



Roof Flashing and Components

White Paper
2020



Waste Factor for Roof Shingle Line Items

Many parties utilizing Xactimate estimation software are told or often assume that the standard waste factor applied to roof shingle line items also allow for the amounts needed for hip, ridge, starter – and many times – even roof flashing. This stance revolves around the misperception that the standard-applied waste factor “covers the cost” of such items, usually under the assumption that many roofers include the cost of these items when they quote roofs on a price-per-square basis. While this may be true, it is important to realize the design intention of Xactimate software.

Xactimate price lists are designed as a cost-plus estimating software, allowing a user to see all inclusions and allowances for material costs per unit, without markup. This is what is commonly known as “Open for Inspection” functionality. In **Figure 1**, the ‘RFG300S’ line item allows for \$113.30 per square in materials. These materials only include 1 ¼” roofing nails and the laminated composition shingles themselves.

Item Activity Information (Close)

Category: RFG Selector: 300S Activity: + (Replace) Phase: 07 Roofing

Material: →

Equipment:

Retail Labor: →

Market Conditions:

Replace Price:

Material Breakdown:

Material	
Contractor Supplied	Non-Contractor Supplied
<input type="text" value="\$113.30"/>	<input type="text" value="\$0.00"/>

Labor Breakdown:

Labor		
Worker's Wage	Labor Burden	Labor Overhead
<input type="text" value="\$19.44"/>	<input type="text" value="\$10.97"/>	<input type="text" value="\$128.44"/>

Details

Type	Description	Price Per Unit	
Labor	Roofer	158.850	Add... Edit... Delete
Material	1 1/4" roofing nails, (based on 50 lb box)	3.020	
Material	Laminated - comp. shingle	110.280	

Definition Assembly Info Supporting Events

Type: Material Direct Yield:

Component Code: RFG300 Component Price: \$110.280/SQ

Supporting Events: Yield: 1.000

Description: Laminated - comp. shingle Price Per Unit: \$110.280

Yield = Direct Yield * (1 - (Supporting Events / 100)) Price Per Unit = Component Price / Yield

Figure 1: Showing material components of Xactimate line item 'RFG300S'.



In **Figure 1**, it is also important to note the ‘Supporting Events’ within the ‘Assembly Info’ tab, which indicates a ‘0.000’ percent allocation is applied to the shingles themselves. This prompts a user to ensure an industry-standard waste factor is applied manually so that an adequate amount of materials are represented. This often ranges from 10-15% for gable and hip roofs, and sometimes more depending on complexity. However, this application of waste factor is intended for the shingles themselves, and does not allocate for hip, ridge, starter and flashing components. When applying a manual waste factor, an estimator is simply factoring each component included within the selected line item.

What Are My Options to Account for These Components?

Xactware outlines a number of methods to allocate for hip, ridge, starter and flashing components. First, a user can search published price list data and include each component separately, which accurately allocates for each component and their costs. As an alternative, Xactware states that *“it is possible for estimators to choose to account for roofing accessories by using an increased waste factor percentage – a percentage that reflects more than just the shingle waste – or by modifying the line item pricing and descriptions to include these additional cost”* (**Figure 2**). Unfortunately, most parties utilizing this option do not accurately quantify the percentage increase actually needed to account for such items.

What is included in the composition shingle roofing line items? Do they include hip, ridge, flashing, vents, etc.?

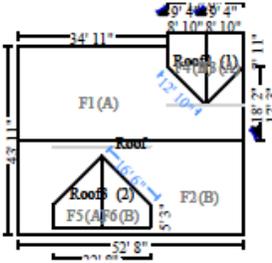
You can find this information in the line item definition, which specifies what is included in that line item. For example, the line item description for RFG 300 states that the replacement activity includes “laminated composition shingles, 15 pound roofing felt, roofing nails, and installation labor.”

