

## Step 4: Configure Packages

### Introduction:

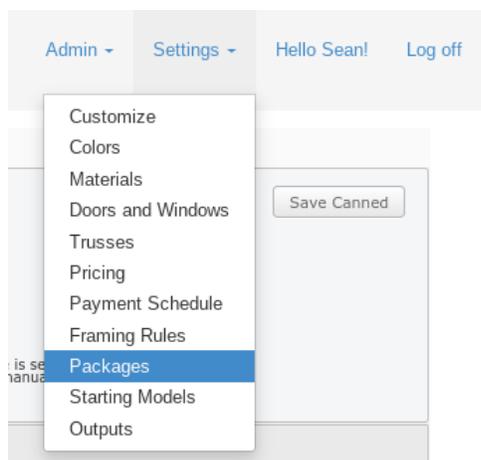
Sheathing, trim and framing members shown in the 3-d model will automatically be included in the material list and priced appropriately. You can also add materials from your catalog or as special order to any job. For everything else, SmartBuild uses Packages to call out materials and prices in a job. Packages are used to price things like insulation, interior liners, closures, bracing, screws, nails, horse stalls, labor, delivery and more.

Essentially, you choose a material from your material database and define a way to calculate, and add that material to any given job. A Package can contain one or many materials. You can have as many or as few packages as you like. Packages can incorporate Excel-like functions and formulas to calculate materials. Packages can also take advantage of job information like square footage, lineal footage, counts of members and many more options. Packages can include questions to be input on a job by job basis, like dimensions of a concrete slab, to calculate cubic yards of concrete required for the specifications of a job.

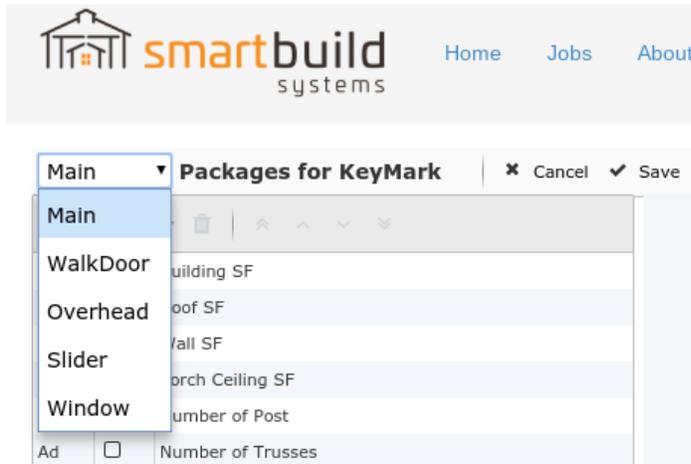
SmartBuild allows you to define packages in a way that makes sense for how you run your business. There are some standard Packages that SmartBuild will provide, but it will be your responsibility to make sure a full list of packages are set up in a way that works for your business.

### Adding a Package:

Packages are created under Settings/Packages:

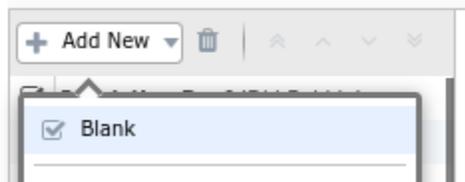


Choose to create Packages that apply to the whole building ('Main').



(see Door and Window Packages section for details on Packages for opening types)

To add a new package select Add New and Blank.



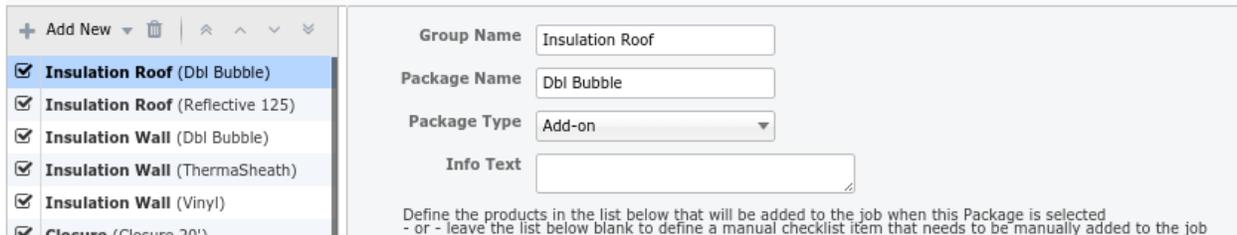
You can also add a pre-defined SmartBuild Package from the list to your packages:



The pre-defined packages are included with SmartBuild as a starting point for many of the common types of packages, but they will require adjustments for your specific materials and practices.

Once you add a New or pre-defined package, you can select the Package and edit the properties of the package and add or edit materials.

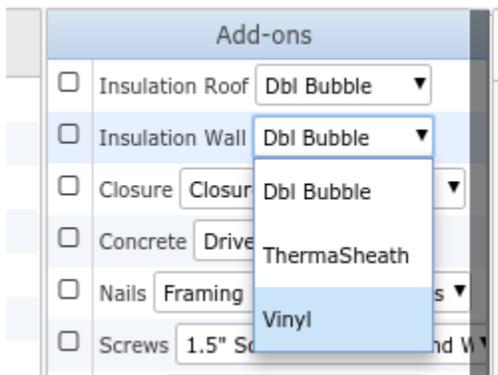
Before adding materials, you should define the properties of the package itself. The following section defines the properties of a Package:



*This shows the properties of the selected package*

**Group Name:** Packages can be grouped together. Any packages that have the same Group Name will be listed together under the Group Name as options to select from in a job.

In the example below, In a job, the two roof insulation material options ('DBL Bubble' and 'Reflective 125') will be grouped together under the 'Insulation Roof' Group Name. And, likewise, the three wall insulation material packages will be grouped together under the 'Insulation Wall' Group Name.



*In a job, the drop down shows the three material packages grouped under 'Insulation Wall'.*

In a job, you can select to turn on the Add-on for a job and you can choose one of the options from the roof and/or wall insulation groups to be added to the material list.

**NOTE:** You can only pick one item from a group (in this case you cannot select 'ThermaSheath' and 'Vinyl' from the list for wall insulation) to add to a job. If you need to have both 'Material A' and 'Material B' in a job at the same time then 'A' and 'B' cannot be under the same Group Name. In this example, the roof and wall insulation are not grouped together because we need the option to add roof insulation and/or wall insulation to a job. But, the different types of wall insulation can be grouped together, because we do not offer different types of insulation for walls in any given job.

