

Eco-Friendly Non-Fired Bricks in Nepal

- Introduction to Good Bricks System

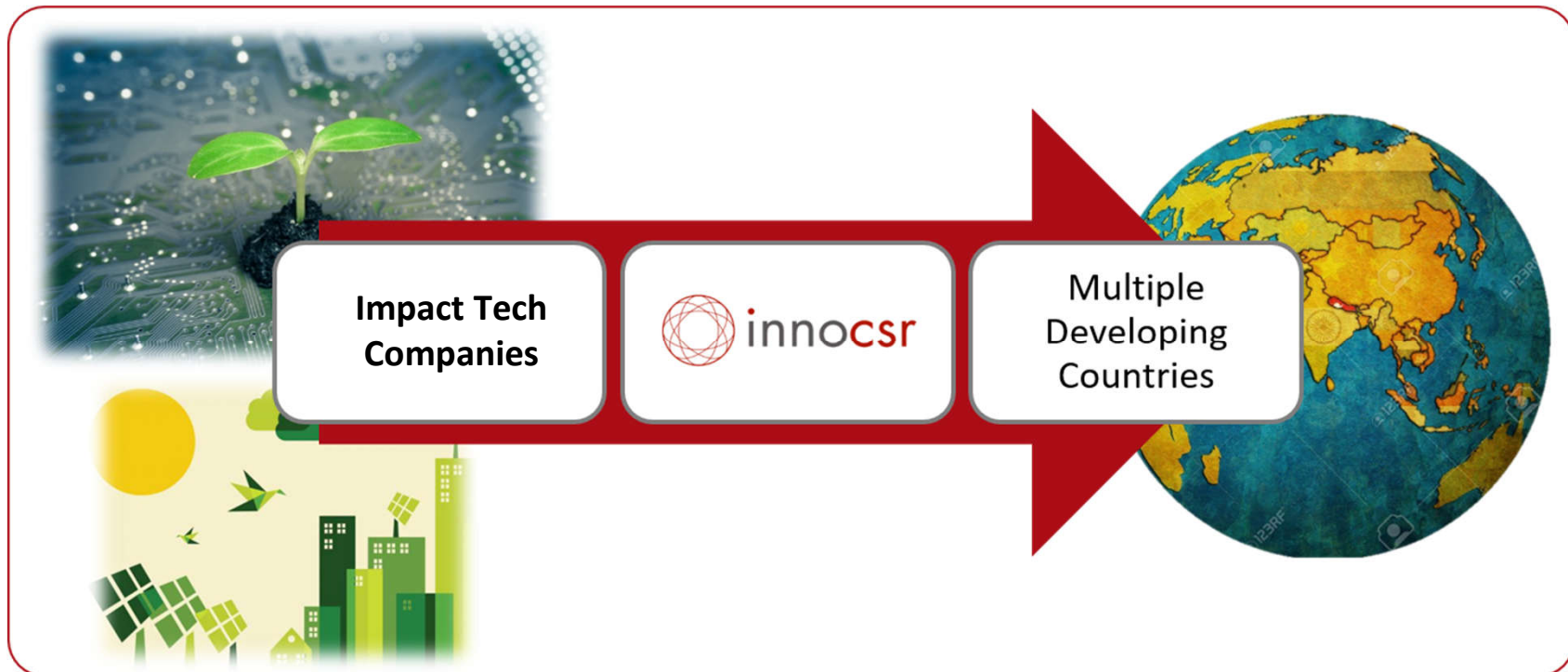


Good Bricks

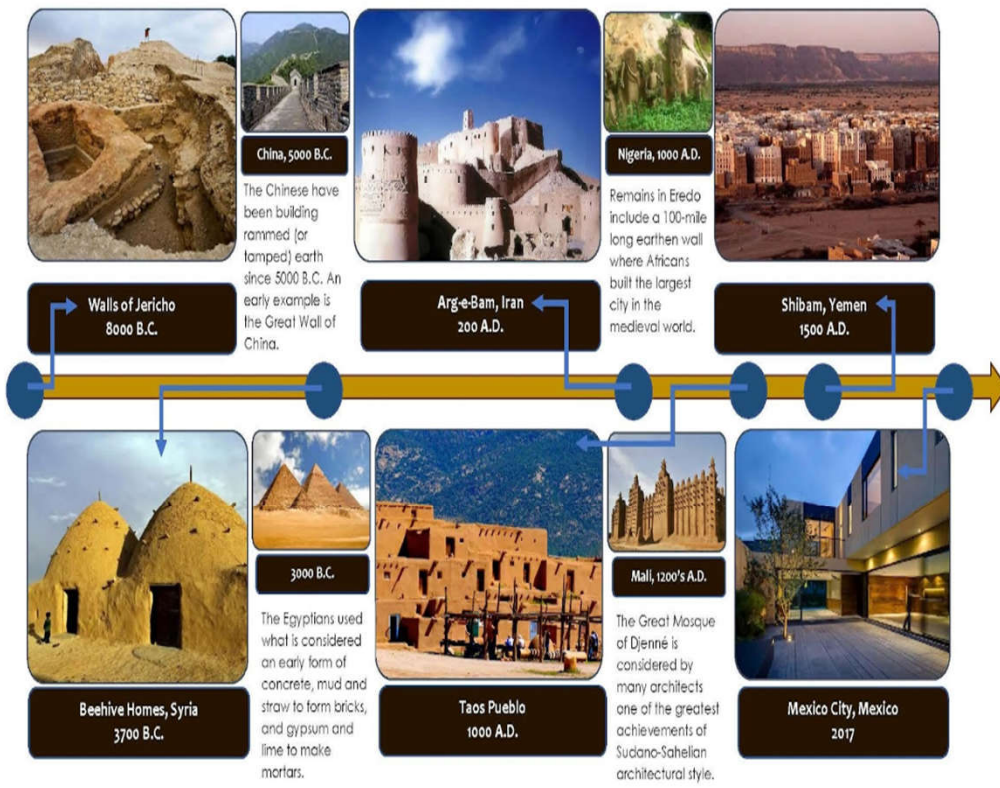
Oct 2023

InnoCSR introduces eco-friendly technologies to developing countries

InnoCSR is a Material Technology company established in 2008 headquartered in South Korea. InnoCSR has accumulated extensive global network and business insights. InnoCSR's **Technology Business NOW** uses these resources to help companies who have proven Green Technologies to go into developing countries to do good and do well.



