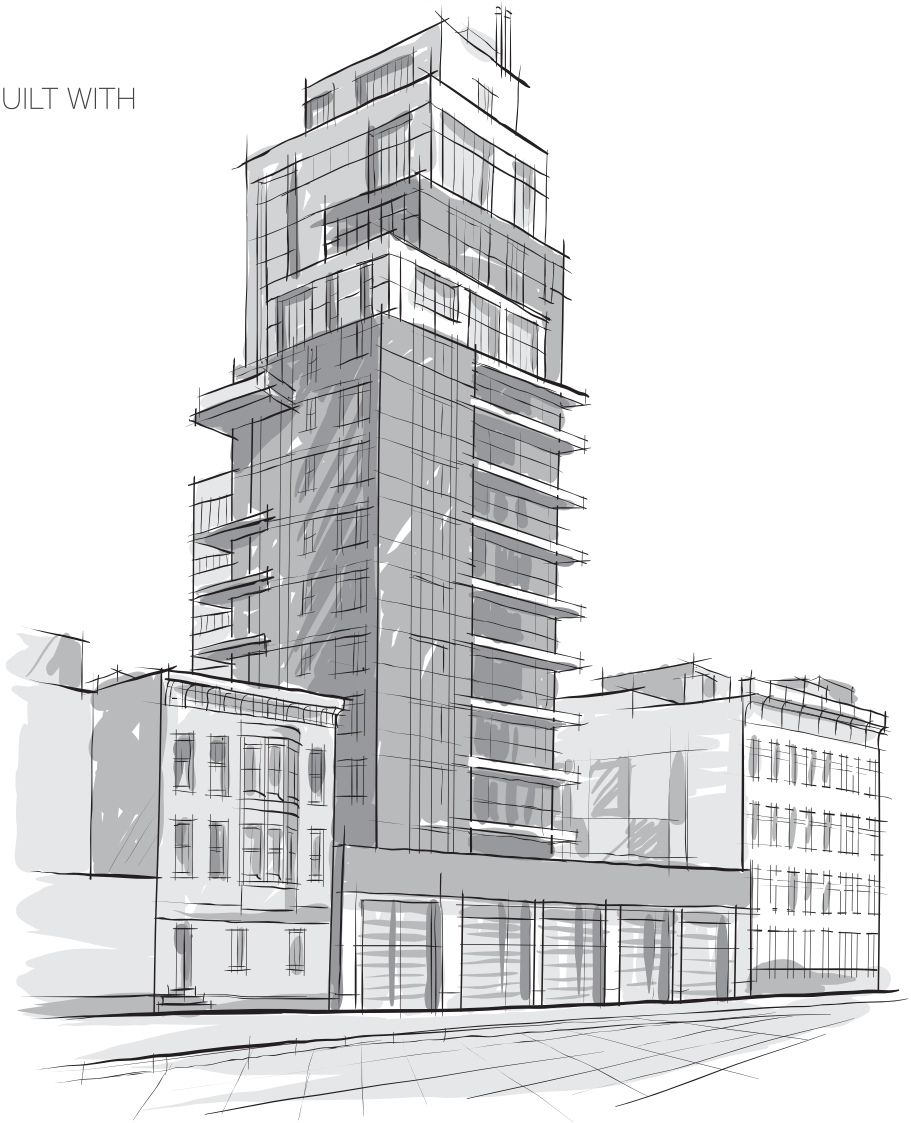
Orilite

New Age Building Solutions

LET YOUR CONSTRUCTION BE BUILT WITH

STRONG
LIGHT
DURABLE

NEW AGE BUILDING SOLUTIONS



2185-PT-3

CM/L8400145510

ORILITE IS PRODUCED AS PER

BIS
BUREAU OF INDIAN STANDARDS

CODE 2185-3 (1984); 6041 (1985); 6072 (1971); 6073 (2006).

About Orilite

Oriental Power Cables Limited is a leading manufacturer of Autoclaved Aerated Concrete (AAC) products under the brand name ORILITE. AAC is an extremely innovative, fire resistant, green building material that is pre-cast, lightweight, strong with superior thermal and sound insulation properties. ORILITE is available in the form of blocks and reinforced panels for a wide range of both load bearing and non-load bearing construction applications. The product range includes blocks and panels of different classes and dimensions.

