FACE
Dipstick.com

1155 FLOOR LAYOUT HELPER

1155 Helper

Instruction & Assistance in laying out floors
in accordance with *ASTM E-1155*

September 2011

FACE®

Visit the Flat Floor Library at www.Dipstick.com for More Helpful Documents

This portion of the 1155 Helper manual is designed to walk you through the use of the 1155Helper software that comes with the Dipstick®.

Using the 1155 Helper Software Program

Now that you know how to lay out a floor in accordance with the requirements of ASTM E-1155, you're ready to use the ***1155Helper software program***. This program does all the work for you - it tells you what N_{MIN} is, whether or not you need to use the 2-ft boundary, whether or not you can use both layout methods, the line length that you should run, and how many lines you need. The only thing you need to do yourself is distribute the lines evenly on the Test Section.

The 1155 Helper program is an Excel® spreadsheet, specially designed and formatted to do all the calculations for you. There are four versions of this program - one "Imperial" version (inches and feet) and one metric version (mm and meters) for your desktop computer running MS Windows®, and one "Imperial" version (inches and feet) and one metric version (mm and meters) for your Windows CE Dipstick computer.

Which Program To Use?
To run these programs, you will need to have a copy of MS Excel®. If you have either a DS2200 or DS2272 model Dipstick, your A-22T or HP720 Windows CE computer comes equipped with this program. You can run it on your Windows CE computer simply by double tapping the 1155Helper Icon on the desktop, or by double-tapping the 1155 Helper file. This file is named
1155 Help I22.PXL
If you have MS Excel® on your desktop computer, you can run it on your desktop computer too. The file **1155 Help I22.XLS** is the one you want to use on your desktop computer. The .XLS files run on your desktop, and the .PXL files run on the Dipstick's Windows CE computer.
The metric versions have "M22" instead of "I22."

How to use The 1155 Help Program:
Start the program by double-clicking or double-tapping the file or the shortcut.
Enter the Length of the Test Section and press <Enter>.
Enter the Width of the Test Section and press <Enter>.
The program displays the number of lines, and the length of the lines, that you need.
You must distribute the lines evenly across the slab.

No matter whether the area of the test section is greater or less than 1600 sf, the program will automatically use the correct equation for N_{MIN}. If the width of the Test Section is less than 25 ft, the program will not allow you to use the "Parallel and Perpendicular" method. If the Excluded area is greater than 25% of the total area, the program will tell you not to use the 2-ft boundary, and will calculate line lengths based on the full width of the slab. In other words, the program does all the calculations for you and tells you what you need to do. All you need to do is spread the Runs on the Section evenly. (Leave approximately equal amounts of "white space" on the slab after you have placed the lines on it.)

The following pages show examples of how the program works, using the same examples we have already shown.

Example 1. (This is the same as example 1 on page 4)

	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	34		Area, sq feet =	918.00
3	Enter Width in feet =	27		Work Area, sq feet =	690.00
4	Nmin =	61		% Area Excluded =	25%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	228.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	23		Maximum Number of Steps =	32
9	Number of Lines =	6		Number of Lines =	3
10	# of Z readings you get =	84		# of Z readings you get =	69
11	Ratio of Z's/Nmin	1.38			

The Section is 34 ft long X 27 ft wide.

N_{MIN} is shown as 61

The program tells you that you must use the 2-ft Exclusion.

The area of the slab is shown on the right as 918 sq. feet.

You have two layout choices - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 6 lines of 23 steps each.

If you choose the 45º Zig-Zag method, you need 3 lines of 32 ft each.

Example 2. (This is the same as example 2 on page 3)

	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	52		Area, sq feet =	1248.00
3	Enter Width in feet =	24		Work Area, sq feet =	960.00
4	Nmin =	71		% Area Excluded =	23%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	288.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	Must Use 45		Maximum Number of Steps =	28
9	Number of Lines =	Must Use 45		Number of Lines =	4
10	# of Z readings you get =	#VALUE!		# of Z readings you get =	76
11	Ratio of Z's/Nmin	#VALUE!		Ratio of Z's/Nmin	1.07

The first Section is 52 ft X 24 ft.

N_{MIN} is shown as 71

The program tells you that you must use the 2-ft Exclusion.

The area of the slab is shown on the right as 1248 sq. feet. *(<1600 sf)*

Because the Test Section is only 24 ft wide, you must use the 45º Zig-Zag layout pattern. *(For any Section less than 25 ft wide, you must use the 45º Zig-Zag layout pattern.)*

You need 4 lines of 28 ft each For this Section.