History of Earthen Construction



History of Earthen Construction



- ◆ 30%-50% of the world's population currently lives in earth-based dwellings
- ◆ Earthen structures are found all over the world

Good Bricks System

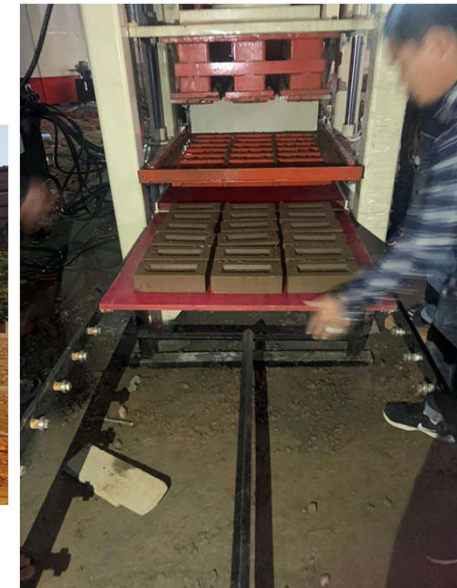
Good Bricks System (GBS)

Soil (90%) + Cement (9.8%) + **Good Soil Stabilizer (0.2%)** = **Non Fired Bricks**

Higher
Productivity

No
Pollution

Labor
Friendly



Transforming the old brick making technology to eco friendly automated technology

Why Good Bricks?

Fired Bricks

Production day 28 days

Labor 300+

Seasonal production

1Grade, 2Grade, 3Grade
brick with unequal shape
and size

Environment Unfriendly

Good Bricks

Production day 7-10 days
(75% Reduction)

labors and land by
decrease by 90%

Whole year production
with multiple shift

1Grade brick with
Uniform shape and size

Environment Friendly

Good Bricks System increases productivity significantly

Good Bricks System: Manufactured by Soil Stabilizer and Brick Making Machine



Good Bricks System hardens and cures bricks using Soil Stabilizers instead of baking bricks in Kilns, **reducing 75% of production time (28 days → 7-10 days)**

Good Bricks System can be manufactured during rainy season and night time, since all process can be done **indoors**, under the same roof

Initial Investment in Good Bricks System is 1/5 of building a new kiln

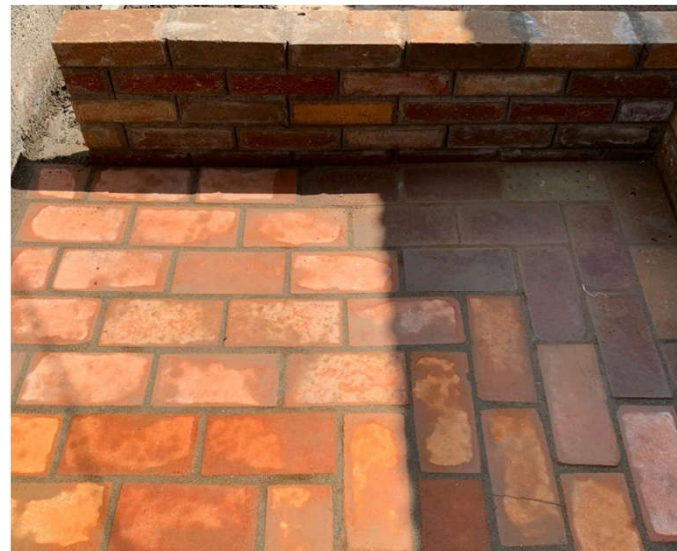
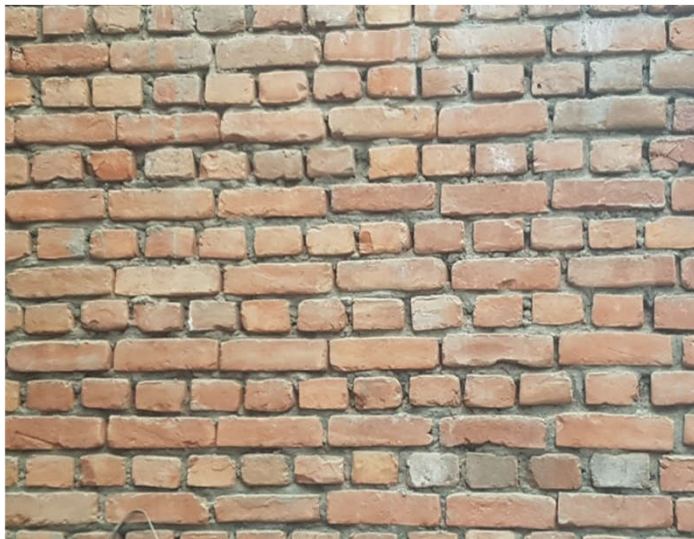
Hence, Productivity increase is expected at 10X compared to existing Fired Brick Solution

Good Bricks system produces better quality bricks

– Easier Construction, Less Construction Materials, and Better Results



VS.



Normal Bricks

Good Bricks

Good Bricks system is beneficial

Traditional Brick Kiln System



- Average yearly production = 5.14 billion
- Average Hire of HR = 300+ People
- Challenging Policy from Government due to pollution
- High dependency on foreign labors and coal

Good Brick System



Average yearly production = 10 – 20 million per machine (8 and 16 Hours of Production)
Average HR Required = Minimum 20 people
No hassle on approval from Nepal Government
No Environmental issues, No Labor Issues
No Coal supply issues
Easily Expandable to multiple machines → Above # is for '1' machine only
Land requirement 10% of Local Brick Kilns
Use of locally available resources (cement, soil, labor and Soil Stabilizer)

Good Brick system is good for Nepal's Environment

Energy consumed by a **Good Brick = 0.0036 Wh per brick**
 (Considering 15 million bricks production consume 536 KWh energy).

