General Measuring Guidelines – A-B Plot Point Triangulation for Asymmetrically Shaped Pools

Measuring your pool will be easier if you have another person helping you.
Also, draining your pool will make the measuring process easier, however, it is not necessary. Measurements can be easily taken from outside of the pool.

Never assume your pool is standard. All pools are different. Please take all the requested measurements for your pool for an exact fit. Actual pool measurements should be made even if original pool plans are available, as slight variances to the plans may have occurred during construction and the builder may not have followed the pool plan precisely.

When measuring the pool, do not make allowances for weather conditions, temperature, or the fact that vinyl shrinks and expands. These calculations are made when the new liner is designed.

Please supply all measurements in feet and inches. Round your measurements up to the nearest ¼" (inch).

Follow the "step-by- step" measuring instructions carefully, referring to all diagrams to ensure accurate measurements.

Remember to include your Name and Quote # number on each page that you send to us.

Remember to record ALL of your measurements on the MEASURING form. You may need to transfer measurements you have made on other pages or your notepad onto the actual MEASURING FORM.

Write your measurements legibly, using BLACK INK. (No pencil or felt-tip marker please!) Make copies of all pages for your records BEFORE sending them to us. You will need to refer to your copies if we have questions regarding your measurements.

Have Questions? Need Assistance? . . . We're Here to Help!

REMEMBER: Retain a Complete Copy of your Pool Measurements for Your Records . . . You may need to refer to your copies if there are any follow-up questions

REMEMBER: Pool Fits is here to support you!

- **Call Toll-Free:** 1-877-325-3487 (FITS)
- **Go to:** www.poolfits.com – Live Chat

MOST COMMON MEASURING MISTAKES

1. Not Writing Legibly & in Black Ink (no pencils or markers please!)
2. Mis-measuring the Slopes
3. Not Taking all Measurements on the Horizontal & Vertical Plane
4. Assuming or Estimating any of the Required Measurements
5. Not Measuring Depth from the Bead Receiver versus the Pool Deck
6. Not Taking Accurate Diagonal Measurements
7. Not Using the same Units of Measurements for all Dimensions
    - **Tip:** Use Feet & Inches (4'-2")
8. Adjusting Measurements for a 'Better Fit'
9. Mis-measuring or leaving off Corner Type and Dimensions
10. Not Providing the Location of a Preformed Plastic Pool Step
11. Mis-measuring S1 & S2 Shallow-end Break-off Points
12. Mis-measuring D1 & D2 Deep-end Break-Off Points
13. Not Taking a Full Perimeter Measurement of the Pool
14. Ensuring Vinyl Over Stair Risers Equal the Shallow-end Wall Height
15. Not Providing the Vinyl-Over Step Attachment Type and Locations
16. Not Retaining a Copy for Your Records
    - You may need to refer to your copies if there are any follow-up questions