**Package Types:** ‘Packages’ is a general term used in the program that refers to several types of packages. Add-on, Base Macro, Bundles and Options are types of ‘Packages’.

You can designate a Package Type which will affect the behavior of the package within a job.

**Add-on:** Add-ons are a type of package that can be included or excluded on a job by job basis. If an Add-on is included in a job, then all materials for that Add-on will be added to the material list and added to the quote price.

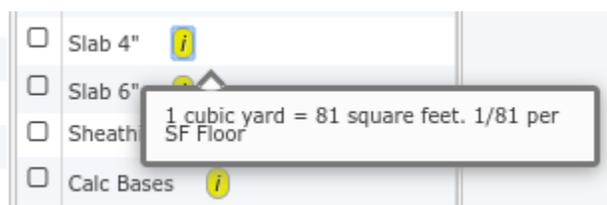
**Base Macro:** Base Macros are like Add-ons except they are automatically included in every job. There is no option to include or exclude per job, Base Macros are always included in every job according to the calculation used. Typically, these are used for nails, screws and other materials that are included with every job and do not require the option to turn off according to job specifications.

**Bundles:** A bundle acts like an Add-on, except it is also shown as a single item in terms of pricing. So, if you create a Bundle called ‘Workbench’ that includes 2x4’s and nails, the bundle will show a single total price for a ‘Workbench’ which is the sum of the individual materials. And, on the materials list, each material is listed as a separate material and added to the quote price. Bundles can be used to present sales bundles to a customer as a single line item price (like ‘Workbench = \$399.95’) with the individual material items that make up the ‘Workbench’ still on the material list as separate material items. Bundles are typically used when you want to present a single price to the end client and still have an itemized material list. Bundles can be listed on document template outputs (Add-ons will not be listed on document template outputs).

**Options:** Options are like Bundles except that an Option can also be shown on outputs with a total price and not added to the material list or total price of the quote. Options are a three way switch. Options can be 1. excluded from a job all together 2. Included in a job as a bundle (see Bundles definition above) or 3. Shown as a single price line item like a bundle but the materials are not included in the material list and not added to the total quote price. But, options can easily be added to a job as a bundle by clicking the checkbox for any given option. Options are typically used to present optional add-ons to the end client. For example, If your client has given specifications for a base building, and wants to consider adding the ‘workbench’, you can show the total price for the work bench as part of the original sales quote without affecting the price of the base building. If the client decides to add the work bench, then a single button click will add the option to the material list and quote price.

**Default Setting:** You can choose at set up if an Add-on will default to ‘turned on’ or ‘turned off’ in a job. If you choose ‘On’ then the Add-on will be automatically checked upon opening a job and therefore included in the job materials (and can be unchecked in the job to remove the Add-on). If you select ‘Off’ then the Add-on will be unchecked and not included in the job materials (and can be checked-on in the job to add the Add-on).

**Info Text:** The text entered here will be available in a job.

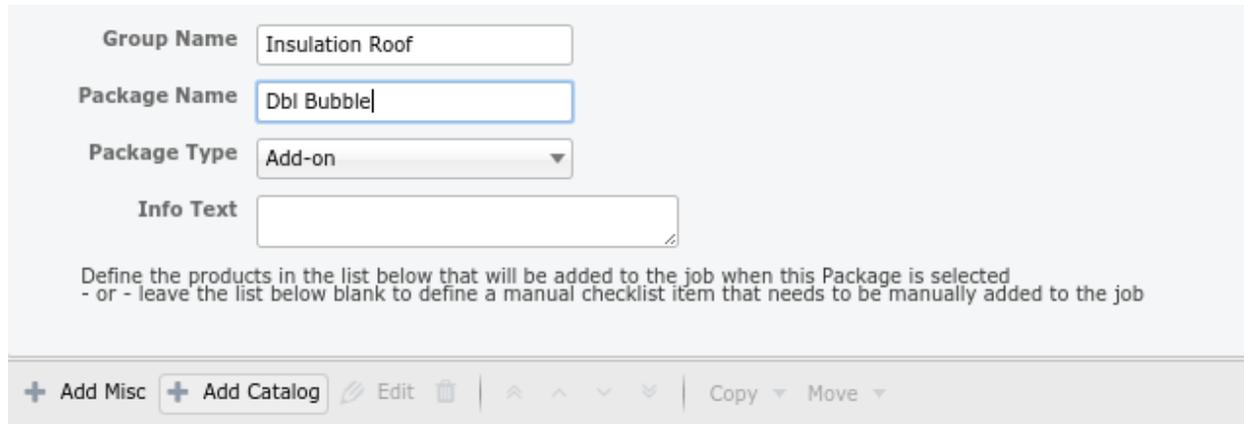


*Info Text can be accessed by clicking on the ‘i’ button next to any given package in a job*

Info Text is used to display notes, reminders and information for any package while modelling a job.

## Adding Materials to a Package:

Once you define the Package information then you can add materials to the package and define how those materials will be calculated and added to a job. A package can have one or more materials, each material is added to a package one at a time. To add a material to a package, select Add Misc or Add Catalog.



Group Name

Package Name

Package Type

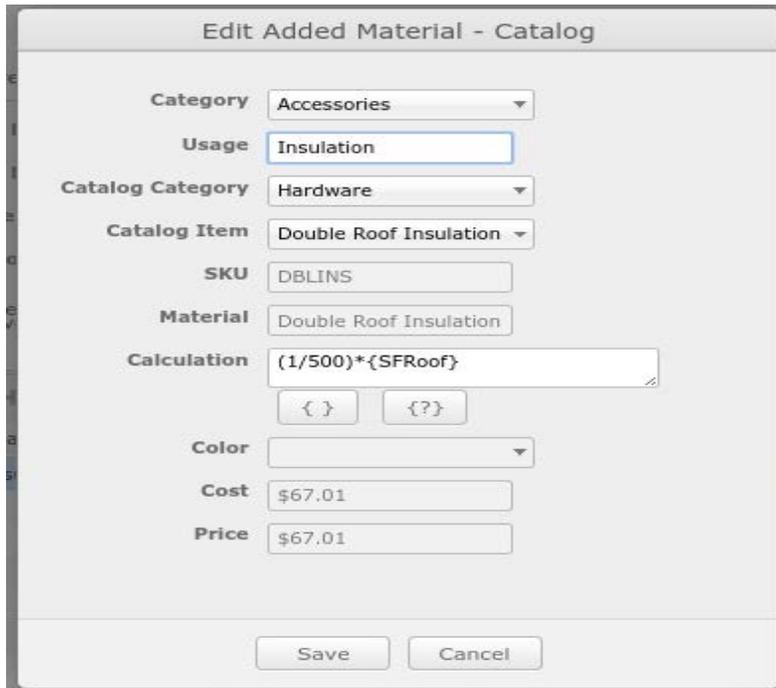
Info Text

Define the products in the list below that will be added to the job when this Package is selected  
 - or - leave the list below blank to define a manual checklist item that needs to be manually added to the job