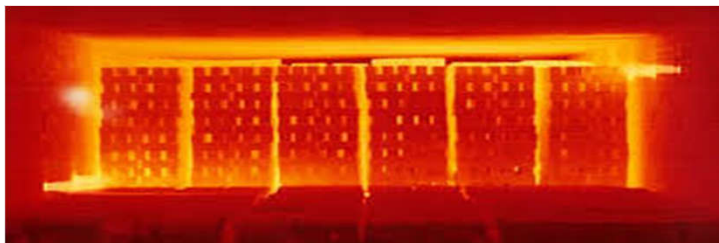
Energy consumed by **conventional brick = 2230 Wh per brick**
 (Considering 5 billion bricks consume 1 million ton coal each year. Thus **1 brick consume 0.2 kg of coal as energy**).



- **No Brick Burning Process** - No combustion of fossil fuel

Conventional Brick Making

Kilns emit large amounts of CO2 by using coal to bake bricks



Good Bricks System

Bricks are made with machines and stabilizers, without the need of fire



Good Bricks System will need 8 – 12 weeks to be tested and installed



- Feasibility Test will take approximately 12 days from the date of soil arrives at InnoCSR’s Good Bricks Test Center (GBTC) in KTM
- After initial order is placed, It will take approximately 8-12 weeks for machine and soil stabilizer to arrive in Nepal



Good Bricks Test Center



Sample Good Bricks at Test Center



Good Bricks Vs Traditional Bricks

Good Bricks System meets the Nepal Gov's Standard



Requirement of Nepal Government on Construction Bricks (For Fired Brick A class=7.8 Mpa ,B class =3.5 Mpa) (For CSEB A class=5-7 Mpa, B Class-2-5 Mpa)
 Good Bricks System meets the requirement.



TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING, THAPATHALI CAMPUS
MATERIAL TESTING LABORATORY
 THAPATHALI, KATHMANDU
 Institute of Engineering, Thapathali
 Material Testing Laboratory
 2076

Ref. No.:42/077/078

Date : 2077/11/10

COMPRESSIVE STRENGTH TEST

Company Name: InnoCSR Nepal Pvt. Ltd.
 Material: InnoCSR Nepal Bricks

Report No: 7711MTL028

Description	Unit	S-1	S-2	S-3	Remarks
Date of testing		2077/11/07			
Dimension	cm.	23.66*11.35*5.25	23.67*11.38*5.24	23.56*11.35*5.11	
Surface area	cm ²	268.54	269.36	267.41	
Volume.	cm ³	1409.84	1411.47	1366.44	
Weight	gms	2812.00	2790.00	2680.00	
Density	g/cm ³	1.995	1.977	1.961	
Breaking Load	KN	438.95	448.80	498.15	
Breaking Strength.	Mpa	16.35	16.66	18.63	
Avg. Breaking Strength.	Mpa	17.21			

Material supplied By: Inno CSR Nepal Pvt. Ltd.

Dated :- 2077/11/07

Chinaki
 Tested By
 Chinakaji Maharjan
 Deputy Instructor

Yadin
 Yadin Shrestha
 Head
 Civil Department

Soil, Rock and Concrete Laboratory NEA.		Compressive Strength Test		
Client : GCB Bricks (InnoCSR Nepal Pvt. Ltd.) Date : 2079.1.19				
Sample No.	1	2	3	
Date of Testing				
2079.1.13				
Original Dimension cm	Length	23.00		
	Breadth	10.95		
	Height	6.13		
Sample Weight, gm		2690.30	2715.60	2779.30
Testing Dimension cm	Length	23.00	23.00	23.00
	Breadth	10.95	10.95	10.95
	Height	6.13	6.13	6.13
Sample Weight, gm		2903.80	2937.50	2985.40
Surface Area, cm ²		251.77	251.77	251.77
Volume, cm ³		1544.33	1544.33	1544.33
Density, gm/cm ³		1.88	1.90	1.93
Failure Load, kN		357.90	350.10	393.30
Compressive Strength, Mpa		14.22	13.91	15.62
Mean Compressive Strength, Mpa		14.58		

Shrey *Pf.*

Soil Rock & Concrete Laboratory
 NEA
 Bhagwan Pan, Swayambhu Kathmandu

Good Bricks System meets the Nepal Gov's Standard



SHRI RAM ANALYTICAL LABORATORY

Mob: 9910058519, 9910056519
 Land Line : 0120-2758266
 E-mail : shriramalab@gmail.com
 Web : www.shriramalab.com

Test Report

Report No : SRAL/SOP/01906014	Date : 08/06/2019
Issued To : M/S Rextear systems	Your Reference : Email
Plot no 260 ecotech 3 rd Udyog	Date of Receipt : 05/06/2019
Kendra 1 st Gr. Noida (U.P) 201306	Our Reference : Email
	Test Started on : 05/06/2019
	Test Completed on : 08/06/2019
	Page No : 1 of 1

Sample Description : One Sample received as "Sample No - 2 Brick 15%"

"Analysis of Brick"					
S.No.	Parameter	Lot 1	Average	Limit	Method
1.	Water Absorption %	14.98	14.98	20 Max.	IS:3495:Part 2:1992
2.	Compressive Strength N/mm ²	8.56	8.56	7.5 Min (For Grade 7.5)	IS:3495:Part 1:1992

Remarks: on the basis of above tested parameters sample is found good for use
 Limit is given as per IS: 13757

*****End of Report*****

Terms & Conditions

- > Total liability of our laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
- > The results listed refer only to the tested sample and applicable parameters. Enforcement of product is neither inferred nor implied.
- > The sample description is not verified in all cases and is given "As described" by customer. Sample not drawn by us and analysis conducted on "As received basis" unless specified otherwise.
- > Sample disposed after suitable retaining period.
- > a) Perishable items: Immediately after reporting.
- > b) Water Samples/Non-perishable items: After four week of reporting.
- > Any Complaints about this report should be communicated in writing within 7 days of issue of this report.
- > This report is not to be reproduced wholly or in parts and cannot be used as evidence in a court of law and shall not be used in advertising media without permission of CSD in writing.
- > As the final results are feeded manually in the computer by a human being so if any clerical error occurs its only a matter of human mistake so please confirm this to the lab within a period of 7 days & we will rectify it within a stipulated Time.
- > All disputes are subject to the Charabada Jurisdiction.
- > We hereby declare that we are not concerned & misrepresented in any manner what it shall be to "SRAL Shri Ram Institute for Industrial Research Dept."
- > E & O E

662/12, I-Floor, Old Kirana Committee Building, Ram Nagar, Kirana Mandi, Ghaziabad - 201001 (U.P.)