TOOLS REQUIRED

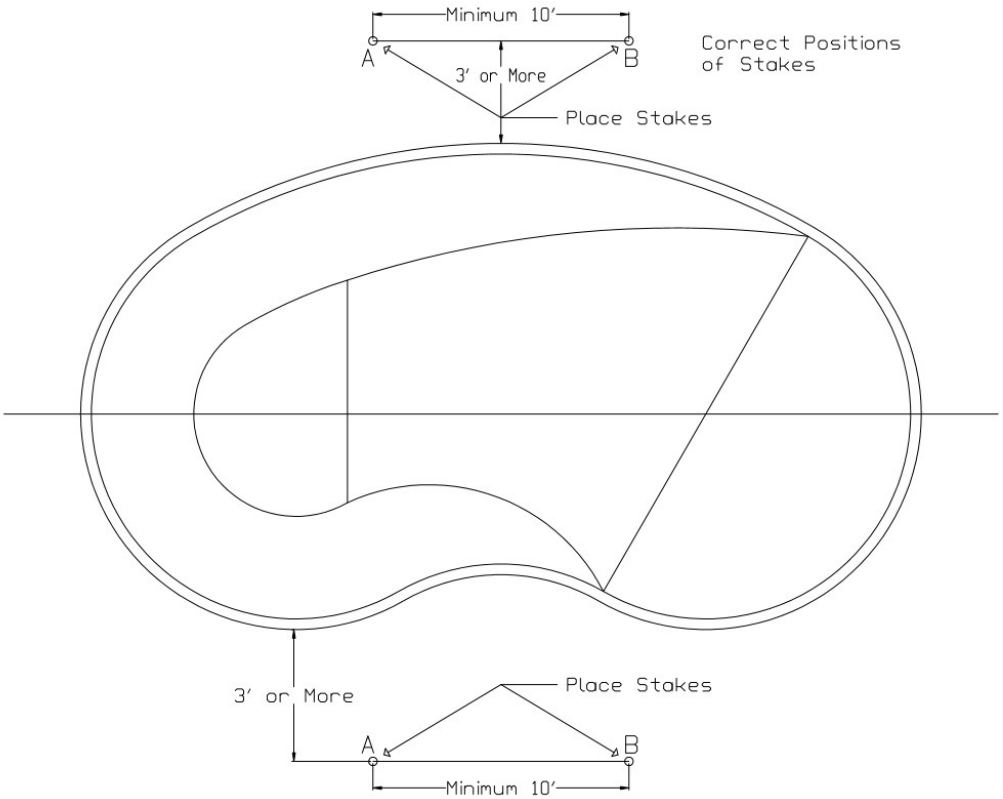
Tools Required to Measure a Pool

- Minimum of 2 People – Ideally 3 People (which allows someone to record measurements while the others work the tapes)
- 2 – 100 Foot Tape Measures
- 2 – A-B Stakes (12" Nails or ½ Re-Bar or Similar)
- 6' to 8' Straight Edge (used to measure the slopes and depths)
    - **Tip:** A Straight 2"x2" Spruce or Straight Ordinary 2"x4" will work
    - **Tip:** Your Telescopic Vac Pole will work
- Plumb Bob and String
- Pool Fits Measurement Sheet(s) – Some Shapes Require More than 1
- Black Ink Pen
- Chalk
- Level

Remember: Record All Measurements on the Pool Fits A-B Plot Point Triangulation for Asymmetrically Shaped Pools Measuring Form

A-B Plot Triangulation for Freeform and Asymmetric Pool Shapes

The A-B plot is a method using triangulation to measure Freeform and Asymmetrical pool shapes, such as Kidneys, Humpback Kidneys, Lazy L's is highly effective. The A-B Plot method should not be used for Symmetric Pool Shapes such as Rectangles, Lazy L's and Octagons.



A-B Plot Measurement Process – Set-up

Position two stakes (12" long nails or a piece of ½" steel bar or similar – see Tool Required) at least 10 Feet apart (Ideally 20 Feet) as illustrated in figure above. When positioning the stakes be certain that they are approximately parallel to the centerline or the longest length of pool depending on the shape and a minimum distance of 3 Feet (Ideally 10 Feet) way from the edge of the pool. The stake placement shown on the side of the reverse radius is the ideal position to measure a pool of this nature. Sometimes due to landscaping, or other obstructions, it is not possible to place the stakes on this side of the pool.