Advantages of construction with **ORILITE.**

High floor space area.
Labour cost savings.
Speedy construction.
High workability quotient (can easily be cut, chased etc).
Foundation sizes minimized (due to light weight construction).
Support structure minimized (due to light weight construction).

Products and systems have been developed for all types of construction Industry

Residential Buildings
Industrial Sheds
Commercial Buildings
High-Rise Buildings
Hotels
Schools
Hospitals and more.

Why Orilite is far better than coventional clay bricks?

LIGHT WEIGHT

Orilite blocks are one third of the weight of Clay Bricks and can be easily handled.

Clay Bricks are heavy.

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RAPID CONSTRUCTION

ORILITE enables genuine cost savings as construction time is reduced and labour costs are minimized.

No such saving from clay bricks

THERMAL INSULATION

Unique cellular structure of ORILITE provides good insulation properties, keeping building cool in summers and warm in winters.

Clay Bricks have less insulation properties.

ACCOUSTIC PROPERTIES

With sound transmission class of upto 40dB, ORILITE show better resistance to sound transmission.

Clay Bricks have less acoustic performance and cannot be used as a effective sound barrier.

MECHANICAL PROPERTIES

It is easy to cut, saw, drill, chase with tools manually just like wood.

Clay bricks does not have great mechanical properties.

FIRE RESISTANT

Best in class, fire rating of 4-6 hours. It will prevent the spread of fire to other room.

Clay Bricks do not help to prevent the spread of fire.

ACCURACY

The completely automated manufacturing process ensures that ORILITE panels and blocks are always produced to accurate size.

Clay bricks are available in irregular sizes.

NON TOXIC

ORILITE products are made of inorganic compound and do not contain any toxic gas substances.

Clay Bricks contain toxic gas substances and volatile organic compounds.

ANTI TERMITE

Termites hate ORILITE. Being made of inorganic minerals, it does not promote growth of molds, pests or insects.

Clay Bricks may be affected by termite if they contain some organic material or have some moisture content.

ENVIRONMENT PROTECTION

Designed for consumers who are environmentally conscious. It helps reduce at least 30% of environmental waste.

Pollutes air at the time of the manufacturing of clay bricks. It is not an environment friendly product.

What other benefits ORILITE brings?

HIGH FLOOR SPACE AREA
Various options available with ORILITE, can save floor space area between 4-5%..

VERSATILITY
ORILITE adapts to every structural surface. It is suitable for floors, exterior and interior walls, roofs, elevator shafts, stairwells etc, thus making ORILITE as most flexible material in all the applications.

HIGH STRENGTH MATERIAL
High pressure autoclaving process gives ORILITE unmatchable strength to weight ratio.
Compressive Strength of ORILITE ranges from - **4.0 - 5.0 N/mm2.**

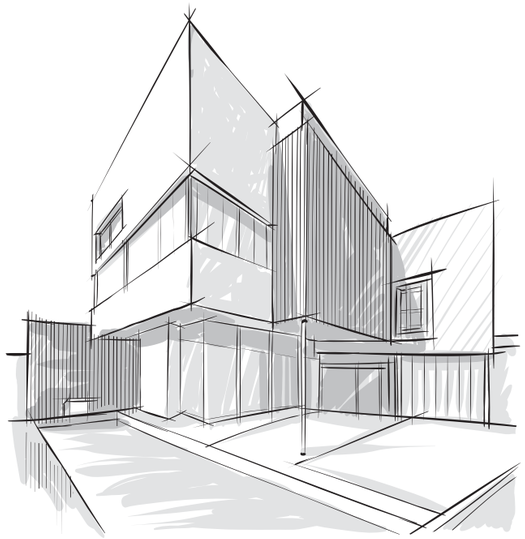
SAVES TIME
Constructions with ORILITE saves time because of sizes, ease of work, zero curing etc.

SAVES WATER
Globally construction of buildings consume 16% of water. A large portion of this goes in curing the surface while construction. Use of ORILITE range in construction reduces the consumption of water to 3% thus contributing in saving of natural resources.

DURABILITY POTENTIAL/ WEATHER RESISTANCE
ORILITE products are very durable and will not degrade under normal climatic conditions. They have outstanding durability characteristics over traditional materials relative to humidity, freeze/thaw cycles and chemical attack.

