shears. Unfortunately, installers often forget or poorly execute this step that can in turn reduce the overall quality of the film attachment system installation.

Additional adhesive attachment article-to-window film installation steps requiring some level of skill include initially aligning the adhesive attachment article relative to the corresponding window component (i.e., the window frame 16 or the glazing 18), and then applying proper force to activate the adhesive surfaces 13a, 13c. First, the adhesive attachment article 10 must be aligned and generally adhered to the corresponding window components. Once aligned, a force is applied by the installer on to the leg portions 12a, 12c, causing the adhesive surfaces 13a, 13c to more fully press against the corresponding window component. Because the leg portions 12a, 12c are quite close to one another while arranged at an approximately 90 degree angle, it can be difficult to uniformly align the attachment article relative to the window components, while simultaneously removing the liners (where provided). Similar constraints also impede consistent application of the requisite pressing forces. Various tools have been developed for assisting the installer with these tasks, including tools that can both align and apply pressing forces to the attachment article such as those described in U.S. Publication No. 2009/0320406 (Dyer). While useful, these alignment and force applying tools must be carried by the installer (in addition to the cutter(s) mentioned above), adding to the overall complexity of the installation process.

The cutting, alignment and/or force applying concerns noted above are not limited to adhesive attachment articles and their installation to windows. Installation of a wide variety of other flexible profile moldings (i.e., other than adhesive attachment articles utilized for window film-to-window frame attachment) also entail one or more of miter cut formation, installation alignment and/or pressing force application.

In light of the above, a need exists for tools that simplify the installation of elongate flexible profile moldings, such as, but not limited to, installation of adhesive attachment articles to window film-protected windows, including the formation of desired miter cuts. Optionally, these same tools facilitate performance of other installation tasks, such as attachment article alignment. Other installation tasks, such as application of required pressing forces, are also addressed.

Summary

According to an aspect of the present invention, there is provided an installation tool for installing an elongate flexible profile molding to a substrate, the tool comprising:

a housing defining a cavity and opposing, first and second ends;

a blade assembly coupled to the housing and including a blade disposed within the cavity; and

a cutting plate selectively mountable to the second end of the housing, the cutting plate including:

a platform defining opposing, first and second major faces,

a first profile projecting from the first major face,

an optional second profile projecting from the second major face,

wherein the first profile and the optional second profile are configured to retain an elongate flexible profile molding, the first profile differing from the second profile when provided;

wherein the housing further defines a slot open to the second end,

wherein the slot is open at opposing sides of the housing for receiving the elongate flexible profile molding,

wherein the slot is configured to define a flexed condition for the elongate flexible profile molding, and

wherein selective mounting of the cutting plate to the second end of the housing defines a first cutting state in which the first profile faces the blade and an optional second cutting state in which the second profile, when provided, faces the blade.

According to another aspect of the present invention, there is provided a method of installing a flexible profile molding having an un-flexed shape in a natural condition, the method comprising:

inserting the flexible profile molding into an installation tool, including the installation tool forcing the flexible profile molding to a flexed cutting condition having a flexed cutting shape differing from the un-flexed shape;

actuating the installation tool to cut the flexible profile molding while in the flexed cutting condition to define a flexible profile molding segment having a miter cut end;

removing the flexible profile molding segment from the installation tool such that flexible profile molding segment is free to revert back toward the natural condition;

wherein the miter cut end is substantially linear in the flexed cutting condition and has a curved contour in the natural condition; and

locating the flexible profile molding segment at an installation environment.

Some aspects of the present disclosure relate to an installation tool useful for the installation of an elongate flexible profile molding, for example installation of an adhesive attachment article to a window film-protected window. Although descriptions of the present disclosure make reference to elongate adhesive attachment articles for installation to windows the tools, systems and methods of the present disclosure are equally applicable to any other type or format of flexible profile molding, including flexible profile moldings that do not include an adhesive. The installation tool includes a housing, a blade assembly and a cutting plate. The housing defines a cavity and opposing, first and second ends. The blade assembly is coupled to the housing and includes a blade disposed within the cavity. The cutting

What is claimed is:

1. An installation tool for installing an elongate flexible profile molding to a substrate, the tool comprising:

a housing defining a cavity and opposing, first and second ends;

a blade assembly coupled to the housing and including a blade disposed within the cavity; and

a cutting plate selectively mountable to the second end of the housing, the cutting plate including:

a platform defining opposing, first and second major faces,

a first profile projecting from the first major face,

an optional second profile projecting from the second major face,

wherein the first profile and the optional second profile are configured to retain an elongate flexible profile molding, the first profile differing from the second profile when provided;

wherein the housing further defines a slot open to the second end,

wherein the slot is open at opposing sides of the housing for receiving the elongate flexible profile molding,

wherein the slot is configured to define a flexed condition for the elongate flexible profile molding, and

wherein selective mounting of the cutting plate to the second end of the housing defines a first cutting state in which the first profile faces the blade and an optional second cutting state in which the second profile, when provided, faces the blade.

