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2,569,543

MASONRY SIMULATING ROLL SIDING AND PROCESS OF PRODUCING SAME

Filed June 5, 1948

FIG. 1.

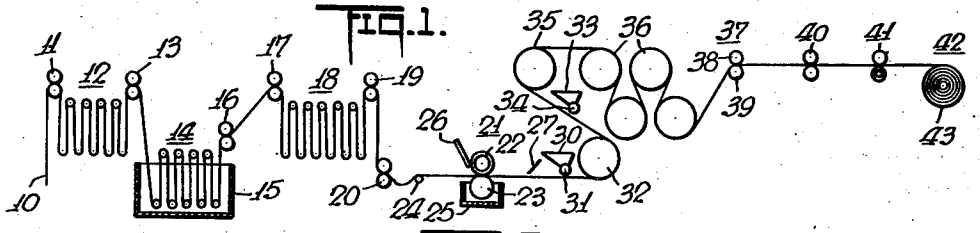


FIG. 2.

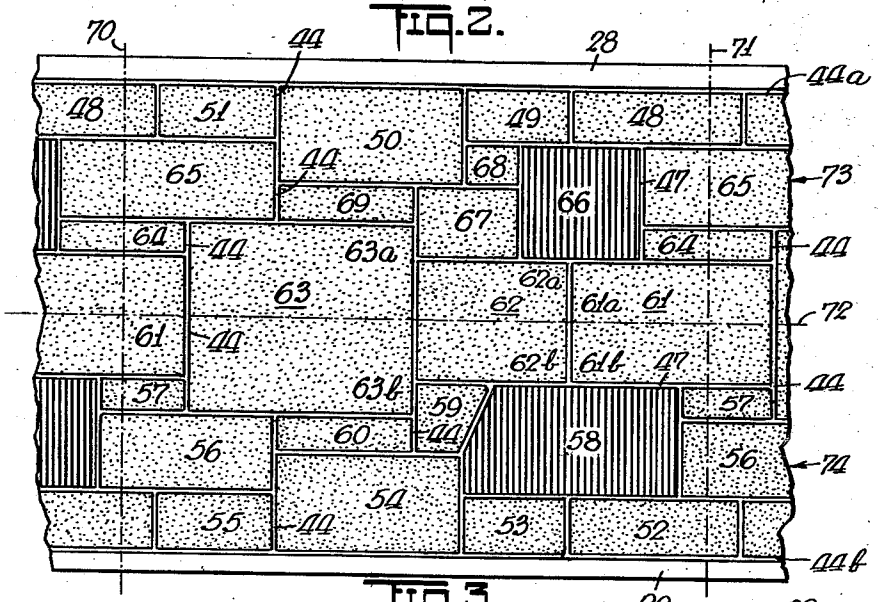


FIG. 3.

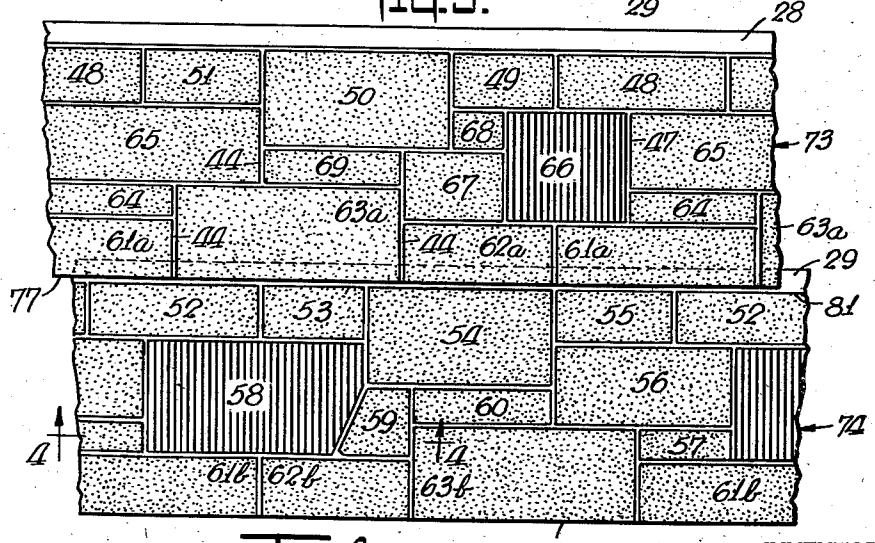
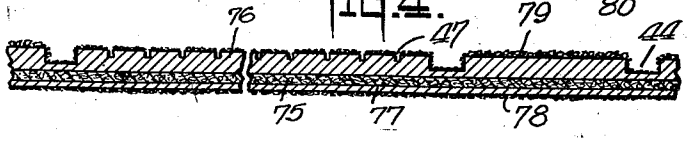


FIG. 4.