SAVE ELECTRICITY COSTS
Due to excellent thermal insulation properties, ORILITE reduces the consumption for air conditioning or heating system in the buildings. It helps to control temprature upto 30% inside the building hence saving electricity costs.

EARTHQUAKE RESISTANCE
Earthquake forces on structure are proportional to the weight of the building. ORILITE system permits a designer to reduce the mass of the structure, limiting the impact of accelerations introduced in seismic situation. Best option for higher seismeic zone.



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Cost Impact Analysis Compared to Bricks

COST COMPONENT	SAVING IN COMPONENT	ESTIMATED IMPACT ON PROJECT COST	EXPLANATION
MORTAR	61%	1.2%	ORILITE blocks are 8 times the size of conventional bricks, resulting in 1/3rd the number of joints.
STRUCTURE STEEL & CONCRETE	20%	6.25%	Being light weight, ORILITE blocks drastically reduce dead weight of the building, resulting in reduction in steel and cement utilized in structure.
WASTAGE	5%	0.25%	Breakage in Bricks might be as high as 12-15% and in case of ORLITE Blocks, it is much less.
SAVING IN LABOUR COST	10%	3.1%	Relatively larger sizes, exceptional dimensional and smooth surface ensure rapid construction and more walls laid per min hour.
SAVING IN FLOOR SPACE	4.5%	11.25%	Due to exceptional thermal insulation properties, it is possible to use thinner blocks, which results in increase in carpet area .

TOTAL IMPACT ON PROJECT COST

22.05%

• Selling Rate of Floor Space @ 2500/Sqft and considered Floor Area 3 BHK Apartment.

ORILITE STANDARD BLOCKS

ORILITE Autoclaved Aerated Concrete Blocks can be used to build load-bearing and non load-bearing walls.

AVAILABLE DIMENSIONS (MM)

Length : 650
Height : 200, 250
Width : 75 to 300 (with 25 mm increment)

BLOCK SIZES

SIZE IN MM						NO. OF AAC BLOCK		WEIGHT OF 1 BLOCK	SQ.FT. COVERED
S.No.	L		H		W	in 100 SQ.FT.	In 1 CBM	in kg	in CBM
1	600	x	200	x	75	77.45	111.11	7.02	143.47
2	600	x	200	x	100	77.45	83.33	9.36	107.60
3	600	x	200	x	150	77.45	55.56	14.03	71.73
4	600	x	200	x	200	77.45	41.67	18.71	53.80
5	600	x	200	x	225	77.45	37.04	21.05	47.82
6	650	x	200	x	125	57.19	61.54	12.67	86.08
7	650	x	200	x	230	71.49	33.44	23.32	53.80
8	650	x	250	x	100	57.19	61.54	12.67	107.60
9	650	x	250	x	150	57.19	41.03	19.01	71.73
10	650	x	250	x	200	57.19	30.77	25.35	53.80
11	650	x	250	x	225	57.19	27.35	28.52	47.82
12	650	x	200	x	300	71.39	25.64	30.42	35.87

Note : Calculation of Blocks is considered without wastage, bond beam and thickness of jointing mortar.

ORIFIX THIN BED MORTAR

ORIFIX is a factory prepared blend of carefully selected raw materials, Portland cement and graded aggregates and polymers. Designed for use with water to produce high strength thixotrophic mortar, for laying Aerated, light weight concrete, Fly ash bricks, cement hollow blocks, Cellular concrete blocks or smoothing over the block work surface in layers of up to 3mm thickness, that meets and exceeds the requirements of National and International standards.

TECHNICAL DATA SHEET

Test		Result
Appearance		Grey
Water Demand		30-35%
Bulk Density (gm/ml)		1.40-1.45
Pot Life		90 Min
Shelf Life		1 Yr.
Self Curing		Yes
Tensile Adhesion Strength	14 Days	0.41N/mm^2 (IS-15477)
	28 Days	0.74N/mm^2 (IS-15477)
Compressive Strength	14 Days	2.46N/mm^2 (IS-2542)
	28 Days	4.76N/mm^2 (IS-2542)
Flexural Adhesion Strength	14 Days	2.05N/mm^2 (IS-2542)
	28 Days	3.26N/mm^2 (IS-2542)

PREPARATION APPLICATION

Mix Orifix Thin bed mortar in 30-35% of water.

Mix first for 5-10 min by electrical mixer to mix homogeneously.

