Manufacturing process of bricks in detail pdf

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(1) Clay preparation: Clay is ready for bricks in the following order: (I) Un Salang (ii) Excavation (iii) Cleaning (iv) Vietrang (v) Mixture (vi) Talk (i) United Questioning: Top of the soil, about 200 mm deep, taken out The soil in the top is full of soil and hence it has to be discarded for the purpose of producing bricks. (ii) Excavation: The soil then pulls out of the ground. It has spread them to the earth, just a little deeper than the normal surface of the earth. The height of the soil reduction is about 600 mm to 1200 mm. (iii) Cleaning: Soil, like the excavation stake, should be clean of stone, jamra, vegetable matter, etc. If these particles are high, the soil is washed and screening. Such a process would naturally prove to be annoying and expensive. The clay-sands should be converted into powder-shaped rollers in the ground. (iv) Viatrang: The soil is again in front of the atmosphere for softor or melowong. The duration of the exhibition varies from a few weeks to the entire season. For a larger project, the soil is already ejected from the monsoon and it is allowed to weather throughout the monsoon. (v) Mixing: The clay is made loose and spreads to the top of any ingredient to add it. The mixture indicates a combination or harmony. It is done by taking small parts of the soil all the time and in the vertical direction it down and down. The mixture fits for the next stage of the clay thing. (vi) Talk: In the process of the talk, the soil is brought to a reasonable degree of hardness and it is made suitable for the next operation of the template. The required amount of water is added to the soil and pressed under the feet of the entire mass-scale goths or men or livestock. The thing should be the uniform character's clay-smooth mass to get the most. For a massive good brick preparation, the thing is usually done in a dirty mill. Get a common shit About 15,000 to 20,000 bricks are shown in the picture of the land enough for a daily production. 4.1. The process of making clay with water and making it plastic is known as pogang. A dirt mill consists of a sluic ed yan tub with its top cover. It is set on a wood basis in which two wooden planks are made by fixing at the right angle for each other. The bottom of the tub is covered with a shard to take the ground. The bottom is about 800 mm of dirt mill and the top is about a meter. This is made in the top cover which puts the dirt inside the dirt mill. A vertical shaft with horizontal weapons is provided in the center of the iron tub. Small brick-shaped steel knives are set on horizontal weapons. Long sleeves are set to attach a pair of vertical shafttoptop shaded bulls. The rup poggad is provided for soil collection. The height of the dirt mill is about 2 meters. Its depth below the ground is about 600 mm to reduce the height of the 800 mm slathed run and to easily throw angry mud. Initially, the pig is closed to the soil and the soil with water is kept in the dirt mill from the top. When vertical shafts are rotated or replaced by a pair of bulls, the soil is well mixed by horizontal weapons and knife actions and is set up on a uniform scale. Vertical shaft rotation can also be achieved using steam, diesel or electric power. When the clay is quite pogled, the bottom of the tub is opened out and the pig is taken out of the pump by the ground, i.e., a small basket with two wheels for the next operation of the template. The dirt is found and is carried from the top along with the mud to the pot and the bottom to carry out the soil. If the matter is done properly, good brake land can be applied without breaking into small subjects of 3 mm of qatar. (2) Templates: The clay which is produced above is then sent for the next operation of the template. There are two ways of templatemaking: (I) hand template (ii) machine template. (i) Hand template: In hand template, the bricks are manually hand-made. It is adopted where manpower is cheap and is readily available for the manufacturing process of bricks on a small scale. The templates are the itacar boxes that are open on top and bottom. They can be wood or steel. A typical wooden shard is shown in the picture. 4.2. It should be well prepared from experienced wood. Long sides are kept slightly split to serve as handle. The brass or steel stripes are sometimes fixed on the edges of wooden templates and are set to make them more durable. A typical steel scar is shown in the picture. 