1. INTRODUCTION

The "Cement Blocks/Bricks/Pavers" micro-scale business in Uttarakhand stands as a testament to a visionary entrepreneur's dedication to address the region's construction and infrastructure development needs. Nestled amidst the natural beauty of Uttarakhand, this venture embodies a profound commitment to providing high-quality and eco-conscious building materials, essential for the state's ongoing development.

At its heart, this business seeks to serve as a reliable partner to the construction industry in Uttarakhand, where varying terrains and climates demand resilient and adaptable building solutions. With a steadfast focus on quality, sustainability, and the promotion of local economic growth, this micro-scale enterprise aspires to play a pivotal role in Uttarakhand's construction landscape. Every cement block, brick, or paver produced is a testament to the dedication to quality and a vision of contributing to the state's infrastructure in a sustainable and environmentally responsible manner.

2. PRODUCT & ITS APPLICATION

The primary product line of this business comprises cement blocks, bricks, and pavers, meticulously crafted to cater to the diverse requirements of construction projects in Uttarakhand. Renowned for their durability and versatility, these building materials find extensive applications in:

- Cement Blocks: These robust blocks are utilitarian in both load-bearing and non-load-bearing walls, imparting structural stability to buildings. They are favored for their excellent thermal insulation properties.
- Bricks: The bricks offered by this business come in various sizes and types, catering to both structural and aesthetic demands. They play an indispensable role in constructing walls, facades, and fireplaces, ensuring structural integrity and architectural appeal.

- Pavers: These elegant pavers serve as ideal outdoor flooring solutions, enhancing the aesthetics and functionality of driveways, walkways, patios, and landscaping projects. They are a defining feature of outdoor spaces in Uttarakhand.

These products, proudly manufactured in Uttarakhand, have become integral components in the construction of residential buildings, commercial complexes, roads, pavements, and landscaping endeavors, contributing significantly to the region's ongoing development.

3. DESIRED QUALIFICATION FOR PROMOTER

The ideal promoter for this "Cement Blocks/Bricks/Pavers" micro-scale business in Uttarakhand should possess a deep understanding of the construction and building materials industry. This includes knowledge of cement-based product manufacturing, market dynamics, and regulatory compliance. Technical expertise in machinery operation and quality control is essential, along with strong leadership skills to manage a small team. A keen sense of the local market, environmental consciousness, and a commitment to sustainable practices are also highly valued qualities. Overall, the promoter should exhibit a blend of industry insight, business acumen, and a passion for contributing to the region's development through quality building materials.

4. INDUSTRY OUTLOOK AND TRENDS

The construction and building materials industry in Uttarakhand is undergoing significant transformation, spurred by the region's continuous growth in infrastructure and real estate projects. There's an escalating demand for durable and eco-friendly building materials, driven by a broader industry shift towards sustainable practices and environmentally responsible sourcing. Modern construction techniques and a preference for aesthetically appealing structures are also trends gaining momentum. In response, the "Cement Blocks/Bricks/Pavers" business is positioning itself to meet these evolving demands by offering high-quality, eco-conscious products.

The concrete block and brick manufacturing market in India, integral to this industry, is propelled by factors such as infrastructure reconstruction, residential construction, the push for eco-friendly building materials, and a focus on environmental sustainability. This market is on a trajectory to reach US$3.14 billion by 2027, expanding at a compound annual growth rate (CAGR) of 5%. This growth is underscored by a few key trends: supply chain disruptions that challenge the status quo, an increased consumer demand for eco-friendly concrete blocks and bricks, a rising preference for autoclaved aerated concrete blocks and bricks, and a noticeable transition from traditional clay bricks to concrete blocks. The Asia-Pacific region, with heavyweights like China, India, and ASEAN countries, dominates the hollow concrete block market, reflecting the region's massive consumption and demand for these materials. This demand in Uttarakhand aligns with the global move towards more sustainable construction materials, signaling a promising outlook for businesses within this sector.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY

Uttarakhand's construction market presents significant potential for growth, driven by a surge in infrastructure development projects, housing, and urbanization. However, marketing in the building materials sector requires a strategic approach. Effective branding, competitive pricing, and building strong relationships with contractors, builders, and local distributors are key factors for success. Additionally, navigating market fluctuations and addressing supply chain challenges, such as transportation and inventory management, may present occasional issues. The business is poised to overcome these challenges through a customer-centric approach, emphasizing product quality, and leveraging market opportunities to establish a strong foothold.

