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# QUILTED INSULATED SHADES

*ASPI Technical Series*

## INTRODUCTION

Making decorative bed coverings has been a part of our tradition since the days of the earliest settlers. Generations of little girls learned to piece the "Nine-patch" from their grandmothers and then passed the art of quilting on to their own grandchildren. Many of the quilt patterns -- "Log-Cabin", "Double-Wedding Ring", "Dresden Plate", etc. are so old that their origins have long been forgotten.

Unlike some other traditional crafts which are disappearing through lack of interest, quilting has been the subject of a revival in popularity in the last several years. Although, traditionally done by the women of a family, modern crafters of both genders are practicing and perfecting this beautiful and versatile craft.

Quilting techniques can be used to make many other useful and decorative items besides bed covers -- pillows, clothing, etc. Using the craft to create insulated window shades allows us to preserve and celebrate our heritage while solving a very real environmental and economic problem -- the loss of home heat through the windows.

## INSULATED SHADES

A typical home can lose 25 - 30% of its total heat through windows. Particularly large windows can lose 50% and up, even with double-glazing and a south facing. This is of particular significance for a house heated with passive solar. Glass, even double-glazed is not a good insulator. The addition of a plastic storm window

can reduce the heat loss through the windows by 50% or more. A quilted insulated shade can meet and exceed this gain, dependent upon the insulating value of shade materials and the tightness of the seal. Also, unlike the plastic covering, which requires frequent replacement, the durable insulated window shade can provide years of warmth and beauty.

## MAKING THE SHADE

*NOTE: These instructions offer two options for attaching the quilted insulated shades to the window, a plywood cornice and roller or a much simpler velcro attachment.*

In this ASPI project our resident quilter, Martha Bond made two insulated shades to fit the standard size windows in the library. Before beginning construction of your own shade decide which quilt pattern to use. Use one of those provided ("Bow-Tie" -- page 4 and "Jacob's Ladder" -- page 1) or choose another if you're an experienced quilter.

1. Measure around the window. Be sure to measure to the outside of the frame and from the top of the frame to the sill to provide room for a good seal.

2. Calculate how many quilt blocks will be necessary to cover the window. Remember to leave room for a contrasting color binding around the outside of the quilted shade.

3. Sew the pieces together, following Figures 1 & 2. The blocks are traditionally sewn by hand. After "piecing" the patterned cover, cut batting and lining fabric to fit.

4. Quilt these three layers together. For the inexperienced quilter -- begin in the center of the cover and to stitch around the blocks in the pattern. This gives a simple and attractive quilting design. (See Figure 1).

*NOTE: Do not quilt the reflective insulating fabric to these face layers. This would puncture the material, reducing its effectiveness.*

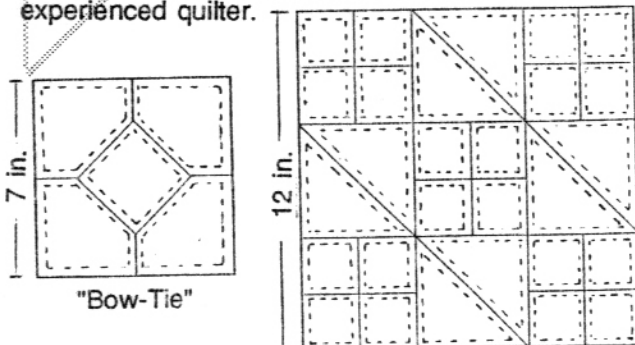
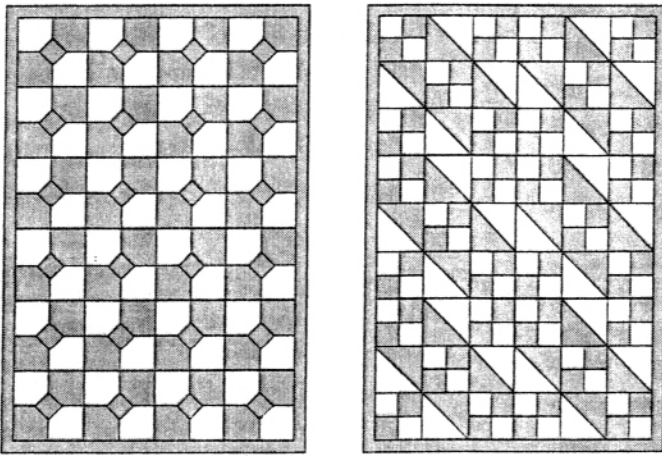