4-3. It is made from a combination of steel plates and channels. It can also be manufactured from steel angles and plates. The thickness of the steel rot is usually 6 mm. They are used for producing a massive brick. Steel templates wood They are more durable and they close uniform-sized bricks. Bricks Dry and during the burn. So the templates have been completely burned to be made larger than the size of the steel shard. So the templates are made in all directions by approximately 8 to 12 percent. The exact percentage of the increase in the width of the shard is determined by the actual experience on the soil to be used for the manufacture of bricks. There are two types of bricks produced by hand template making: (a) ground-sliced bricks (b) table-split bricks. (a) Earth-split bricks: The earth has made the first surface and the fine sand has been sprinkled on it. Its snow is submerged in water and placed on the ground. The angry clay is taken and it is dashed in it. The soil is stressed or forced in such a way that it fills all corners of the snout. Extra or surplus clay is removed either with wood or by the frame with metal strike or wire. A strike is a piece of wood or metal with sharp edges. It has to be drowned in the water all the time. Then the shard is lifted and the raw bricks are left on the ground. The snow is submerged in water and it is placed near the last bricks to prepare another brick. The process of the earth is repeated as long as the earth is covered with raw bricks. A brick can shrink about 750 bricks per day with an 8-hour working period. When the bricks are dry enough, they are made and placed in dry shade. Each time the water is made by the doping crack, the bricks are known as the slop-split bricks. Fine sand or rock can be sprinkled to the inner level of the sand instead of the sand-doping. Such bricks are known as sand-sand-sand bricks and they have sharp and straight edges. The lower faces of ground-split bricks are not to any extent and thus it is not possible to keep the bricks on the ground. The metric is a mark of depth of about 10 mm to 20 mm which is placed on raw bricks during the template. It serves two purposes: (1) It points to the commercial name of the factory. (2) In Brakkoork, the bricks are placed with a daer. This leads to a key to the mortar like this when the next point is placed on it. Improved quality ground is made by using a pair of stand boards and a wooden block with a frog on their surface. A piece of thin wood is a piece of wood. The block is larger than the snow and it is a projection of 6 mm height on its surface. The dimensions of the project are according to the inner dimensions. The effect or the design of the building is designed on this block. This wood block is also known as the template block or stockboard. This shard is placed to fit in the project of the wooden block and is dashed inside the soil. A stand is placed on top and the whole thing is changed down after that. The shard is carried out and another shard is placed on the raw bricks and it is transported to the dry shed. Bricks are placed in dry shade to stand on their long sides and the standing boards are brought back to reuse them. As the bricks are placed on the edge, they occupy less space and they are dry. And better. (b) Table-split bricks: These bricks are just like the same. But here stands near a table of 2 meters x 1 meter size. Clay, snout, water vessel, stockboard, strikes and standing boards are placed on this table. Bricks are pulled on the table and sent for further drying process. However, the performance of the do is gradually reduced due to standing in the same place for the long term. When table template is adopted, the cost of the burke template is also increased. (ii) Machine template: Templates can also be obtained by machines it proves to be economical when large quantities of bricks are to be produced in one place in a short time. It is also helpful for hard and strong clay template shaving. These machines are widely classified into two types: (a) plastic clay machines (b) dry clay machines. (a) Plastic clay machines: Such machines contain an icanof opening of length and the size equal to the width of a brick. The poggad is placed in the clay machine and as it comes out through the opening, it is cut into the stripe by the wires set in the frame. The management bricks are the equivalent of the thickness of the bricks that are made in this way to get the bricks. As bricks are cut by wire, they are also known as wire cut bricks. (b) Dry clay machines: In these machines, strong soil is first converted into powder shape. A small amount of water is included to make a hard plastic past. Such a post is placed in the shard and pressed by the machine to make hard and well-sized bricks. It is known as the bricks pressed bricks and they do not need to be practically dried. They can be sent directly to the burning process. The wire cut and pressed bricks have regular shape, sharp edges and corners. They have smooth exterior surfaces. They are heavier and stronger than normal hand-held bricks. They clearly carry the frog and exhibition uniform dense structure. (3) Drying: The salt is likely to be broken, broken and dried if the salt is not in the bricks. So the broken bricks are dried before they are taken for the next operation of the burn. To dry, the bricks are placed in a width pot equal to two bricks. A stock consists of eight or ten degrees. Bricks are placed across the stock in alternate layers as well. All the bricks are placed on the edge. Bricks should be allowed to dry until they become rough or bone dry of the skin, about 2% or more of the