India Concrete Block and Brick Manufacturing Market, Major Players:

CRH plc, Wienerberger AG, Boral Limited, Acme Brick Company, UltraTech Cement Ltd., Xella Group, CEMEX S.A.B. de C.V. Lignacite Ltd., LCC Siporex Company, MaCon LLC, Midwest Block and Brick, Oldcastle, Magicrete Building Solutions Pvt. Ltd., General Shale Inc.

Construction Care Company: Address: Turner Rd, opp. shiv mandir, Tuntowala, C-24, Clement Town, Dehradun, Uttarakhand 248001. Phone: 099976 39962

Shree Krishna Sales: Address: General Mahadev Singh Rd, opposite Milan Vihar, Engineers Enclave, Kanwali, Dehradun, Uttarakhand 248001. Phone: 070556 60555

6. RAW MATERIAL REQUIREMENTS

The production of cement blocks, bricks, and pavers necessitates several raw materials, including cement, aggregates (sand and gravel), water, and additives. Cement serves as the binding agent, while aggregates provide strength and durability. The specific raw material requirements may vary based on the desired product characteristics. Ensuring a consistent supply of high-quality raw materials is essential for maintaining product quality and reliability. Sourcing these materials sustainably, in compliance with environmental regulations, is a key consideration to align with eco-conscious trends in the industry.

- Ambuja Cement Limited: Address: Lakesri, Uttarakhand 247661. Phone: 022 4066 7000
- Ultratech Cement Ltd. - Roorkee Cement Works: Address: Nalherideh, Roorkee, Uttarakhand 247668. Phone: 1800 210 3311

7. MANUFACTURING PROCESS

The manufacturing process of cement blocks, bricks, and pavers involves a series of well-defined steps. Each step contributes to the creation of high-quality building materials, crucial for construction projects in Uttarakhand.

Step 1: Raw Material Preparation: The process begins with meticulous preparation of raw materials, including high-quality cement, aggregates (sand and gravel), water, and additives. Proper storage and cleaning ensure uniformity, forming the foundation for successful production.

Step 2: Mixing: Precise measurements of cement, aggregates, and water are blended to create a consistent mixture. Correct proportions and thorough mixing are vital for homogeneity and product quality.

Step 3: Molding: The mixed material is placed into molds designed for the specific product type (blocks, bricks, or pavers). Durable molds maintain shape and dimensions, ensuring uniformity.

Step 4: Curing: Products enter a curing phase where controlled moisture and temperature conditions facilitate hydration for desired strength and durability. Curing is essential for structural integrity.

Step 5: Quality Control: Rigorous quality control involves testing raw materials, monitoring mixing ratios, and inspecting products. This ensures that products consistently meet or exceed industry standards.

Step 6: Finishing and Packaging: Products, after curing and quality checks, are finished with smoothing or texturing as needed. They are then carefully packaged for protection during transportation and storage.

Step 7: Storage and Distribution: Finished products are stored in controlled environments until distribution. Effective logistics ensure timely delivery to construction sites, wholesalers, retailers, or customers, meeting market demand and ensuring satisfaction.

The Bureau of Indian Standards (BIS) has several standards for cement blocks, including:

- IS 15658: 2021: Covers precast concrete blocks for paving. This standard specifies the minimum compressive strength and maximum permissible water absorption for precast concrete blocks. It also specifies the thickness requirements for precast concrete blocks.
- BIS-2185-part-3-Autoclaved-Cellular-Concrete-Blocks: Specifies that the actual dimensions of concrete blocks should be 10 mm shorter than the nominal dimensions.

The Indian standard code for concrete paver blocks also specifies the minimum thickness and strength of concrete based on traffic conditions. For example, for heavy traffic, the minimum compressive strength is 50N/mm2 and the minimum thickness of the paver block is 100 mm.

8. MANPOWER REQUIREMENT

Sr. No	Particulars	No. of Person	Months	Monthly Wages Amount/Person (Rs in Lakhs)	Monthly Wages - Total (Rs in Lakhs)	Annual Expenses (Rs in Lakhs)
1	Skilled	3	12	0.20	0.60	7.20
2	Semi-skilled	3	12	0.15	0.45	5.40
3	Unskilled	7	12	0.10	0.70	8.40
	Total					**21.00**

9. IMPLEMENTATION SCHEDULE

Sr. No.	Activity	Time Required *(in months)*
1	Acquisition of premises	3
2	Construction (if applicable)	2
3	Procurement & installation of Plant & Machinery	3
4	Arrangement of Finance	3
5	Recruitment of required manpower	1
Total time required (some activities shall run concurrently)		**8**

10. COST OF PROJECT

Sr. No.	Particulars	Amount (Rs in Lakhs)
1	Pre-operative Expenses	2.00
2	Land and Building	18.00
3	Machinery	45.50
4	Equipment and Furniture	1.05
5	Working Capital	21.00
	Total Project Cost	**87.55**

Assumed production capacity is 1000 bricks per hour with automatic machines available.
Market Selling Capacity assumed is 2000 bricks per day.