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MASONRY SIMULATING ROLL SIDING AND PROCESS OF PRODUCING SAME

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5 Claims. (Cl. 117—5)

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This invention relates to roll siding having a stone wall simulating appearance, i. e., the appearance of a wall made by laying different sizes of stones or other masonry elements bonded with mortar, and also to a novel process of producing such roll siding.

In the building trade it is the practice in the construction of less expensive homes and other buildings to apply roll siding having a surface appearance resembling rows of brick or stone to the studding or framework forming the side walls of such buildings. Such roll siding consists of long strips of felt saturated and coated with water-proofing material, such as asphalt or other bitumen, surfaced with wear-resistant granular material, such as crushed slate or other roofing granules and embossed to produce the desired surface appearance. Roll siding of this type is transported and shipped in the form of rolls which need only be unrolled and cut to form strips of any desired length for application with approximately a 1½" or 2" lap between contiguous rows of strips, and hence is substantially less expensive to manufacture and apply than individual siding units. In fact the roll type siding represents for all practical purposes the least costly type of siding now used in any substantial quantity in the building industry.

Such siding is commonly produced in a conventional roofing machine modified to employ an embossing cylinder to provide the desired surface appearance on the finished product. In this way the capacity of the roofing machine is utilized most efficiently and the cost of producing the siding is reduced in that the expense of having a separate installation involving relatively costly saturating, coating, surfacing, calendering, cutting, embossing and winding equipment is eliminated.

Walls produced from roll siding, particularly of the stone simulating type, as heretofore made, have a monotonous appearance in that each strip of siding as applied repeats the pattern of a preceding or underlying strip. Chiefly because the expense involved in the production of this type of siding is an extremely important factor in determining its saleability, it has not been found feasible to employ two separate embossing cylinders each producing a different stone simulating pattern, since this would either involve the use of duplicate saturating, coating, surfacing, cutting, embossing and winding equipment with consequent increased production costs, or the labor and loss of capacity involved in stopping the manufacturing operation while substituting one

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embossing cylinder for the other. Further, the use of two different embossing cylinders would entail the expense and trouble of keeping separate stocks of the two types of roll siding thus made and of shipping to the place of application the proper quantity of each to produce a wall construction having the desired stone simulating appearance.

Among the objects of this invention is to provide a process of producing roll type siding which can be carried out in conventional and existing roofing equipment, except for the addition of an embossing cylinder, to produce the desired surface appearance and which, notwithstanding only one embossing cylinder is employed, results in the simultaneous production of a plurality of strips each having the appearance of a different arrangement of stones of various sizes, which strips may be applied to a wall to produce a pleasing stone simulating appearance.

Another object is to provide siding in roll form which when unrolled and applied produces a wall having an appearance of being made from stones of different sizes bonded by mortar, the number of different stone simulating areas being such that the wall has a pleasing appearance free from monotonous pattern repetition.

Other objects and advantages of this invention will be apparent from the following detailed description thereof.

In accordance with this invention a felt or other fibrous base is saturated and coated with water-proofing material, such as asphalt or other bitumen, and surfaced with granular material as is conventional roofing and siding practice, and then passed into operative contact with an embossing cylinder which has along its length at least two distinct stone simulating patterns so that there is formed across the width of the web at least two different patterns which are repeated at regular intervals along the length of the web as the embossing cylinder is rotated in operative contact with the moving web. The web is partially or completely separated along the longitudinal meeting lines of the different patterns and without bodily separating the resultant strips, each having a different pattern thereon, wound into a roll to form the desired roll siding product, the web being cut transversely to produce rolls containing the desired length of siding. The partial or complete separation of the web along the longitudinal meeting lines of the different patterns desirably follows the embossing operation.

