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(54) **WALLBOARD TAPE AND METHOD OF USING SAME**

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(57) **ABSTRACT**

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A means and method for simplifying the covering of elongated wallboard joints formed by the abutting of adjacent wallboards using an improved resin impregnated water-activated adhesive tape containing mold and mildew inhibitors, and having air venting perforations extending between first and second planar surfaces applied directly over the joint. Following which an applied single coat of plaster composition is used to conceal the tape.

WALLBOARD TAPE AND METHOD OF USING SAME

BACKGROUND OF THE INVENTION

[0001] This invention relates generally to the construction and building trade, and more particularly to an improved unique version of paper fiber type joint tape usually available in roll form. The objective of wallboard tape is to join gypsum drywall segments to conceal the fusion in a smooth seamless transition from section to section.

[0002] The standard established procedure is set in motion after securing wallboards to the building frame. A layer of joint compound is applied (mud or plaster) to cover the space between drywall sections. Joint tape is then embedded within the compound running the length of the wallboard joint. The generally accepted conventional tape calls for 80-100 pound kraft paper with 0-2% wet strength properties.

[0003] After this tape application is completed, an important drying period is required. Conventional drywall tape is formulated from pulp becoming kraft paper as the finished product. Specifications of paper used require set standards of high tensile fiber composition with wet, dry and cross tear strengths as the standard determined properties (ASTM-475). The kraft paper, fabricated without a resin binder allows the penetration of the moist compound. This paper is either available in a spark-perforated surface or a plain gypsum ribbon. Both paper types are typically slightly sanded creating a fine nap for greater adhesion qualities. These tapes include a defined center margin for an accurate taping guide, particularly for corners. The benefits of spark-perforation are a faster and even drying outcome.

[0004] Depending upon the ambient atmosphere, the aeration time is approximately 8 to 12 hours. The drying is a critical factor so that the joint environment is free of moisture. Moisture breeds mold and mildew that can spread throughout the wallboard perpetuating building decay and promoting a health hazard. This is equally true where the wallboard is of other than gypsum construction.

[0005] After the above step is completed, a second coat of compound covers the tape, again needing to dry fully. Smooth sanding completes preparation for the final finishing, painting, etc.

[0006] This procedure, very well established, is easily executed and requires two time-consuming drying periods, regardless of the basic components (animal, starch, or polyvinyl acetate) found in the majority of compounds used.

[0007] In addition to the paper fiber tape, the art also employs fiberglass mesh tape as a joint seam. It is available in either a self-adhesive roll (one side adhesively coated) or a plain, non-adhesive staple roll, depending upon the user's preference. The benefit of this tape is a grid fabrication that interlocks with the initial layer of compound. The general practice allows for the mesh as a first stage of application, and then follows the same procedures including the two coats of compound that require extensive drying time as described above. The drywall mesh tape is more expensive than conventional paper tape, thus being used more often for repairs than for wallboard joint connection.

SUMMARY OF THE INVENTION

[0008] In brief, the invention contemplates the provision of a fibrous or paper wallboard tape, which may be

employed without the necessity of first applying an initial coat of compound or plaster. The merits of this are both economical and practical from the vantage point of the end user. To this end, the inner surface of the tape with the general basic conventional product qualities is coated with a formulated water soluble, water-activated adhesive containing mold and mildew inhibitors. The tape is inert until wetted. Once activated by water, the tape adhesion to the adjacent joint follows. The adhesive begins to bond as it aerates. Drying is quick as the tape ventilation properties allow moisture to evaporate rapidly via the perforations. Substantial wetting of the paper tape is of little consequence to the bonding properties. The absence of the bedding coat allows moisture to evaporate quickly from the underlying joint. In less than one hour after beginning the process, the final coat of either plaster or compound may be applied.