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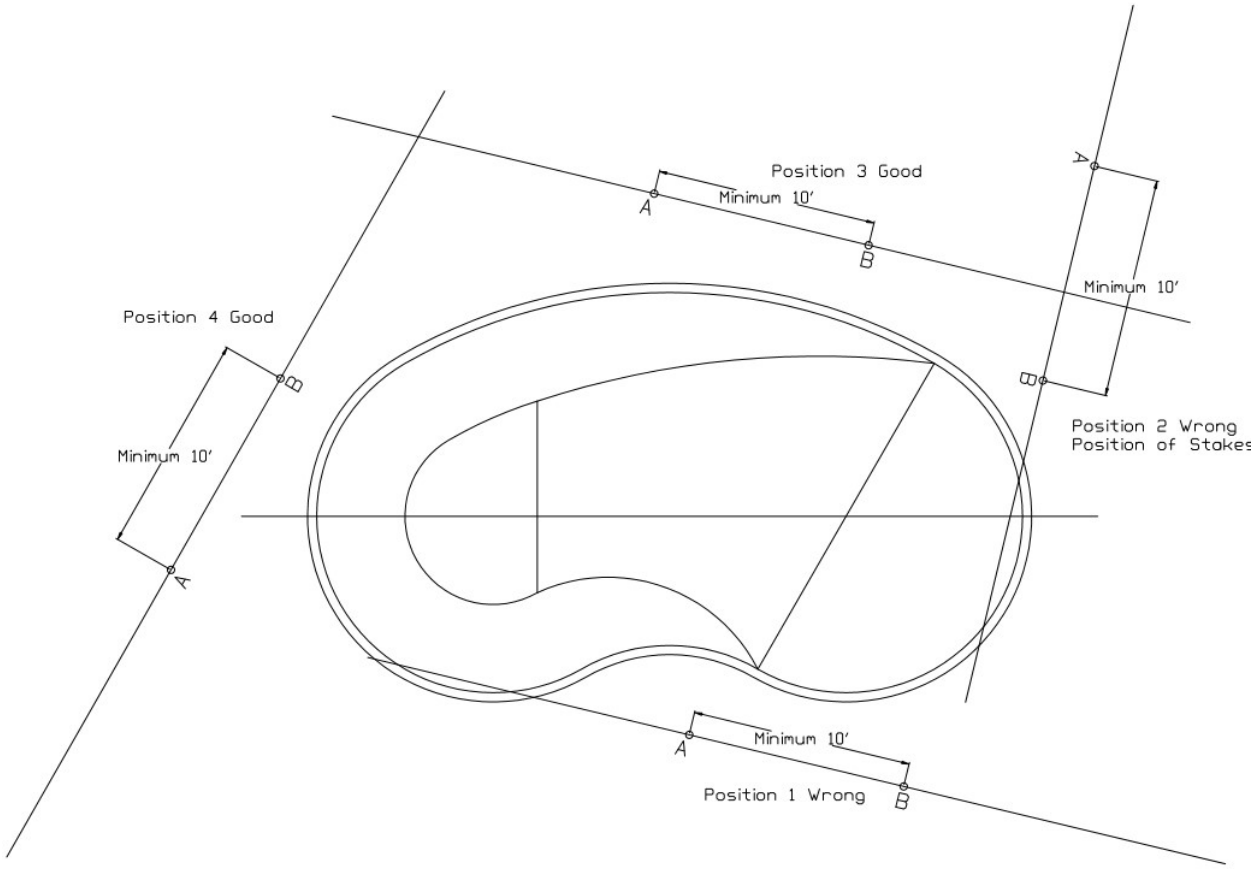
Please refer to the diagram above for an alternate location on the opposite side of the pool.



IMPORTANT: Positions 1 and 2 must be avoided; when an imaginary line is extended thru both the A and B points if that line does intersect with the pool perimeter that pin location cannot be used.

IMPORTANT: Always make Point A toward the Deep-end of the Pool and Point B toward the Shallow-end of the Pool.

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TIP: The stakes can be moved to almost any position around the pool with Some basic rules to follow:

- Keep both stakes roughly parallel to the centerline of the pool and within the overall width or length of the pool. (see the diagram below for alternate Stake Positions) In any case, if an imaginary line, extended thru the A and B Points intersects with the pool perimeter, that Stake Position cannot be used

TIP: Before taking any measurements, double check to ensure the A and B Stake Positions are a minimum of 10' apart and record the exact distance between the A and B Stakes.

TIP: Please indicate on the Pool Fits Measuring Sheet, the approximate location and orientation of the A and B Stake to the pool.