Sagarmatha Engineering Lab (P).Ltd.
 Banasthali, Kathmandu
 Email: info@sagarmathalab.com.np
 Website: www.sagarmathalab.com.np

Client	Inno CSR Nepal Pvt.Ltd.		
Sample Name	Karachi Sample Brick		
Mix Composition:			
Soil	90%		
Cement	9.80%		
0.2 % Good Brick Soil Stabilizer			
Test Standard:	IS 1077, IS 2180 and NS 1/2035		
Soil Location	Karachi Pakistan		
Casting Date	2080/04/04	Testing Date	2080/04/16
Compressive Strength Test of Brick			
Specimen No:	1		
Length of Brick, L mm	239		
Breadth of Brick, B mm	113		
Height of Brick, H mm	50		
Volume of Brick, V=(LxBxH)/10³ mm³	1347936.3		
Weight of Brick, gm	2641		
Density, D=m/V Kg/m³	1959.3		
Loaded area, A mm²	27048.8889		
Load KN	235		
Corrected load, M KN	251.685		
Corrected strength, N/mm²	9.30		

Tested by:

Checked by:

Note: Sample Provided by Client

Good Bricks System is Scientifically Proven

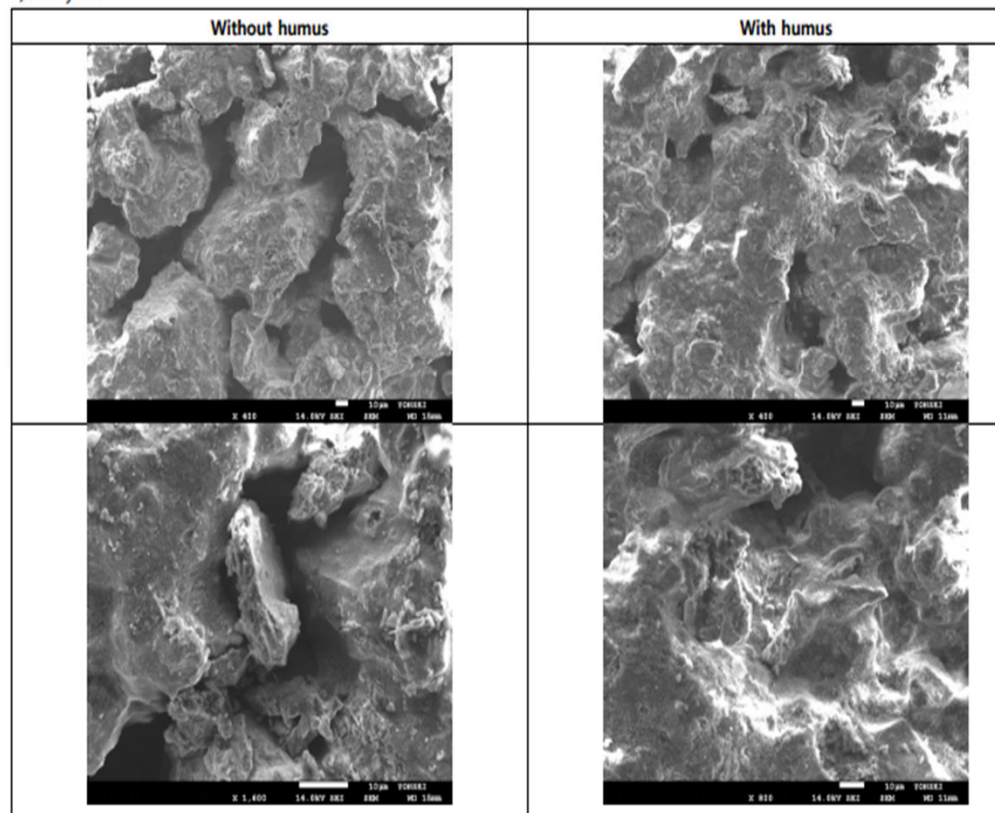
What is the scientific theory behind soil stabilizers?

Mineral salt such as, sodium chloride and magnesium chloride are mixed with water to create a Pozzolanic reaction, which will break the chemical bonds of the organic matter in the soil mixture.

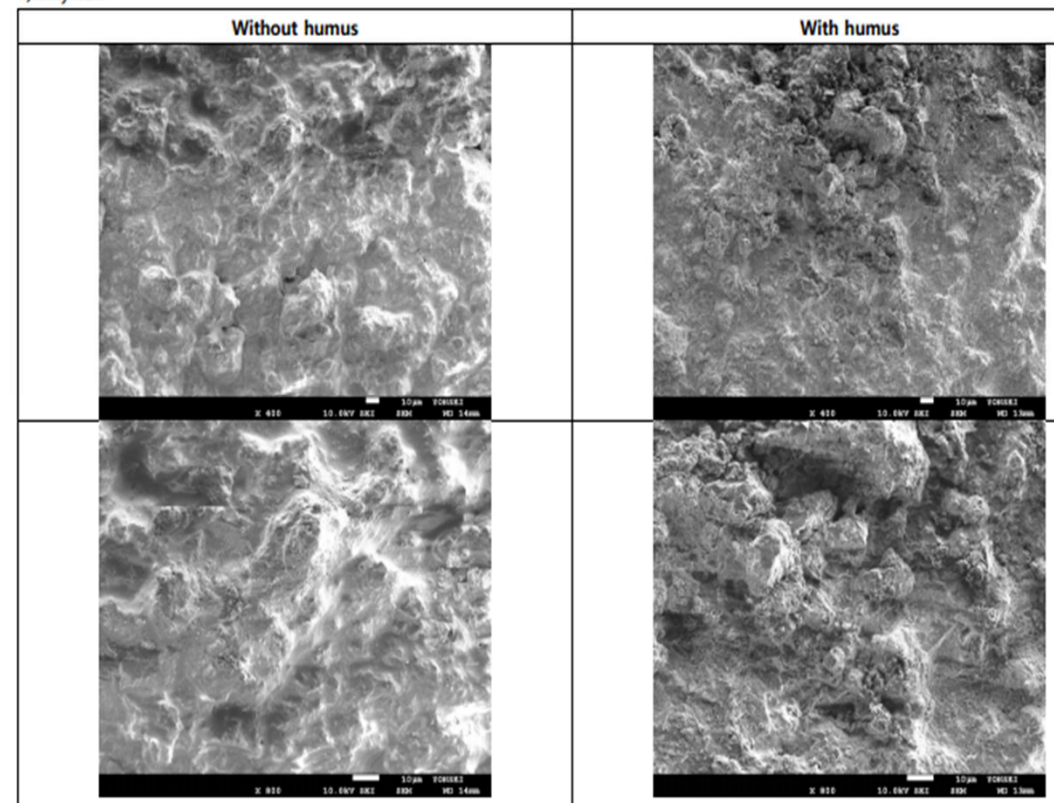
Soil stabilizers will react to these surfaces and create an ionic bond effect that will stiffen and consolidate inorganic matter. This will condense inorganic matter. soil, and cement to secure a significant amount of strength.