Figure 1.

"Jacob's Ladder"

Figure 2.



"Bow-Tie"

"Jacob's Ladder"

5. Cut the binding material (on the diagonal) about 2-2 1/2 inches for the roller shade, 4 inches wide for the velcro shade. With right sides together sew this strip all the way around the quilted cover. This will eventually be turned under and hand-sewn to the two additional layers.

6. Cut the insulating fabric and more lining fabric to fit the shade.

[NOTE: Omit the 7 and 8 (velcro on the lining and rod casing) if using the velcro window attachment.]

7. Sew a strip of velcro (fuzzy side) on the right side of the shade lining about 3 inches from the bottom.

8. Directly beneath this sew a strip of lining fabric (or binding) about 2 inches wide across the width of the lining. Leave one end open. This will be the casing for the metal rod (or wooden dowel).

9. Carefully pin the insulating fabric and lining to the back side of the quilted cover. (Pin around the edges to avoid puncturing the insulating fabric.)

10. Turn down the binding over the layers and, folding under the edge, hand sew it to the backing with a loose whip stitch. Make sure the needle penetrates the two back layers and the lining. See Figures 3 and 4.

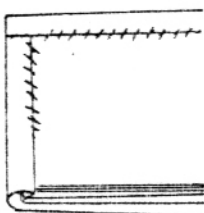


Figure 3.

Sewing the Binding

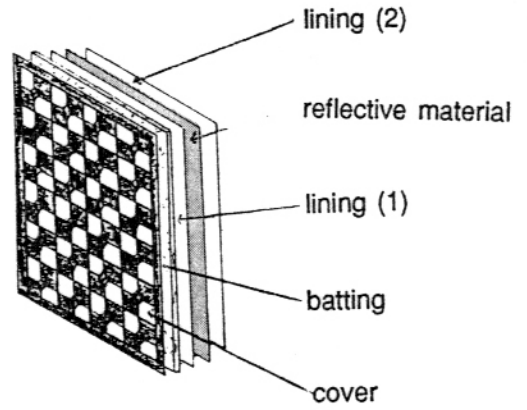


Figure 4.

[NOTE: Omit steps 11 and 12 if using the velcro attachment. Instead, sew velcro (fuzzy side) to the back of the shade (on the binding) all the way around. Sew a drapery ring to one corner of the shade for ease in removing it from the window. Skip to **Velcro Attachment**.]

11. Sew a strip of velcro (fuzzy side) across the top of the shade on the right side (on the binding).

12. Insert the rod through the tube at the bottom and sew the opening shut.

## WINDOW ATTACHMENTS

### A. Cornice and Roller

1. Cut PVC pipe the width of the shade plus 3 inches.

2. Cut velcro (sticky side) the width of the shade and glue it across the length of the pipe 1" from one end and 2 1/2" from the other. Staple the velcro at intervals across the pipe (or drill 5/8" holes and use screws).

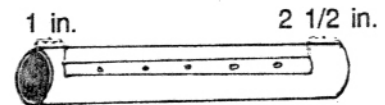


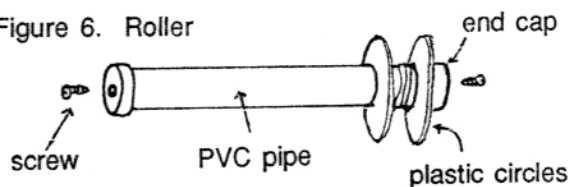
Figure 5.