semi-material. The key facts to remember in the connection with the drying of bricks are the following: (I) artificial dry: The bricks are usually dried by natural processes. But when a large-scale brick can be dried quickly, the artificial dryer can be adopted. In such a case, the broken bricks are allowed to move through special dryers that are in the shape of tunnels or hot channels or floors. Such dryers are heated by special furnace or hot-sand gases. Tunnel dryers from hot floor dryers Economic and You can get a job in a regular or a regular. In the former case, the bricks are full, dry and empty in the rotation. In the latter case, the loading of bricks is done on one end and they are carried out at the other end. The temperature is usually less than 120 s c and the process of drying of bricks takes about 1 to 3 days depending on the temperature maintained in the dryer, the quality of the clay product, etc.(ii) air circulation: the bricks in the pot such as the air-free rotation of the air (iii) Dry courtyard: For dry purpose, special dryyards should be prepared. It should be a bit on a high level and must be covered with sand. Such an arrangement would prevent the accumulation of rainwater. (iv) Duration to dry: The time required by the broken bricks depends on the current weather conditions. Normally it takes about 3 to 10 days for bricks to be dry. (v) Screens: It should be observed that the bricks are not directly related to the air or sun to dry. Proper screens, if necessary, can be provided to avoid such situations. (4) Burning: It is a very important operation in the manufacture of bricks. It hardens and parts of strength for the bricks and makes them dense and durable. The bricks should be properly burned. If the bricks are burning more, they will break down easily because of this. If they are sour, they will be soft and therefore cannot carry the burden. When the temperature of the slow red heat, about 650 s c, is made, the organic matter present in the burke is oxisized and the water of crystallization is removed. But the heat of the bricks is carried out beyond this limit for the following purposes: (I) if the bricks are cooled after achieving a temperature of 650 sc, the formation of the bricks will stimulate the heat from the air and get the reedrate. (ii) Reactions between mineral circles of the soil are achieved at high temperatures and these reactions are necessary to give new characteristics such as strength, hardness, low-salt emotion, etc. When the temperature reaches 1100 sc, the brick clay, i.e., the sources of the two main circles of aluminum and sand, itself as a result of increasing the strength and density of the bricks. No more heat is necessary and if the temperature is raised outside 1100 sc, a large amount of the sludge-high mass is established and the bricks are called water-fed. Bricks begin to loosen their shape beyond a certain range of water-faction. Burning of bricks is done either in clamps or in furnaces. Clamps are temporary structures and they are adopted for the manufacture of bricks on a small scale to serve a local demand or a specific purpose. The furnaces are permanent structures and they are extensively adapted for the manufacture of bricks. Clamps: Methodology: A common scan is shown in the picture. 4.4. The following procedure is adopted in the construction of the shanga: (i) a piece of land Selected. Its shape in planning is usually trapsiad. The floor of the scan is designed in such a way that the short end is slightly in the excavation and the wider end is raised at an angle of 15 s from the earth's surface. (ii) The brick wall in the soil is built at the short end and a plate of fuel is placed on the ready floor. Fuel can be contained in grass, cow's tight, dirt, rice or ground-based nuts, etc. The thickness of this curtain is about 700 mm 800 mm. Wood or coal dust can also be used as fuel. (iii) A plate, which consists of 4 or 5, raw brick courses, then it is left. Bricks are placed on the edges with small spaces between them for wind rotation. (iv) The second fuel is re-laid and another plate of raw bricks is placed on it. This way alternative layers of fuel and raw bricks are established. The thickness of the fuel's thickness gradually decreases as the height increases. (v) The total height of a scan is about 3 meters to 4 meters. When about one-third of the height reaches, the lower part of the schijja is the most exciting. The objection to such action is to burn the bricks in the lower part when the construction of the upper part of the scainja is in progress. (vi) When the scan is fully constructed, it is a plaster to prevent the escape of heat on the sides of the soil and above and above. If the fire is sudden and violent , the land or ashes are thrown down . (vii) The scan is allowed to burn for a period of two months. (viii) After this the burn is allowed to cool for the same duration as maximum. (ix) The sash is removed from the sash after the scent. Benefits of burning the sash: The following are the benefits of burning the skein: (I) are gradually in the burning