3. Scanning electron microscopic images (SEM)

1) Sandy soil



2) Silty soil



SS toxic Report



08165 21, Yangcheong-gil, Ochang-eup, Cheongju-si, Chungbuk, Korea
Tel: 043-711-8888 Fax: 043-711-8884

TEST REPORT

APPLICANT : SUBSURFACE INFORMATION TECH. REPORT NO. : M281-18-00187
 SAMPLE RECEIVED DATE : 2018-06-20
 REPORT ISSUED DATE : 2018-07-09
 PAGE : 1 OF 2

DESCRIPTION : ONE(1) PIECE OF SUBMITTED CUTTING SAID TO BE SOIL.

ITEM : BASE / SUBBASE COURSE OF PAVEMENT WITH HUMUS-B(SOIL STABILIZER)

TEST CONDUCTED : AS REQUESTED BY THE APPLICANT, FOR DETAILS PLEASE SEE ATTACHED PAGES.

PREPARED AND CHECKED BY
FOR FIOTI

Hak Joo, Lee

HAK JOO, LEE
QUALITY MANAGER

AUTHORIZED BY
FOR FIOTI

Jun Se Jun

JE-GOO JUN
PRESIDENT

Report Verification No.: SHET-RGLK-1LR4

(You can see the authenticity of your test report through the above "Report Verification No." at FIOTI homepage.)

DOCUMENT SERVICE

The test results contained in this report are based on the samples that is provided by client and are not necessarily indicative or representative of the quality of the soil that which the samples were taken or of all products. Results contained in this report are not based on the quality certification of service by the FIOTI quality certification program unless specifically requested by the client. Further use of the results of this report is prohibited unless allowed under a separate agreement set forth in an official document that is additional between the client identified on this letter and the FIOTI. This test report is prepared in KCPA&S accreditation.



08165 21, Yangcheong-gil, Ochang-eup, Cheongju-si, Chungbuk, Korea
Tel: 043-711-8888 Fax: 043-711-8884

REPORT NO.: M281-18-00187
PAGE : 2 OF 2

TEST ITEMS	UNIT	DETECTION LIMIT	THE WORKSOME LEVELS OF SOIL CONTAMINATION			TEST RESULTS #1	TEST METHOD
			LEVEL.1	LEVEL.2	LEVEL.3		
CADMIUM (Cd)	mg/kg	0.10	4	10	60	0.13	NATIONAL INSTITUTE OF ENVIRONMENTAL RESEARCH NO.2017-22 (2017.8.11)
COPPER (Cu)	mg/kg	1.0	150	500	2 000	9.3	
ARSENIC (As)	mg/kg	1.50	25	50	200	2.95	
MERCURY (Hg)	mg/kg	0.01	4	10	20	ND	
LEAD (Pb)	mg/kg	1.5	200	400	700	26.9	
HEXAVALENT CHROMIUM (Cr ⁶⁺)	mg/kg	0.5	5	15	40	ND	
ZINC (Zn)	mg/kg	1.0	300	600	2 000	46.8	
NICKEL (Ni)	mg/kg	0.4	100	200	500	2.8	
FLUORINE (F)	mg/kg	10	400	400	800	253	
ORPs	mg/kg	0.05	10	10	30	ND	
PCBs	mg/kg	0.05	1	4	12	ND	
CYAN (CN)	mg/kg	0.2	2	2	120	ND	
PHENOL	mg/kg	0.02	4	4	20	ND	
BENZENE	mg/kg	0.1	1	1	3	ND	
TOLUENE	mg/kg	0.1	20	20	60	ND	
ETHYLBENZENE	mg/kg	0.1	50	50	340	ND	
XYLENE	mg/kg	0.1	15	15	45	ND	
TPH	mg/kg	50	500	800	2 000	199	
TCE	mg/kg	0.1	8	8	40	ND	
PCE	mg/kg	0.1	4	4	25	ND	
BENZO(a)PYRENE	mg/kg	0.005	0.7	2	7	ND	

NOTE) NO = NOT DETECTED = LESS THAN DETECTION LIMIT

"" End of The Report ""

DOCUMENT SERVICE

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Durability



Durability



Sample House made from Good Bricks



Constructed On 2020



The building
Today



Building constructed with Good Bricks



Constructed On 2019



The building Today



Building constructed with Good Bricks



Building constructed with Good Bricks



Building constructed with Good Bricks



Norms And Specification, Standards (National)

- According to Nepal National building Code (NBC 202:2015)

- Section 3.2

- Bricks: The bricks shall be of a standard rectangular shape, burnt red, hand-formed or machine-made and shall conform to the Nepal Standard NS: 1/2035. Bricks used as masonry units shall be of class A1 or class B1 as per NS: 1/2035 with compressive strength as specified in clause 5.5

- 3.4 Stabilized Soil Block

Stabilized soil blocks to be used for the masonry shall be free from major deformation and visible cracks. The stabilized soil blocks can be prepared from soil mixed with stabilizers such as lime, cement, bitumen, and the like. The size of stabilized soil blocks are generally 300mmx150mmx100mm. The crushing strength of stabilized soil blocks shall not be less than 3.5N/mm².

- According to the (NBC 000)Section 1.4.3

- 1.4.3 Masonry

- The use of burnt-brick-in-cement-mortar masonry as a structural element in a highly seismic country like Nepal is not preferred and alternative materials should be chosen wherever possible.

Following is the part of Design Catalogue that includes Compressed Stabilized Earth Brick/Block Masonry (latest update 2017).

