FUNDED & ESTABLISHED BY

MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY

iTNT TAMILNADU TECHNOLOGY HUB

Thiagarajar College of Engineering — Since 1957 — where quality and ethics matter

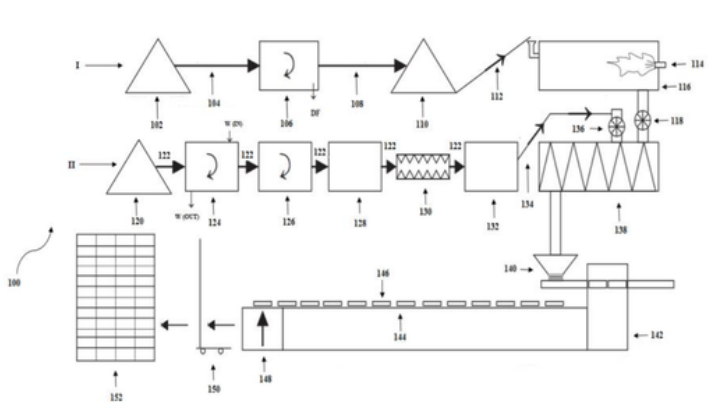
A PROCESS AND A SYSTEM FOR MANUFACTURING OF TILES/BLOCKS FROM WASTE PLASTICS

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

This technology discloses an eco-friendly system and process for manufacturing high-strength construction tiles and blocks by utilizing unsorted waste plastics combined with stone aggregates. The process involves pre-processing stone aggregates through sieving and heating, alongside washing, drying, and shredding waste plastics including bottles, packaging films, carry bags, and thermocol. These materials are fed via separate conveyor lines into a specialized mixing unit, heated to temperatures between 180°C and 200°C to form a homogenous hot mix stock, and subsequently molded under high hydraulic pressure (40 to 80 tonnes). By replacing conventional water- and cement-intensive processes, this innovation eliminates soil erosion and kiln emissions while converting discarded plastic waste into durable, malleable, and crack-resistant building materials.

Block Diagram



Technical Applications

The manufactured plastic-aggregate tiles and blocks serve as lightweight, high-strength alternatives to conventional cement, fly ash, and mud bricks across civil construction and urban infrastructure projects. They are ideally suited for heavy-duty driveways, pedestrian walkways, floral pavers, patio flooring, and retaining block systems.

Salient Features

- Dual Conveyor Pre-Processing System
- Vibration-Assisted Thermo-Mixing
- High-Pressure Multi-Station Molding

Glimpse of the Technology

REFERENCE NUMBER
iTNT-TECH-0191

TECHNOLOGY SECTOR
Clean Energy & Sustainability

IP STATUS
Patent Granted

APPLICATION NUMBER
201721031514

TECHNOLOGY READINESS LEVEL
TRL 8

Tamil Nadu Technology Transfer Facilitation Centre (TNTTFC)

Mr. G. Daniel Prabhakaran, RTTP
Associate Vice President - iTNT

tnttfc@tnthub.org

+91 91766 08820

https://techtransfer.itnthub.tn.gov.in/