of bricks and cool clamps. So the production of bricks are hard and strong. (ii) Burning of clamps proves cheap and economical. (iii) No skilled labor and supervision is required for construction and clamps work. (iv) The cause of injury is not due to high wind or rain. (v) There is enough fuel savings. Damages of the scan: The following are the damages of the scan burn: (i) the bricks are not regularly shaped. This may be due to the brick-and-white analysis of the fuel that is burnt down and turned to ashes. (ii) It is a very slow process. (iii) It is not possible to burn after starting a fire and the bricks are responsible for the extraordinary burning. (iv) The quality of the bricks is not uniform. Near the lower part the bricks are burning and the sides near them and the tops are sour. Eyebrows: A bit is a large oven which is used to burn bricks. The furnaces used in the preparation of bricks are among the following two types: (1) intermittent furnaces (2) continuous furnaces. (1) The furnaces are intermittent in the process which means they are full, unrecoverable, cool and come down. Such furnaces can be either a stoic or circular in the planning. They may be more underground or underground. They Rating in two ways: (I) break-up-breaks (ii) break-down. (i) Intermittent furnaces: These furnaces are in the shape of a steel structure with thick exterior walls. Wide doors are provided at each end for loading and landing of the furnaces. The flues are channels or parts that are provided to carry the gases or hot gases through the body of the bit. A temporary roof can be installed any light material. Such roofs protect raw bricks from rain while they are being placed in position. When the butt is removed, its roof will be removed. Picture. 4-5 shows a common break-up plan. The following is the work of the bit: (A) the raw bricks are equal to 2 to 3 bricks and the height row is equal to 6 to 8 bricks. A place of 2 bricks is left between adjacent rows. This place is used to keep fuel. (b) Fuel is full of bush that easily takes fire. The interior part is then full of large-sized fuel. (g) A cross like the bursting 4 to 5 lines opening by bricks is established. Each row projection is about 30 mm 40 mm. (D) is done after loading the bit with raw bricks. The top course is finished with flat bricks. Other courses are set up by placing bricks on the edge. (e) The end doors are built with dry bricks and covered with clay or clay. (f) Butt is fired again. Fire can be managed by opening or closing the iron sheet doors of the fire shed and controlling fuel supply. Any instant burn development can be seen through these sources. The firing for the first three days is kept slow by the proper diamond lung of the flu. Strong fire is maintained for a period of 60 hours for 48. This draft moves from the bottom of the bit to the top and brings about the burning of bricks. (g) The butt is allowed to cool for at least seven days and then the bricks are made. (h) This procedure is repeated to burn the next bricks. The bricks produced by the dedicated up-and-down steam are better than those produced by clamps. But the following are the disadvantages of such a furnace: (a) the condition of the sedital bricks is not uniform. The bricks below are burned more than the nearest and most of these people are near. (b) The supply of bricks is not continuous. (g) Heat the fuel as the bit to cool every time after burning is the heat of the fuel. (ii) Interval down the furnaces: These are the sertos or circulars in the shape of the furnaces. They are provided with permanent walls and closed narrow ceilings. The floor of the bit is the stool which is attached to a normal fireplace stake through the flux. This bit is less than working or more like such up bit. But it is very much in this bit that hot gases are made through vertical flux to the roof surface and then they are released. These hot gases move down the chimney and do so, they burn Brick. The following benefits are claimed for the broken down furnaces: (a) bricks are burned equal to the one. (b) The performance of this bit is better than the up bit. (g) Heat is closely controlled and therefore such furnaces are useful for structural clay tiles, terra-clay cotta, etc. (2) continuous furnaces to burn: these furnaces are constantly in operation. This means that loading, firing, cooling and landing are performed in these furnaces at the same time. There are different types of continuous furnaces. Three types of continuous furnaces will be discussed after: (i) Bill's Snitt (ii) Homan's Bit (iii) Tunnel Bit. (i) Bill's snout bit: This bit may be in the plan of the itacar, circular or the bi-form. Picture. The plan of 4-6 shows a common bull bit of the egg shape. As the name suggests, the bit is built into a trench excavation in the earth. It can be completely underground or bursting above the ground. In the latter case, the earth's remedied should be provided on the outside walls. The exterior and interior walls are being built of bricks. The shards are usually provided in the outer walls to act as a snout. Dampers are in the shape of iron plates and are used to distribute the furnaces into the appropriate parts as shown in the picture. 