11. MEANS OF FINANCE

Bank-term loans are assumed @ 75 % of fixed assets.

Sr. No	Particulars	Percentage Share	Amount (Rs in Lakhs)
1	Promoter's Contribution	25%	21.89
2	Bank Finance	75%	65.66
	Total		**87.55**

12. LIST OF MACHINERY REQUIRED

A. Machinery

Sr. No	Particulars	Unit	Unit Cost (Rs in Lakhs)	Total Amount (Rs in Lakhs)
1	Automatic Concrete Block Making Machine	1	35.00	35.00
	Total Amount			**35.00**
	Tax, Transportation, Insurance, etc.			7.00
	Electrification Expenses (Wiring)			3.50
	Grand Total			**45.50**

B. Furniture & Equipment

Sr. No.	Particulars	Unit	Unit Cost (Rs in Lakhs)	Total Amount (Rs in Lakhs)
1	Office Furniture	Set	0.65	0.65
2	Computer and printer	1	0.40	0.40
	Total Amount			**1.05**

1. Hanje Hydrotech
   Plot No 2 Gat No 34, Sanjay Industrial Estate,
   Madhavnagar, Sangli Maharashtra,
   Mumbai - 400001, Maharashtra, India.
2. Revomac Industries
   Unit 1: Plot No-1,2&3,
   Shivadhin Industrial Estate, Beside HP Petrol Pump,
   Near Amba Hotel Cross Road,

Indore Highway Chandial,

Ahmedabad-382433, Gujarat, India

3. Hardic Machinery

   24, Shreeji Estate, Kujad Road,Bakrol Gidc

   Near Gopal Charan Estate, 382346,

   Bakrol Ahmedabad, Ahmedabad - 382415, Gujarat, India

13. SALES REALIZATION CALCULATION

Sr. No	Product	Quantity (in piece)	Sales in Percentage	Total Sales (Rs in Lakhs)
1	Cement Blocks	700000	100%	224.00
	Total		100%	224.00

14. PROFITABILITY CALCULATIONS

Sr. No	Particulars - Amount (Rs.)	Year-I (Rs in Lakhs)
A.	Sales Realization	
	Sales (Assuming 15% growth per year)	224.00
	Other Income (Assuming constant)	
	Total Sales Realization	224.00
B.	Cost of Production	
	i) Raw Materials	141.75
	ii) Utilities (Assuming constant)	2.25
	iii) Manpower (Salaries/wages)	21.00
	iv) Administrative Expenses (Assuming constant)	1.75
	v) Selling & Distribution Expenses (Assuming constant)	1.25
	viii) Interest (Assuming constant)	8.76
	Total Cost of Production	176.76
	No of Units Produced	7,36,479
	Cost of Goods Sold	0.0003
	Gross Profit/Loss (A – B)	48.25

	Less: Depreciation	7.01
C.	PBIT (Profit Before Interest and Tax)	41.25
D.	Income-tax (Assuming 28% tax rate)	11.55
E.	Net Profit/Loss (C - D)	29.7
F.	Repayment	8.76
	Retained Surplus (E - F)	20.94

15. BREAKEVEN ANALYSIS

Fixed cost	**Year-I (Rs in Lakhs)**
Depreciation	7.01
Interest	8.76
Manpower	6.30
Total Fixed cost	22.07
Variable cost	
Raw materials	141.75
Utilities	2.25
Manpower	14.70
Administrative expenses	1.75
Selling & distribution expenses	1.25
Total Variable cost	161.70
Contribution margin	**20%**
Break-Even Point in Value	11.03

16. STATUTORY/GOVERNMENT APPROVALS

Establishing and operating a cement blocks, bricks, and pavers manufacturing business in Uttarakhand, India, involves compliance with various statutory and government regulations. The following approvals and permits are typically required:

- Business Registration: Begin by registering your business entity with the appropriate authorities, such as the Registrar of Companies (RoC) or relevant state government departments.