Within Xactimate price lists, the replace (+) activities for composition roofing shingles (RFG2* / RFG3 / RFG4 / RFG5*) do not include any assumptions for hip and ridge cap shingles, starter shingles, drip edge, valley metal, other flashings, pipe jacks, or roofing vents. Each roofing accessory type is available within the Xactimate price lists as a separate line item (e.g., see RFG ASTR, RFG DRIP, RFG RIDGC*, etc.). It is also possible for estimators to choose to account for roofing accessories by using an increased waste percentage—a percentage that reflects more than just the shingle waste—or by modifying the line item pricing and descriptions to include these additional costs.

Figure 2: Showing Xactware’s “Frequently Asked Questions about Xactware’s Published Price Lists”, outlining the various options for adding allocations for hip, ridge, flashing and vents. https://xactware.custhelp.com/app/answers/detail/a_id/2963

What Additional Waste Percentage is Needed to Cover These Costs?

Within **Figure 3**, a unit price of \$272.15 per square is provided for the shingles, nails and labor components of the ‘Laminated – comp. shingle rfg. – w/out felt’ line item. It is also evident that a standard 10% waste factor has been applied manually, as the quantity listed is 27.67 squares – which has also taken into account bundle rounding – whereas the size of the roof is only 24.97 squares.

Roof

2497.19 Surface Area
244.09 Total Perimeter Length

24.97 Number of Squares
86.01 Total Ridge Length

DESCRIPTION	QUANTITY	UNIT PRICE	TAX	O&P	RCV	DEPREC.	ACV
1. Laminated - comp. shingle rfg. - w/out felt	27.67 SQ	272.15	250.80	1,556.24	9,337.43	(0.00)	9,337.43
2. Roofing felt - 30 lb.	21.55 SQ	46.02	21.84	202.70	1,216.27	(0.00)	1,216.27
3. Ice & water barrier	341.76 SF	2.25	10.39	155.88	935.23	(0.00)	935.23
4. Asphalt starter - universal starter course	244.09 LF	2.72	13.47	135.48	812.87	(0.00)	812.87
5. Ridge cap - Standard profile - composition shingles	86.01 LF	5.98	14.59	105.78	634.71	(0.00)	634.71
6. Step flashing	16.07 LF	11.97	1.75	38.84	232.95	(0.00)	232.95
7. Valley metal	58.67 LF	6.70	9.53	80.52	483.14	(0.00)	483.14
8. Drip edge	130.17 LF	2.85	7.71	75.74	454.43	(0.00)	454.43
9. Drip edge/gutter apron	113.92 LF	2.97	7.84	69.22	415.40	(0.00)	415.40
10. Aluminum sidewall/endwall flashing - mill finish	22.67 LF	7.17	4.88	33.48	200.90	(0.00)	200.90
11. Roof vent - turtle type - Metal	4.00 EA	71.48	4.97	58.18	349.07	(0.00)	349.07
12. Exhaust cap - through roof - 6" to 8"	2.00 EA	101.36	5.47	41.64	249.83	(0.00)	249.83
13. Flashing - pipe jack	3.00 EA	51.57	2.30	31.40	188.41	(0.00)	188.41
14. Furnace vent - rain cap and storm collar, 5"	1.00 EA	69.03	1.69	14.14	84.86	(0.00)	84.86
Totals: Roof			357.23	2,599.24	15,595.50	0.00	15,595.50
Total: Roofing			357.23	2,599.24	15,595.50	0.00	15,595.50

Figure 3: Showing the costs of a basic gable roof area, including shingles, ridge cap, starter, flashings and vents.

The gable roof example in **Figure 3** totals a replacement cost value of \$15,595.50 when including for all components, but excluding any removal costs. Reviewing the totals for line items 4 - 14, one can determine the total dollar amount needed for ridge cap, starter, flashing and vents (**Figure 4**).

