear box with air cooled system and high efficiency resulting in power saving & low maintenance.
  - Upper location of bearing housing resulting in to low breakdowns.
2. Advance control panel with auto & manual PLC control system. The electronic control panel includes cycle counter, phase indication lights, metering circuit, over & under load protections with reputed brand hardware.
3. Removable bushes.



**TARA MechRam®-X work station**

## Package Specifications

S. No.	Specifications	TARA MechRam® X
1.	Rated Production Capacity	1000 Bricks / hour
2.	No. of Bricks per cycle	4 Bricks / cycle
3.	Brick Size ( standard )	(230x110x75mm)/(250x120x75mm)/(200x95x90mm)
4.	Electrical Power Connection	<b>19 HP, 3Phase +Neutral +Separate Earthing:</b> 1Pan Mixer (500 Kg)-10HP, Conveyor-3HP, X- 5HP, Control Panel - 1HP, (Water pump-1 HP, provision of water, separate earthing for machine to be provided by customer)
5.	Operating pressure (Maximum)	<b>2200 PSI</b>
6.	Pushing Mechanism	Not available
7.	Pan mixer capacity	500 Kg/Charge
8.	Product Transfer Mechanism	Manually placed from mould auto pallet

# TARA MechRam<sup>®</sup>-V

Fly ash technology for high quality bricks

The TARA MechRam-MV is an elegant machine with a twin moulding mechanism powered by a single hydraulic power pack.

The TARA MechRam-MV is capable of producing bricks of different sizes

with the uniqueness of producing bricks of both Standard and Chamfered shapes.

### New Added Features

1. Improved version of Pan Mixer with

- High performance, standard gear box with air cooled system and high efficiency resulting in.

- power saving & low maintenance. Upper location of bearing housing resulting in to low breakdowns.



TARA MechRam<sup>®</sup>-V

### Package Specifications

S. No.	Description	TARA MechRam <sup>®</sup> -V
1.	Product Size(Standard/Chamfered)	(230x110x75mm), (250x120x75mm), (200x95x90mm)
2.	Production Capacity	650 Bricks/hour
3.	Roller Pan mixer	300 kg/Charge
4.	Electrical Power (3 Phase)	7.5+5 HP (Pan Mixer + Power pack)
5.	Product Transfer Mechanism	Manually taken from the mould placed on pallet



Chamfered



Standard

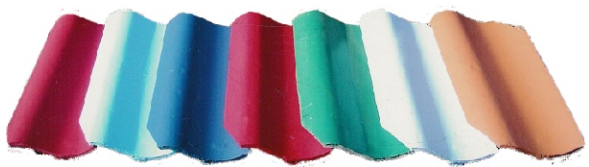
# TARA Micron

Eco concrete technology for roofing tiles & decorative pavers

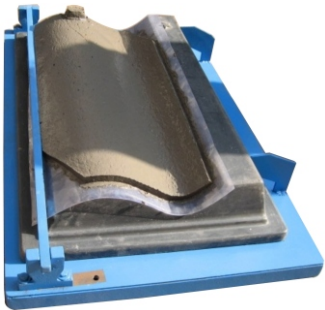
TARA Micron machine produces cost effective, aesthetic and durable roofing tiles and decorative pavers. The technology drives highly profitable businesses in both rural and urban markets. The micro concrete tiles are made on the TARA Micron machine; moulds and a full set of accessories complete the technology package. Specialized rubber moulds for decorative pavers are also available.

## Package Specifications

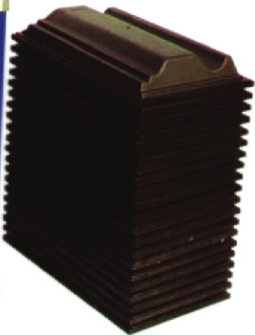
S. No.	Description	TARA Micron
1.	Vibrating Table (L×W)	540×315 mm
2.	Roof Tile Moulds	Pan/Roman type injection moulded
3.	Quality Assurance Tools	<ul style="list-style-type: none"><li>• Bending test jig</li><li>• Alignment tool</li></ul>
4.	Electrical Power	1/4 HP, Single Phase
5.	Production Capacity	250 Tiles/shift
6.	Manpower	4