When it is desired to apply the siding, it is unrolled. If only partially separated along the

aforesaid longitudinal meeting lines the separation is completed prior to or immediately after the unrolling. The unrolled strips are applied to form the wall preferably so that two or more strips, each having a different stone simulating pattern, are applied one above the other with the desired lap, say 1½" between contiguous strips. By applying siding strips in succeeding rows having different stone simulating configurations, a wall is produced having the pleasing appearance of being made up of a relatively large number of stones of different sizes laid at random.

In the accompanying drawing Figure 1 is a side elevation somewhat diagrammatic in character and shows the steps involved in the manufacture of the roll siding of this invention;

Figure 2 is a fragmentary plan view of roll siding embodying the invention showing the full width of the siding as embossed and prior to winding to form the desired roll product;

Figure 3 is a fragmentary plan view of two overlapping strips corresponding to those shown in Figure 2 as applied in the intended manner to form a wall covering; and

Figure 4 is a fragmentary vertical section taken in a plane passing through line 4—4 of Figure 3.

Referring to the drawing with particular reference to Figure 1, a web of fibrous material **10**, which may be and preferably is the usual roofing felt made from fibrous material, as well known in this art, is fed by feed rolls **11** from the usual felt making machine or from a felt roll into a looping device **12**. From the looping device **12** rolls **13** feed the web into any customary type of saturating equipment **14**. Saturating tank **15** may contain suitable water-proof saturant, such as asphalt or other bituminous material utilized for the impregnation and saturation of the felt.

Rolls **16** and **17** feed the saturated web to a second looping device **18**. The passage of the saturated web through the looping device **18** gives the saturant the necessary opportunity to dry and thoroughly impregnate the fibrous web. Rolls **19** and **20** feed the saturated web from the looping device **18** to the coating equipment **21**. Rolls **20** are preferably driven at a slightly greater peripheral speed than that of the coating rolls **22, 23**, the slack accumulating between driving rolls **20** and guide roll **24** over which the web passes before entering the bight of the coating rolls **22, 23**. Coating roll **23** is rotatably mounted in a tank **25**. This tank may contain suitable waterproofing material, such as asphalt or other bituminous material employed for coating roofing and siding.

One side of web **10** is completely coated by roll **23**. Coating material is applied to the top of the web by means of a pipe **26** equipped with a discharge spout of a width approximately equal to that of the web. The coating material thus applied is spread uniformly over both sides of the web as it passes between the coating rolls **22, 23**.

Immediately upon leaving the coating equipment **21** and while the coating material is still tacky, the coated web passes under a pair of scrapers **27**, each approximately 1½" wide, disposed to contact the marginal areas of the web and remove substantially all of the coating material along a 1½" width band disposed at the marginal edges. The selvedge edges **28, 29** of reduced thickness as compared with the thickness of the remainder of the web are thus produced. The web then passes under hopper **30** containing granular surfacing material, preferably gray or other colored granules which impart to the surface of the web an appearance resembling that of stone. These granules are showered by means of the usual distributing roll **31** on to the web therebeneath. The thus surfaced web then passes about reversing roll **32**, which functions to partially embed the granular material in the underlying plastic coating. In the continued passage of the surfaced web, it comes under the hopper **33**. Mica dust, talc or other material capable of rendering the back of the web non-cementitious is deposited in hopper **33** and discharged therefrom by distributing roll **34**. The talc covered web then passes over a reversing roll **35** which imparts a smooth surface to the back of the web.

From the press rolls **36** the surfaced web passes through embossing equipment **37** consisting of a heated embossing cylinder **38** and a cooperating platen cylinder **39**. The embossing cylinder **38** will be hereinafter described in greater detail. The web then passes through a slitting or scoring mechanism **40** for completely or partially severing the web into longitudinal contiguous strips, each as hereinafter more fully described, bearing a stone simulating pattern consisting of stones of different sizes at regularly occurring intervals. The resultant web or series of contiguous strips then passes through a transverse cutting mechanism **41** of any conventional type which severs the same into predetermined lengths which are wound by the winding mechanism **42** to form a roll **43**. From the winding mechanism **42** the rolls **43**, as conventional, are wrapped for storage or transportation to the point of application.

