**FORM 2**

THE PATENTS ACT, 1970

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THE PATENTS RULES, 2003

**COMPLETE SPECIFICATION**

(See Section 10; rule 130

TITLE OF INVENTION

**STUCCO BRICKS**

APPLICANT

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The following specification particularly describes the invention and the manner in which it is to be performed.

**STUCCO BRICKS**

**TECHNICAL FIELD**

The present invention relates to the field of Brick Design. More specifically the present invention related to stucco bricks used in the elevations of the buildings and at some interior wall designs which gives a aesthetic look to the building.

**BACKGROUND**

Stucco, one of the oldest construction materials, has evolved over time to provide better protection and a more attractive appearance as an exterior siding. Whether cement or acrylic based, stucco begins as a sticky paste that can be shaped and textured during application. Once hardened, it offers a resilient exterior that shields against the elements.  
 The production of cement stucco involves using silica sand of different coarseness, mixed with cement, lime, and other ingredients. These components are blended together, creating a consistency similar to cake mix. Water is added on-site to liquefy the mixture, and pigments can be added to achieve a pre-coloured finish, eliminating the need for painting.

In the manufacturing process, a mega mixer is used to blend the dry ingredients. Multiple pigments can be added to create custom colours. After three minutes of mixing, a sample is taken and sent for quality control evaluation. At the lab, the stucco mixture is weighed and water is added in proportion. The technician ensures the pigment and raw materials are well dispersed.  
 Acrylic stucco, on the other hand, utilizes calcium carbonate instead of silica sand and acrylic as a binder instead of cement. It is sold wet in buckets and can be pre-coloured using a computerized tint machine that produces precise colours. Alternatively, tint base acrylic stucco allows for colour adjustment on-site.  
 Acrylic stucco dries quickly, while cement stucco takes 28 days to fully cure. In packaging, a rotating machine fills paper bags with cement stucco, providing material for 30 houses in just eight seconds. Once packaged, the stucco is ready to be used for building projects.

When applied to a building's exterior, stucco can be textured according to the homeowner's preference, creating a strong and durable finish. Its versatility and ability to withstand the elements make it a popular choice for exterior siding.

The problems facing in the stucco putty is it will take more time to apply, it will increases the cost of applying, it will take more manual effort for applying putty.

Thus, there is a need to introduce a stucco brick for reducing the manual effort and to eliminate environmental impacts. The present invention will overcome the aforementioned problems, limitations and disadvantages in an effective manner.

**OBJECT OF THE INVENTION**

The primary object of the present invention is to provide stucco brick for reducing the cost of painting stucco on the wall after applying mortar and wall putty.

Another object of the present invention is reducing cost difference between stucco putty and stucco brick.

Another object of the present invention is to reduce manual effort for stucco brick making process.

Yet another object of the present invention is to reduce the time consumption during stucco brick making process.

**SUMMARY**

Stucco wall design using brick combines the durability and strength of brick with the versatility and aesthetic appeal of stucco. In this design approach, bricks are used as the structural framework, providing stability and support, while stucco is applied as a finishing material to enhance the appearance and texture of the wall. Fly ash used 65%, for improving binding and reactions between chemicals and improves plasticity and workability Lime used 10%, for plasticity nature and catalyst for reactions Water For mixing and combining them.

Crusher dust used 15%, filler material and improves strength with angular particles and Cement used 10%, for binding materials and improves strength. Fly ash bricks are manufactured by hydraulic press or vibratory press the raw materials in a required proportion are mixed in the pan mixer to have a semi dry uniform mix.

Then the semi dry mix is placed in the separate moulds of hydraulic/vibratory press to shape the bricks. Moulded bricks are air dried for 2 days in a shed and then keep the bricks at the sun and start give curing for 7-8 days. The bricks produced are sound, compact and uniform in shape. At the end of the process silicon mould is used to create the fly ash brick for stucco design.

**BRIEF DESCRIPTION OF THE DRAWING**

The other objects, features and advantages will occur to those skilled in the art from the following description of the preferred embodiment and the accompanying drawings in which:

Fig 1 illustrates the isometric view of the stucco brick, according to an embodiment of the present invention.

Fig 2 illustrates the front view of the stucco brick, according to an embodiment of the present invention.

In the diagram the 1- denotes the stucco design which will display in the elevation of the buildings.