4-6. It is the most widely used bit in India and it gives continuous supply of bricks. The bricks are arranged in parts. They are organizing as if the flues are established. Fuel is kept in the flux and it is forced through the slush-covered sour after covering the top level with the ground and ashes to prevent the escape of heat. The fuel is in development when the fuel is supplied in large numbers at the top to enter. Normally two wariron chamines are employed as forms. The leinis are kept in the advance of the part that is being released. So hot gases leave the chimneys and heat the bricks in the next part. Each section requires about a day to burn. When a section is burnt, the thread is closed and it is allowed to cool down gradually. The fire is advanced in the next section and is moved forward as shown by the arrow in the picture of the chimney. 4-6. The bill's trench bit is working continuously because all operations are carried out along with load, burning, calling and landing. Picture. Shows the bill bit with two sets of 4-6 parts. Two pairs of chaminis and two groups of workers will need to do this bit work. Table 4.1 can be shown a test arrangement for different parts. (ii) Hobbit: This bit is built on the ground and is why it is sometimes known as the flame bit. Its shape is circular in planning and it is divided into a number of apartments or chambers. As a permanent roof is provided, bit can work even during the rainy season. Picture. Hoffman's bit plan and section with 4-7 shows 12 chambers. Each chamber is provided with the following: (a) a key door for loading and landing bricks, (b) door that communicates with Act as flue in open condition, (c) a sash attached to a central fireplace, and (d) is connected with the fuel source, which can be in the form of powder coal, in the burning chambers. Important doors are closed by dry bricks and covered with mud, when needed. Doors and shower swells are provided for conversation, to close or open the dampers. In normal condition, only a sash is attached to the fireplace to establish a draft. In this type of bit, each chamber performs different functions, i.e., loading, drying, burning, cooling and landing. As an example, the 12 chamber is shown in the picture. 4-7, as the following can be done: Chamber 1-Load, Landing Chamber 2 to 5 — Dry and Pre-Heating Chamber 6 and 7-To-Burn Chamber 8-up with arrangement, the gas will be shown by the arrow in the picture of the rotation of the gas 4-7. The best air chambers enter through 1 and 12 because their main doors are open. After the colling chambers exceed 8 to 11, it enters the burning part in a warm state. Then heat it before 2 to 5 to dry and raw bricks. The damper of Chamber 2 is in open condition and hence it survived in the atmosphere through the fireplace. The initial cost of installing this bit is high, but the following benefits are: (A) the bricks are burned equally and equally. Therefore, high percentages of good quality bricks can be produced. (b) It is possible to manage the heat inside the chambers through the fuel source. (g) The supply of bricks is constantand regularly that is off the top of the bit and it can be made to work throughout the year. (D) There is considerable savings in fuel due to pre-heat of raw bricks by the gas. This is used completely in drying hot gases and before heating raw bricks. (a) There is no air pollution in the area because the way gases do not contain black smoke or coal dust particles. The ability to bit will depend on the dimensions of the chambers. If each chamber is about 11 m length, 4.50 m average width and 2.50m height, it will include about 25,000 bricks. So, if it is arranged like this that a chamber descends daily, a bit will produce about 25,000 bricks per day or about 8 to 9,000,000 bricks annually. The amount of coal required for burning of 100,000 coal is about 120 to 150 n. It can be noted that in the case of the bill's sash butt and Hoffman's bit, the chambers are geysers according to the processing stages of brick processing, i.e., loading, drying, heating, burning, calling and landing. The fire and other zones are constantly moving along the butt channel while the bricks in the process remain stationer. The table shows the competition of the 4.2-bell-bit and with homan along with some important items in the series of bit. (iii) Tunnel bit: This type of bit is in the form of a tunnel that can be directly in the plan of the circular or oval. This A stationery zone of fire. Raw bricks are placed on the trays which then move from the other end of the tunnel to one end. Raw bricks become dry and pre-heated as they approach the fire zone. In the fire zone, the bricks are burned to the required degree and then they are pushed forward for the calling. When the bricks are cool enough, they descend. This bit proves economical when a large-scale brick can be produced. The temperature is under control, better quality uniform bricks are produced. Create.