	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	52		Area, sq feet =	2080.00
3	Enter Width in feet =	40		Work Area, sq feet =	1728.00
4	Nmin =	70		% Area Excluded =	17%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	352.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	36		Maximum Number of Steps =	50
9	Number of Lines =	4		Number of Lines =	2
10	# of Z readings you get =	108		# of Z readings you get =	82
11	Ratio of Z's/Nmin	1.54		Ratio of Z's/Nmin	1.17

The other two Sections are 52 ft X 40 ft.

N_{MIN} is shown as 70

The program tells you that you must use the 2-ft Exclusion.

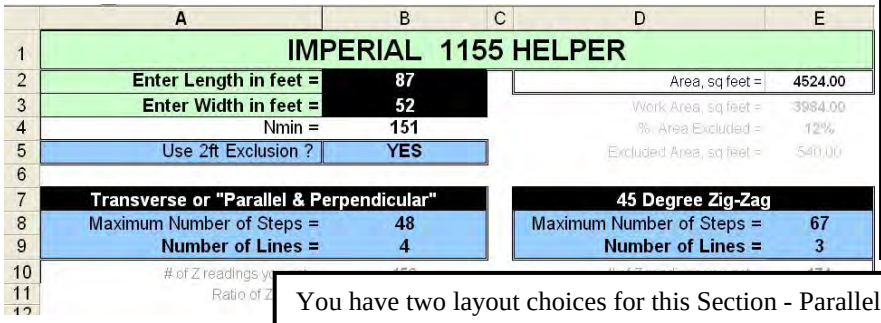
The area of the slab is shown on the right as 2080 sq. feet.

You have two layout choices for these 2 Sections - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 4 lines of 36 steps each.

If you choose the 45º Zig-Zag method, you need 2 lines of 50 ft each.

Example 3. (This is the same as example 3. on page 5)



	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	87		Area, sq feet =	4524.00
3	Enter Width in feet =	52		Work Area, sq feet =	3984.00
4	Nmin =	151		% Area Excluded =	12%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	540.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	48		Maximum Number of Steps =	67
9	Number of Lines =	4		Number of Lines =	3
10	# of Z readings you get =	156		# of Z readings you get =	201
11	Ratio of Z				

The first Section in the first (Lobby) Surface is "LobbyFront", 87 X 52 ft.

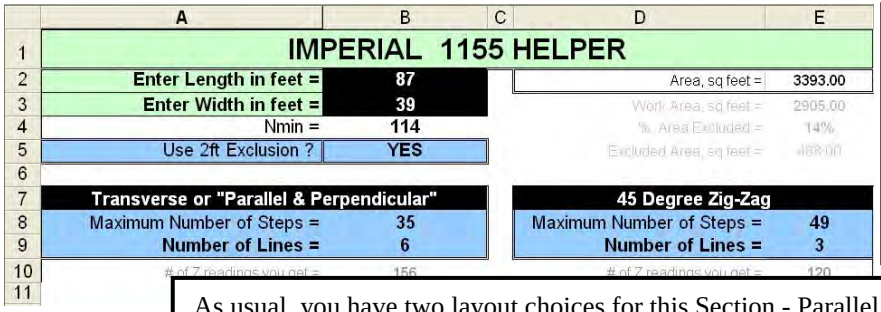
N_{MIN} is shown as 151, and once again the program tells you that you must use the 2-ft Exclusion.

The area of the slab is shown on the right as 4524 sq. feet.

You have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 4 lines of 48 steps each.

If you choose the 45º Zig-Zag method, you need 3 lines of 67 ft each.



	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	87		Area, sq feet =	3393.00
3	Enter Width in feet =	39		Work Area, sq feet =	2905.00
4	Nmin =	114		% Area Excluded =	14%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	488.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	35		Maximum Number of Steps =	49
9	Number of Lines =	6		Number of Lines =	3
10	# of Z readings you get =	156		# of Z readings you get =	120
11					

The second Section in the first (Lobby) Surface is "LobbyRear", 87 X 39 ft.