Allow mortar to stand for 5 min.

Now clean the surface of blocks using suitable tools like brush .

Wet the surface of blocks before applying mortar.

Use spirit level and fibre hammer to remove any air Gaps in between blocks for proper jointing and alignment.

Mortar should be spread on all sides of block way to maintain the bond thickness 2-3 mm.

Do not disturb the wall after application of mortar for at least 24hrs.

KEY FEATURES

EASY TO USE · FASTER CONSTRUCTION · SAVE WATER · SELF CURING · ECO FRIENDLY · BONDING STRENGTH · THIN JOINTS

Material properties of ORILITE AAC

S.N.	Characteristics	Unit	Value
1	Compressive Strength	N/mm^2	4.0 to 5.0
2	Density in Oven Dry Condition	kg/m^3	551 to 700
3	Thermal Expansion Coefficient	$/^oK$	8×10^6
4	Thermal Conductivity Air Dry Condition	W/m.K	0.15 to 0.26
5	Modulus of Elasticity	N/mm^2	2000 to 2330
6	Modulus of Rupture	N/mm^2	0.8 to 0.9
7	Fire Resistance	Hours	2-4
8	Sound Insulation	dB	40 for 200 mm wall

Hand Tools recomended to use with ORILITE

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NOTCHED TROWEL

This tools comes in same width as the available ORILITE products. Notched teeth ensure even mortar distribution.

SAW - WITH CARBIDE TEETH (HALF / FULL WIDTH)

This handsaw is big enough with long blade for cutting ORILITE blocks (just like wood).

RUBBER MALLET

Used for aligning and adjusting blocks.

MULTIPOR HAND BRUSH

It is used to remove dust from the surface of the ORILITE blocks before installation.

PUTTY BLADE

Used to fill the gape of joint & clean the PMC Mortar from block Surface

SAW GUIDE

For a perfect fit and right-angled cut.

MIXER

It is used for mixing ORIFIX mortar.

ANGLE GRINDER

It is used for chiselling due to MEP services in block wall.

PLASTIC BUCKET

Used for Mortar Preparation.

Installation Guidelines for ORILITE Blocks Masonry Construction

STEP 1

Layout walls lines on the building slab. The surface should be in level. Clean the surface by water.

STEP 2

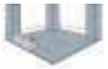
Place full width maximum1" thick sand cement (1:6)mortar for levelling. If floor is unlevelled more then 1" then do concreting (with 6mm aggregate).Minimum 7 days curring is required.

STEP 3

Make a mixture of Polymer Modified Cement (thin bed mortar) with the mortar mixer rod such that it easily flows through a mortar bed's teeth ratio (water: PMC:: 1:3). Use notch trowel to spread mortar of 2-4mm thickness.

STEP 4

Clean the block from dust and spray the water on block. Set the first corner block on the mortar bed, using rubber mallet. If RCC column is there then do hacking minimum of 20 no. in 1 sq.ft. before start.

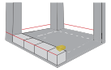


STEP 5

Set the second corner block using PMC mortar with a joint of thickness 2-4 mm and push towards corner block by rubber mallet.

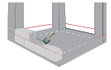
STEP 6

After building the corners, level them using a sprit level. If any difference in level then adjust by cement sand mortar.



STEP 7

For installing the second course of blocks, swipe off the dust from blocks using a brush and sprinkle some water.



STEP 8

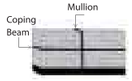
Apply PMC to the head and bed joints of AAC blocks, one block at a time. Install blocks with minimum 8" overlap. Vertical joint should not be in single line.

STEP 9

Move every block close to the head joint before lowering the block on a bed joint. Check vertical level of masonry by sprit level.

STEP 10

Clean off spilled thin bed mortar and repeat the same steps for subsequent courses.



STEP 11

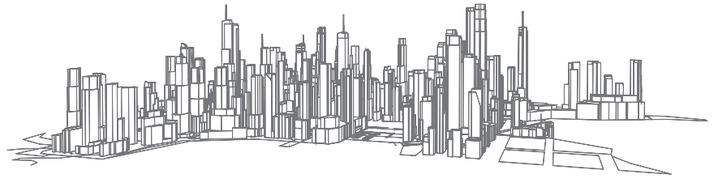
Provide joint reinforcements / bond beam as per details in Reinforcement section in block wall. Provide mullions/- control Joint after each 6m length of wall.