Design Catalogue Volume II

INTRODUCTION

DUDBC has prepared second volume of Design Catalogue and named it as “**Catalogue for Reconstruction of Earthquake Resistant Houses Volume II**”. The Catalogue includes architectural design, structural detailing and material estimate. The main objective is to support urban and rural households in reconstruction of their houses.

The model designs of seventeen houses provided in the catalogue are placed under the following twelve technologies:

- Interlocking Brick Masonry
- Confined Hollow Concrete Block Masonry
- Hollow Concrete Block Masonry
- Compressed Stabilized Earth Block Masonry
- Random Rubble Masonry with GI Wire Containment
- Bamboo and Stone Masonry Hybrid Structure
- Rat Trap Bond Masonry
- Earth Bag Masonry
- Light Gauge Steel Structure
- Steel Structure
- Timber Structure
- Debris block Masonry

The designs provided in this catalogue are based on calculations, model test and analytical tests as these technologies are not covered by Nepal National Building Code, 2060. These designs are approved by Ministry of Urban Development. For each design included in the catalogue, the following information is provided:

- 3D view of the design
- Floor plans
- Elevations
- Section
- Structural Details
- Quantity estimate of major materials

Designs included in this catalogue can be selected and used as they are, for reconstruction of urban and rural housing . For designs, other than those included in this catalogue, detailed engineering design and approval from concerned authorities shall be done.

Compressed Stabilized Earth Block (**CSEB**) Technology makes use of mud as a predominant building material. The properties of soil used are improved by using stabilizers like cement. The proposed technology is very suitable for rural areas where local materials are used and their quality improved by adding small quantities of non local materials. Featured design C.S.E.B.-4.1 is a low cost, single storied two room residential units of load bearing stabilized earthen block walls with mud stabilized soil roof over bamboo rafter and purlins. Design Model C.S.E.B.-4.2 is a two storied residential units with eight rooms. Load bearing walls are made of Earthen block stabilized with chemicals.

MATERIAL PROPERTIES(C.S.E.B 4.1)

Block Size: 30cm X 20cm X10cm

Min Compressive Strength on gross area CSEB: 3.5 Mpa

MATERIAL PROPERTIES(C.S.E.B 4.2)

Properties	Solid Brick
Size	230*110*55 mm
28 days dry compressive strength	7.5 - 10 MPa
28 days wet compressive strength (after 24 hours immersion)	3 - 4 MPa
Apparent bulk density	2100 - 2350 kg/m3
Total Water absorption	5 - 10 %
Moisture content	< 0.03%
Dry Shrinkage	< 0.04%
Shell thickness	-

C.S.E.B.-4.1
C.S.E.B.-4.2

National and International

Standard Norms and Specification for CSEB Block

CSEB Green Buildings in Nepal

July 2012

Hari Darshan Shrestha

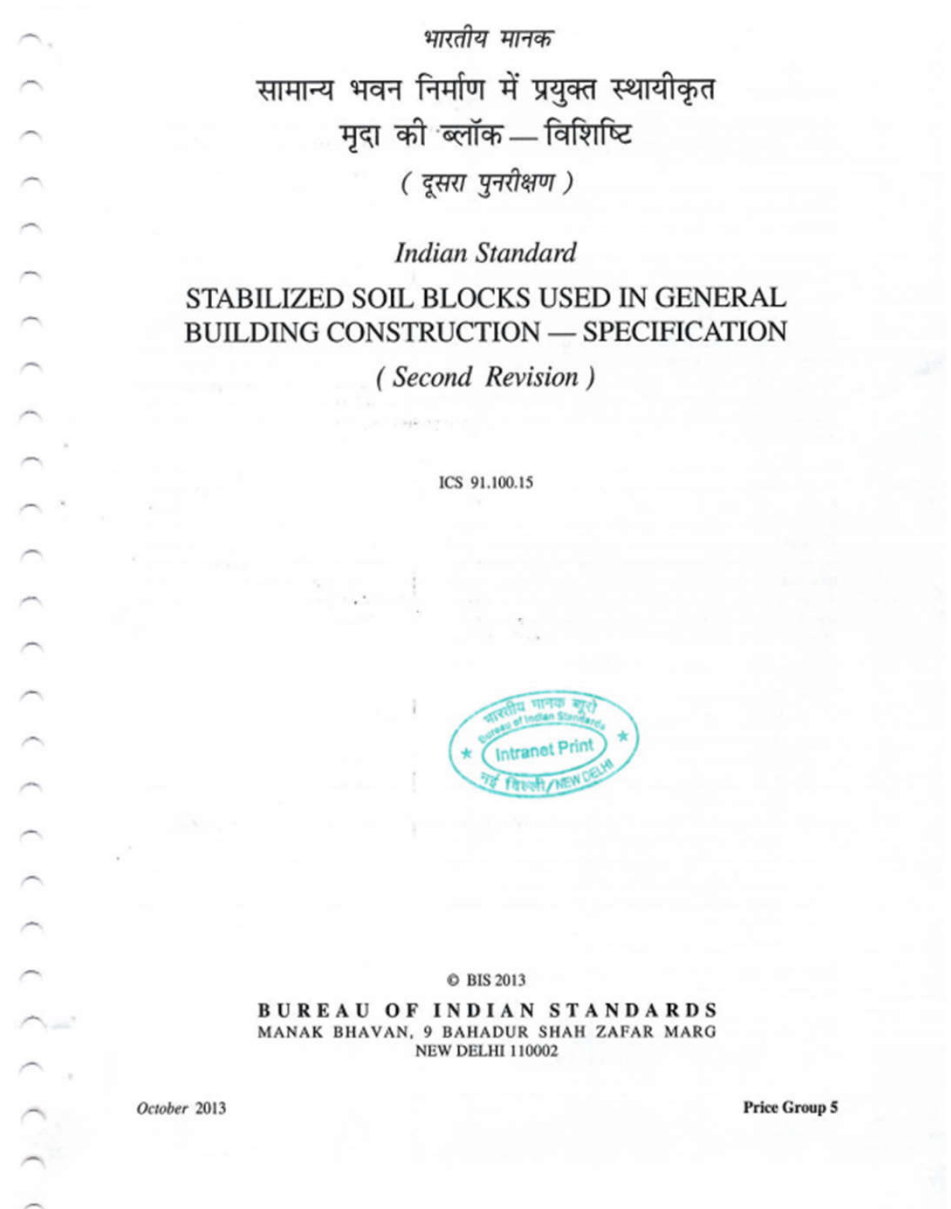


Government of Nepal
Ministry of education
Department of Education

Action Aid International Nepal



This manual is developed by
Centre of Resilience Development
(CoRD)



Current Standards for CSEB



LIMITATIONS, IF ANY

- Not suitable for high rise structures. However, can be used for non-load bearing applications or filler walls.
- In order to have quality production of blocks, the soil need to be tested characterized and design mix need to be prepared.
- Training of masons and artisans are required.

