VINYL-WRAPPED CHAMFER AND REVEAL STRIPS FOR USE IN CONCRETE TILT-UP CONSTRUCTION

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ABSTRACT
An easily removable chamfer strip for use in concrete setting. The chamfer strip has a vinyl release coat or wrapping on one side and double-sided tape or glue on the other. The chamfer strip temporarily affixes to a concrete form to allow the concrete to set, yet can be easily removed thereafter.
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CROSS REFERENCE TO RELATED APPLICATION

This application claims priority to U.S. Provisional Patent Application Ser. No. 60/992,898, filed Dec. 6, 2007, Robert Malanga inventor, which application is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

This invention relates to construction methods and materials and particularly to use of chamfer and reveal strips in concrete setting process during construction of tilt-up walls and other concrete objects.

BACKGROUND OF THE INVENTION

Tilt-up wall construction is a widely-used method of constructing walls for buildings. In this method reveal strips and chamfer strips are used to add beauty and functionality to concrete walls by creating desired voids in a finished concrete wall or other concrete object. A tilt-up wall is typically constructed by pouring a concrete slab within forms horizontally, on the ground, then tilting up the cured concrete slab vertically to act as a wall.

As shown in FIGS. 1 through 3, reveal strips 8 and chamfer strips 9, collectively 10, are members placed within a concrete form 12 to provide voids 15 in the finished concrete wall 14. The strips are placed in the form 12 and a concrete slurry 16 is then poured in the form, enveloping the strips 10. The strips 10 are later removed from the hardened concrete as or after it has been raised vertically (as shown by arrow) to act as a wall 14, leaving a desired void in the concrete. Chamfer strips 9 are usually used to form the edges of concrete walls to avoid forming a ninety degree edge, a shape that is difficult for the granular particles of concrete to maintain with structural integrity. Reveal strips 8 are more commonly used to form voids within the body of the finished wall.

In the past a chamfer or reveal strips were typically made of wood or metal of a desired shape. The wood was affixed to the substrate that formed the floor 18 of the form by nailing or bolting it to the floor. The strips 10 were then sprayed with a release agent 19 to allow easy separation between the wood and concrete after curing.

This method of the prior art is laborious and prone to leaving undesired impressions of the wood or metal in the finished concrete wall, requiring excessive grinding to remove these shapes in the concrete, to finish the wall.

Attempts were made in the past to wrap a chamfer or reveal strip 10 in a vinyl sheet material by use of an intermediate paper layer, laminated to bind the sheets together. The water in the poured concrete, however, caused these layers to separate in use and fall as inadequate chamfer and reveal strips.

SUMMARY OF THE INVENTION

The present invention provides more economical and efficient chamfer strips for use with concrete walls. While the present invention is directed to tilt-up wall construction it is not limited to this particular type of construction. The methods and design can also be used in conjunction with any concrete formation where the use of reveal or chamfer strips is desired to form other concrete objects.

A reveal or chamfer strip of a desired shape is bonded to vinyl or similar sheet material using the methods of profile wrapping a substrate such as wood as has been used in the past to bond such sheet material in profile wrapping picture frames. Such methods, for example, are described in U.S. Pat. No. 5,234,519, Talbot, and these other profile wrapping methods are known to those of skill in that art. A material like vinyl is bonded directly to the substrate and the resulting vinyl sheet both bonds well with the substrate and, because it does not stick well to the dried concrete, eliminates the need for a separate release agent for the concrete.

In the preferred embodiment the side of the chamfer or reveal strip that is to be affixed to the floor of the concrete form is provided with a glue or double-sided tape with a non-stick film to prevent activation, allowing quick affixation to the floor of the concrete form. A user simply removes the non-stick film from the chamfer or reveal then places it on the floor of the concrete form in the desired location.

After the concrete has been poured and has cured the vinyl-wrapped chamfer and reveal strips can be easily separated from the concrete, leaving a clean impression as a void.

