

Economical Building Blocks

SHIELD CONCRETE PRE ENGINEERED BLOCKS

STRONG, DURABLE, LASTING.

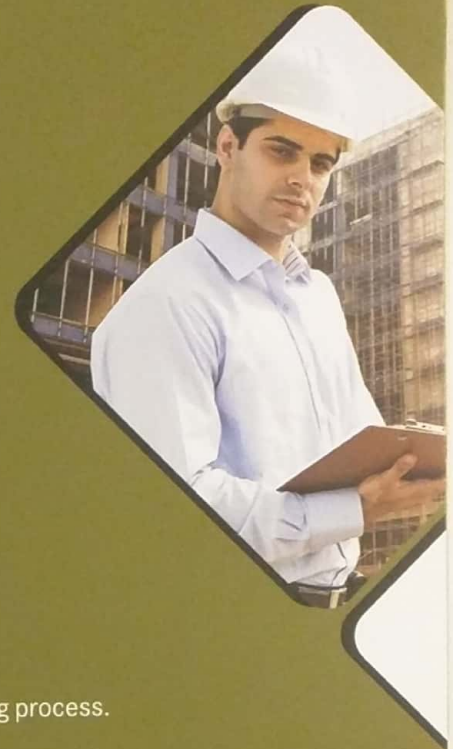


Precision, Protection and Economy since 1991

Literoof Housing Limited is the dynamic arm of the over 4 decade old Literoof Group. Since inception in 1991 we have constructed numerous commercial and residential landmarks in India. Innovative concepts and cutting edge technology have been the defining aspects of our Group. In tune with this we have set up a most modern production unit in Chettipunniyam, Chennai with the latest technology from Masa AG, Germany. This is the largest fully automated plant in India.

Shield is our precision range of precast concrete products that meet the highest standards nationally and internationally. **Shield** covers the entire range of hollow and solid masonry blocks, interlocking pavers, kerbs and flagstones, retaining wall blocks, permeable pavers and grid pavers, garden landscaping products, channel drains and custom designed products.





Quality Assurance

Quality is ensured at every stage by the systems built into the manufacturing process. Our quality parameters include:

- Raw materials sourcing and procurement
- Scientific Formulation
- Accurate weigh batching
- Consistent and homogeneous mixing
- Quality moulds from Rampf Formen GMBH, Germany
- Casting vibration and compaction control
- Quality checks on green products
- Periodical tests on hardened products
- Final inspection and testing
- Complete traceability of products from production to customer's site





Meeting Standards

Shield products are manufactured in compliance with IS, EN, BS, AS/NZ and ASTM standards. Constant updation keeps us abreast of the current standards. Our technical team will assist you in making the right choice in keeping with your project.

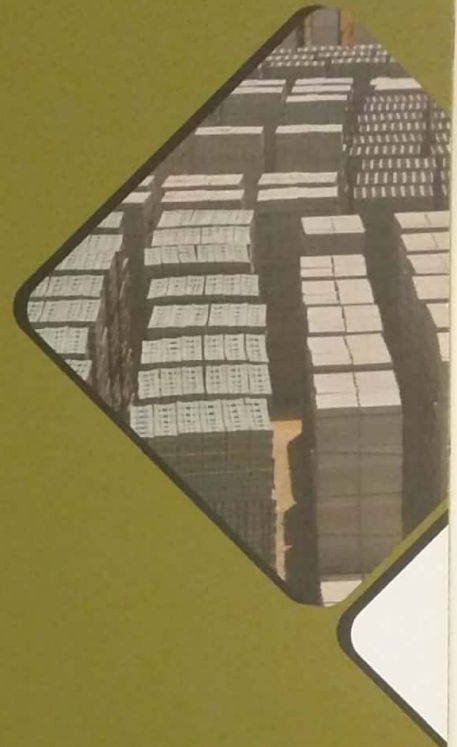
Technology platform

Shield is manufactured in collaboration with Masa AG Germany in the sophisticated R 9000 AF block plant. The fully automated precision processes are controlled by modern PLCs ensuring process accuracy, precise dimensions, high strength, excellent finish and uniform high quality. Different process parameters are used to produce a range of products.