+ Add Misc + Add Catalog Edit Copy Move

**Add Misc:** This will add a ‘miscellaneous’ or special order material to the package, you define this material upon adding it to the package. NOTE: Adding a material this way will only be used for the package it is added to, it is not connected to your master material database in any way. It will not be updated based on changes to pricing or anything else connected to your master material database. This material exists only as part of this package.

**Add Catalog:** This option will use a material from your existing master material database. When you use Add Catalog, the selected material is tied directly to your material database and used in the package. So, if you update the price of a material in your master material database, then the updated price will be reflected when the package is used in a job.



*This is the screen when Add Catalog is used to input a material into a package.*

The terms below are in order of the Add Catalog input.

**Category:** Specify which material category the calculated material will be placed within a job's material list. For example, if this is a framing member then you can choose Lumber from the drop down list, if it is a labor calculation then you can choose the Labor category. Once this material is added to a job, it will be listed under the selected category on the material list.

**Usage:** This is used to describe how this material is used in a job and can be anything you want. The Usage will be added, along with the parent Package name, to the Usage column in the job's material list.

**Catalog Category:** Narrow down the list of available 'Catalog Items' based on the material category. If you are estimating a framing member, then choose the Lumber category to select from the available lumber products.

**Catalog Item:** Select a material from your material database. This is the specific material that will be calculated and added to a job's material list based on the calculation defined.

**SKU:** Internal program SKU for selected Catalog item (automatically entered by program based on Catalog Item selected)

**Material:** Description of the selected Catalog Item (automatically entered by program based on Catalog Item selected)

**Calculation:** Formulas can be defined here to calculate quantities of the Catalog Item selected. You can use program data to help calculate material take offs, for example, square foot of roof or wall, lineal feet of different types of trim and quantities of things like trusses or posts. You can use standard addition,

subtraction, multiplication and division to calculate materials. You can also incorporate questions into calculations that will prompt the user for inputs to use in the calculation when added to a job (see Example 4 below for more details).

Follow these links to learn more about using Excel Functions in these calculations:

[Using Excel Functions in SmartBuild Package Calculations-2](#)

[SmartBuild IF Statements for Labor Calcs - Video](#)

**Test:** Use the Test button to check if the formulas are formatted correctly and verify that the expected amount of material results. This 'Test' mode saves significant time to verify the results without having to open a job.

**Color:** For materials with colors in the material database, this will allow you to select a color option for the material. You can either choose an exact color based on your color list, or match the roof or wall or trim color of the main building, or if you select 'Calc Base' then the program will apply the appropriate color based on the method of calculating the materials; for example, if you use 'SF of Wall Sheathing' in the calculation then the material will match the wall colors, even if you have more than one wall color in a job.

**Cost:** Cost of selected material from the material database (automatically entered by program based on Catalog Item selected)

**Price:** Cost of selected material from the material database (automatically entered by program based on Catalog Item selected)

## NOTE ON MATERIALS

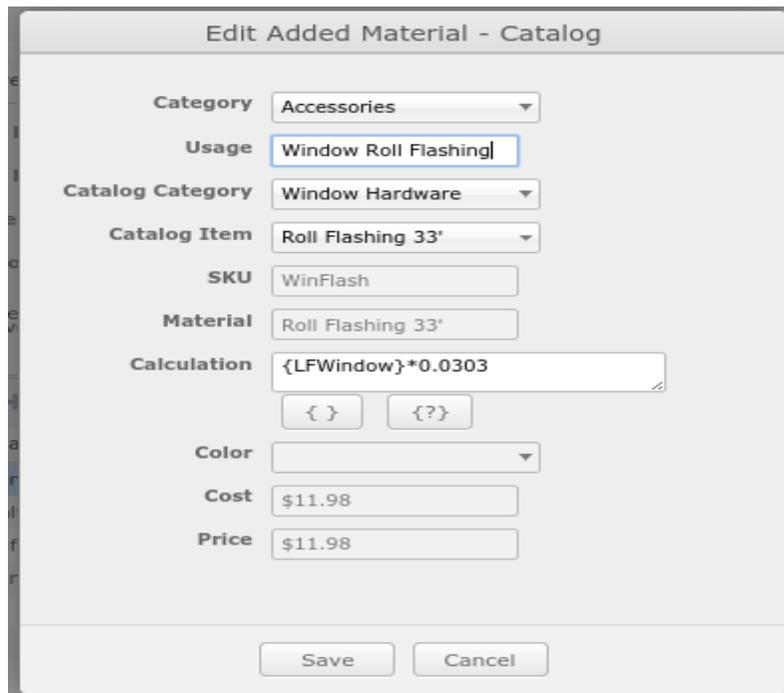
In order to estimate a material from your master material database, you need to first have the material added to your SmartBuild material database. See **Step 2: Setting up Material Databases** for more information on loading materials.

The way a material is entered into the system will affect how a Package is set up. If you set the price of a material by the roll (or box or bag...) then the Add-on will need to figure how many rolls are needed for a given job. To figure this, you need to find out what percentage of a roll is used based on your selected 'Calc Base', such as square foot of wall. If you don't want the program to call out a roll or box etc. but instead just want the lineal footage or square footage of material per job, then you would price the material based on square foot or lineal foot (not per roll, box....). So, if a 100 foot roll cost \$100 dollars, then the material would be priced as \$1.00 to get a cost per linear foot. So, the way a material is priced needs to coordinate with the way you want to report and estimate the material.

### Example 1: Estimate per roll based on Lineal foot

Let's say you use a roll on waterproof flashing for all windows. You need to have a material in your database to use. In your database, you add a 33' roll of flashing priced per roll in your 'Window Hardware' category. In this case, you want to figure out how many rolls to send out to any given job. So you create a 'Base Macro' to account for this flashing material. In this case, the best Calc Base available is 'Lineal Foot of Window Trim'. So, how do we figure out how many 33' rolls we need per job?

