

USING FORMULAS IN GROUNDPLAN

Supported References

Formulas for Parts within a Measurement include related Supported References. These References vary according to the Measurement type [Count vs Length vs Area]. Each Formula must contain a Supported Reference/s to be accepted.

Support References can be used in conjunction with Excel-type Formulas to calculate Parts and/or Labour for a Measurement.

Notes:

- All formulas must start with the equal sign [=] and include one of the supported references associated with the Measurement.
- Either whole or decimal numbers can be used.
- Groundplan works in metres [feet for imperial customers].
- Parts and Labour may follow our Grouping rules although Formula is not included within the rules.

Groundplan Formulas follow the PMDAS Rule.

ie: Parentheses [brackets] followed by multiplication, division, addition then subtraction.

Calculations within brackets are prioritised. The Totals after any Formula applied to a Part will be displayed in the bill of materials under the Quantities tab.

TERM	EXPLAINED
+	Addition
-	Subtract or create a negative total
*	Multiply [SHIFT+8 to create a *]
/	Divide
<code>ceil(x)</code>	Rounds the total [x] and/or Formula inside the brackets up to the nearest whole number .
<code>floor(x)</code>	Rounds the total [x] and/or Formula inside the brackets down to the nearest whole number .
Unit of Measure	Displayed on the bill of materials and represents the Part being quantified. Some examples include ea, bags, sheets, rods, pipes, m, m2, m3. <i>(Supported references will not reference this UOM for calculations).</i>

USING FORMULAS IN GROUNDPLAN

Supported References for Count Measurements

How the main Count Supported References correspond to a Plan:

count = 5 Symbols



Add Once-Off Item

Part No

Description

Unit of Measure: ea

Unit Cost

Markup %: 10.00

Unit Price

Formula: = count

Supported References: count

Total: 0.00

Save Close

Add Once-Off Item

Part No

Description: Toilet removal

Unit of Measure: ea

Unit Cost

Markup %: 10.00

Unit Price

Formula: = -count

Supported References: count

Total: -2.00 ea

Save Close

Explanation: To create a negative Count when removing an item.

FORMULA	EXPLAINED	*UOM
=count * 8	For every Count, multiply the item by 8m	m
=count * 5 / 100	For every Count, allow 5 items divided by 100 (or amount in a bag)	bags
= - count	Create a negative Count	ea

*UOM - Unit of Measure

USING FORMULAS IN GROUNDPLAN

Supported References for Length Measurements

How the main Length Supported References correspond to a Plan:

count = 3 Runs

len = Total overall Length

segments = 6 clicks to change direction



Length Measurement Unit of Measure (UoM)		Part Supported References
<div>Measurement Unit</div> <div><div>m</div><div>m²</div><div>m³</div></div> <div>Pitch °</div> <div></div>	▶	<div>Formula</div> <div>= len</div> <div>Supported References: count len segments</div>
<div>Measurement Unit</div> <div><div>m</div><div>m²</div><div>m³</div></div> <div>Pitch °</div> <div></div> <div>Height (m, mm)</div> <div></div>	▶	<div>Formula</div> <div>= area</div> <div>Supported References: count len segments area</div>
<div>Measurement Unit</div> <div><div>m</div><div>m²</div><div>m³</div></div> <div>Pitch °</div> <div></div> <div>Height (m, mm)</div> <div></div> <div>Width (m, mm)</div> <div></div>	▶	<div>Formula</div> <div>= volume</div> <div>Supported References: count len segments area volume</div>

USING FORMULAS IN GROUNDPLAN

Length Formula Examples

FORMULA	EXPLAINED	*UOM
<code>=len/6</code>	Total length divided by 6, [counting one length every 6 metres]	lengths
<code>=len*2.4</code>	Total length multiplied by height	m ²
<code>=ceil(len*2)</code>	Total length multiplied by 2 and rounded up to the next whole number [ceil]	m
<code>=segments*2</code>	Each time clicked to change direction multiplied by 2 items along each segment	ea
<code>=len+count*5</code>	Total length add an additional 5m for each run	m
<code>=ceil(len*2.4/2.88)</code>	Total length multiplied by the height and divided by the area covered by a product rounded up to the next whole number [ceil]	sheets
<code>=(len/1.5)+count*2</code>	Total length divided by how often a post is [1.5m] add for each run 2 extra posts [for each end]	posts
<code>=volume*1.10</code>	Volume multiplied by 10% wastage	m ²

**UOM - Unit of Measure*

USING FORMULAS IN GROUNDPLAN


Supported References for Area Measurements

How the main Area Supported References correspond to a Plan:

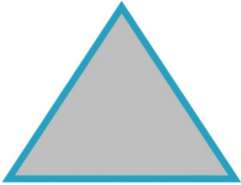
count = 3 areas

len = perimeter around the areas including cut outs

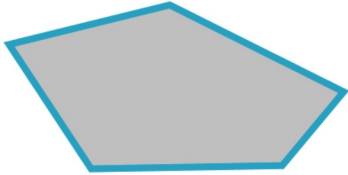
area = Total overall Area m2



Area 1



Area 2



Area 3

Area Measurement Unit of Measure (UoM)		Part Unit of Measure (UoM) choices
<div><div>Unit of Measure</div><div><div>m²</div><div>m³</div><div>ea</div></div><div>Pitch °</div><div></div></div>	▶	<div><div>Formula</div><div>= area</div><div>Supported References: count len area</div></div>
<div><div>Unit of Measure</div><div><div>m²</div><div>m³</div><div>ea</div></div><div>Pitch °</div><div></div><div>Depth (m, mm)</div><div>0.25m</div></div>	▶	<div><div>Formula</div><div>= volume</div><div>Supported References: count len area volume</div></div>
<div><div>Unit of Measure</div><div><div>m²</div><div>m³</div><div>ea</div></div><div>Pitch °</div><div></div><div>Footprint / Unit area ⓘ</div><div>7.2m2</div></div>	▶	<div><div>Formula</div><div>= tiles</div><div>Supported References: count len area tiles</div></div>

USING FORMULAS IN GROUNDPLAN

Area Formula Examples

FORMULA	EXPLAINED	*UOM
=area*1.5	Area multiplied by height OR depth	m ³
=len	Perimeter of the area	m
=ceil(len/6)	Perimeter of the area (including any cut outs) divided by 6m lengths rounded up to the next whole number	lengths
=area+(len*0.2)	Area added to [perimeter multiplied by 200mm high]	m ²
=area/7.2	Total area divided by the area of a sheet / product [7.2 m ²]	sheets
=area*4/100	In each m ² there are 4 items required divided by the amount in a bag	bag
=count	Each area created	ea
=volume*1.10	Volume multiplied by 10% wastage	m ³
=area*1.10	Total area multiplied by 10% wastage	m ²
=ceil(tiles)	Total sheets size populated then rounded up to the next whole number [ceil]	sheets

*UOM - Unit of Measure



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