Capacity

Product	Production Capacity Units per annum	Equivalent per annum
Hollow Blocks 390 x 190 x 190 mm	17.3 million	1.3 million m2 of walling
Interlocking Pavers 200 x 100 x 80 mm	69.1 million	1.5 million m2 of paving

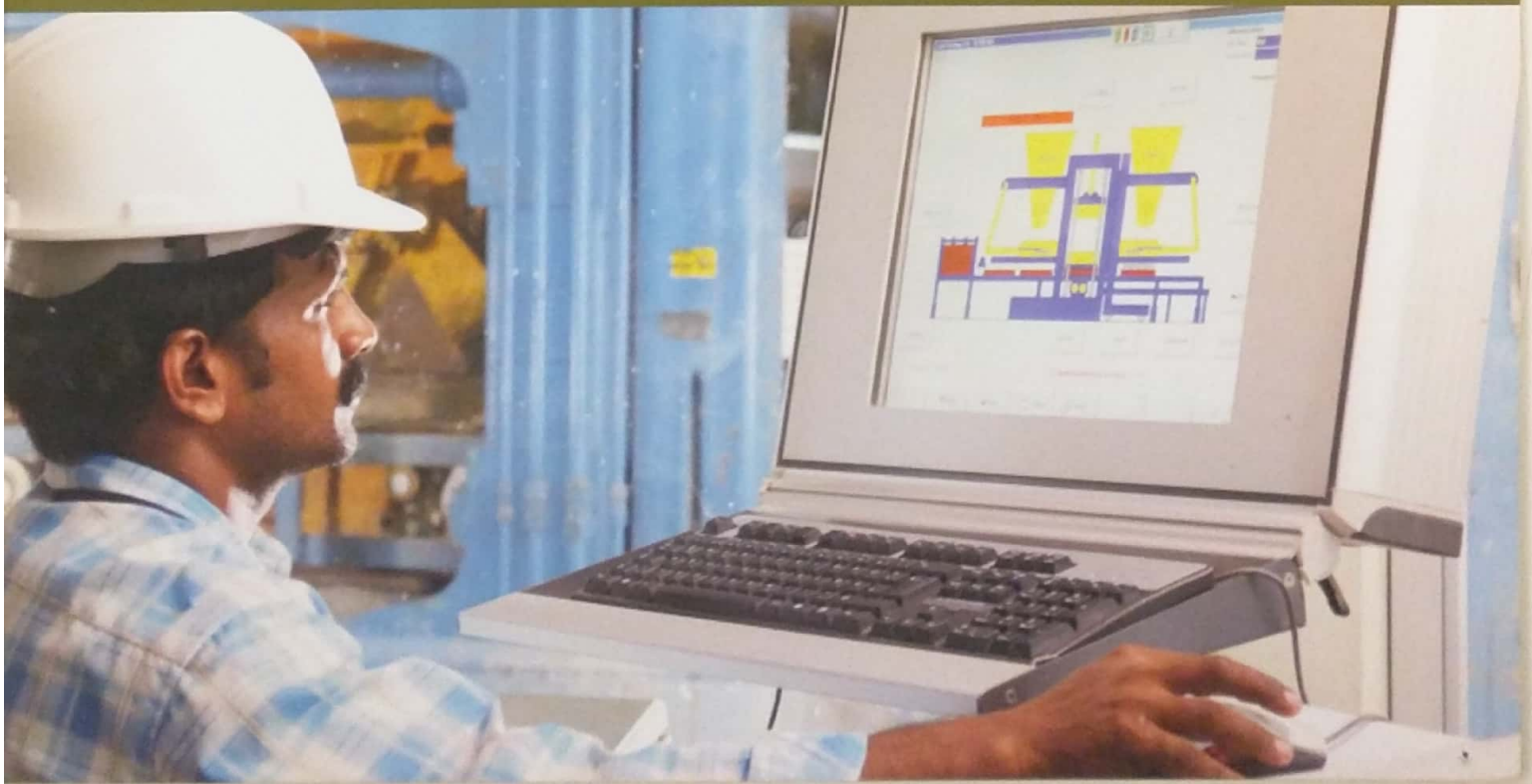




Customer focus

With us the customer is literally the king. While every step is taken to provide precision, excellent finish and aesthetics, strength and economy we add value at every stage by

- Need identification
- Pre-sales support
- Need based Standard adherence
- Sophisticated technology and process
- Palletizing of finished product to prevent handling damages
- Mechanised loading/ unloading
- Coordinated on-site delivery
- Post supply support
- Economic pricing





Towards Green Points for Green Building Certification

Shield range of products includes an eco-friendly variety. This is the first step of the environmentally conscious company. Total eco-friendly options are to be introduced soon to earn you valuable LEED (Leadership in Energy and Environmental Design) 'green points' in the construction of Green Buildings that may become the fixed norm in future.

