HINGED INSULATED CONCRETE FORM

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ABSTRACT

An insulated concrete form is provided with a hinge on one of the side walls and indicia on the opposite side wall. The indicia indicate a desired angle for a wall being constructed, and which presents cut lines to remove a section of the opposite wall. The concrete form is then rotated about the hinge to the desired angle and set in place. A plurality of sections may be stacked to form a wall of any desired height and length.
HINGED INSULATED CONCRETE FORM

BACKGROUND OF THE INVENTION

[0001] The present invention relates to concrete form and, more particularly, to insulated concrete forms that may be configured at any desired angle.

[0002] Insulated concrete forms made of polymeric foam material are known. Such forms generally include a pair of laterally spaced-apart side walls made of polymeric foam which present a cavity therebetween. A plurality of these forms is connected together to present longitudinally and vertically aligned cavities for pouring concrete therein.

[0003] One problem with these concrete forms is that they cannot easily be manipulated to form walls with corners with angles other than 90 or 135 degrees. If a wall being formed includes a 150 degree angle, for example, the concrete forms have to be cut and fitted together. When concrete is poured into the forms, if the corners are not sealed concrete may leak through the gaps at the corner. The leaked concrete requires additional time for clean up, finishing once the concrete has set, or is not aesthetically pleasing. This process of sealing the corners requires additional OSB to seal the gaps in the form as well as additional bracing. Furthermore, mismatched or poorly cut forms result in waste.

SUMMARY OF THE INVENTION

[0004] An insulated concrete form is provided that includes a hinge in one of the side walls. The hinge permits the concrete form to be adapted to a desired angle while sealing one corner of the form. The other side of the form may be cut to the desired angle and the form set in place.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. 1 is a front elevational view of the insulated concrete form with an integrated hinge of the present invention.

[0006] FIG. 2 is a left end view of the insulated concrete form of FIG. 1.

[0007] FIG. 3 is a top view of the insulated concrete form of FIG. 1.

[0008] FIG. 4 is the insulated concrete form of FIG. 3 shown with a section removed.

[0009] FIG. 5 is the insulated concrete form of FIG. 4 with a section pivoted to a desired angle.

[0010] FIG. 6 is the insulated concrete form of FIG. 3 with indicia for angled cuts.

[0011] FIG. 7 is a rear elevational view of the insulated concrete form of FIG. 6 showing indicia corresponding to the indicia of FIG. 6.

[0012] FIG. 8 is a perspective view of a partial wall showing alternating hinged corners.

DESCRIPTION

[0013] Referring initially to FIGS. 1-3, a hinged insulated concrete form of the present invention is generally indicated by reference numeral 10. Insulated concrete form 10 includes a pair of sidewalls 12 and 14 held in a spaced-apart relationship by ribs or form ties 16 to form a channel 18. The top and bottom surfaces of sidewalls 12 and 14 include an alternating pattern of raised blocks 20 which allow the forms 10 to be stacked and locked together to form a wall.

[0014] The ribs 16 may include fingers (not shown) extending upwardly or downwardly to secure rebar (not shown) running longitudinally through the channel 18 to reinforce concrete poured in the channel 18. The sidewalls 12 and 14 are made of a polymeric material known in the art with the ribs 16 typically made of molded plastic. The ends of the ribs 16 are embedded in the sidewalls 12 and 14 to maintain an even spacing and to provide lateral support for the concrete wall.

[0015] Sidewall 14 includes an embedded hinge 22 which runs from the top to the bottom of sidewall 14. A piano-type hinge is shown in FIG. 1, however, two or more separate hinges may be used. It is contemplated that the hinge may be a solid plastic or other suitable material piece bendable along a fold line. On the channel side surface 24 of sidewall 14, a V-shaped notch 26 is provided to allow clearance for the hinged sidewall 14 as further described below.

[0016] Referring to FIGS. 4 and 5, to make a corner of any desired angle, a section 28 of the sidewall 12 is removed by cutting the foam to the desired angle. As shown in FIG. 4, the sidewall 12 is cut at a 15 degree angle on either side of a line normal to the surface of sidewall 12 and intersecting hinge 22 in sidewall 14. With a section of sidewall 12 removed, the end 30 of form 10 may be pivoted about hinge 22 until the exposed surfaces 32 and 34 of sidewall 12 meet to form a 150 degree angle, and thus a 60 degree corner.