**DETAILED DESCRIPTION**

The various embodiments and the other advancements and features are illustrated with the reference to the non-limiting details in the following detailed description. Illustration of processing techniques of well-known components are omitted so as to not unnecessarily obscure the embodiments herein. The examples used herein are intended to facilitate an understanding of ways in which the embodiments herein may be practiced and to further enable those of skill in the art to practice the embodiments herein. Accordingly, the examples should not be construed as limiting the scope of the embodiments herein.

The raw materials we are using for manufacturing of stucco bricks are Fly Ash, Sand (or) Crusher Dust, Lime and Cement. Fly Ash is a waste byproduct obtained from the combustion of coal from the thermal power plants. We are choosing Grade F fly ash for the process. Cement is a material obtained from the mixing of Lime stone, Clay, Silica, and Alumina.

The mixing ratios are 65% of Fly Ash, 15% of Crusher Dust, 10% of Lime and 10% of Cement. PPC (Pozzolana Portland Cement) and the Grade 33 is used. Mix this all materials in a Pan Mixer, while mixing add the white colour zinc oxide as a colour pigment and add needed amount of water and mix it well. Then put the mixed components in a mould has a size of 19cmx9cmx9cm which contains a stucco design, vibrate it well and level it. Remove the mould and at the top of the brick make a indentation that is TJNT and keep at the indoor shed for 2 days to dry. Then keep the bricks at the sun and start give curing for 7-8 days. This is the process for manufacturing of stucco bricks which is a white coloured design brick.

The advantages of using stucco bricks are it is a eco friendly brick which emits less amount of heat compared to a clay brick, it absorb less water compared to a clay brick, it has more strength and stability compared to a clay brick and it reduces the cost of plastering, applying wall putty.

It is noted that the above-described examples of the present invention is for the purpose of illustration only. Although the present invention has been described in conjunction with a specific example thereof, numerous modifications may be possible without materially departing from the teachings and advantages of the subject matter described herein. Other substitutions, modifications and changes may be made without departing from the spirit of the present solution. All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

Although the embodiments herein are described with various specific embodiments, it will be obvious for a person skilled in the art to practice the embodiments herein with modifications.

**CLAIMS**

**We Claim,**

1. A stucco brick:

A fly ash brick already exists with size of 19cmx9cmx9cm used in the construction field. Now it’s upgraded with stucco material with the colour of white. It’s directly used in construction site.

2. Components of the stucco brick: The stucco brick is mainly covered with (a) 65% of fly ash,(b)15% of lime,(c)10% of crusher dust and (d)10% of cement depending upon quality of the material.

3. The stucco brick of claim 2(a), where the fly ash is a fine powder residue resulting from coal combustion in power plants. It’s most commonly used as a pozzolan in PCC application, react with calcium hydroxide at ordinary temperature to produce cementitious compounds.

4. The stucco brick of claim 2(b), in that the lime is used in various forms such as quicklime, hydrated lime and lime putty. It has historical significance and is appreciated for its sustainable properties in modern construction. It can be combined with certain additives to produce other metals and is also a key ingredient in mortar and plaster in lime slurry form.

5. The stucco brick of claim 2(c), It's primarily utilized in the form of gypsum board (drywall) for interior walls and ceilings, providing fire resistance, sound insulation, and smooth surfaces. Additionally, gypsum is used in plaster, cement, and soil conditioning applications. It also contains water molecules in its crystal structure, which helps it to resist high temperatures and prevent the spread of flames.

6. The stucco brick of claim 2(d), Concrete sand, pit sand, natural or river sand, manufactured sand (M-sand), utility sand, and fill sand are the most common forms of sand used in construction. These sands have distinct qualities that make them appropriate for a variety of construction projects. It provides structural support, stability, and cohesion, essential for building foundations, roads, and structures worldwide.

**ABSTRACT**

**STUCCO BRICKS**

The present invention discloses stucco brick is a versatile and aesthetic approach that combines the durability and strength of bricks with the versatility of stucco. Bricks serve as the structural framework, providing stability and support, while stucco is applied as a finishing material to enhance the wall's appearance and texture. The manufacturing process of fly ash bricks involves a ratio of materials, with fly ash used for improving binding and reactions between chemicals, lime used for plasticity, water for mixing and combining, sand used as filler material, and cement for binding materials. The bricks are then shaped using hydraulic or vibratory press, air dried for 2 days, and cured for 7-8 days. The final product is a sound, compact, and uniform brick for stucco design.