Shield Products

Concrete Masonry Blocks

- Hollow Blocks
- Solid Blocks

Interlocking Pavers

- Without Face Mix
- With Face Mix

Custom Designed Products

Products to be introduced soon

- Precast kerbs & flagstones
- Permeable pavers & grid pavers
- Precast channel drains
- Segmental retaining wall blocks
- Landscaping products





Interlocking Concrete Pavers



Interlocking Concrete Pavers

Ancient Romans introduced paved carriage ways around 2000 years ago. They were so durable that some have been preserved till date. They have been in existence in some form since. Interlocking concrete pavers were introduced after World War II and with the advances in mass production pavers have taken over the world.

Interlocking concrete pavers are segmental. Formed of multiple small interlocking units held together through friction these pavers have excellent load bearing hard standing properties. The pavement behaves as one cohesive structural unit but embodies great flexibility in weight transmission making pavers the ideal and economic choice.

Heavy Duty Pavers

Shield also offers Heavy Duty Pavers that are robust enough to withstand great stress and wearing. They exhibit excellent heavy load bearing properties and are ideal for constructions like warehouses, airports, ports etc. that bear a lot of heavy duty traffic.

Face Mix

Face mix products are two layered but produced by a single process making them single units. The top layer of about 6- 8 mm thickness is made of specially designed mixtures with varied colours rendering the pavers high abrasion and skid resistant. **Shield** Interlocking Concrete Pavers are available with or without face mix.

Applications

- | | |
|---|---|
| <ul style="list-style-type: none"> ● Airports ● Ports ● Container Terminals ● Industrial Sites ● Warehouses ● Roads/ Junctions ● Driveways ● Petrol Stations ● Bus Terminals | <ul style="list-style-type: none"> ● Commercial Complexes ● Residential Complexes ● Parking Lots ● Walkways ● Porches ● Patios ● Pool Decks ● Sidewalks ● Road Decks |
|---|---|



Shield Interlocking Concrete Pavers

Shapes	GRADE	SIZE IN MM. Length x Width x Height
UNI - Regular	M 30/M35	222 x 109.50 x 60
UNI - Regular	M 40	222 x 109.50 x 80
UNI - Regular	M 50	222 x 109.5 x 100
I - SHAPED	M30/M35	198 x 163 x 60
Rectangular	M30/M35	200 x 100 x 60
Rectangular	M40	200 x 100 x 80
Hexagon	M 35	226.5 x 197 x 60
KERBSTONE		600x350x150

Shield Interlocking Concrete Pavers Advantage

Precision

- Excellent Dimensional Tolerance
- Modular
- Range of Architectural Forms
- Excellent Finish
- Even Textures
- High Precision Moulds from Rampf Germany

Protection

- High Compressive Strength
- High Flexural Strength
- Durable
- High Abrasion Resistance
- High Weathering Resistance
- Low Water Absorption
- Low Permeability
- Negligible Efflorescence

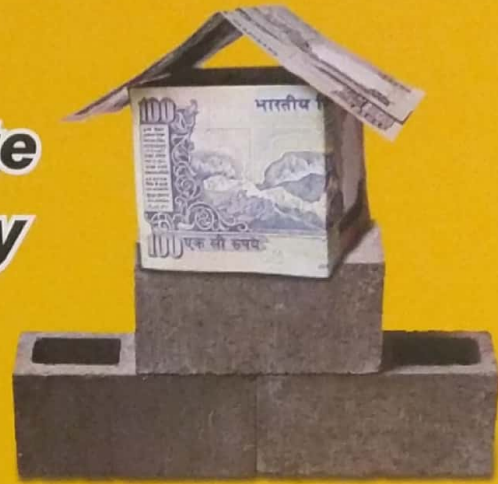
Economy

- Ease and Speed of Construction
- Low Onsite Wastage
- Low Labour Cost
- Mechanized Laying For Large Scale Projects
 - Low Installation Cost
 - Quick Completion of Projects
 - Early Opening to Traffic
- Low Maintenance Costs
- Ease of Maintenance of Subsurface Utilities
- Low Life Cycle Costs





Concrete Masonry Blocks



Concrete Masonry Blocks

Concrete masonry blocks have been in existence for centuries. Revolutionary changes in manufacturing technology and material sciences have made multi sized, shaped, coloured and textured blocks a reality. They are used as both structural and non-structural components and have been the preferred building blocks in the western world. They are fast replacing traditional bricks and other masonry products in India too.