If you want to use 1 lineal foot of flashing for each 1' of window trim then you can use this formula: 1 lft divided by 33' of flashing (= .0303).



The screenshot shows a dialog box titled "Edit Added Material - Catalog". It contains several fields for configuring a material:

- Category:** Accessories
- Usage:** Window Roll Flashing
- Catalog Category:** Window Hardware
- Catalog Item:** Roll Flashing 33'
- SKU:** WinFlash
- Material:** Roll Flashing 33'
- Calculation:** {LFWindow}\*0.0303
- Color:** (empty dropdown)
- Cost:** \$11.98
- Price:** \$11.98

At the bottom, there are "Save" and "Cancel" buttons.

You could also use the calculation of:  $\{LFWindow\} * (1/33)$ , which would give the same result as the above calculation and is generally preferred as it provides more information about how it is calculated .

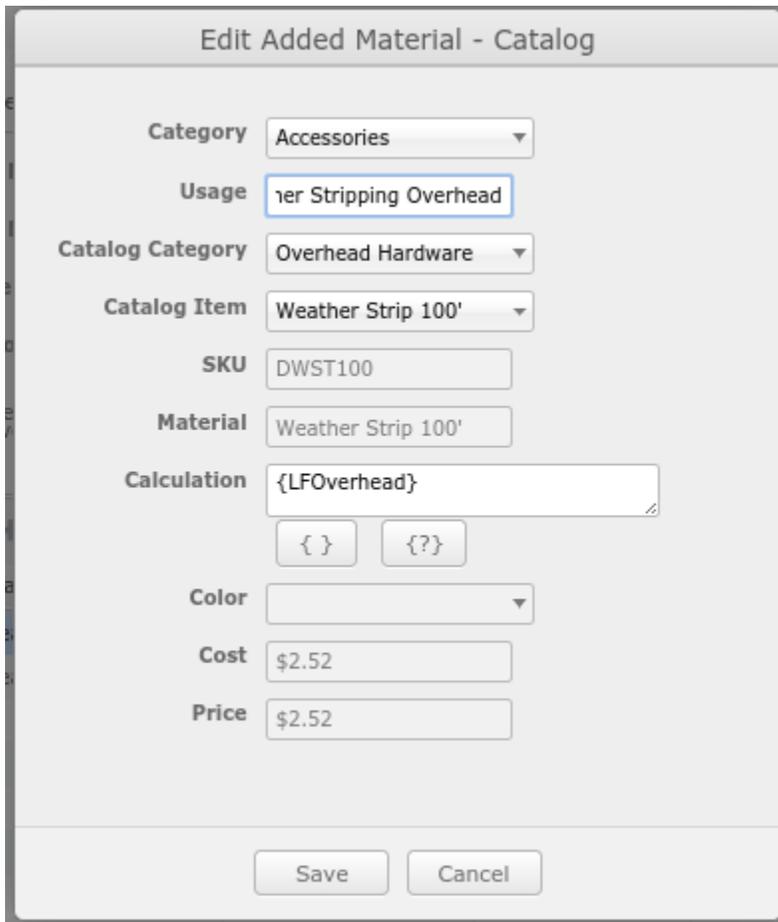
This means for every lineal foot of window trim for a given job, you will get 1 foot of window flashing, **but** it will only report the number of rolls required for the material take off. If a job has less than 33 lineal feet of window trim then one roll of 'Roll Flashing 33'' will be included and priced on the material take-off. As the lineal feet of window trim increases so does the number of rolls, but only when it reaches a point that requires a new roll. So, 33' will require 2 rolls (the program will round up when exactly 33'). 65' will require 2 rolls. 66' will require 3 rolls etc.

You can build waste factors into the calculations. For example, one way to handle this is to add 10% to the lineal footage of trim and then figure out the material based on actual lineal footage plus a 10% waste factor. The calculation would look like:  $((\{LFWindow\} * .1) + \{LFWindow\}) * .0303$ . This calculation finds 10% of the lineal footage of trim and then adds the actual lineal footage of window trim and then figures out how many rolls are required based on the waste adjusted lineal footage.

This is one example, but the same principles can apply to any type of material where you need to find the quantity of rolls, or bags or boxes to send out per lineal foot of something.

**Example 2: Priced per lineal foot (not per roll,box...)**

Let’s assume instead of figuring out the number of rolls to send out, you want a number of actual lineal footage required and priced per lineal foot (not per roll). In this case, you would set the cost of the material in your material catalog by the cost of material per lineal foot in a roll. If a roll of 100’ costs \$252.00 then the cost in your material catalog would be \$2.52 per lineal foot. In this case, you want one lineal foot of flashing for every lineal foot of window trim.



The screenshot shows a form titled "Edit Added Material - Catalog" with the following fields and values:

- Category: Accessories
- Usage: 1er Stripping Overhead
- Catalog Category: Overhead Hardware
- Catalog Item: Weather Strip 100'
- SKU: DWST100
- Material: Weather Strip 100'
- Calculation: {LFOverhead}
- Color: (empty dropdown)
- Cost: \$2.52
- Price: \$2.52

Buttons for "Save" and "Cancel" are located at the bottom of the form.

*The 100’ roll is priced per lineal foot.*

In the above example, the Calculation is just Lineal Footage of Overhead door trim, so one foot of weather strip for every lineal foot of overhead trim. The results per job on the material take-off will show the actual lineal footage required and it will give a price of the material per lineal foot.

### Example 3: Materials based on Square Footage

Using square footage as a Calc Base is similar to using lineal footage, except you need to figure out the total coverage of the material. For example, let's say you use a 4x8 insulation panel to insulate walls and you want the program to figure out how many panels you need for any given job. In the material database, you would add a 4x8 insulation panel with the cost/price per panel. Under packages, you would create an Add-on to account for this material. In this case, square footage of wall sheathing is a good Calc Base to use to figure out how many sheets are required. To do this you need to figure out the coverage of one sheet, so  $4 \times 8 = 32$  square foot per panel. Then you need to tell the program how much of a sheet is required for one square foot of wall sheathing. This calculation is  $1/32$ .