A-B Plot Measurement Process – Marking of Points around the Pool Perimeter

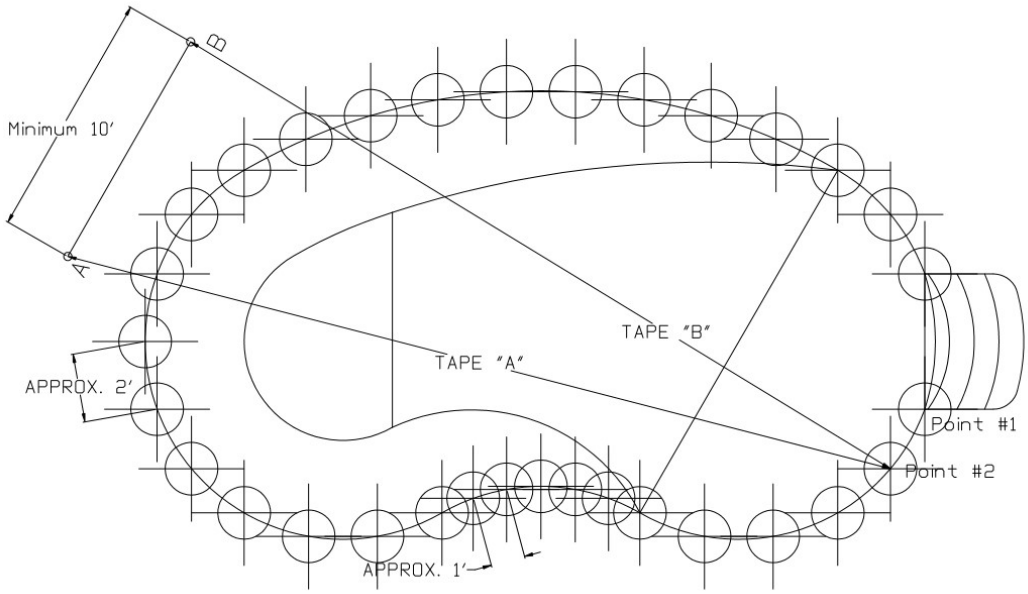
Using chalk, mark the points on the perimeter of the pool at the coping applying the following frequency:

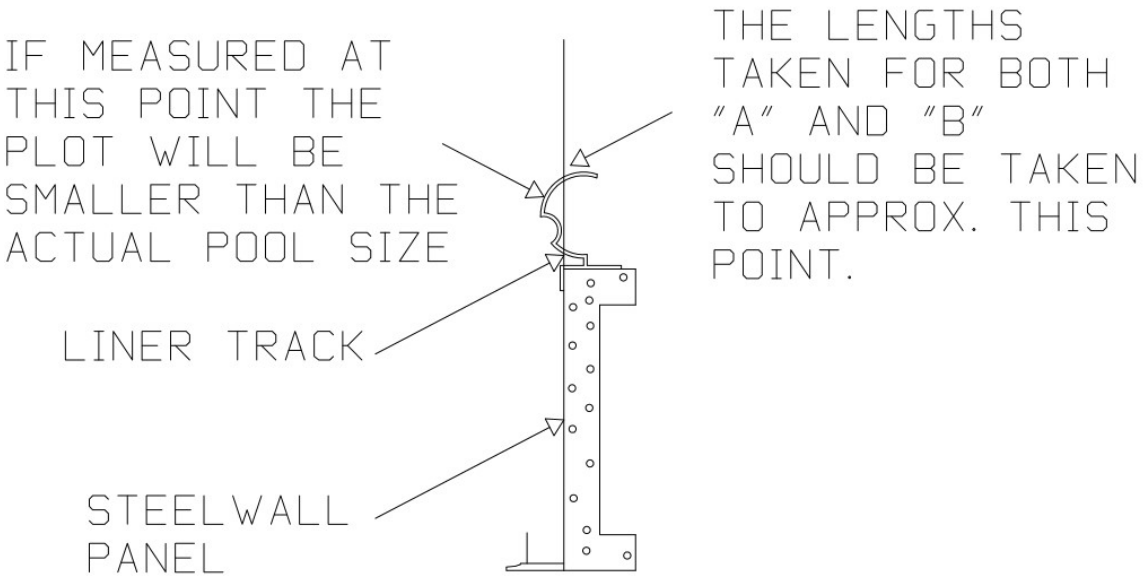
- Every 1 Foot and 6 Inches unless you are measuring:
  - A Small Radius – Then every 1 Foot
  - A Reverse Radius – Then every 1 Foot
  - A Specific Direction Change (i.e. a 45 Degree Corner) – Then to that point exactly.
- Label those Points in Chalk starting at 1 and numbering consecutively until you are within 1 Foot and Six Inches of Point #1.
- If there is a straight wall in the pool points should be marked only at the beginning and end of the straight wall.
- If there is a Preformed Thermo-Plastic or Fiberglass Pool Step points should be marked only at the beginning and end of the straight wall.
- (see diagram below)