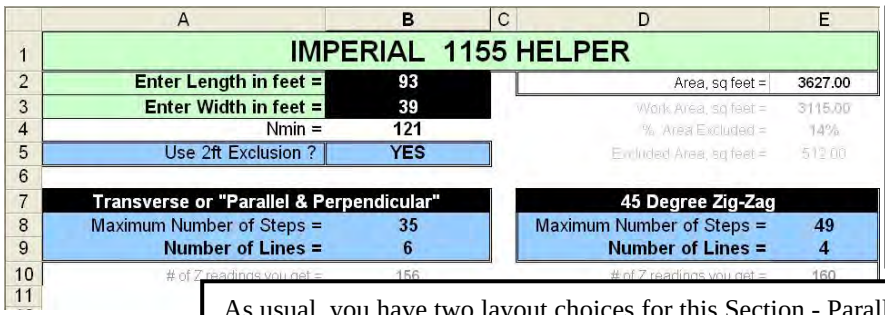
N_{MIN} is shown as 114, and once again the program tells you that you must use the 2-ft Exclusion.

The area of the slab is shown on the right as 3393 sq. feet.

As usual, you have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 6 lines of 35 steps each.

If you choose the 45º Zig-Zag method, you only need 3 lines of 49 ft each.



	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	93		Area, sq feet =	3627.00
3	Enter Width in feet =	39		Work Area, sq feet =	3115.00
4	Nmin =	121		% Area Excluded =	14%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	512.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	35		Maximum Number of Steps =	49
9	Number of Lines =	6		Number of Lines =	4
10	# of Z readings you get =	156		# of Z readings you get =	160
11					

The last Section in the "Lobby" Surface is "Atrium", 93 X 39 ft.

N_{MIN} is shown as 121, and once again the program tells you that you must use the 2-ft Exclusion.

The area of the slab is shown on the right as 3627 sq. feet.

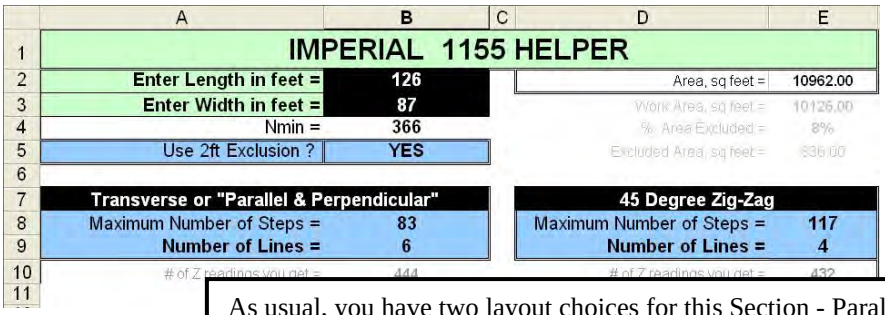
As usual, you have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 6 lines of 35 steps each.

If you choose the 45º Zig-Zag method, you need 4 lines of 49 ft each.

This covers the three different-sized Sections in the Lobby area of Example 3. Now for the upstairs rooms:

Example 3. Continued - Upper Floors:



	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	126		Area, sq feet =	10962.00
3	Enter Width in feet =	87		Work Area, sq feet =	10126.00
4	Nmin =	366		% Area Excluded =	8%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	836.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	83		Maximum Number of Steps =	117
9	Number of Lines =	6		Number of Lines =	4
10	# of Z readings you get =	444		# of Z readings you get =	432
11					

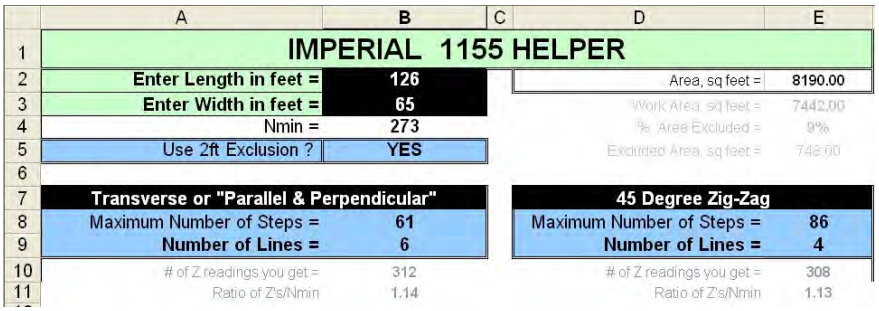
The "Rooms" Surface is divided into sections of 2 different sizes. This is the East side, 126 X 87 ft.

N_{MIN} for this large Section is 366, and once again the program tells you that you must use the 2-ft Exclusion.

As usual, you have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 6 lines of 83 steps each.