**Edit Added Material - Catalog**

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**Category**

**Usage**

**Catalog Category**

**Catalog Item**

**SKU**

**Material**

**Calculation**

**Color**

**Cost**

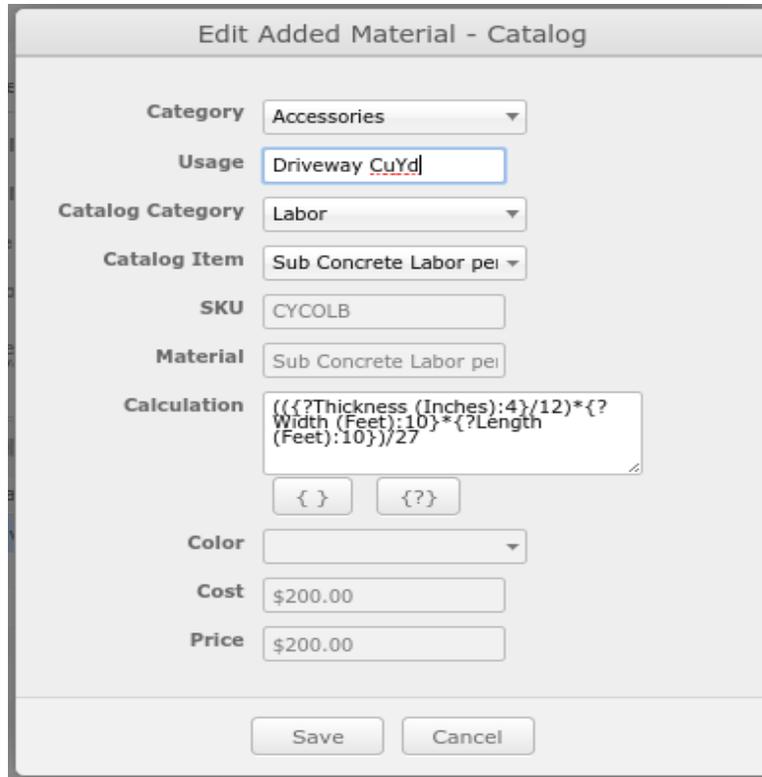
**Price**

In this example, the program will calculate how many sheets are required for any given job based on the job's total square foot of wall sheathing. The program will round up, but basically, for every 32 square foot of wall sheathing, the program will report 1 sheet of wall insulation. 330 square feet of wall sheathing would report 11 sheets.

### **Example 4: Finished floor cubic yards to square foot with questions**

For slabs, since we are using the square footage of floor in the program, we need to convert cubic yards to square feet. You could create a material under the Foundation category of '1 cubic yard of concrete' with a cost/price for 1 cubic yard of concrete.

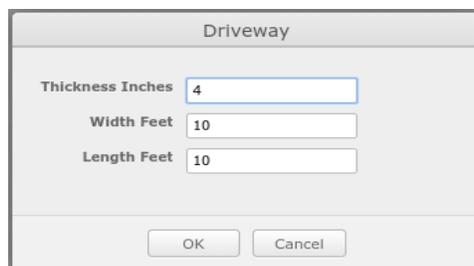
You can add questions within a calculation to prompt a user of the program to enter job specific information to use in the calculation when applied to a job. Here is a sample set up to calculate:



The calculation:  $((\{?Thickness (Inches):4\}/12)*\{?Width (Feet):10\}*\{?Length (Feet):10\})/27$

Using this calculation, the program will prompt the user to enter a Thickness, Width and a Length. It will then calculate square footage and divide by 27 to get cubic yards and add the number of cubic yards to the quote with a price per cubic yard.

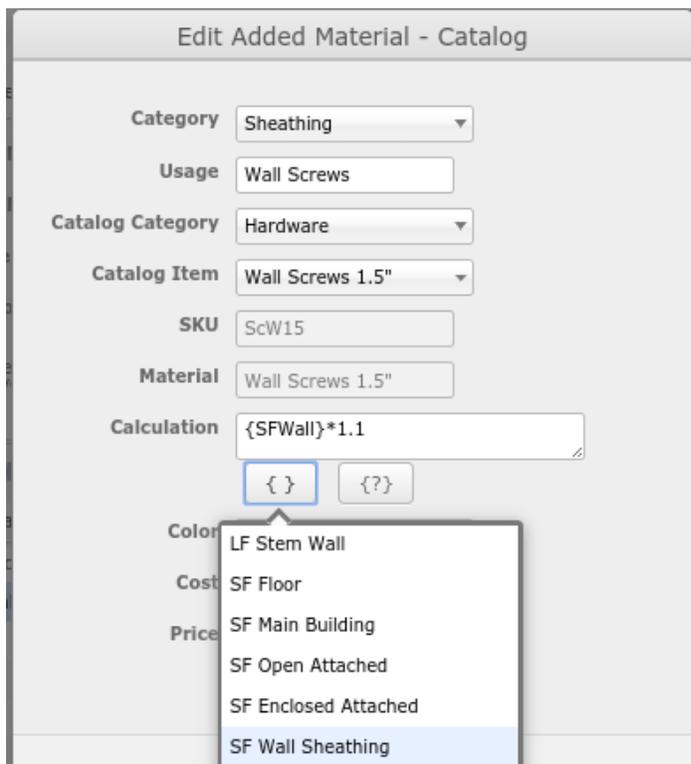
When the driveway is added to a job, the questions will be presented like this:



The program will calculate the cubic footage of concrete based on the answers to the Driveway questions. The defaults in this case are defined as 4, 10 and 10 but can be changed in a job.

### **Example 5: Screws**

Screws generally follow similar principles as above. If you want a count of screws per square foot of roof or wall sheathing then the calculation is pretty easy. In the Calculation, you just add “SF of wall Sheathing’ and multiply by the desired amount of screws per square foot of wall sheathing. If you use ‘1’ as the multiplier then you will get 1 screw for every square foot of wall sheathing. If you use 2 then you will get 2 screws for every square foot, if you use .5 then you will get ½ a screw for every 1 square foot (though you can’t get half a screw so it is more accurate to say you will get 1 screw for every two square feet). You can increase or decrease the amount per square foot as you like.