TIP: Pick a logical starting point for Point #1 for example at the end of the one side of a Preformed Thermo-Plastic or Fiberglass Pool Step (see diagram below)

Remember: Record All Measurements on the Pool Fits A-B Plot Point Triangulation for Asymmetrically Shaped Pools Measuring Form

TIP: When marking the Points around the perimeter of the pool make certain that the points are marked directly above the Bead Receiver. (see diagram below)





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A-B Plot Measurement Process – Recording A-B Point Measurements

TIP: Mark each Tape Measure with an A and a B respectively. Ideally this can be done with different color masking tape or pen ink. This will help ensure that the two tapes are easily identified during the measuring process and do not get interchanged.

TIP: Make sure that at every point that both the A & B Tapes are:

- Held at the same level as the pool deck
- Not obstructed and held in a straight line between the A and/or B stakes and the point being measured.

TIP: Take both the A and the B Measurements at the same time to ensure accuracy.

Your now ready to proceed taking and recording the A-B Plot Triangulation Measurements for your pool. With the ends of the tapes fixed to the stakes, stretch the both tapes to the Point # 1 and record that measurement on your Pool Fits A-B Point Measuring Sheet, first taking the 'A' measurement to Point 1 (using the measuring tape marked 'A' and attached to stake 'A') and then the 'B' measurement to Point 1 (using the measuring tape marked 'B' and attached to stake 'B') Repeating the process until all Points marked around the perimeter of the pool are measured.

TIP: Accuracy required is to the nearest ¼" (example. 35'-4 ¼").

TIP: When marking the Points around the perimeter of the pool make certain that the points are marked directly above the Bead Receiver. (see diagram below)

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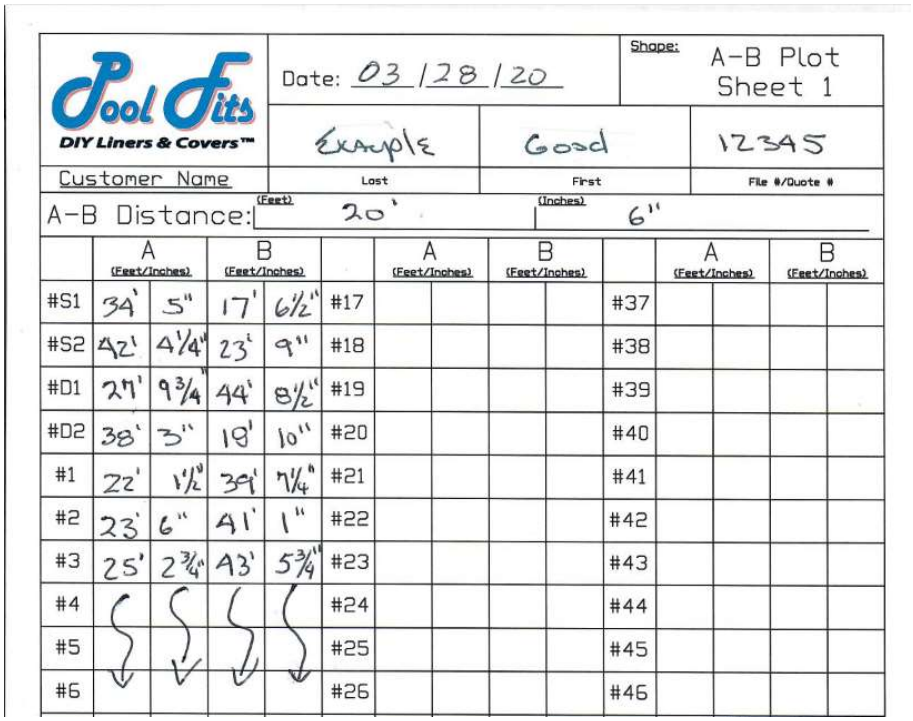

Pool Fits DIY Liners & Covers™

Date: 03/28/20 | Shape: A-B Plot Sheet 1

Customer Name (Last)	Example	Good (First)	12345 (File #/Quote #)

A-B Distance: 20' (Feet) 6" (Inches)