The embossing cylinder **38** is provided with raised portions disposed circumferentially about the cylinder and also disposed on the periphery of the cylinder to produce the mortar simulating areas or lines **44** which desirably are each approximately ⅜" wide, and the closely spaced parallel lines **47** each desirably $\frac{1}{16}$" wide. Each revolution of the embossing cylinder **38** produces a series of mortar lines defining a plurality of masonry simulating areas of different dimensions hereinafter more fully described.

In the embodiment of the invention shown in Figure 2 each revolution of the cylinder produces a row of stone simulating areas **48, 49, 50** and **51**, hereinafter referred to as a marginal row of stone simulating areas. The top edge of areas **48, 49, 50** and **51** is defined by the longitudinally extending mortar line **44***a* contiguous to selvedge edge **28**. It is important to note that this marginal row consists of alternately long and short stone simulating areas; areas **48** and **50** are relatively long areas with area **50** being somewhat longer than area **48**, and areas **49** and **51** are the relatively short stone simulating areas, with area **51** being longer than area **49**. Suitable dimensions for these areas are as follows: **48**—12⅛" x 3⅝"; **49**—7⅜" x 3⅝"; **50**—13¾" x 6½"; **51**—8⅝" x 3⅝".

Along the marginal edge of the web contiguous to selvedge edge **29** a second marginal row of stone simulating areas **52, 53, 54** and **55** is produced. These areas are alternately long and short and are dimensioned as follows: **52**—12⅛" x 3⅝"; **53**—7⅜" x 3⅝"; **54**—13¾" x 6½"; and **55**—8⅝" x 3⅝"; thus areas **48, 49, 50** and **51** are identical, respectively, with areas **52, 53, 54** and **55**. There is also simultaneously produced interior stone simulating areas indi-

cated by the reference characters 56 to 69, inclusive. The areas 56, 57, 58, 59 and 60 constitute an interior group of five stone simulating areas on the lower half of the web which differ from the areas 64, 65, 66, 67, 68 and 69 constituting an interior group of six stone simulating areas disposed on the upper half of the web. Suitable dimensions for the areas 56 to 60, inclusive, are as follows: 56—13" x 5¼"; 57—6½" x 2"; 58—base side (viewing Figure 2) 15½", top side 13½", right side 7⅝" and length of left vertical portion 2⅞"; 59—base 3¼", left side 4¾", top side 5¼"; 60—10⅛" x 2⅜". Suitable dimensions for the areas 64 to 69, inclusive, are as follows: 64—9½" x 2"; 65—16" x 5¼"; 66—8½" x 7⅝"; 67—7¼" x 4¾"; 68—3⅝" x 2½"; and 69—10⅛" x 2⅜". Interior areas 61, 62 and 63 are desirably of the following dimensions: 61—14⅝" x 8¼"; 62—11" x 8¼"; and 63—16⅝" x 13". These areas are scored or slid along longitudinal line 72 bisecting areas 61, 62 and 63 and forming areas 61*a* and 61*b*, desirably each 14⅝" x 4⅛"; 62*a*, 62*b* each 11" x 4⅛" and 63*a*, 63*b* each 16⅝" x 6½".

The space between the parallel dot-and-dash lines 70, 71 on Figure 2 of the drawing indicates the area of the web 10 embossed during each complete revolution of the embossing cylinder 38. The web is fed at a constant rate of speed correlated with the speed of rotation of the embossing cylinder so as to feed the same linear distance of web through the embossing equipment per revolution of the embossing cylinder 38 and thereby produce across the width of the web the pattern shown in Figure 2 within the confines of the lines 70, 71. This pattern, as indicated in this figure, is repeated on each succeeding portion of the width of the web, which portion corresponds in area to that between the lines 70, 71 as the succeeding portion is brought into contact with the rotating cylinder. The web is then severed or scored along its longitudinal center line 72 and, without separating the two strips 73, 74 thus produced, is wound into a roll to produce the desired roll siding containing the two contiguous sections 73 and 74 in edge abutting relationship.