[0017] Referring to FIGS. 6 and 7, three different angled cuts are illustrated with the corresponding section which would be removed from sidewall 12. The raised blocks are not shown in FIG. 6 to clearly show the indicia. On the upper 38 and side 40 surfaces of sidewall 12, template lines are shown which correspond to a desired angled corner. For example, template lines 42 correspond to a section 44 which may be removed from sidewalls 12 to form a 150 degree corner as shown above in FIG. 5. Template lines 46 correspond to a section 48 which may be removed from sidewall 12 to form a 135 degree corner. Likewise, template lines 50 correspond to section 52 which may be removed from sidewall 12 to form a 120 degree corner. The template lines may be included to provide the user with a quick and accurate way to cut the form 10 to create the desired corner angle. The three sets of lines shown are for illustrative purposes only. Additional lines may be provided in five degree increments and include a label or color coding, for example. The template lines may also be printed on the inside and bottom surfaces of sidewall 12 to aid the worker in making an accurate cut.

[0018] Referring to FIG. 8, a series of insulated concrete forms 10 may be fitted together and stacked alternating the pattern to form a wall 60. Once the wall is completed, concrete may be poured into the channel 18 to form a structural wall for a foundation or above grade wall for a house or other building. Finishing materials such as drywall (on the interior surface), rock or stucco (on the exterior surface) may be applied directly to the surfaces of the forms 10 to finish the wall as desired.

[0019] It is to be understood that while certain forms of this invention have been illustrated and described, it is not limited thereto, except in so far as such limitations are included in the following claims and allowable equivalents thereof.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. An insulated concrete form comprising:
   - first and second laterally spaced apart sidewalls for presenting a cavity therebetween, said sidewalls joined by a plurality of ribs,
a hinge embedded in said first sidewall and dividing said first side wall into left and right halves, and indicia affixed to an upper surface of said second sidewall opposite said hinge,

wherein said indicia demark cut lines for removing a section of said second sidewall corresponding to a desired angle, and wherein when said section is removed said first sidewall is pivoted about said hinge to said desired angle.

2. The insulated concrete form as set forth in claim 1 further comprising a plurality of indicia affixed to said upper surface of said second sidewall opposite said hinge corresponding to a plurality of angles.

3. The insulated concrete form as set forth in claim 1 further comprising indicia on an inner and outer surface of said second sidewall aligned with the ends of said indicia on said upper surface of said second sidewall.

4. The insulated concrete form as set forth in claim 1 wherein said hinge extends from an upper surface of said first sidewall to a lower surface of said sidewall.

5. The insulated concrete form as set forth in claim 1 wherein said desired angle is from 180 degrees to 90 degrees.

6. The insulated concrete form as set forth in claim 1 wherein said desired angle is less than 90 degrees.

7. An insulated concrete form comprising:

   first and second laterally spaced apart sidewalls for presenting a cavity therebetween, said sidewalls joined by a plurality of ribs,

   a hinge embedded in said first sidewall and dividing said first side wall into left and right halves, and indicia affixed to an upper surface of said second sidewall opposite said hinge corresponding to a plurality of angles,

   wherein said indicia demark cut lines for removing a section of said second sidewall corresponding to a desired angle, and wherein when said section is removed said first sidewall is pivoted about said hinge to said desired angle.

8. The insulated concrete form as set forth in claim 7 further comprising indicia on an inner and outer surface of said second sidewall aligned with the ends of said indicia on said upper surface of said second side wall.

9. The insulated concrete form as set forth in claim 7 wherein said hinge extends from an upper surface of said first sidewall to a lower surface of said sidewall.

10. The insulated concrete form as set forth in claim 7 wherein said desired angle is from 180 degrees to 90 degrees.

11. The insulated concrete form as set forth in claim 7 wherein said desired angle is less than 90 degrees.

12. An insulated concrete form comprising:

   first and second laterally spaced apart sidewalls for presenting a cavity therebetween, said sidewalls joined by a plurality of ribs,

   a hinge embedded in said first sidewall and dividing said first side wall into left and right halves, and first indicia affixed to an upper surface of said second sidewall opposite said hinge corresponding to a plurality of angles,

   second indicia on an inner surface of said second sidewall aligned with one end of said first indicia on said upper surface of said second side wall,

   third indicia on an outer surface of said second sidewall aligned with another end of said first indicia on said upper surface of said second side wall,

   wherein said indicia demark cut lines for removing a section of said second sidewall corresponding to a desired angle, and wherein when said section is removed said first sidewall is pivoted about said hinge to said desired angle.

13. The insulated concrete form as set forth in claim 12 wherein said hinge extends from an upper surface of said first sidewall to a lower surface of said sidewall.

14. The insulated concrete form as set forth in claim 12 wherein said desired angle is from 180 degrees to 90 degrees.

15. The insulated concrete form as set forth in claim 12 wherein said desired angle is less than 90 degrees.

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