	A (Feet/Inches)		B (Feet/Inches)			A (Feet/Inches)		B (Feet/Inches)			A (Feet/Inches)		B (Feet/Inches)	
#S1	34'	5"	17'	6½"	#17					#37				
#S2	42'	4¼"	23'	9"	#18					#38				
#D1	29'	9¾"	44'	8½"	#19					#39				
#D2	38'	3"	18'	10"	#20					#40				
#1	22'	1½"	39'	7¼"	#21					#41				
#2	23'	6"	41'	1"	#22					#42				
#3	25'	2¾"	43'	5¾"	#23					#43				
#4					#24					#44				
#5					#25					#45				
#6					#26					#46				

Properly Measuring S1/S2 and D1/D2 Shallow-end and Deep-end Break-off Points

The Shallow-end (S1/S2) Break-off and Deep-end Pad Break-off (D1/D2) must be defined when the pool is measured. These Break-off points can be easily measured on Symmetrically Shaped pools, such as Rectangles, Ovals or Grecians. When a pool is Asymmetric, such as any Freeform, Kidney or Lazy L shaped pool, then locating the Shallow-end (S1/S2) Break-off and Deep-end Pad Break-off (D1/D2) is more a bit more challenging. The diagram below will help to understand how this is done. is of the defined transition line but the pad can be sometimes difficult to measure. ***(see image below)***

TIP: Locate and measure the Shallow-End Break-off points 1st. Locate these on the perimeter of the pool as shown on the diagrams above.

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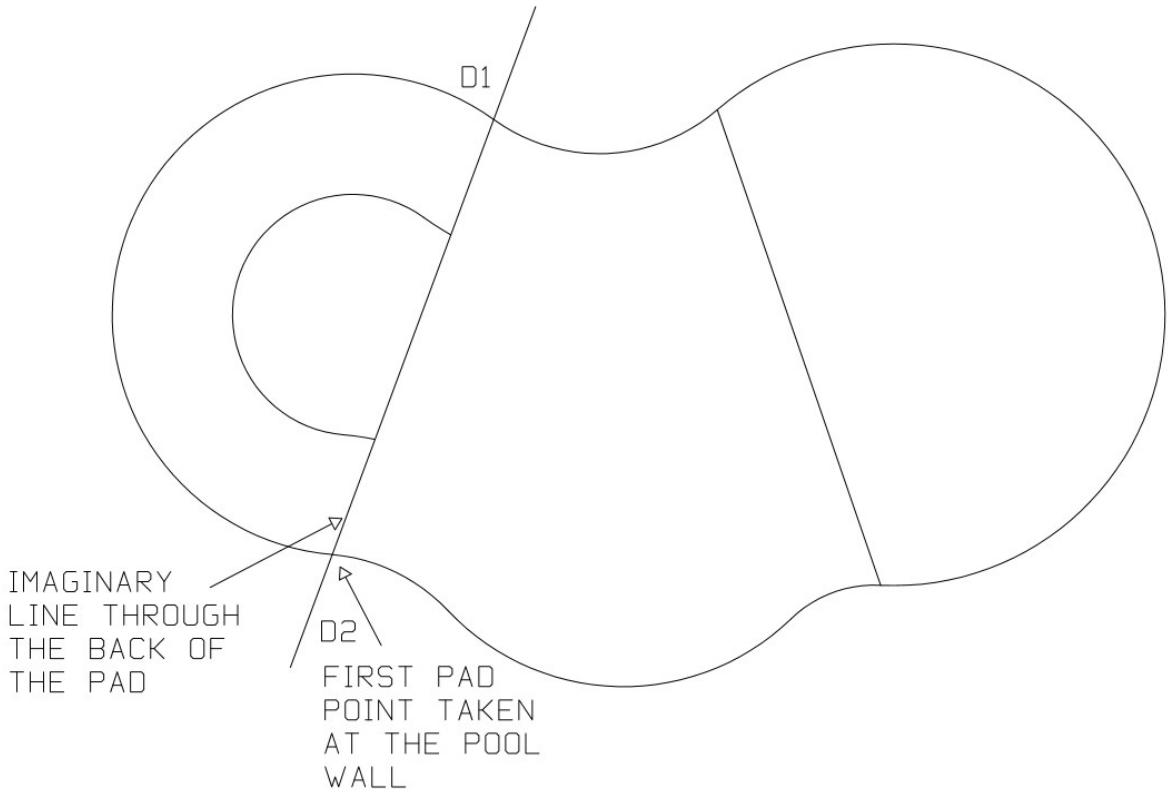
TIP: Locate and measure the Deep-End Break-off points 2nd. Locate these on the perimeter of the pool as shown on the diagrams above. The easiest way to accomplish this is to use 1 – 100' tape measure with a person on either end of the tape. Position the tape measure directly over the transition point of where the 'hopper pad' meets the long slope to the shallow-end of the pool. Using chalk, mark on the pool deck or coping where the tape measure intersects with the wall of the pool. Mark those points as D1 & D2, per you Pool Fits Measuring Sheet and measure to these points. Record these points in the boxes provided on the Measuring Sheet.