STEP 12

Install lintels with minimum bearing 8 inches.

STEP 13

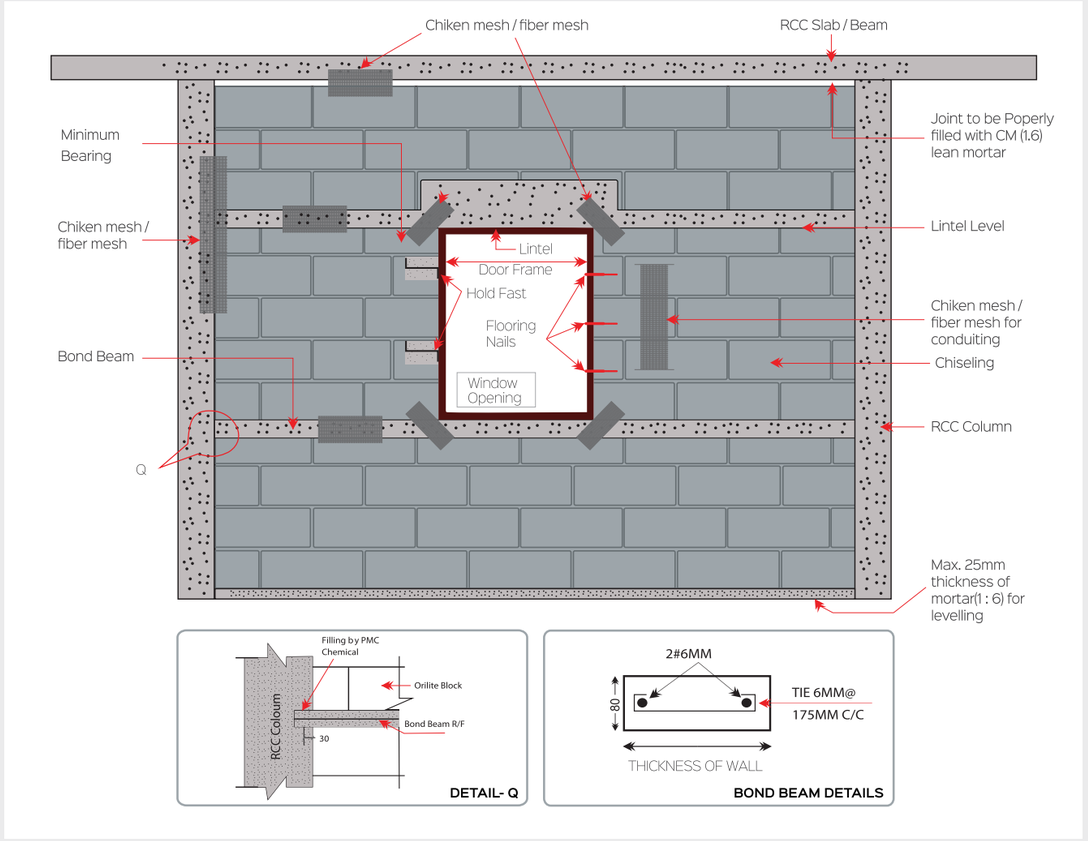
Fill all joint gape if they are not filled by PMC. do not try to patch on outer surface without filling gape.



Reinforcement

To minimize the effects of shrinkage, tensile & diagonal cracking and to enhance stability, it is recommended to provide joint reinforcement or nominal bond beams.

(1) Joint reinforcement Option – refer clause 4.6.5 - IS 6041-1985.
(2) Nominal Bond Beam option -As per clause 4.6.4 BIS 6041 -1985 , provide minimum 2 no. of 6 mm HYSD longitudinal bar and tie bar of 6mm dia. in 175 mm c/c spacing in bond beam as per the image shown below. Keep minimum thickness 80mm & width as per wall thickness. It has to place at sill level & lintel level for large height of wall keep vertical distance in between bond beam maximum 1200 mm .