DETAILED DESCRIPTION OF THE DISCLOSED EMBODIMENT

[0009] In accordance with the invention, the disclosed embodiment may include many forms, although the majority of use is in the form of an elongated resin impregnated tape. Other such forms may be rectangles, squares, circles, and frames of those shapes, as well as appliques combined with other materials for use as adjuncts or as accessories in activities associated with the construction industry and general crafts where applicable. The embodiment is comprised of a first layer of fibrous material and a water-soluble, water-activated adhesive layer applied to one surface thereof. The tape may be conveniently packaged in roll form as known in the art. The tape may be in a variety of widths, mostly ranging between one-eighth inch and six inches, and lengths from 20 feet to 600 feet, most commonly approximately 2 feet by 300 feet, which will be normally adequate to cover the gaps formed by abutting wallboards. Extending between the outer surface and the inner surface of the fibrous layer are air-conducting perforations covering substantially the entire area at intervals of one-eighth inch, which may be either punched or spark-perforated. As is known in the art, a preferred centerfold may be employed to enable the tape to be used with angle joints, as well as joints formed by inside corners of a wall. This centerfold, known in the art as a center margin, serves as a rule guide for the user. The adhesive layer is preferably roll-coated using known techniques to conventional thickness. Since resin impregnated paper is mechanically stronger than kraft paper, the fibrous material may be of a lesser thickness than the conventional product. The adhesive contains mold and mildew inhibitors as described below.

[0010] The tape may be employed either by moistening the adhesive layer using a wetted sponge, immersing the tape roll in a vessel of water, or a dispensing device that may or may not incorporate a wetted sponge. It is possible to wet the exposed surface of the wallboard adjacent to the joint so that moisture transfer from the wallboard wets the adhesive surface of the tape when applied. Preferably, a sponge brushing of the applied tape length across the joint takes place after application to ensure proper bonding wetness and a smooth drying result. During this period, or re-wetting later, the tape may be accurately positioned if not originally properly aligned without difficulty. The wetting is facilitated by the fact that the paper layer which is resin impregnated does not absorb and retain substantial amounts of moisture, which also facilitates subsequent drying of the adhesive. As

a result, the tape is sufficiently dried and ready for the application of a finish coat of plaster compound after several minutes.

[0011] An important feature to be noted is that within the adhesive formula there are provided mold and mildew inhibitors for preventing bacterial growth. While a variety of such agents are commercially available, a preferred composition is sold under the trademark "Sil-75", a liquid polysiloxane available from the Dow Chemical Corporation of Midland, Mich. This composition is preferably incorporated into the adhesive by mixing in a proportion of less than five percent by volume. I have found a range of one to two percent by volume to be effective.

[0012] It will be observed that since the adhesive layer is not activated prior to actual application to the joint, should any longitudinal twisting occur as the strip is handled, it can be readily straightened as the strip is applied without danger of the adhering layer adhering to itself, as is the case where pressure sensitive adhesives are employed. Of equal importance is the fact that the cost of manufacture of the disclosed tape is only marginally greater than that of conventional paper tape, and well within the price range of the highest quality fiberglass tape.

[0013] With the elimination of the initial layer of compound, fewer person-hours are necessary to accomplish the drywall joint task and a great savings emerges. The improved tape may be used in connection with wallboards of other than gypsum type with equal facilities.

[0014] I wish it to be understood that I do not consider the invention to be limited to the precise details of structure described in the specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

I claim:

1. An improved tape for covering elongated joints in gypsum and other type wallboards comprising: a fibrous tape having a resin-impregnated body defining first and second planar surfaces; said body having air-conducting perforations extending therethrough; and a water-soluble,

water-activated adhesive layer applied to one of said first and second surfaces, said layer being in communication with said air-conducting perforations, whereby said adhesive layer may dry through said air perforations in the process of drying after installation over a wall joint, said resin impregnated body remaining relatively non-moisture absorbent during the wetting of said adhesive layer.

2. A method for covering an elongated wall joint between a pair of abutting wallboards forming a continuous interior of a building structure comprising the steps of:

- a) providing an elongated length of wallboard tape of width sufficient to overlie said joint, said tape including a resin impregnated fibrous base having air-conducting perforations extending between first and second planar surfaces thereof, and a layer of water-soluble, water-activated adhesive containing mold and mildew inhibitors applied to one of said surfaces;
- b) wetting an exposed surface of said layer of adhesive;
- c) pressing said last-mentioned surface of said tape into smooth contact with adjacent areas of said pair of wallboards to overlie said joint to adhere said adhesive layer to said adjacent areas;
- d) allowing said adhesive layer to dry by evaporation of moisture through said air-conducting perforations; and
- e) applying a single coat of plaster compound over said tape and areas adjacent said joint.

3. The method in accordance with claim 2; in which said adhesive is wetted prior to the application of said joint.

4. The method in accordance with claim 2, in which said adhesive is wetted by wetting of the adjacent surfaces of said pair of wallboards.

5. The method in accordance with claim 1, in which said mold and mildew inhibitors include a liquid polysiloxane.

6. The method in accordance with claim 5, in which said polysiloxane is mixed with said adhesive in a proportion of less than five percent by volume.

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