The screenshot shows a software interface for editing a material catalog entry. The title is "Edit Added Material - Catalog". The form includes several fields:
 

- Category:** Sheathing (dropdown)
- Usage:** Wall Screws (text input)
- Catalog Category:** Hardware (dropdown)
- Catalog Item:** Wall Screws 1.5" (dropdown)
- SKU:** ScW15 (text input)
- Material:** Wall Screws 1.5" (text input)
- Calculation:** {SFWall}\*1.1 (text input)

 Below the calculation field, there are two buttons: "{ }" and "{?}". A dropdown menu is open from the "{ }" button, listing several material categories:
 

- LF Stem Wall
- SF Floor
- SF Main Building
- SF Open Attached
- SF Enclosed Attached
- SF Wall Sheathing (highlighted)

*Example of getting 1.1 screws for every square foot of wall sheathing*

Calculating screws per square foot to get a count of the number of boxes is a bit more difficult.

#### **Here is a formula that you can use:**

The number of screws per square foot you want to use, divided by the total number in a box, multiplied by the actual square footage in the job.

In the example below, we are using the same screw for roof and wall so the calculation combines roof and walls screws into one calculation. For this example, there are 250 screws per box, for the roof I used 1.4 screws for every square foot, divided by 250 and multiplied that by the actual square footage of wall sheathing. For the walls I used 1.1 screws per square foot. I added the roof and walls screws together to get a total number of boxes required for roof and wall screws. If the screw count is under 250 then I will have one box called out on the material list, if it is 250-499 then I will have two boxes and so on.

**Edit Added Material - Catalog**

**Category**

**Usage**

**Catalog Category**

**Catalog Item**

**SKU**

**Material**

**Calculation**

**Color**

**Cost**

**Price**

For trim screws, you can estimate based on square footage similar to the example above. You can also use the extensive list of different types of trim lineal footage to get a count. Using similar techniques as above, you can specify a multiplier based on lineal footage.

### Example 6: Nails

You can also use similar methods for nails as screws depending on how you want to calculate the counts. With nails you may be more likely to use other data to calculate quantities. For example, for girt nails, you could use # of post, along with the building ceiling height to calculate a quantity of girt nails. If you figure the number of girt nails per lineal foot of post (in the example below I used .25 girt nails per lineal foot of post) and then multiply that by the ceiling height (so a 14' post \* .25 would be 3.5 nails per post) and then multiply that by the total number of posts in the job. The calculation would look something like:

Edit Added Material - Catalog

<b>Category</b>	<input type="text" value="Accessories"/>
<b>Usage</b>	<input type="text" value="Main Building Girt Nails"/>
<b>Catalog Category</b>	<input type="text" value="Fastener"/>
<b>Catalog Item</b>	<input type="text" value="Gun Nails Box 3"/>
<b>SKU</b>	<input type="text" value="NailBox3"/>
<b>Material</b>	<input type="text" value="Gun Nails Box 3"/>
<b>Calculation</b>	<input type="text" value="({MainBuildingCeilingHeight})*.25) * {Post}/1000"/>
	<input type="button" value="{ }"/> <input type="button" value="{?}"/>
<b>Color</b>	<input type="text"/>
<b>Cost</b>	<input type="text" value="\$69.39"/>
<b>Price</b>	<input type="text" value="\$69.39"/>

*In this case, I am using a box of 1000 nails so the equation is divided by 1000 to get the number of boxes.*

For purlins, you could use a multiplier based on the '# of trusses' if you nail the purlins to the trusses. If you drop the purlins flush with the trusses then you could use '# of purlins' with a multiplier to figure the number of hangers required, for example.

**Package Name**  Save Canned  
**Package Type**   
**Info Text**

Define the products in the list below that will be added to the job when this Package is selected  
 - or - leave the list below blank to define a manual checklist item that needs to be manually added to the job

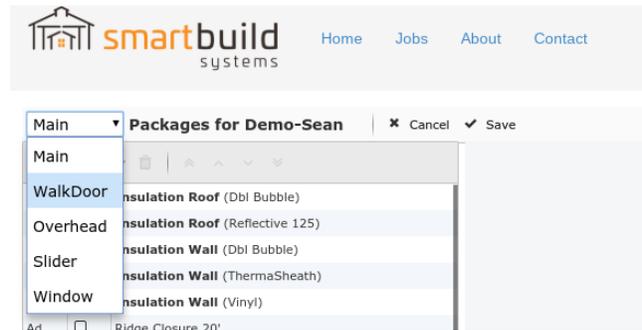
+ Add Misc   + Add Catalog   Edit   Delete   |     |   Copy   Move

Usage	SKU	Material	Length	Calc Base	Qty
Girt Nails Exterior	NailBox3"	Gun Nails Box 3"		SFWall	0.004
Purlin Nails	NailBox3"	Gun Nails Box 3"		SFRoof	0.004
Skirt Board Nails	PNail35GIV	Pole Nail 3 1/2 Galv		LFBASE	0.018
Truss to Post Nails	PNail4	Pole Nail 4"		Truss	0.3
Header Nails	PNail4	Pole Nail 4"		Post	0.004
Windows Nails	CapNail1.51	Cap Nails 1 1/2 #1		Window	0.096

*Example of a nail Base Macro with multiple types of nails calculated in different ways.*

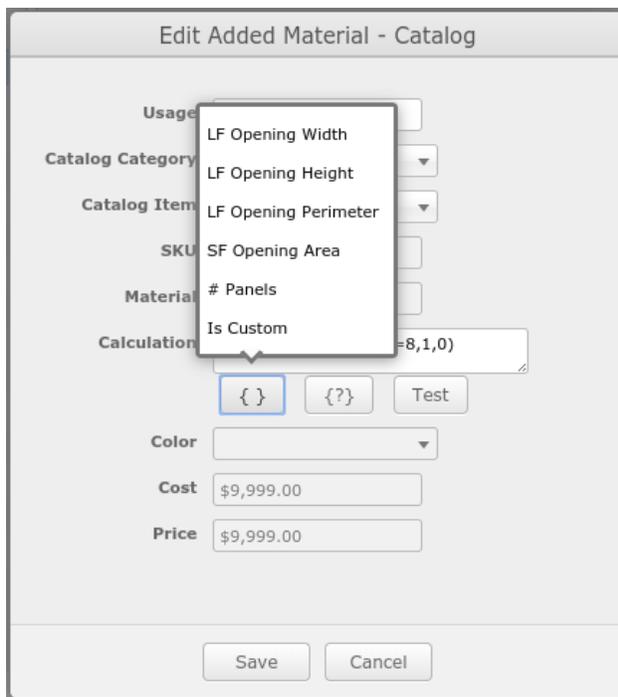
## Door and Window Packages

The same functionality described above is available specifically for doors and windows. You can create a Package for a Walkdoor, Overhead, Slider or Window. Door and window packages are specific to the door and window type.