The resulting siding, as shown in Figure 4, consists of a felt base 75 having coating layers 76, 77 on opposite sides, a layer of antistick material 78 on the back and a layer 79 of granular material partially embedded in the coating layer 76. The thickness of coating layer 76 in Figure 4 is exaggerated to show relative depths of lines 47 simulating rough texture stone and mortar lines 44. The face of the web is embossed to produce (1) two marginal rows, one consisting of alternating long and short stone simulating areas 48, 49, 50 and 51 and the other of alternately long and short areas 52, 53, 54 and 55; areas 48, 49, 50 and 51 are identical, respectively, with areas 52, 53, 54 and 55; (2) a group of interior stone simulating areas 56 to 60, inclusive, on the lower half of the web; (3) a second group of interior stone simulating areas 64 to 69, inclusive, on the upper half, which groups differ from each other in the arrangement of stone simulating areas; and (4) an interior row of areas 61, 62 and 63 through each of which passes the longitudinal median line 72 of the web. Thus when the web is separated into two strips 73, 74, the former has along its marginal edge 77 stone simulating areas 61*a*, 62*a* and 63*a* and the latter has along its marginal edge 80 stone simulating areas 61*b*, 62*b* and 63*b*, areas 61*a*, 62*a* and 63*a* being identical, respectively, with areas 61*b*, 62*b* and 63*b*.

When the roll siding is applied it is unrolled and divided into the two strips 73, 74. All the strips are applied to form the wall with the selvedge edge 28, 29, as the case may be, at the top. Strip 74 may first be applied by nailing or otherwise to the wall. The succeeding or overlying strip on the wall desirably is a strip 73, thereafter a strip 74 is applied to the underlying 73 strip, etc. Before application, each strip 74 is turned so that the selvedge edge 29 appears at the top of the strip. By so turning the strip 74 the relative position of areas 52 to 60 is reversed as compared with their position shown in Figure 2. Thus in Figure 2 showing the position of these areas as produced, area 59 is positioned to the left of area 56; in Figure 3 which shows the position of these areas when the strips are applied, area 59 is positioned to the right of area 56. Hence, the identical stone simulating areas 49 and 53, and 51 and 55, when the strips are laid, no longer occur longitudinally opposite each other as in Figure 2 but bear the relative positions shown in Figure 3. Likewise the stone simulating areas 61*b*, 62*b* and 63*b* on strip 74, which when cut run from right to left (see Figure 2), when the strip is turned for application are disposed so that they run from left to right.

The siding may be laid as shown in Figure 3 to produce a wall having the pleasing appearance of being made from a large number of different sizes of stone laid at random. Due to the turning of strip 74 in order to have the selvedge edge 29 on top, a staggering of most of the vertical mortar simulating areas throughout the wall results even though the applicator, when placing a succeeding strip, positions it so that one mortar line of one strip is in vertical alignment with a mortar line of the immediately underlying strip. Thus, as is evident from Figure 3, the mortar line between areas 61*a* and 62*a* is in vertical alignment with that between areas 54 and 55; the mortar lines between 61*a* and 63*a*, between 63*a* and 62*a* and between 61*a* and 63*a* are staggered relative to those between 52 and 53, 53 and 54 and 55 and 52. By aligning one or more mortar lines in a vertical direction, as in the case of the mortar lines between 61*a* and 62*a* and 54 and 55, the long longitudinal mortar line 44*a* or 44*b* between adjoining strips 73 and 74 appears to be broken where the vertically aligned mortar lines appear. The different pattern of stone simulating areas 56 to 60 of strip 74 as compared with stone simulating areas 64 to 69 of strip 73 and the different sizes of stone simulating areas 61*a*, 62*a* and 63*a*, which as strips 73 are laid run from right to left, and areas 61*b*, 62*b* and 63*b*, which are of the same size, respectively, as areas 61*a*, 62*a* and 63*a* but as strips 74 are laid run from left to right, greatly enhances the pleasing appearance of the wall and the impression that the wall is composed of a multiplicity of stones of different sizes laid at random.