- Trade License: Acquire a trade license from the local municipal corporation or panchayat, authorizing your business to operate within the jurisdiction.
- Environmental Clearance: Obtain necessary environmental clearances from the State Pollution Control Board (SPCB) to ensure that your manufacturing processes adhere to environmental norms and guidelines.
- Factory License: Depending on the size and scale of your operation, you may need a factory license issued by the Factory Inspectorate under the Factories Act, 1948.
- GST Registration: Register your business for Goods and Services Tax (GST) with the Goods and Services Tax Network (GSTN).
- Labor Compliance: Comply with labor laws, including the Employees' Provident Fund (EPF) Act and the Employees' State Insurance (ESI) Act, if applicable.
- Building and Land Use Approvals: Ensure that your manufacturing facility complies with local building and land use regulations. Obtain necessary approvals from the local planning authority.
- Fire Safety Certificate: Obtain a fire safety certificate from the local fire department, demonstrating that your facility is equipped with fire safety measures.
- Product Quality Standards: Adhere to Bureau of Indian Standards (BIS) or relevant product quality standards for cement blocks, bricks, and pavers. Ensure regular testing and certification of your products.
- Electricity and Water Connections: Secure electricity and water connections for your facility from the respective utility providers.
- Taxation Compliance: Comply with tax regulations, including Income Tax, Excise Duty, and other applicable taxes. File returns and maintain accurate financial records.
- Customs and Import/Export Licenses: If you plan to import or export materials or products, obtain the necessary customs and import/export licenses.
- Safety and Health Regulations: Implement safety measures and comply with health regulations to ensure the well-being of your workforce.

It's imperative to consult with legal and regulatory experts or government agencies to navigate the approval process effectively. Compliance with all statutory and government requirements is essential to operate your cement blocks, bricks, and pavers manufacturing business smoothly and in accordance with the law.

17. BACKWARD AND FORWARD INTEGRATIONS

Backward Integration:

- **Raw Material Production:** Engaging in or establishing partnerships for the production of raw materials used in cement blocks, bricks, and pavers, such as sand, gravel, and cement. This ensures a direct and stable supply of primary materials.
- **Cement Production:** Integrating backward by owning or collaborating with cement production facilities. This provides control over the quality and cost of cement, a key component in block and brick manufacturing.
- **Concrete Mix Production:** Establishing facilities for in-house concrete mix production ensures control over the formulation and quality of the mix used in block and brick molding.
- **Recycling Operations:** Implementing recycling operations for construction waste to recover materials like aggregates and cement for reuse in the manufacturing process, contributing to sustainability.

Forward Integration:

- **Branded Retail Outlets:** Establishing branded retail outlets to directly sell cement blocks, bricks, and pavers to consumers, enhancing brand visibility and allowing for direct interaction.
- **Online Sales Platforms:** Developing an online presence through e-commerce platforms to reach a wider customer base and facilitate direct sales of construction materials.
- **Customized Design Services:** Offering customized design and manufacturing services, allowing customers to personalize the appearance or dimensions of cement blocks, bricks, or pavers according to their specific needs.
- **Installation Services:** Integrating forward into installation services, providing end-to-end solutions for customers, including the delivery and installation of cement blocks, bricks, and pavers.
- **Landscaping and Construction Services:** Diversifying into landscaping and construction services, incorporating the use of the manufactured products in larger projects, such as paving driveways or building walls.

- **Exporting to International Markets:** Exploring export opportunities for cement blocks, bricks, and pavers in international markets, tapping into global demand for construction materials.
- **Collaboration with Home Improvement Stores:** Collaborating with home improvement retailers to feature cement blocks and bricks as part of DIY construction and landscaping projects, increasing visibility and accessibility.

18. TRAINING CENTERS AND COURSES

For entrepreneurs entering the Rose Empowering the youth of Uttarakhand to participate in the cement blocks, bricks, and pavers manufacturing business is essential for economic growth and entrepreneurship. Training centers and courses can play a pivotal role in equipping individuals with the necessary knowledge and skills to excel in this industry. The following training opportunities can be considered:

Production Techniques: Training programs can offer insights into the intricacies of cement-based product manufacturing. This includes hands-on experience in operating machinery, understanding raw material composition, and mastering the art of molding and curing processes. Practical training ensures that individuals are well-versed in the core aspects of production.

Safety and Environmental Awareness: Safety is paramount in manufacturing, and courses on workplace safety and environmental sustainability should be integrated. Training should emphasize safe handling of machinery, hazard identification, and eco-friendly manufacturing practices, aligning with modern industry trends.

Technical Skills: To operate and maintain machinery effectively, technical skills training is essential. Courses can cover machinery maintenance, troubleshooting, and repair. Technical proficiency ensures minimal downtime and efficient production. (https://swayam.gov.in/)

Disclaimer

Only few machine manufacturers/institutes are mentioned in the profile, although many machine manufacturers/institutes are available in the market. The addresses given for machinery manufacturers/institutes have been taken from reliable sources to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.