These package will apply only when that type of opening has been input into a job. So, the Overhead Door packages will not apply unless you input an Overhead door. And the packages will apply individually to each Overhead door input into a job. The package calculations are based on the specifications of the specific opening such as the width, height, perimeter and square footage. Door and Window packages can be used to calculate and add materials for individual openings for things like weather stripping, openers, rails and slider parts.

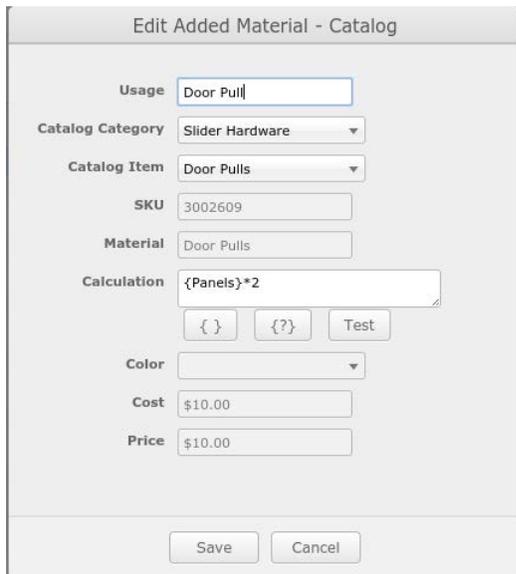
Each opening type has its own set of 'Calc Bases' to use to calculate materials for that opening type.



'Is Custom' is used to get a quantity of Custom openings (as opposed to doors from you material catalog), and can be used to calculate different materials and labor for custom openings. IF statements

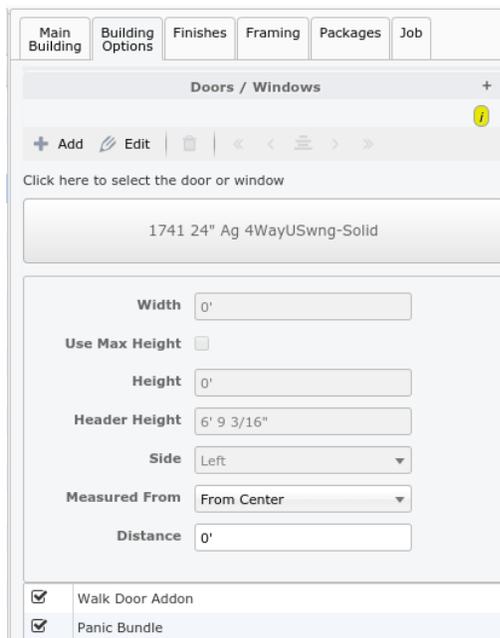
can be used to apply, or not apply materials based on the presence (or absence) of custom openings in a job.

For Sliders, the '# of Panel' {Panels} Calc Base represents the number of panels in a slider door. One panel for a Left or Right Slider, and 2 panels for a Split slider. You can use this to add materials based on if the door is split or not



In the example above, the Calculation: {Panels}\*2 add 2 Door Pulls to the material list for a Left or Right Slider or it add 4 'Door Pulls' if it is a Split Slider.

In a job, Door and Window packages are displayed at the bottom of the Door/Window input screen, depending on which type of opening you have selected to input.



Door and Window package set-up, best practices and application follow the same rules as the 'Main' packages (See Main packages section for additional documentation).

## Using Excel Functions in SmartBuild Package Calculations

You can use many of the functions available in Excel within the calculation used to call out materials in SmartBuild (see end of this document for a full list of available Excel functions). If you have an Excel expert then they would be a good resource to help create these types of packages for your business.

### IF Function

The most valuable function is the IF function. You can use IF functions within package calculations to evaluate certain conditions, and then perform different calculations depending on whether the test was TRUE or FALSE. These are very similar to the IF functions used in Excel. The only difference, unlike Excel, SmartBuild can not reference other cells in a spreadsheet. Instead, SmartBuild can reference 'Calc Bases' which represent information from the job like total square footage, total weight and many more.

Note: the purpose of an individual calculation is to add a calculated quantity (and therefore a total cost/price) of a single material to a job. So, it is important to understand that the way the material is added in the Pricing database will affect how the calculations is set up.

### Example 1:

You can use a single IF functions, but the most value comes from 'nested' IF functions. A "nested IF" refers to a formula where more than one IF function is nested inside another to check more than one conditions. The first function found to be true will be used for the calculation.

General Syntax:

```
IF(logical_test, value_if_true,IF(logical_test, value_if_true ))
```

Example IF statement:

```
if({TotalWeight} <=3000,1,if({TotalWeight} <=6000,2,if({TotalWeight} <=9000,3)))
```

In this example, say I have a delivery fee in my material database of \$100. The way this is set up, if the total weight of the job is equal to or less than (<=) 3000 pounds, then I will get a quantity of 1 delivery fee, so \$100. If the statement is not true (i.e. the total weight is more than 3000) then it will move on to the next If statement. If the total weight is less than or equal to 6000 pounds then I will get a quantity of 2, so \$200 will be placed on the job's material list. (Note: since the function already determined that <= 3000 was false, so even though this 2nd function includes anything below 6000, we know it is not below 3000 already). If the total weight is less than or equal to 9000 then I will get a quantity of 3 delivery fees (or \$300). We could continue to nest more total weights to make sure we cover all the possibilities.

Each IF statement needs to be carefully "nested" inside another so the calculation will execute correctly. It is required to include the correct amount of parenthesis in the function. For each nested IF statement, an opening and a closing parenthesis is required. Notice in the above 'Example 2', each IF statement has an open parenthesis before the test and then all three are closed off at the end with 3 closing parenthesis. Also, be careful to check the commas. Commas are used to separate the test from the value:

e.g. {TotalWeight} <=3000,1.

And a comma is used to separate each nested If statement:

e.g. {TotalWeight} <=3000,1,if({TotalWeight} <=6000,2....