3. Cut 2 circles from the plastic coffee can lids about 5 inches in diameter.

4. Drill a hole through the pipe 1 1/4" from the end. Place one of the plastic circles to the left of this hole. Place a strong string (at least 1 foot longer than the shade) through the hole and tie a knot on the inside to secure it.

5. Place the other plastic circle to the right of the string hole. Attach the end caps.

Figure 6. Roller



6. Build a cornice 6 - 8" high and 5-7" deep with a cover on top.

7. Drill holes for 2" -2 1/2" cabinet screws on the ends at the center. Drill corresponding (but slightly larger) holes in the PVC end caps. Place the screws, so the holes in the center of the caps are held on the ends.

8. Attach a 1/2" dowel rod (or broomstick) to the lower back edge of the cornice using cabinet screws. Leave about 1/2" so the quilt can slide under the dowel up to the pipe. Attach a screw eye above the dowel rod and below the roller.

9. Place a rubber band around the pipe to keep the string from slipping. Wrap the string around the pipe so its last 8" fall from the top.

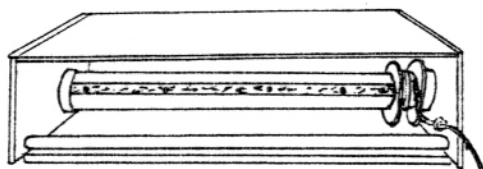


Figure 7. Cornice and Roller

10. Attach the cornice to the window using right angle braces.

11. Cut two pieces of wood 2" wide X 1/2" deep the length of the distance from the bottom of the cornice to the bottom of the window sill. Attach the edges to the window frame with spring hinges.

12. Attach the velcro on the front of the shade to the PVC roller, running the shade under the dowel. The shade is pulled down by hand and raised by pulling the string. Staple ( or screw) velcro (sticky side) to a wood strip 3 1/4" x 3/4" cut to fit between the side boards. Attach this strip with screws along the window sill. This attaches to the velcro strip on the lining when the shade is down. An awning clip or good sized hook should be attached to the frame or sideboard to hold the roller string.

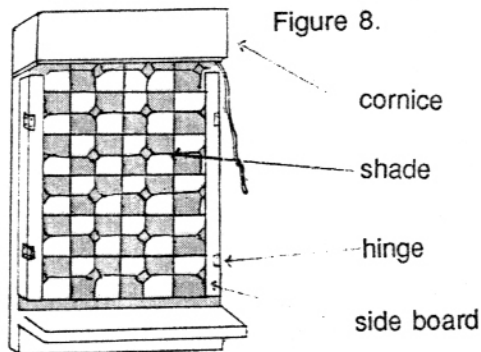


Figure 8.

## B. Velcro Attachment

Attach velcro (sticky side) to the window all the way around on the outside of the frame. (Corresponding to the velcro on the shade.) It can be glued, tacked, stapled or screwed.

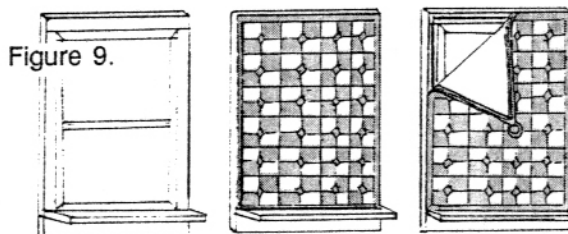


Figure 9.

## MAINTENANCE

Try to avoid laundering the shades unless absolutely necessary. Vacuum or brush out dust and sponge off spots for general cleaning. There are occasions, especially in households that use wood heat or have shades on the kitchen windows, when thorough cleaning is necessary. The shades can be washed by hand or in a machine (gentle cycle) in cold water and mild soap. We do not recommend washing them more than once or twice a year.

