



The ShortStop works for finding faults in medium and long rolls of WarmlyYours floor heating systems. It does not work on the shortest rolls. The ShortStop will not help if you do not follow the Design Layout and if you do not have a copy of the installation plan. Contact WarmlyYours to request a copy of the Design Layout if needed.

1. Finding what ROLL is in the floor

- a. Column 1 of Tables 1-4 lists all the rolls that we sell and have sold. To find which roll is in your floor, do one of the following things:
- Look to the original quote,
 - On the layout page; or
 - On the UL tags that come with each roll

2. Setting Velocity of Propagation (VOP)

- a. The VOP varies for most rolls and having the correct VOP will improve the accuracy of the ShortStop.
- b. Look in Column 2 to find the correct VOP for your roll.
- c. To set the VOP, turn the ShortStop off.
- d. Do not connect the alligator clips yet.
- e. With the ShortStop turned off, press and hold the down arrow and at the same time the on/off button until a zero then alternately or two digit number appears on the screen. This two-digit number is the VOP.
- f. Press the up or down arrow to set the ShortStop to the appropriate VOP as shown on the attached table.
- g. Switch the ShortStop off.

3. Finding the Cable distance to the Short/Break

- a. Before connecting the ROLL to the ShortStop ensure that the silver ground is NOT TOUCHING the inner wire at either end.
- b. On the yellow or red wire connect the red alligator clip to the inner wire and connect the black alligator clips to the silver braided ground sheath. Turn on shortstop. You will get a reading in feet. Note this down. Turn off shortstop.
- d. Repeat step (3b) on the white wire. Note this down.
- e. The figures from (3c) and (3d) are the length of CABLE to the short/break from each end. These figures will INCLUDE the cold leads connecting the thermostat to the mat. The cold length can be estimated by using the design layout.

- f. To find the length of HEATING CABLE from the starting end, subtract the yellow or red cold lead length from the figure noted down in (3c).

$$\text{3c} - \text{Yellow Cold Lead} = \text{3f}$$

- g. To find the length of HEATING CABLE from the white end subtract the white cold lead length from the figure noted down in (3d).

$$\text{3d} - \text{White Cold Lead} = \text{3g}$$

- h. The total of (3f) and (3g) should give you the total cable length for the roll that you have. (Compare in column 3 Tables 1 - 4) If they do not add to approximately the figure in column 3 then you have more than one short/break.

4. Finding the Short in the floor

- a. The distances we have from Steps (3f) and (3g) are the linear feet of CABLE to the short from each end.
- b. To find the fault in the floor we must work out the Length of ROLL to the short.
- c. There are two ways to do this:

5. Calculating the distance down the roll to the Short/Break

Rolls from Table 1, 3, 5 and 6

- There is 9' of cable for every foot of ROLL.
- Take the measurement from previous section (3f) and/or (3g) and divide it by 9.
- This figure is the length of ROLL from the beginning point or ending point to the short.

Rolls from Table 4

- There is 18' of CABLE for every foot of ROLL
- Take the measure from previous section (3f) and/or (3g) and divided them by 18.
- This figure is the length of ROLL from the beginning point or ending point to the short.

Calculating Percentage Value

- On the table, find the total length of CABLE from your roll.
- Divide the measurement from previous section (3f) and/or (3g) and multiply by 100 to get the percentage.
- To find the length of ROLL to the short take the total length of the ROLL and multiply it by the percentage.
- By using the ROLL length found, follow the design layout to estimate to a considerable degree of accuracy which tile the short is under.

If the failure is found at the factory splice, remove the splice and a couple of inches of wire on each side of the splice. Do NOT open the splice or apply voltage to the splice! Contact WarmlyYours at 800-875-5285 for information regarding the return of the splice for testing.