Roofing Tiles



Alignment Tool



TARA Micron with Roman type moulds



# TARA GreenCast Floors

## Technology for high quality, affordable Concrete Pavers

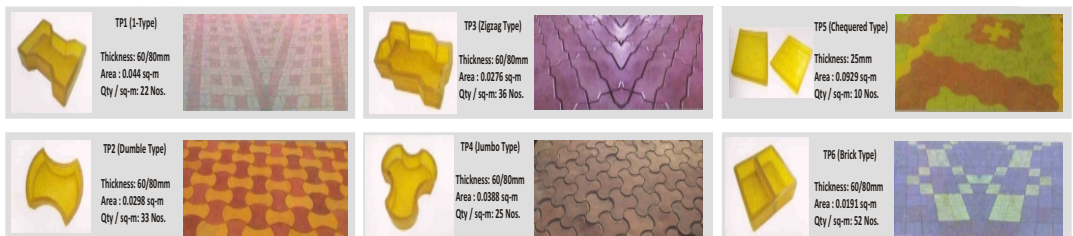
TARA GreenCast Floors technology provides a cutting edge solution for manufacture of high quality and affordable Concrete Pavers. The GreenCast Floors technology package consists of a vibrating table with a choice of PVC moulds for manufacture of concrete decorative pavers of diverse shapes & thickness. TARA GreenCast Floors Technology is highly profitable for micro and small scale building material producers. The concrete pavers find application in driveways, parking areas, fuel stations and rural roads. The equipment is also capable of production of GreenCast Frames.

### Package Specifications

S. No.	Description	TARA GreenCast Floors
1.	Vibrating Table (L×W)	3.05 x 0.91 meter / 3.05 x 0.76 meter
2.	Moulds	PVC Moulds in diverse range of interlocking shapes with choice of thickness with anti skid surface
3.	Production Capacity	1000-1500 pavers/day
4.	Power Rating	2HP, 3 Phase (Single Phase Optional)
5.	Color Pan Mixer (Optional)	150 kg / Charge powered by 3HP geared motor



Pan Colour Mixer



# TARA GreenCast Frames

Technology for high quality concrete door and window frames

TARA GreenCast Frames technology provides a pioneering solution for manufacture of high quality, long lasting and affordable Concrete Door and Window Frames using reinforced cement concrete. The production system consists of specialized rubber moulds, which are placed inside GI channels. A series of GI channels are mounted on the vibrating table; fitted with vibration mechanism to achieve uniform compaction and high quality surface finish. Two sets of door frames can be manufactured in every production cycle. The equipment also capable to produce plants and joist (Flad lofty solutions)

## Package Specifications

S. No.	Description	TARA GreenCast Frames
1.	Vibrating Table (LxW)	3.05 x 0.91 meter / 3.05 x 0.76 meter
2.	Frame Moulds	Rubber moulds positioned in galvanized metallic enclosure; for production of door and window frames
3.	Production Capacity	12-15 sets/day
4.	Power Rating	2 HP, 3 Phase (Single Phase Optional)
5.	Fittings	Hinge blocks for fixing hinges are provided

### Advantages:

- High Product durability with unmatched resistance to pests and white ants
- Excellent surface finish allows polishing and easy painting
- Flexible production; can be easily adopted to production of GreenCast Floors



GreenCast door frames / Plank & Joist



TARA GreenCast Frames

# TARA BrickMek

Soft clay moulding technology for high quality green bricks

TARA BrickMek Moulding Machine is designed to optimize manpower while producing high quality bricks with good control on brick size and finish.

The machine package consists of TARA BrickMek, set of moulds, mould transfer trolleys and soil feeding conveyor (optional). TARA BrickMek moulding machine is highly suitable for mixing of internal fuel.



## Package Specifications

S. No.	Specifications	TARA BrickMek-SuperX	TARA BrickMek-Super	TARA BrickMek
1.	Mould sizes	As per customer's requirement		
2.	Mould quantity	32 nos.	24 nos.	24 nos.
3.	Powered by	3 phase, 10HP diesel engine and 7.5 HP induction motor	3 phase, 10HP diesel engine only	3 phase, 7HP 1HP induction motor pump
4.	Weight	2 tonnes	1.9 tonnes	1.8 tonnes
5.	Production capacity	1560 bricks/hr (rated)	1440 bricks/hr (rated)	1440 bricks/hr (rated)
6.	Transfer trolley	4 nos.	3 nos.	3 nos.
7.	Bricks per stroke	3	3	3

## Special Features:

- Premium on high quality bricks made with TARA BrickMek Machine.
- Extended brick season due to uninterrupted moulding of green bricks.
- Fuel saving realized through consistent mixing of soil with carbon rich materials like sponge iron waste.
- Reliable operation and low maintenance.



# TARA PaperMek

Innovative paper recycling technology for schools and institutions

TARA PaperMek technology is a pioneering concept for recycling of waste paper in schools and institutions.

## Special Features:

- Ideally suited for operations by school children.
- Over 500 schools in Delhi use TARA PaperMek Systems.
- Fitted with safety devices to ensure safe operation by school children and persons with special needs.