Concrete Masonry Blocks can either be

- Hollow or Solid
- Load Bearing or Non-load Bearing
- Light weight or Dense

Shield concrete blocks are used in low and high rise buildings, for basements, exterior and interior walls and partitions.

Applications

- Shopping Malls, Multiplexes
- Institutional Building
- Farmhouses, Villas
- Hotels, Resorts
- Hospitals
- Factory Buildings
- Sports Stadia
- Multi functional Complexes such as IT Parks
- Independent Residences
- Residential Complexes
- Schools, Colleges
- Ports, Airports, Mass Transport Stations
- Warehouses

SHIELD - CONCRETE PRE - ENGINEERED HOLLOW BLOCKS

BOTTOM OPEN TYPE
SIZE IN MM
390 x 190 x 190
390 x 125 x 190
390 x 90 x 190

BOTTOM CLOSE TYPE
SIZE IN MM
390 x 190 x 190
400 x 100 x 200



SHIELD - CONCRETE PRE - ENGINEERED SOLID BLOCKS

SIZE IN MM
390 x 190 x 190
390 x 140 x 190
390 x 90 x 190
400 x 200 x 200

LINTEL BLOCK (U CHANNEL)

SIZE IN MM
390 x 190 x 190

Shield Concrete Blocks advantage

Precision

- Excellent Dimensional Tolerance
- Modular
- Range of Architectural Forms
- Excellent Finish
- Even Textures
- Variety of Structural Forms
- Control on Bonding Dimensions and Quality
- High Precision Moulds from Rampf Germany

Economy

- Ease and Speed of Construction
- Low Onsite Wastage
- Low Labour Cost
- Consumes Less Cement
- Low/ No Plastering Cost
- Low/ No Painting Cost
- Low Maintenance Cost
- Minimal Steel Reinforcement in case of Load Bearing Structure
- Additional Floor Space

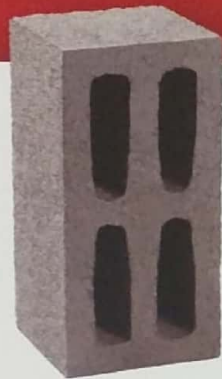
Protection

- High Compressive Strength
- High Flexural Strength
- High Lateral Modulus of Rupture
- High Bond Strength
- Earthquake Resistant
- Durable
- Excellent Fire Rating
- Good Thermal Insulation
- Good Acoustic Insulation
- High Weathering Resistance
- Low Water Absorption
- Low Permeability
- Low Coefficient of Expansion
- Low Coefficient of Contraction
- Negligible Efflorescence
- High Abrasion Resistance
- Resistant to Salt Attack





A brand trusted by the renowned builders and architects



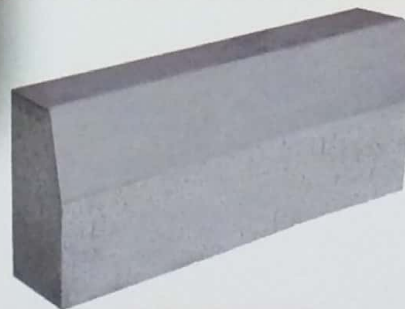
HOLLOW BLOCKS



SOLID BLOCKS



HEAVY-DUTY PAVERS



KERBSTONES



Also available:

ECC friendly FLY ASH Bricks

#35,7th Street, VSI Estate Phase II, Thiruvanmiyur, Chennai- 600 041

Ph: 97899 79301, 97899 79303, 97899 79306, 98406 71243

E-mail : shieeld@literoof.in



Fly Ash Bricks



About us

Since its inception in 1991, Literoof Housing Limited has constructed numerous commercial and residential landmarks, Innovative concepts and cutting edge technology have been the defining aspects of our company.

In order to meet the growing demands of the construction sector we have ventured into our SHIEELD brand range of Precast concrete products in association with MASA GMBH of Germany.

