



The

LUCKY NEEDLE

HOW TO CALCULATE PLEATS



A LUCKY NEEDLE EBOOK

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HOW TO CALCULATE PLEATS



HOW TO CALCULATE PLEATS: TERMS



Calculating pleats can be a little complicated at first, but once you understand the concept it's easy! Before we get started, I want to lay out some definitions for the terms I use in this tutorial.

Insert: This is the section of pleats that will be sewn into the rest of project.

FW = Finish Width: This is the width you want the insert of pleats to be when the insert is sewn into the seat or project.

FL = Finish Length: This is the length you want the insert of pleats to be when the insert is sewn into the seat or project.

TSA = Top Stitch Allowance: When you sew pleats into foam it pulls material from the sides and makes your piece of material shorter. To compensate for this, you must start out with a longer piece of material than the finish width or finish length of your insert (depending on which direction the pleats are running). Usually when sewing pleats into 1/2 inch scrim foam, you will lose about an 1/8th of an inch per pleat. It is a good idea to do a test piece and check first, before going straight to your project.

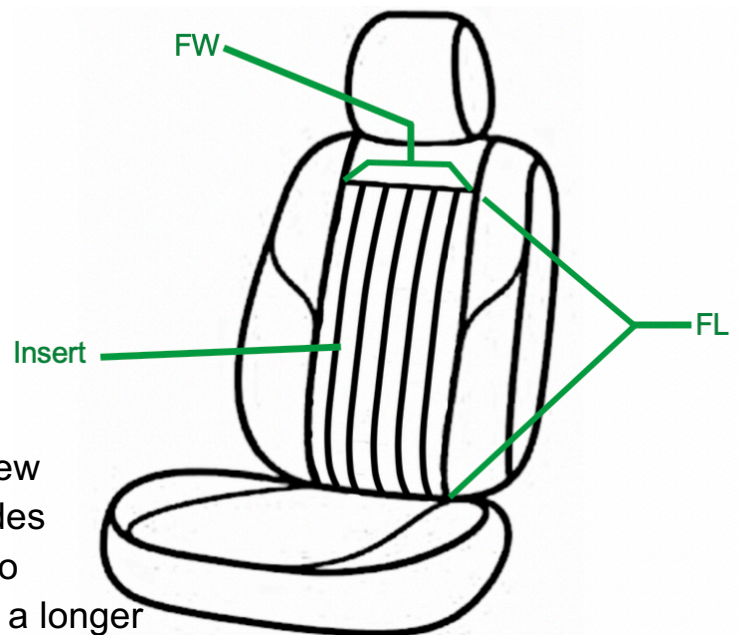
TTSA = Total Top Stitch Allowance: This is TSA multiplied by the number of pleats.

SA = Seam Allowance: I will be using 1/2 inch seam allowance per side, and because there is a seam allowance on both sides, SA = 1 inch.

CW = Cut Width: This is the width you cut the material after adding seam allowance and top stitch allowance.

CL = Cut Length: This is same as cut width but depending on which way your pleats are running you may or may not add top stitch allowance.

PP = Plot Point: Marks to plot out where the pleats are going to be sewn.



HOW TO CALCULATE PLEATS



HOW TO CALCULATE PLEATS: CALCULATIONS



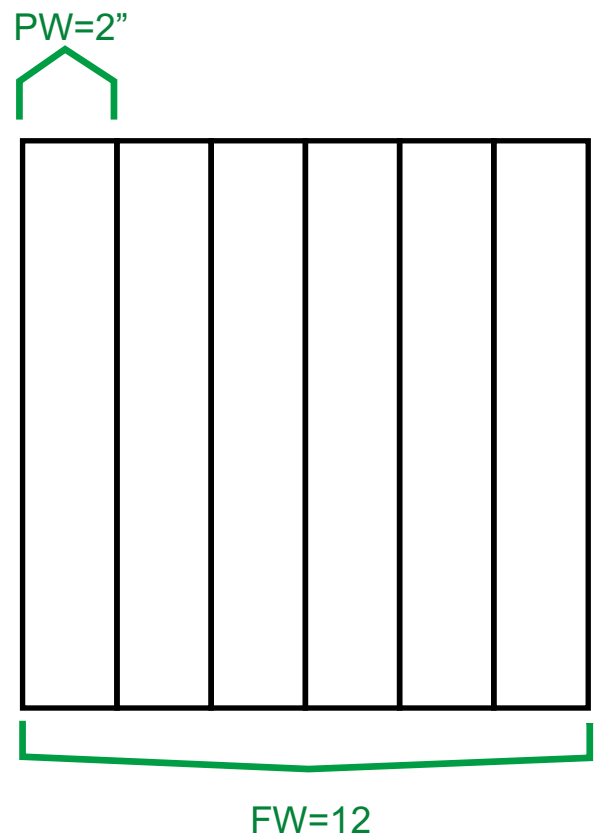
Now that we have all of our terms defined it is time to get into calculations! Here I will show you step by step how to find and calculate your measurements, to plot perfect pleats!

The first step is to find the Finish Width and Finish Length. For this demonstration we will be using: $FW = 12''$ and $FL = 12''$.

Then, you need to decide how many pleats you want. We will be using: $\#P = 6$.

Now you can find the pleat width. $FW \div \#P = PW$. The math for this example is very simple: $PW = 12'' \div 6$. This gives us a PW of 2''.

For pleats that do not divide easily I use this formula: $\#P \times PW = FW$. Using this formula, you can solve for the pleat number ($\#P$), pleat width (PW), or the finish width (FW).



Now that we have this information, we can find the cut length and cut width. In this example the pleats will be running top to bottom. To find cut width:

$$CW = FW + TTSA + SA$$

We know $FW = 12''$ and $SA = 1''$ ($1/2''$ per side) and must find TTSA to find CW.

$TTSA = TSA \times \#P$. In this example $TTSA = 1/8'' \times 6$. So, our $TTSA = 6/8''$ (because we have 6 pleats).

In this example $CW = 12'' + 1'' + 6/8''$. So, our $CW = 13 3/4''$.

To find cut length: $CL = FL + SA$. In this example $CL = 12'' + 1''$. So, our $CL = 13''$.

HOW TO CALCULATE PLEATS



Cut Width = 13 3/4"

Cut Length = 13"

Seam Allowance = 1/2"

CALCULATIONS

$$CW = FW + TTSA + SA$$

$$FW = 12''$$

$$TTSA = 1/8'' \times 6$$

$$TTSA = 6/8''$$

$$SA = 1''$$

$$CW = 12'' + 6/8'' + 1''$$

$$CW = 13 \text{ } 3/4''$$

$$CL = FL + SA$$

$$CL = 12'' + 1''$$

$$CL = 13''$$

$$PP \#2 = 2 \text{ } 1/8''$$

Now you need to find your first plot point.

$$PW + SA + TSA = PP\#1.$$

For this example: $PP\#1 = 2'' + 1/2'' + 1/8''$.

So, our $PP\#1 = 2 \text{ } 5/8''$.

Every plot point after is $PW + TSA = PP\#2$. In this example $PP\#2 = 2'' + 1/8''$. So, our $PP\#2 = 1/8''$.

Lay out your plot points on your material and connect them to make lines to follow while sewing the pleats. Always make sure to use something that will not stain the fabric and is easy to remove. For tips on chalk and marking pencils see The Lucky Needle's Tools of the Trade Ebook.

Hope this was helpful! Now go stitch some pleats!