Few Completed Projects

Few completed projects

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Trusted by the LEADERS

Trusted by the LEADERS

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EICHER
ACME
NEXA
GENPACT
PUBLIC WORKS DEPARTMENT MADHYA PRADESH
Smart City
SMART CITIES MISSION
NDDB DAIRY SERVICES
Jabalpur Development Authority
Central Administrative Tribunal
RAMADA
NTPC
BHOPAL DEVELOPMENT AUTHORITY
ida
NBCC
NPCIL

Do's and Don'ts of ORILITE AAC Blocks

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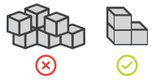
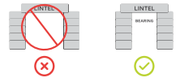
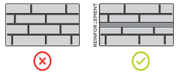


DO NOT STACK THE AAC BLOCKS IN HAPHAZARD MANNER.



MINIMUM LINTEL BEARING 1/3rd OF BLOCK LENGTH.

DO NOT LEAVE THE AAC BLOCKS ON WET SURFACE.

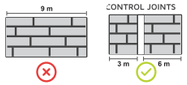


DO NOT CONSTRUCT WALL WITHOUT JOINT REINFORCEMENT OR COPING BEAM.

ALWAYS CUT THE AAC BLOCKS USING CARBIDE TIPPED SAW.

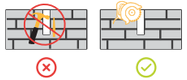
DO NOT WET THE WALL ONLY SPRAY THE WATER ON COPING BEAM.

USE NOTCHED TROWEL FOR SPREADING THINBED MORTAR.

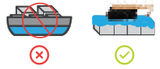


PROVIDE CONTROL JOINT FOR LONGER THAN 6 M WALL.

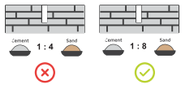
DO NOT DIRECTLY APPLY THIN BED MORTAR BETWEEN AAC BLOCK OR RCC COLUMN.



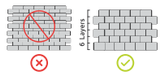
USE HAND OR ELECTRIC ROUTER FOR CHISELLING.



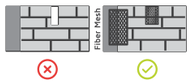
USE BRUSH TO MOISTEN AND CLEAN AAC BLOCKS BEFORE USING.



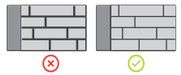
REFILLED CHASES WITH LEANER PLASTER IN MORTAR (CM:1:8).



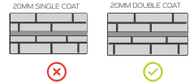
DO NOT LAY MORE THAN SIX LAYERS OF BLOCKS IN A DAY.



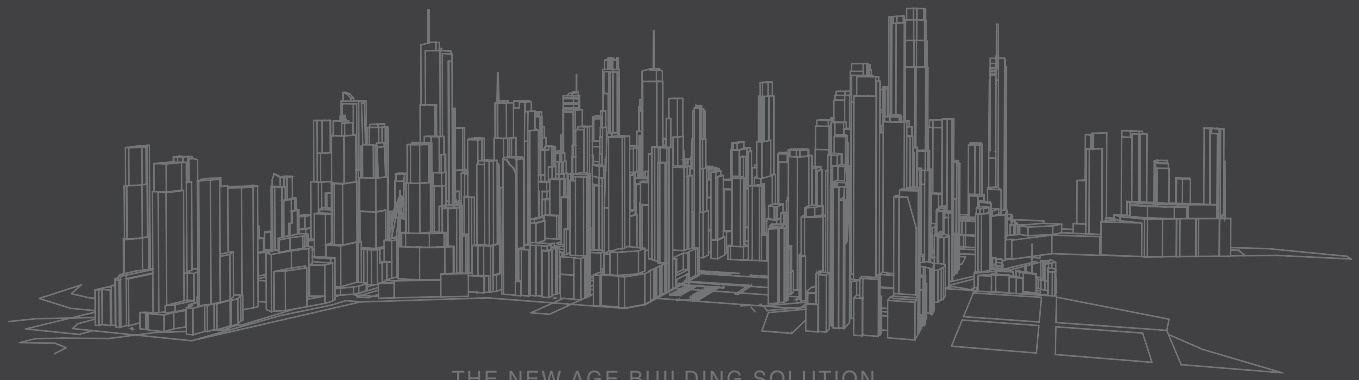
USE CHICKEN MESH/ GLASS FIBRE MESH ON CHASE SURFACE AND DISSIMILLER JOINT BEFORE PLASTER.



DO NOT USE MORE THAN 4MM THICK THIN BED MORTAR & DON'T OVER PATCH ON JOINT.



DO NOT PROVIDE CM PLASTER OF THICKNESS MORE THAN 10MM IN SINGLE COAT.



THE NEW AGE BUILDING SOLUTION

ORIENTAL POWER CABLES LTD.

Manufacturers of Precast Building Solutions

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