MARKET LINKAGES

- The precast components can be locally cast near construction site.
- It can also be produced by small entrepreneurs and supplied to consumers at State/ Block/ village level

MAJOR PROJECTS

- 2,698 earthquake resistant houses, after the 2001 Bhuj earthquake in Gujarat.
- Auroville Kindergarten, Solar kitchen Prarthna apartments, Tibetan pavilion, etc.
- Primary School at Jantanagar, Nepal - Built in 20 days with the community (Precasting was done in 3 months)
- Al Medy Mosque at Riyadh, 420 m², 18.05 m high minaret - Built in 7 weeks with ~ 75 unskilled masons and ~ 150 workers
- Kaza Community Centre, Spiti valley, India – Rammed earth - First prize (Low Carbon Award) from Green Building & City Solutions Awards 2016
- Sharanam at Pondicherry - Double storey lodges



CERTIFICATION/INDIAN STANDARD/ ENDORSEMENT

- IS 1725-2013 Stabilized Soil Blocks for General Building Construction
- GSDMA India, adopted CSEB for the rehabilitation of the regions affected by the January 2001 Gujarat earthquake in Kutch district
- Government of Iran (Housing Foundation) adopted CSEB for the rehabilitation of the regions affected by the December 2003 earthquake in Bam.
- The government of Tamil Nadu (Tsunami Relief and Rehabilitation), India, for the reconstruction of the zones affected by the December 2004 Indonesian tsunami.

CURRENT STANDARDS FOR CSEB

CSEB was first introduced in 1950s and earth construction methods have a very long history. However, the development of standards and specifications related earth construction methods are very poor and Table gives a summary of available standards.

Table 3 Available Standards for CSEB

Publication	Standard or Code of Practice	Critical Parameters
IS 15:1725-1982 Specification for Soil Based Block Used in General Building Construction: First Revision (2)	Standard	Block sizes, Compressive Strength (not less than 20 kgff/cm ²), water absorption (not more than 15%)
Australian Handbook of Earth Construction (3)	Handbook	Covers many aspects of earth construction. Defines soil parameters, construction methods including rammed earth.
New Zealand Standard on Earth Construction (4)	Standard	Covers many aspects of earth construction. Defines soil parameters, construction methods including rammed earth.
New Mexico Building Code (1)	Appendix to standard	Brief addition to cover aspects of earth construction.

International Standards

2.2.2 Cement stabilisation

2.2.2.1 Efficacy and dosage

The efficacy of the dosages depends on the texture and structure of the earth, and on how it is used. 4 to 12% of the weight of the dry earth gives good results. Some types of earth require only 3% whereas others, with the same dosage, behave less well than without the cement. In general, at least 6% cement is needed to obtain satisfactory results. Compressive strength remains highly dependent on the dosage.

The dosages indicated are relative to dry weight and are determined in laboratory conditions. Measures for checking in the workshop or on site should take account of the specific hygrometric conditions existing locally.

2.2.2.2 Efficacy parameters

1) *Types of earth*

Almost all types of earth can be stabilised with cement. The best results are obtained with gravely and sandy types of earth. Compression at optimum water content is the most efficient.

2) *Organic matter*

This is recognised as deleterious, and as a general rule, an organic matter content in excess of 1% is risky; earth containing more than 2% should not be used.

3) *Sulphates*

When dry, calcium sulphates, which are frequently found, are less deleterious than magnesium sulphates. When wet, sulphates are always very deleterious. Sulphates destroy the hardened hydraulic binder matrix and increase the sensitivity to humidity of the clays. A specific study for earth containing more than 2 to 3% total sulphate content is indispensable.

4) *Oxides and metallic hydroxides*

Essentially, these are iron and aluminium oxides which are rarely present in excess of around 5% and which in that event have little effect. In types of earth containing more than 5%, stabilisation has been observed to be highly effective with little cement.

5) *Water*

In principle one should reject water containing organic matter and salty water: these may cause efflorescence. Water rich in sulphates may be unfavourable.

2.2.2.4 Additives

Certain products, added in small quantities to the earth-cement during mixing, can improve certain of its properties.

1) *Reducing sensitivity to organic matter*

Slaked lime, used at 2%, can reduce the deleterious effect of organic matter, as can calcium chloride (0.3 to 2%) which also accelerates the setting of the cement.

2) *Modifying the plasticity of the earth*

Slaked lime can also be used to modify the plasticity of the earth and to restrict the formation of nodules.

3) *Rendering the earth water-proof*

Bitumens, in emulsion or cut-back, used at 2 to 4%, enable CEBs to be made impermeable.

Press Release:

Press Conference at Hotel Shangri-La held on 4th Mar 2020:

नेपालमा असल ईटा उत्पादन प्रविधिको सुरुवात

epaper.nagariknetwork.com



NMB Bank

NMB Bank launches home loans with fixed interest for five years

KATHMANDU (REPUBLICA): NMB Bank has launched an enhanced variant of its home loan product, with interest rate fixed for 5 years. The offer comes with fixed interest rate of 11% per annum with the said rate being locked for 5 years. However, the maximum tenure under the NMB home loan fixed interest rate is up to 25 years. According to the officials of the bank, the product offering is one of the best in the housing loan segment in the industry and the objective of the product is to bring a sense of respite to the mental and financial pressure that customers face with fluctuating interest rates on their home loans.

REPU KATHM

The
a new
per to
domest
day.