Table 1: 120 Volt Rolls

Roll Size (in feet)	VOP	Length of Cable (ft.)	Sq. Feet	Ohm Core	Ohm Sheath	Lead Length
1 x 9'	n/a	n/a	9.0	102.90	1.08	13' / 26'
1.5 x 7'2"	n/a	64.5	10.5	91.14	1.08	"
1.5 x 10'2"	65	91.5	15.0	64.00	1.13	"
1.5 x 13'2"	66	118.5	19.5	49.15	1.42	"
1.5 x 16'2"	65	145.5	24.0	40.00	1.68	"
1.5 x 17'2"	66	154.5	25.8	37.60	1.93	"
1.5 x 19'2"	66	172.5	28.5	33.64	2.02	"
1.5 x 21'2"	66	190.5	31.8	30.44	2.22	"
1.5 x 22'2"	67	199.5	33.0	29.09	2.40	"
1.5 x 25'2"	66	226.5	37.5	25.60	2.50	"
1.5 x 28'2"	66	253.5	42.0	22.85	2.80	"
1.5 x 30'2"	67	271.5	45.3	21.33	3.07	"
1.5 x 31'2"	66	280.5	46.3	20.63	3.35	"
1.5 x 34'2"	66	307.5	51.0	18.82	3.56	"
1.5 x 37'2"	66	334.5	55.5	17.29	3.98	"
1.5 x 40'2"	66	361.5	60.0	16.00	4.20	"
1.5 x 44'2"	66	397.5	66.0	14.55	4.52	"
1.5 x 49'2"	66	442.5	73.8	13.06	4.80	"
1.5 x 50'2"	66	451.5	75.0	12.80	5.15	"
1.5 x 51'2"	66	460.5	76.5	12.54	5.26	"
1.5 x 54'2"	66	487.5	81.3	11.85	5.40	"
1.5 x 55'2"	66	496.5	82.3	11.63	5.52	"
1.5 x 60'2"	67	541.5	90.0	10.66	5.84	"
1.5 x 66'2"	66	595.5	99.3	9.70	6.90	"
1.5 x 68'2"	66	613.5	102.0	9.41	7.07	"
1.5 x 71'2"	67	640.5	106.8	9.01	7.17	"
1.5 x 72'2"	66	649.5	108.8	8.89	7.40	"
1.5 x 78'2"	65	703.5	117.0	8.20	8.02	"



Table 2: 120 Volt Mats

Mat Size (in feet)	VOP	Length of Cable (ft.)	Sq. Feet	Ohm Core	Ohm Sheath	Lead Length
3' x 2'	n/a	n/a	6.0	160.00	0.61	13' / 26'
3' x 3'	n/a	n/a	9.0	107.00	0.73	13' / 26'
3' x 5'	65	95.0	15.0	64.00	0.95	13' / 26'
3' x 6'	65	112.0	18.0	53.00	1.07	13' / 26'
3' x 8'	65	131.0	24.0	40.00	1.23	13' / 26'
3' x 10'	65	158.0	30.0	32.00	1.52	13' / 26'

Table 3: 240 Volt Rolls

Roll Size (in feet)	VOP	Length of Cable (ft.)	Sq. Feet	Ohm Core	Ohm Sheath	Lead Length
1.5 x 7'2"	n/a	64.5	10.5	364.50	1.13	13' / 26'
15 x 10'2"	n/a	91.5	15.0	256.00	1.37	"
1.5 x 14'2"	n/a	127.5	21.0	182.80	1.81	"
1.5 x 20'2"	n/a	181.5	30.0	128.00	2.36	"
1.5 x 26'2"	67	235.5	39.0	98.50	2.90	"
1.5 x 34'2"	65	307.5	51.0	75.30	3.72	"
1.5 x 42'2"	65	379.5	63.0	60.00	4.42	"
1.5 x 50'2"	68	451.5	75.0	51.20	4.49	"
1.5 x 60'2"	66	541.5	90.0	42.60	6.22	"
1.5 x 74'2"	65	667.5	111.0	34.60	7.09	"

Table 4: 240 Volt Rolls 3' Wide

3.0 x 44'2"	65	795.0	132.0	29.09	8.78	20' / 40'
3.0 x 51'2"	65	921.0	153.0	25.10	9.93	"
3.0 x 60'2"	64	1083.0	180.0	21.33	11.30	"
3.0 x 71'2"	64	1281.0	213.0	18.03	13.38	"

Table 5: 24 Volt Rolls

1.5 x 2'2"	n/a	19.5	3.0	12.80	0.65	13' / 26'
1.5 x 3'2"	66	28.5	4.5	8.53	0.75	"
1.5 x 5'2"	n/a	46.5	7.5	5.12	0.93	"
1.5 x 7'2"	66	64.5	10.5	3.65	1.08	"
1.5 x 15'2"	66	135.0	22.5	1.80	1.96	"