**If any statement has incorrect parentheses and/or commas then all packages in the system will not function and they will all report a quantity of 1. The program will give you an error message in Test Mode and point you to the error.**

**Example 2:**

This example uses the same principles as above, but it is set up different. In this example, I have a General Labor material in my pricing database with a price of \$1.00. I use the If statement below to charge a specific amount per square foot depending on the size of the building. *NOTE: There is a video that goes into more detail and demonstrates how to set up and use this IF function within a labor package.*

```
{SFMain}*
if({SFMain} <= 1000,2.50,
if({SFMain} <= 1500,2.25,
if({SFMain} <= 2500,2.15,
if({SFMain} <= 3000,2.05,
if({SFMain} <= 3500,1.95,
if({SFMain} <= 4000,1.75,
if({SFMain} <= 4001,1.70,
if({SFMain} > 4002,1.75,
))))))
```

In this example, the top {SFMain} represents the total square footage of a building and it will be multiplied (\*) by whichever following IF statement is true first. So, if the building is equal to or less than 1000 square foot then the square footage will be multiplied by 2.50. Because I am using a general labor material of \$1.00 in my database, this equation will multiply \$1.00 \* 2.50 per square foot. So, practically, I am charging \$2.50 per square foot if the building is less than or equal to 1000 square feet.

If the building square footage is less than or equal to 1500 (and not less than or equal to 1000) then I will charge \$2.25 per square foot and so on.

Comparison operator	Meaning	Example
=	equal to	A1=D1
>	greater than	A1>D1
>=	greater than or equal to	A1>=D1
<	less than	A1
<=	less than or equal to	A1<=D1
<>	not equal to	A1<>D1

*Comparison operators that can be used in If statements*

In addition to the IF statement, other Excel functions can be used. The IF statement has proven the most useful so far, but we will update documentation as we find valuable functions. And feel free to experiment and let us know if you find any useful functions.

Here is a full list of the functions available to be used in package calculations (See MicroSoft's Excel help documentation for more details on these functions).

ABS	TAN	AND	SQRT	AVERAGE	CEILING
SIGN	TANH	NOT	FACT	MEDIAN	FIXED
	DEGREES	OR	LN	SUM	FLOOR
ACOS	PI	TRUE	LOG	MAX	INT
ACOSH	SQRTPI	FALSE	LOG10	MIN	ROUND
ASIN			EXP	PRODUCT	ROUNDDOWN
ASINH	IF		POWER	QUOTIENT	ROUNDUP
ATAN	IFERROR		MOD		TRUNC
ATAN2	IFNA				
ATANH					
COS					
COSH					
SIN					
SINH					

## Recommendations (do's and don'ts):

Below is a list of recommendations for Packages.

- DON'T create a Group if there's only one package. This simply confuses the user by implying that they have a choice.
- DON'T repeat the Group name in each Package. This just wastes space in the interface.
- DON'T require the user to select or type in a qty that is available as a calc base. If the user has a chance to answer a question wrong, they will.
- DO use the calc bases and the IF function liberally. This is particularly helpful when there are scenarios like varying labor rates for different ranges of square footage.
- DON'T use Miscellaneous materials with prices in your packages. By adding a Material to your database, all pricing changes can be handled in one place. You can use Miscellaneous entries when you just want to verify a quantity (see the tip below about "dummy" entries).
- DON'T make the group names or package names too long. Test the package to make sure none of the text is getting truncated.
- DO include Info Text, especially if you needed to shorten the name. This is also useful for "checklist" packages, to explain to the user what they should be looking for.
- DON'T add '?' to the end of a question. It won't appear in the dialog.
- DO test each package using the Test button when creating the calculation.
- DO arrange your calculations so that you can easily tell what they're supposed to be doing. Instead of  $\{SF\text{Roof}\} * 0.002$  for a product that is 4' wide and 125' long, use  $\{SF\text{Roof}\} / (4 * 125)$ . You WILL look at this in 6 months and scratch your head.
- DO make sure your familiar with ALL of the available calc bases. The best way to do this is to add the Calc Bases default package and review the items it adds to your Accessories. It's also a good idea to delete this package and re-add it each time we update the web site, since we are adding new calc bases all the time. As with "dummy" entries, remove this package when you're done.
- DO let us know if there's a calc base you'd like to have. We can usually get these added in a week or so.

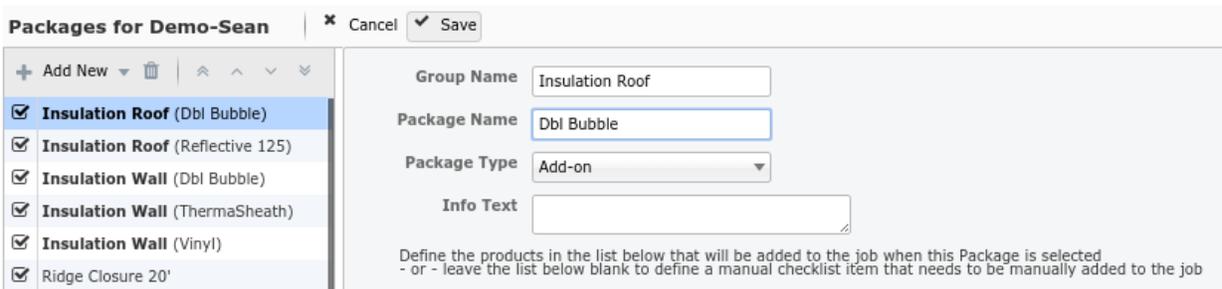
## Conclusion:

Packages take preparation and may require some trial and error testing. You can always add, edit and delete, so feel free to do some experimenting and check jobs for accurate material counts. If you need additional help, please call our help line or send us an email. Also, we can add more Calc Bases, so if you do not see a Calc Base that you would like to use then please let us know.

Follow this link to additional information about defining packages:

<http://support.smartbuildsystems.com/support/solutions/folders/36000197590>

**Note: Make sure to hit 'Save' before you exit the Packages input screen if you have made any changes to any of the packages!**



The screenshot shows a software interface titled "Packages for Demo-Sean". At the top right, there are "Cancel" and "Save" buttons. On the left, there is a list of packages with checkboxes:
 

- Insulation Roof (Dbl Bubble)
- Insulation Roof (Reflective 125)
- Insulation Wall (Dbl Bubble)
- Insulation Wall (ThermaSheath)
- Insulation Wall (Vinyl)
- Ridge Closure 20'

 The "Insulation Roof (Dbl Bubble)" package is selected. On the right, the configuration form for this package is visible:
 

- Group Name:** Insulation Roof
- Package Name:** Dbl Bubble
- Package Type:** Add-on
- Info Text:** (Empty text box)

 Below the form, there is a note: "Define the products in the list below that will be added to the job when this Package is selected - or - leave the list below blank to define a manual checklist item that needs to be manually added to the job".