Our plant which operates from Chettipunniyam, Near Chennai, is the largest fully automated plant in India. The plant is unique in technology with a production capacity of about 17.3 million concrete blocks and 69.1 million concrete pavers per annum.

Our SHIEELD range of products include

Fly ash bricks

Hollow and Solid concrete masonry units [concrete blocks].

Interlocking concrete pavers, Permeable concrete pavers and Grid concrete pavers.

Kerb stones

Our products conform to IS, BS and AS standards and have Precise dimensions, Good finish and Higher strength.

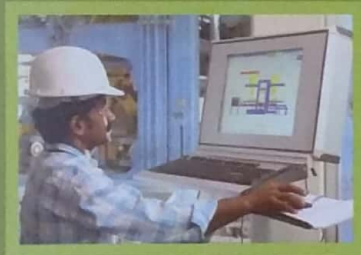
WHY SHIEELD BRAND FLYASH BRICKS

FlyAsh Brick is a product of basic cement clinker materials i.e. FLY ASH, STONE DUST / SAND, LIME, GYPSUM and BONDING AGENT. The mix is so ideally worked out to produce bricks of higher strength, with consistency as well as uniformity. The manufacturing process is fully automatic with state of art technology. At Literoof we take utmost care in curing our products. Our products go through a specialised curing process called **Chamber curing** where hot air is circulated until the products reach the desired strength. Though a new age product introduced in the market, Fly Ash Bricks are very well accepted by the organized sectors in heavy industries, high rise buildings, large townships, colonies, etc. because of its unique features and merits.

DIMENSION: 210 mm x 110mm x 75 mm [L x W x H]

Advantages of using SHIEELD brand fly ash bricks:

Environmental Friendly | Green building concept | Used in facework due to uniformity and smoothness | Less usage of mortar & saving in manpower | Direct gypsum plastering can be done | Dimensional accuracy | Light weight | Fire resistance and sound insulation | Less usage of water



Comparing Fly ash brick with clay brick.

NORMAL CLAY BRICK	FLY ASH BRICK
Varying colour as per soil	Uniform pleasing colour like cement
Uneven shape as hand made	Uniform in shape and smooth in finish
Loosly bonded	Densly compacted
Heavier in weight	Lighter in weight
Compressive strength is around 35 Kg/cm2	Compressive strength is around 100 Kg/cm2
More porous	Less porous
Thermal conductivity 1.25 – 1.35 W/m2 °C	Thermal conductivity 0.90-1.05 W/m2 °C
Water absorption 20-25%	Water absorption 6-10%



FOR SAMPLES AND FURTHER INFORMATION

Literoof Housing Limited

"Literoof Centre"

No. 35, 7th Street, VSI Estate, Phase II, Thiruvanimiyur, Chennai - 600 041,

Ph: 044 2454 4949 / 50 Mob: 97899 79301, 97899 79303, 94440 33867,

94453 78230, 97899 79300 Email: info@literoof.in / shieeld@literoof.in www.shieeld.in



SKID-PROOF
SHOT BLASTED
PAVERS



Literoof, the leading manufacturer of concrete blocks and pavers, now pioneer the production of face mix layered shot blasted pavers which possess skid resistant properties that aid tension-free movement on road surfaces. The face mix layers on the shot blasted pavers provide high abrasion and high compressive strength that prevent chipping of the surfaces thereby increasing the lifespan of the pavers. The pavers are manufactured in Chennai and come in many variants in different shapes and colours.

The German technology infused products manufactured with MASA machinery

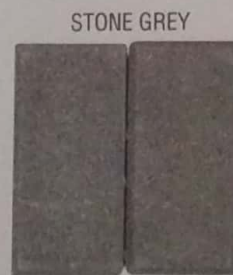
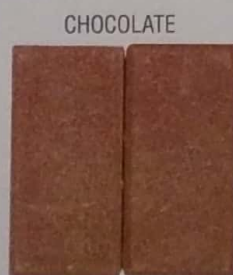
- Improves overall strength of the pavers enabling them to withstand great stress and wearing.
- Face mix coated high friction slip-resistant surfaces.
- Applications : heavy duty traffic areas that include warehouses, airports, industrial and residential sites
- Highly durable surfaces withstands the rigours of equipment traffic.
- Manufactured locally at a fully automated plant controlled by modern PLCs.
- Huge production capacity - 30,000 sq. ft per shift.
- Easy maintenance and installation.