~~2. The installation tool of claim 1, wherein the housing further defines a slot open to the second end, wherein the slot is open at opposing sides of the housing for receiving an elongate flexible profile molding.~~

~~3~~2. The installation tool of claim ~~2~~1, wherein the cutting plate is configured to arrange the first profile in a direction of the slot in the first cutting state and the second profile, when present, in a direction of the slot in the second cutting state.

~~4~~3. The installation tool of claim ~~3~~2, wherein the second profile is present, and further wherein the first and second profiles are configured such that in the first and second cutting states, respectively, ~~an~~ the elongate flexible profile molding is held in arrangement flexed cutting condition dictated by the corresponding profile for cutting by the blade.

~~5~~4. The installation tool of claim 1, wherein the first profile includes a support wall projecting from the first major face and terminating at a leading edge opposite the first major face, the leading edge forming a curve.

65. The installation tool of claim 54, wherein the support wall further defines opposing side edges extending between the leading edge and the first major face, the side edges being substantially planar.

~~7~~6. The installation tool of claim ~~5~~4, wherein the housing further defines a slot configured to receive ~~an~~ the elongate flexible profile molding, and further wherein the first cutting state includes the leading edge extending in a direction of the slot.

~~8~~7. The installation tool of claim ~~5~~4, wherein the first cutting state includes the leading edge being proximate the blade.

~~9~~8. The installation tool of claim 1, wherein the second profile is present, and further wherein the second profile includes first and second spaced apart ribs projecting from the second major face, and wherein a notch is formed through each of the ribs and sized to receive the blade.

~~10~~9. The installation tool of claim 1, wherein the blade assembly further includes a biasing mechanism biasing the blade away from the cutting plate, and further wherein the installation tool is configured to effectuate severing of an elongate flexible profile member mounted to the cutting plate via a user-applied force sufficient to overcome a biasing force of the biasing mechanism.

~~11~~10. The installation tool of claim 1, wherein the blade is a straight blade.

~~12~~11. The installation tool of claim 1, wherein the blade assembly further includes a guide member, and further wherein the cavity defines a guide channel configured to selectively capture a region of the guide member in establishing a spatial orientation of the blade relative to the cutting plate.

~~13~~12. The installation tool of claim ~~12~~11, wherein the guide channel forms a first end region configured to arrange the guide member at a first spatial orientation relative to the cutting plate, and a second end region configured to arrange the guide member at a second spatial orientation relative to the cutting plate.

~~14~~13. The installation tool of claim 1, wherein the housing forms an exterior defining a first alignment surface configured to apply ~~an~~ the elongate flexible profile molding to a window.

~~15~~14. The installation tool of claim ~~14~~13, wherein the first alignment surface includes:

a trough extending from the first end to the second end;

wherein a width of the trough is defined in a direction perpendicular to a length of the housing;

and further wherein the width of the trough at the first end differs from the width of the trough at the second end.

~~16~~15. The installation tool of claim ~~15~~14, wherein each of the alignment faces further includes a ridge formed within, and extending along a length of, the corresponding trough, and further wherein the ridge forms a curved face for slidably interfacing with ~~an~~ the elongate flexible profile molding.

~~17~~16. A method of installing a flexible profile molding having an un-flexed shape in a natural condition, the method comprising:

inserting the flexible profile molding into an installation tool, including the installation tool forcing the flexible profile molding to a flexed cutting condition having a flexed cutting shape differing from the un-flexed shape;

actuating the installation tool to cut the flexible profile molding while in the flexed cutting condition to define a flexible profile molding segment having a miter cut end;

removing the flexible profile molding segment from the installation tool such that flexible profile molding segment is free to revert back toward the natural condition;

wherein the miter cut end is substantially linear in the flexed cutting condition and has a curved contour in the natural condition; and

locating the flexible profile molding segment at an installation environment.

~~18~~17. The method of claim ~~17~~16, wherein the installation tool includes a straight blade, and the step of actuating the installation tool to cut the flexible profile molding includes cutting the flexible profile molding with the straight blade.

~~19~~18. The method of claim ~~18~~17, wherein the step of locating the flexible profile molding segment at an installation environment includes flexing the flexible profile molding segment to a flexed installation condition having a flexed shape differing from the un-flexed shape and the flexed shape of the flexed cutting condition.

~~20~~19. The method of claim ~~19~~18, wherein the flexible profile molding defines opposing leg portions interconnected by a flexible connection portion, and further wherein the flexed cutting condition includes the opposing leg portions arranged substantially parallel and the flexed installation condition includes the opposing leg portions arranged substantially perpendicular.