The present invention can also be used to form other concrete objects with similar benefits, where there is a need for chamfer or reveal strips in the formation of that object.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevation view showing placement of chamfer and reveal strips in a concrete form for construction of tilt-up walls.

FIGS. 2 and 3 are side elevation view showing the remaining steps of use of reveal and chamfer strips in tilt-up construction.

FIG. 4 is a side diagram view of the chamfer strip of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The following description, and the figures to which it refers, are provided for the purpose of describing examples and specific embodiments of the invention only and are not intended to exhaustively describe all possible examples and embodiments of the invention.

Referring now in addition to FIG. 4, the specific shape and size of reveal strip 8 varies depending on the look the user wants to achieve. This description applies equally to a chamfer strip while the reveal strip is used for illustrative purposes.

The device and the process for using it are that vinyl material is applied to a chamfer or reveal strip substrate 24 using either hot-melt glue or cold glue, a substrate for example of wood or medium density fiberboard. A cold-melt glue is favored however because some hot-melt glues can melt the vinyl material 22 itself.

While vinyl has been found to both bind well to the substrate and act as a release agent, any sheet material with equivalent properties may be used, and may be collectively as vinyl-sheet 22 and the description herein refers to those other equivalent sheet materials as well. Different materials may be used that achieve the same properties may be used solid plastic for example may be used as either a laminate or for the entire strip. A sheet material may be formed by methods of that art, applied as a liquid paint to the substrate as well, as used in earlier methods of profile wrapping.
The vinyl-sheet 22 is applied as a sheet or to form a sheet to a chamfer or reveal strip on at least all of the surface that is to come in contact with cement. On the remaining side 30 of the reveal 8 a double-sided sticky tape or a bead of pressure-sensitive glue 26 is applied together with a non-stick film 28 to prevent activation. After the non-stick film 28 is removed, the side of the strip with the glue 30 is placed on the forming surface, to bind it to the floor of the concrete form 18, to prevent it's movement during the concrete setting process.

It is preferred that the tape or glue 26 extend to the ends of each strip 10 to prevent the intrusion of cements into the glue side 30 of the chamfer or reveal strips. It is also desirable to seal the ends 32 of the chamfer or reveal strips to prevent the substrate 24 from absorbing water from the wet concrete and thereby compromising its structural integrity.

Wrapping of chamfer strips 10 with vinyl-sheet 22 can be made or performed on a lineal profile wrapping machine and using an industry standard glue applicator.

The finished product allows for easy release of the chamfer strip after the concrete wall has finished forming, while keeping the strip in place during the forming.

It is therefore not necessary to apply a non-stick release agent to allow separation from the concrete, or an adhesive glue nailed to affix the strip 10 to a form floor or form substrate 18 in the field. The vinyl-sheet 22 is not sticky so the need for a release agent is eliminated. The adhesive glue 26 of the present invention keeps chamfers and reveals in place while concrete wall is being formed.

The process is the same for all shapes and sizes of reveal and chamfer strips. Each shape is bond to a non-stick vinyl-sheet to replace a release agent on the side that comes in contact with the wet cement and the other side has a pressure-sensitive glue or other adhesive with a protective coating over it, to protect to protect the adhesive prior to use. One or more chamfer or reveal strips of the present invention are placed in a concrete form and affixed in place. After the concrete has cured the strips are separated from the concrete to leave one or more desired voids.

It will be appreciated that the invention has been described hereabove with reference to certain examples or preferred embodiments as shown in the drawings. Various additions, deletions, changes and alterations may be made to the above-described embodiments and examples without departing from the intended spirit and scope of this invention.

What is claimed:

1. A chamfer or reveal strip for use with shaping concrete, comprising:
a chamfer or reveal strip having at least one side that has a pressure-sensitive glue coating and additional sides having a vinyl-sheet covering, whereby the vinyl-sheet covering is adapted to come in contact with wet cement and, when the user affixes the glue coating side to a form then pours concrete over the chamfer or reveal strip, the chamfer or reveal creates a void after the chamfer or reveal strip is removed from the cured concrete.