While the drawing shows the production of a web which is divided along its longitudinal median line into two strips, each having a desired stone simulating pattern thereon, it will be understood that the embossing cylinder may be so designed as to produce three or more such siding strips which are wound into a single roll after partial or complete severance along the meeting lines of the separate strips. If desired, the web embossed, as shown, for example, in Figure 2, may be wound on a roll without partially or com-

pletely severing the web along the longitudinal meeting lines of the strips each having different stone simulating patterns thereon, the roll being provided with indicia indicating the point at which it should be cut to produce strips each having a different pattern. Thus, for example, the last convolution of the roll may have a line thereon indicating where the roll should be cut. In a broad sense, of course, score or perforation lines on the web are indicia on the roll indicating where the web or roll should be cut to produce the separate strips.

It will be noted this invention provides a process of producing roll type siding which can be carried out in conventional roofing equipment, except for the addition of a single embossing cylinder of the type hereinabove described. It will be further noted notwithstanding only a single embossing cylinder is employed in the practice of this invention, there is simultaneously produced a plurality of siding webs each having the appearance of a different arrangement of stones of various sizes separated by mortar joints. Hence, it is only necessary to stock and ship this one type of roll siding which when applied as hereinabove described results in a wall having the pleasing appearance of being made from a large number of different sizes of stone laid at random and bonded by mortar, which wall is free of monotonous pattern repetitions. While not preferred, if desired, the two strips **73**, **74**, each having a different pattern, may be applied so that strips **73** only are applied to one wall and strips **74** to another wall.

In the claims where reference is made to cutting said web, it is intended to include a slitting or cutting operation which cuts the web completely through the full thickness thereof, as well as a partial severance, for example, perforating the web or scoring it so that the web may readily be separated into strips when it is unwound from the roll or even while on the roll.

Since certain changes in carrying out the above process, and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In a process for continuously producing masonry simulating roll siding which process comprises impregnating a felt web with a bituminous saturant, applying a bituminous coating layer to the impregnated web, and surfacing the coated web with granular surfacing material, the improvement which comprises embossing the granular material surface of said web to produce across substantially the full width of said web at least two different masonry simulating patterns, each of said patterns being repeated in contiguous relationship along the length of said web and consisting of different masonry simulating areas separated by mortar line simulating areas, cutting said web along each longitudinal line separating the different patterns to form contiguous strips having said different patterns thereon respectively and winding said strips to form rolls of siding each roll containing at least two of said strips having said different patterns thereon respectively in side by side relationship on said roll.

2. In a process for continuously producing masonry simulating roll siding which process comprises impregnating a felt web with a bituminous saturant, applying a bituminous coating layer to the impregnated web, forming selvedge edges along the opposite longitudinal edges of the coated web and surfacing the coated web with granular surfacing material, the improvement which comprises embossing the granular material surface of said web to produce across substantially the entire width of said web between said selvedge edges two diffrent masonry simulating patterns, each of said patterns being repeated in contiguous relationship along the length of said web and consisting of different masonry simulating areas separated by mortar line simulating areas, cutting said web along its longitudinal median line to form two contiguous strips having said different patterns thereon respectively and winding said strips to form rolls of siding each roll containing both of said strips in side by side relationship on said roll.

3. Roll siding consisting of a web having a wear-resisting surface in which is embossed across the width of said web at least two different stone simulating patterns, each of said patterns being repeated in contiguous relationship along the length of said web and consisting of different sizes and shapes of stone simulating areas separated by mortar joint simulating areas, said roll siding having thereon indicia indicating a longitudinally extending line separating said web into strips, each of which strips has a different stone simulating pattern thereon from that on a contiguous strip.

4. Roll siding consisting of a web having a wear-resisting surface in which is embossed across the width of said web two different stone simulating patterns, each of said patterns being repeated in contiguous relationship along the length of said web and consisting of different sizes and shapes of stone simulating areas separated by mortar joint simulating areas, said roll siding having thereon indicia indicating a longitudinally extending line separating said web into two strips each having a different stone simulating pattern thereon.

5. Roll siding consisting of a pair of contiguous strips both wound in side-by-side relationship with their contiguous marginal edges in abutting relationship to produce said roll, each strip consisting of a felt base, saturated and coated with water-proofing material, surfaced with granular material and embossed to embed the granular surfacing into the underlying coating to produce a stone simulating pattern consisting of stone simulating areas of different dimensions separated by mortar joint simulating areas, said patterns being repeated in contiguous relationship along the length of said strip, the pattern on one of said strips being different from that on the other of said strips.

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