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Full Perimeter Measurement

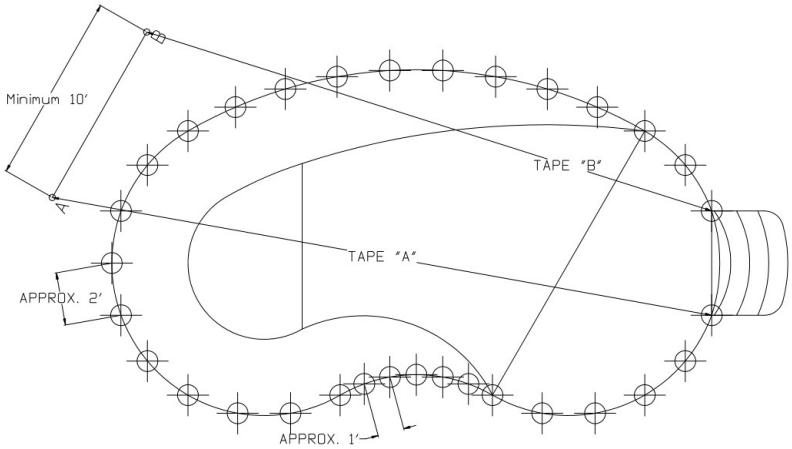
After the Pool, Pad and Break-off points are measured and recorded the perimeter ***must*** also be measured. **This measurement is a requirement** on all pools measured using the A – B Plot Triangulation method. The Full Pool Perimeter is important in both the design and production of any pool liner when measured with the triangulation method. The perimeter measurement supplied is used to verify the perimeter as determined by the A – B Plot Points submitted.

TIP: To measure the pool perimeter use a 100ft fiberglass tape. Start at a defined point (Step, panel or Break-off) sliding your hand along just below the bead receptor all the way around the pool wall.

TIP: Do not use a walking wheel. Although it seems easier it has proven to be very inaccurate when used to measure the pool perimeter.

Providing the Location of a Preformed Thermo-Plastic or Fiberglass Pool Step

Most vinyl pools built after 1980 have a Thermo-Plastic or Fiberglass Pool Step, some more than 1. It is helpful to the liner manufacturer to know where this step is located within the perimeter of your pool. When designing and manufacturing the pool liner, the side wall vertical seam can be located inside the Preformed Step and therefore eliminate that seam from being visible. While this doesn't impact the fit or function of your pool liner, it does improve the esthetics!



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Vinyl-Over Steps Measuring

Since the early 2000's vinyl pools have seen a huge increase in the number of pools being built with 'Vinyl-Over Steps'. This is a beautiful feature that adds to the esthetics of a pool. It also presents numerous challenges in terms of measuring for a replacement liner. This trend has driven a huge number of design methods and custom features.

TIP: Always use a Pool Fits Vinyl-Over Step Measuring Sheet

TIP: Always take plenty of pictures

TIP: Always call Pool Fits and talk to a pro. We can work with you from your pictures to ensure that the Vinyl-Over Step is measured properly and completely the first time.

- **Call Toll-Free:** 1-877-325-3487 (FITS)

REMINDERS

REMEMBER: Never adjust the measurements you take try and get a 'better fitting liner' or 'no wrinkles'. Manufacturers do that for you when they design and tailor the liner to fit your pool.

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