If you choose the 45º Zig-Zag method, you need 4 lines of 117 ft each.



	A	B	C	D	E
1	IMPERIAL 1155 HELPER				
2	Enter Length in feet =	126		Area, sq feet =	8190.00
3	Enter Width in feet =	65		Work Area, sq feet =	7442.00
4	Nmin =	273		% Area Excluded =	9%
5	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	748.00
6					
7	Transverse or "Parallel & Perpendicular"			45 Degree Zig-Zag	
8	Maximum Number of Steps =	61		Maximum Number of Steps =	86
9	Number of Lines =	6		Number of Lines =	4
10	# of Z readings you get =	312		# of Z readings you get =	308
11	Ratio of Z's/Nmin	1.14		Ratio of Z's/Nmin	1.13

This is the West side, 126 X 65 ft, of the "Rooms" Surface.

N_{MIN} for this Section is 273, and once again the program tells you that you must use the 2-ft Exclusion.

As usual, you have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

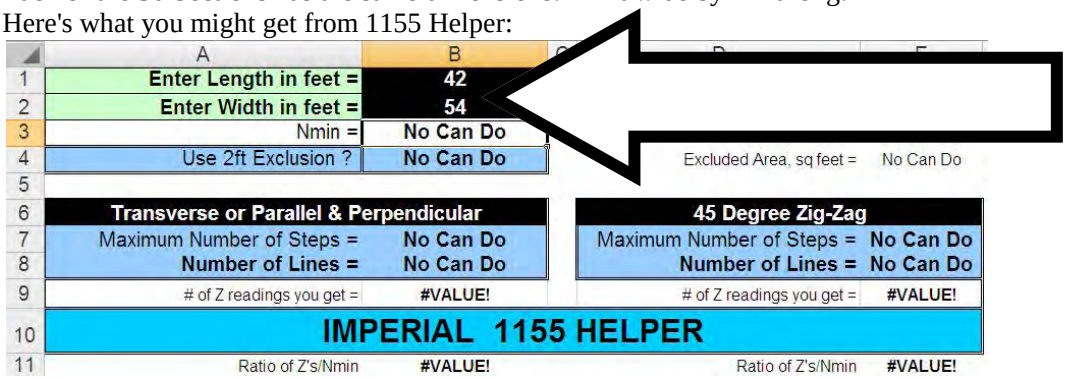
If you choose Parallel and Perpendicular, you need 6 lines of 61 steps each.

If you choose the 45º Zig-Zag method, you need 4 lines of 86 ft each.

There are four floors that each have these two sections, but they are the same on each floor.

Example 4. (This is the same as the example on page 6)

Each of the 50 Sections has the same dimensions: 21 ft wide by 27 ft long.
Here's what you might get from 1155 Helper:

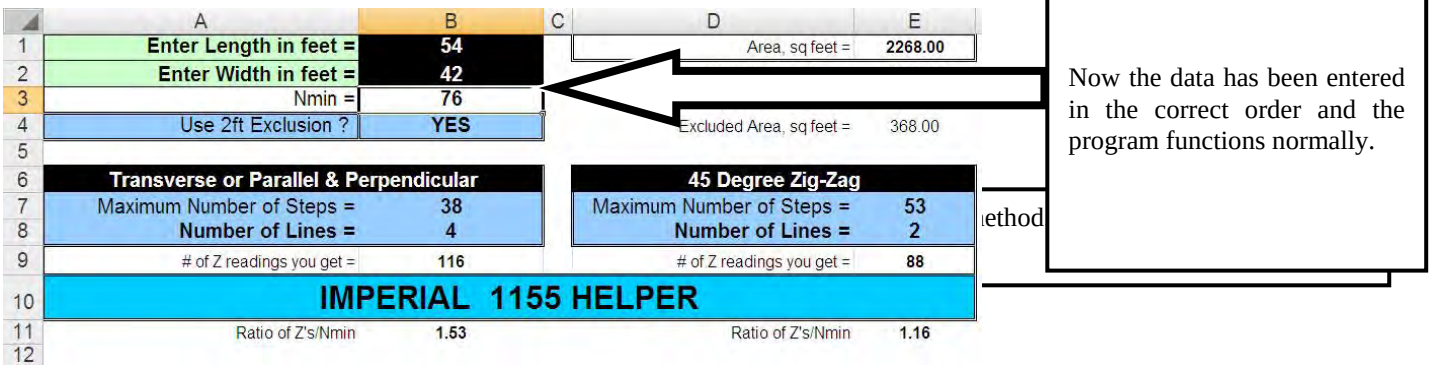


	A	B	C	D	E
1	Enter Length in feet =	42			
2	Enter Width in feet =	54			
3	Nmin =	No Can Do			
4	Use 2ft Exclusion ?	No Can Do		Excluded Area, sq feet =	No Can Do
5					
6	Transverse or Parallel & Perpendicular			45 Degree Zig-Zag	
7	Maximum Number of Steps =	No Can Do		Maximum Number of Steps =	No Can Do
8	Number of Lines =	No Can Do		Number of Lines =	No Can Do
9	# of Z readings you get =	#VALUE!		# of Z readings you get =	#VALUE!
10	IMPERIAL 1155 HELPER				
11	Ratio of Z's/Nmin	#VALUE!		Ratio of Z's/Nmin	#VALUE!

Note

Note that the operator has entered "42" for the **LENGTH** and "54" for the **WIDTH**.
The software expects you to know that the "***length***" is always the longer dimension, and the "***width***" is always the shorter dimension. The "length" should be "54" and the "width" should be "42".

See below for what it looks like when you enter the data correctly:



	A	B	C	D	E
1	Enter Length in feet =	54		Area, sq feet =	2268.00
2	Enter Width in feet =	42			
3	Nmin =	76			
4	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	368.00
5					
6	Transverse or Parallel & Perpendicular			45 Degree Zig-Zag	
7	Maximum Number of Steps =	38		Maximum Number of Steps =	53
8	Number of Lines =	4		Number of Lines =	2
9	# of Z readings you get =	116		# of Z readings you get =	88
10	IMPERIAL 1155 HELPER				
11	Ratio of Z's/Nmin	1.53		Ratio of Z's/Nmin	1.16
12					

ethod

Now the data has been entered in the correct order and the program functions normally.

As usual, you have two layout choices for this Section - Parallel and Perpendicular, or 45º Zig-Zag.

If you choose Parallel and Perpendicular, you need 4 lines of 38 steps each.

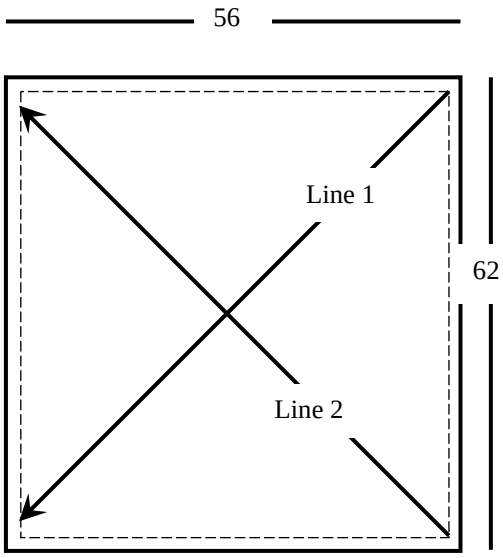
If you choose the 45º Zig-Zag method, you need 2 lines of 53 ft each.

Example 5. (This is the same as the example on page 10)

The section is 62 ft x 56 ft. Here is what you get from 1155 Helper.

	A	B	C	D	E
1	Enter Length in feet =	62		Area, sq feet =	3472.00
2	Enter Width in feet =	56		Work Area, sq feet =	3016.00
3	Nmin =	116		% Area Excluded =	13.13%
4	Use 2ft Exclusion ?	YES		Excluded Area, sq feet =	456.00
5					
6	Transverse or Parallel & Perpendicular			45 Degree Zig-Zag	
7	Maximum Number of Steps =	52		Maximum Number of Steps =	73
8	Number of Lines =	4		Number of Lines =	2
9	# of Z readings you get =	172		# of Z readings you get =	128
10	IMPERIAL 1155 HELPER				
11	Ratio of Z's/Nmin	1.48		Ratio of Z's/Nmin	1.10

The easy way to do this is with two 45 degree Zig-Zag lines.
Note that corner-to corner diagonals are **NOT** 45 degree lines.



Note that Line 1 starts 2-ft from the upper edge and 2-ft from the right edge. Because it is at 45 degrees, it does NOT go into the lower left corner.

Likewise, Line 2 starts 2-ft from the lower right corner and goes up and to the left at 45 degrees. It does NOT go into the upper left corner.

Try the 1155 Helper program. You'll like it.