Available in
6 different colours,
5 different sizes,
4 different shapes-
I - shape, rectangle, hexagonal, zig-zag

Sizes : 60mm, 80mm, 100mm

AVAILABLE COLOURS:

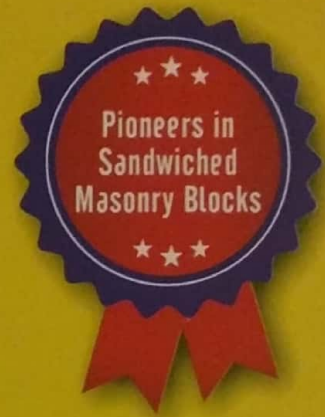


Due to high compressive strength, there is hardly any wastage during handling as compared to blocks manufactured by unorganised sector where it is about 15-20%.



Anything else will be something less.

Literoof Housing Limited
#35,7th Street, VSI Estate Phase II, Thiruvanniyur, Chennai- 600 041.
Ph: 044-24544949, +91 99520 06688, +91 97899 79303,
+91 97899 79301 E-mail: shield@literoof.in Web: www.literoof.in



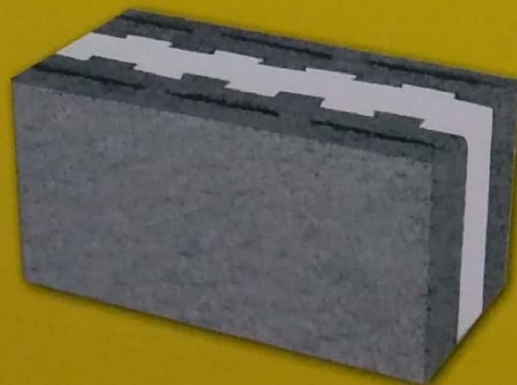
INTRODUCING THERMAL-SANDWICHED BLOCKS

Precision, Protection and Economy

Shieeld range of pre cast concrete products meets the highest standards nationally and internationally. Shieeld covers the entire range of hollow and solid masonry blocks, interlocking pavers, kerbs and retaining wall blocks, permeable pavers and custom designed products.

High Quality SHIEELD Products

Shieeld products are manufactured in a fully automated factory with the latest German Technology and built-in quality control systems which ensure process accuracy, precise dimensions, high strength, excellent finish and uniform high quality. Quality is ensured at every stage by the systems built into the manufacturing process.





Our sandwiched thermal blocks are ideal for external walls and have greater advantage when compared with normal hollow/solid blocks.

They are totally eco-friendly and will earn you 'green points' in the construction of Green Building which may become the fixed norm in future.

Concrete masonry block with intermediate polystyrene insulation

BENEFITS

- Thermal insulated blocks are ideal for external walls.
- Prevents the heat from getting transferred to the wall inside the room.
- Provides excellent sound insulation and fire resistant.
- Reduces AC power consumption and saves energy.
- Aides 'Green Building' concept.

Precision

Excellent dimensional tolerance.
Excellent finish and texture.
Control on bonding dimensions and quality.
High precision moulds from Germany.

Protection

High compressive and flexural strength.
High bind strength and earthquake resistant.
Low water absorption and permeability.
High weathering resistance.

Economy:

Ease and speed of construction.
Low on-site wastage and labour cost.
Consumes less cement.
Low/No plastering and painting cost.

Available in 8" 400mm * 200mm * 200mm
with 60mm rigid polystyrene insert having
density of 25/kg/m³



Literoof Housing Limited
#35, 7th Street, VSI Estate Phase II, Thiruvanniyur, Chennai- 600 041.
Ph: 044-24544949, +91 97899 79301/ 303 / 306 / 309
E-mail: shieeld@literoof.in Web: www.literoof.in



Corporate Office

No. 35, 7th Street
VSI Estate, Phase II
Thiruvanmiyur
Chennai - 600 041
Tamilnadu, India
Ph: 91 44 2454 4949 / 50 / 51
Fax: 91 44 2454 4242
Email: info@literoof.in, shieeld@literoof.in
www.literoof.in

Factory Address

No. 399 / 1 B & C
G.S.T. Road
(opp. Mahindra World City)
Chettipunniyam Village
Chengalpet Taluk
Kancheepuram District
Pin - 603204
Tamilnadu, India