TARA Hydrapulper



TARA Screw Press

## Package Specifications

S. No.	Description	TARA PaperMek-XV	TARA PaperMek-V	TARA PaperMek-I
1.	Capacity	50 - 75 Kg/day	25 - 30 Kg/day	6 - 8 Kg/day
2.	Hydrapulper	6 Kg/charge	3 Kg/charge	1 Kg / charge
3.	Beater	3.5 Kg/charge	2 Kg / charge	Optional
4.	Univat	18"x23"	18"x23"	11"x16"
5.	Screw Press	18"x23"	18"x23"	12"x18"
6.	Calendering Machine	24", width of rolls	20", width of rolls	Optional
7.	Cutting Machine	33", size of blades	20", width of blades	Optional
8.	Power	12 HP, 3 Phase	4 HP, Single Phase	2 HP, Single Phase
9.	Water (Potable)	2500 Litres/day	1200 Litres/day	300 Litres/day
10.	Area Requirement	2 rooms, 40 sq mtrs	2 rooms, 30 sq mtrs	16 sq mtrs



School children engaged in paper recycling with TARA PaperMek

# TARA PaperMek

High quality paper recycling technology for community enterprises

TARA PaperMek technology is ideal for use by institutions and corporate offices. The Delhi Secretariat, Shimla Secretariat, units of the Indian Army and National Institute for the Visually Handicapped (NIVH), Dehradun recycle paper using TARA PaperMek Technology.

The TARA PaperMek Technology consist of a diverse portfolio of machines:

1. **TARA Hydrapulper:** used to produce pulp from waste paper by shredding the paper in presence of water.
2. **TARA Beater:** used to produce pulp from waste cotton.
3. **TARA Univat:** used to lift sheets of paper with uniform thickness, one sheet at a time.
4. **TARA Screw Press:** used to squeeze out excess water from wet sheets.
5. **TARA Calendering Machine:** used to give a smooth finish to paper by means of polishing with two chilled cylinders rotating in opposite directions.
6. **TARA Cutting Machine:** used to cut the finished sheets of paper into desired sizes.



TARA Beater



TARA Calendering Machine



TARA Cutting Machine



Product making at NIVH, Dehradun

# Other Technologies

## TARA GreenCast Panels

### Technology for precast wall panels



The TARA Green Cast Wall Panels Technology deploys state of art design principles to manufacture reinforced ferro-cement walling elements. These are produced on specially designed Vibrating Tables and mould. The Wall Panels have high density, water proof, provide structural strength, can be quickly manufactured and easily installed. The technology conserves materials; both cement and steel while excluding the use of stone aggregates. The technology ensures unmatched speed of construction.

## TARA GreenCast Panels

### Technology for concrete blocks for walling

Hollow and solid concrete blocks are extensively used for walling applications where speed of construction is critical. The TARA GreenCast Panels technology offers a versatile machine capable of producing hollow and solid concrete blocks. A choice of easy to fit moulds provides a portfolio of block sizes and panels for wall construction.



## TARA GreenCast Pavers

### Technology for heavy duty paver blocks

The TARA GreenCast Paver technology is ideally suited for production of heavy duty pavers. The heavy duty paving blocks are produced in diverse shapes by simply interchanging moulds; they can be produced in 60mm, 80mm and 100 mm thicknesses. The TARA GreenCast Paver machine provides an operating pressure of 70 tonnes; the machine has a reliable hydraulic system for compaction and ejection.



## TARA Balram-MI

### Technology for stabilized compressed earth blocks

TARA Balram-MI is a unique, manually operated machine that harnesses Stabilished Compressed Earth Block (SCEB) Technology for economical, strong and durable construction. Houses made from compressed earth bricks (unfired bricks) are durable. The TARA Balram machine is ideal for on-site production of bricks.



# Green Building Centers

Unique Multi-product Centers of Excellence for Building Materials



- Fly Ash Bricks
- Solid/Hollow Blocks
- Decorative Roof Tile
- Interlocking Paver & Chequered Tiles
- Door/Window Frames
- Concrete Cover Block for RCC Slab



## NATIONAL PRESENCE



**Machines Supplied to 28 States in India**

## INTERNATIONAL PRESENCE



**Afghanistan**



**Bangladesh**



**Bhutan**



**Cameroon**



**Indonesia**



**Malawi**



**Nepal**



**South Africa**



**Sri Lanka**



**United Kingdom**

## Marketing Office and Demonstration Centre

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TARA Machines and Tech Services Private Limited is promoted by TARA, Society for Technology and Action for Rural Advancement; an enterprise of the Development Alternatives Group

**Website: [www.taramachines.com](http://www.taramachines.com)**