Acco
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Gold
Associ
the yell
at Rs 78,
price of
2,200 in

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coronavi
United S
investing
sider inv
safe hav
the price
said Sun



InnoCSR Co Ltd

Non-fired bricks technology enters Nepal

KATHMANDU (REPUBLICA): InnoCSR Co Ltd of South Korea is formally launching its non-fired brick business and Good Bricks Alliance. Issuing a statement on Wednesday, the company said its non-fired bricks solution, named as Good Bricks System, is an innovative method of producing bricks without baking by using soil stabilizer, cement and soil. Gorkha Innotech Pvt Ltd has adopted InnoCSR's good bricks technology in Gorkha, according to the company. Osika Neupane, marketing and sales manager of InnoCSR, said the production of bricks without baking plays a huge role in making environment safe and clean

काठमाडौं, २१ फागुन (कास): नेपालमा इन्नोसिएसआरले औपचारिक रूपमा असल ईटा उत्पादन (आगोले नपोली उत्पादन गरिने ईटा) पद्धतिको व्यवसाय सुरुवात गरेको छ। इन्नोसिएसआरले माटो, सिमेन्ट, सोइल स्पेपलाइजर र पानीको मिश्रणबाट आगोमा नपोली बनाइने ईटाको प्रविधि सुरु गरेको छ। आगोले ईटालाई पोल्नुपर्ने परम्परागत विधिमा ईटा भट्टाले धेरै वातावरणीय तथा स्वास्थ्य निम्त्याएको समस्याहरू अन्त्य गर्न असल ईटा उत्पादन प्रविधिले सहयोग गर्ने कम्पनीले जनाएको छ। कम्पनीले बुधवार पत्रकार सम्मेलनको आयोजना गरी असल ईटा उत्पादन प्रविधिको सुरुवात गरेको जनाएको छ। यो प्रविधिबाट ईटा उत्पादन गर्दा १० गुणा उत्पादकत्व वृद्धि हुने, धेरै अदक्ष कामदारहरूको प्रयोग नहुने साथै कामदारहरूको प्रयोगभन्दा उच्च गुणस्तरको हुने, समान मूल्यमा उपभोक्तृसम्म पुग्ने र उत्पादकहरूलाई अधिकतम आमदानी गराउने कम्पनीले जनाएको छ। कोरियन प्रविधिमा आधारित यो विधिले अधिकतम ईटा उत्पादन कम लागतमा उत्पादन



गर्न मद्दत मिल्ने र वातावरणीय तथा सामाजिक समस्याहरूको समाधान गर्ने जनाएको छ। इन्नोसिएसआर २००८ मा स्थापना भएको कोरियन कम्पनी हो। यसले कोरियालागायत विश्वका विकासोन्मुख देशहरू मलेसिया, फिलिपिन्स, चीन र नेपालमा ईटा उत्पादनको क्षेत्रमा काम गरिसकेको छ। इन्नोसिएसआरका सीईओ साम योनसुक लिले सुरुवाती समयमा नेपालको विभिन्न क्षेत्रहरूमा करिब

१८ महिना माटोको परीक्षण सम्पन्न गरेको बताए। यो प्रविधिमा आधारित गोरखा इन्ोटेक प्रालिले सन् २०२० फेब्रुअरीमा इन्नोसिएसआरको असल ईटा पद्धति अवलम्बन गरी गोरखाका उपभोक्तृहरूलाई विक्री वितरण गरी सुरु गर्ने तयारी गरेको छ। यस उद्योगले करिब २ करोड ईटा वार्षिक रूपमा उत्पादन गर्ने जनाईएको छ। साथै स्थानीयहरूले घर निर्माण गर्न असल ईटाको प्रयोग गर्न थालिसकेको कम्पनीले जनाएको छ। पुल्चोक,

ललितपुरको इन्जिनियरिड क्याम्पसको निर्माण सामग्री परीक्षण प्रयोगशालामा असल ईटाको धेरै पक्षहरूको प्राविधिक जाँच गरी यसको कडापन १० एमपीए रहेको प्रमाणित गरेको छ। यसका अतिरिक्त यस कम्पनीले असल ईटा उत्पादकहरूको एउटा सघ सगठन गठन गरेको छ। जसलाई असल ईटा उत्पादक सघ भनिएको छ। यसका सदस्यता असल ईटा पद्धति प्रयोग गरी उत्पादन गर्ने उद्योगलाई प्रदान गरिन्छ।



Pictures:

Good Bricks Factory



5. Machine

5.1 Machine Parts

Parts of Automatic Good Bricks Machine

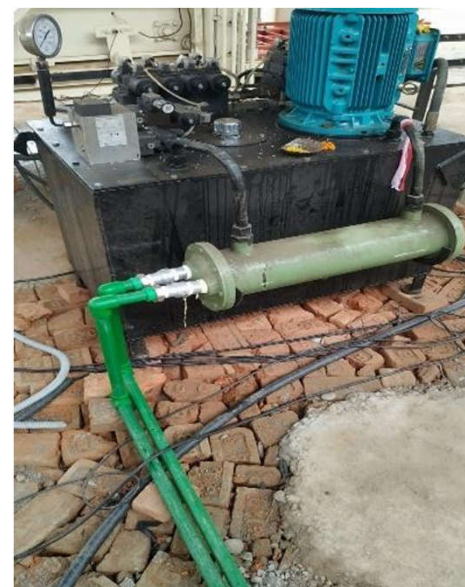


Hydraulic brick Press machine

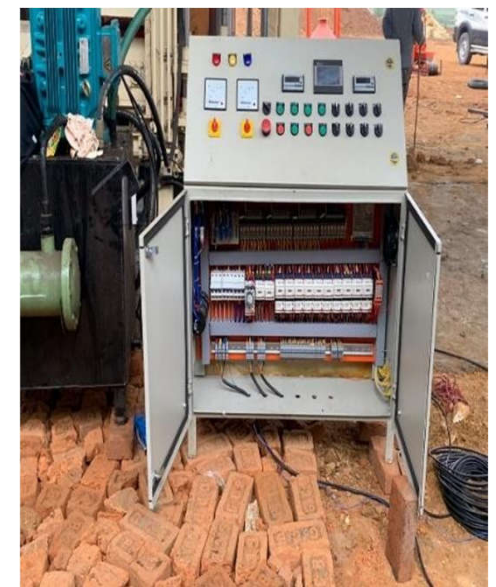
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Pan Mixer



Hydraulic Power Pack with cooling system



PLC System

5. Machine

Parts of Automatic Good Bricks Machine



Water Tank



Soil Hopper



Cement Silo

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For Further Questions, please contact us.

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