The useful life expectancy of the shades varies depending upon how often they are washed and the choice of insulating material. Most will last ten years and beyond. Seasonal washing can reduce that to around six years. The quilted cover of the shade can last a very long time. (Ask anyone who remembers the durability of great-grandmother's quilts.) It is the insulating material (aluminized plastic) and the cotton lining which is exposed to the sun that wear out.

Our shades are designed so that the last two layers can be removed very easily, with a few snips of the scissors. We suggest that when the insulating layer begins to wear or the lining begins to show sun damage, simply remove them and replace with new materials (both of which are at this time relatively inexpensive). This can extend the life-span of your shade indefinitely.

## MATERIALS

Fabric scraps (to cut quilt pieces from)  
Insulated fabric -- aluminized polyethylene  
Quilt batting  
Lining fabric -- unbleached muslin or thin cotton in a light color  
Velcro  
Metal rod or wooden dowel 1/4 inch in diameter (for Roller Shade only)

### Cornice and Roller

2 inch PVC pipe  
2 inch PVC pipe endcaps  
1/2 inch Dowel rod or broom stick  
Plywood or shelving board (for cornice)  
String  
Nails  
Two 5-inch or 6-inch plastic lids (e.g. coffee can lids) Screw eye

**Velcro Window Attachment** -- Velcro strips (enough to go around the window casing on all sides)

## COST OF MATERIALS

### Shades:

Fabric (scraps and lining)	\$ 10.00
Quilt batting	5.00
Astrolon I (insulating fabric)	@3.00/yd. 6.00
Velcro	@.79/ft. 8.43
Thread	2.00
<b>Total (for 2):</b>	<b>\$ 31.43</b>

### Cornice and Roller Attachments (2)

PVC Pipe	@ .60/ft.	\$ 4.80
rope	@ .08/ft.	1.28
PVC end caps	@ 2.19/cap	8.76
dowell rods	@ 1.69/rod	3.38
1 in. x 4 in. board (16 ft.)		3.84
1 in. x 6 in. board (12 ft.)	@3.00/each	6.00
finishing nails (1/2 lb.)		.35
<b>Total (for 2):</b>		<b>\$ 40.35</b>

**RESOURCE** for Insulating Materials -- SHELTER INSTITUTE, 38 Center St. Bath, ME 04530 (207)442-7938.

## CREATING A COTTAGE INDUSTRY

Any hand-crafter is aware of the large time investment in learning and practicing their crafts. As with any art, many of the rewards are intangibles gained from the actual process of creating. Those craftspeople who do market their products rarely consider the time involved when setting prices. It would be impossible for a quilter to work at an hourly rate, as this would make even a small quilt outrageously expensive. The same is true for the quilted window shades. In the ASPI project it took our quilter 72 hours to complete two standard size window shades, doing all of the work by hand. At an hourly rate the expense was well beyond what could be recouped from selling the shades, not to mention the added cost of making the roller attachment for the window. However, if labor costs were excluded, the shade becomes a very economical item. Of course, when an individual makes the shades for his or her own home there is considerable payback from the reduced heating costs. Making the shades requires very little investment, if scrap materials are used. The only new products needed are the insulating fabric and quilt batting.

Making and selling shades as a cottage industry requires a major adjustment to the production process. In order to increase the number of shades produced per amount of time invested, it would be wise to piece and quilt the covers using a sewing machine. Granted, this detracts somewhat from the aesthetic charm of a handmade item but would greatly speed up the process and make payment on an hourly basis more feasible. Materials could be purchased in bulk -- some as scrap or remnants making the only major investment the sewing machine. The shades could either be produced in quantity fitted to several standard size windows or contracted for individual dwellings. Actually, the latter idea could be very successful, as many individuals would appreciate and pay for the opportunity to choose patterns and fabrics to match the decor of their homes. The current marketability of environmentally sound and yet beautiful items makes a small community or individual business producing quilted insulated shades a very promising venture.

## REFERENCES

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