Item	Total Replacement Cost Total
Asphalt starter – universal starter course	\$812.87
Ridge cap – standard profile – composition shingle	\$634.71
Step flashing	\$232.95
Valley metal	\$483.14
Drip edge	\$454.43
Drip edge/gutter apron	\$415.40
Aluminum sidewall/endwall flashing	\$200.90
Roof vent – turtle type - Metal	\$349.07
Exhaust cap – through roof 6" to 8"	\$249.83
Flashing – pipe jack	\$188.41
Furnace vent – rain cap and storm collar, 5"	\$84.86
Total	\$4,106.57

Figure 4: Showing the total costs for starter, ridge cap, flashing and vent components.



The total replacement cost value allocated for all accessories is \$4,106.57. Some estimators may opt to include for these costs by increasing the waste factor of the shingles beyond just the shingle waste. But just how much waste should be added for these items? In **Figure 5**, the amount for just the shingles and underlayment totals just \$11,488.93, which also takes into account a 10% waste factor applied manually to the shingle line item. In order to accurately account for the additional \$4,106.57 needed for all other accessories shown in **Figure 4**, an estimator would need to add an additional 49% waste factor to the shingle line item to maintain a similar replacement cost value (**Figure 6**).

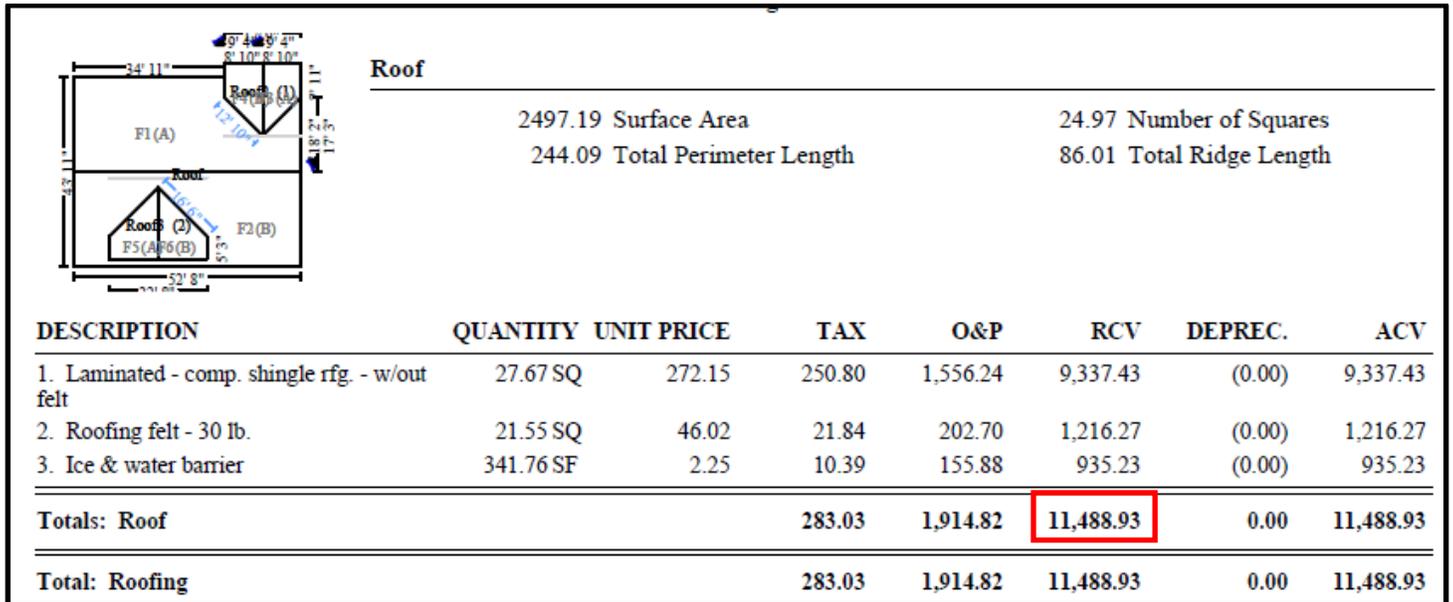


Figure 5: Showing the costs of a basic gable roof estimate, **excluding** ridge cap, starter, flashings and vents.

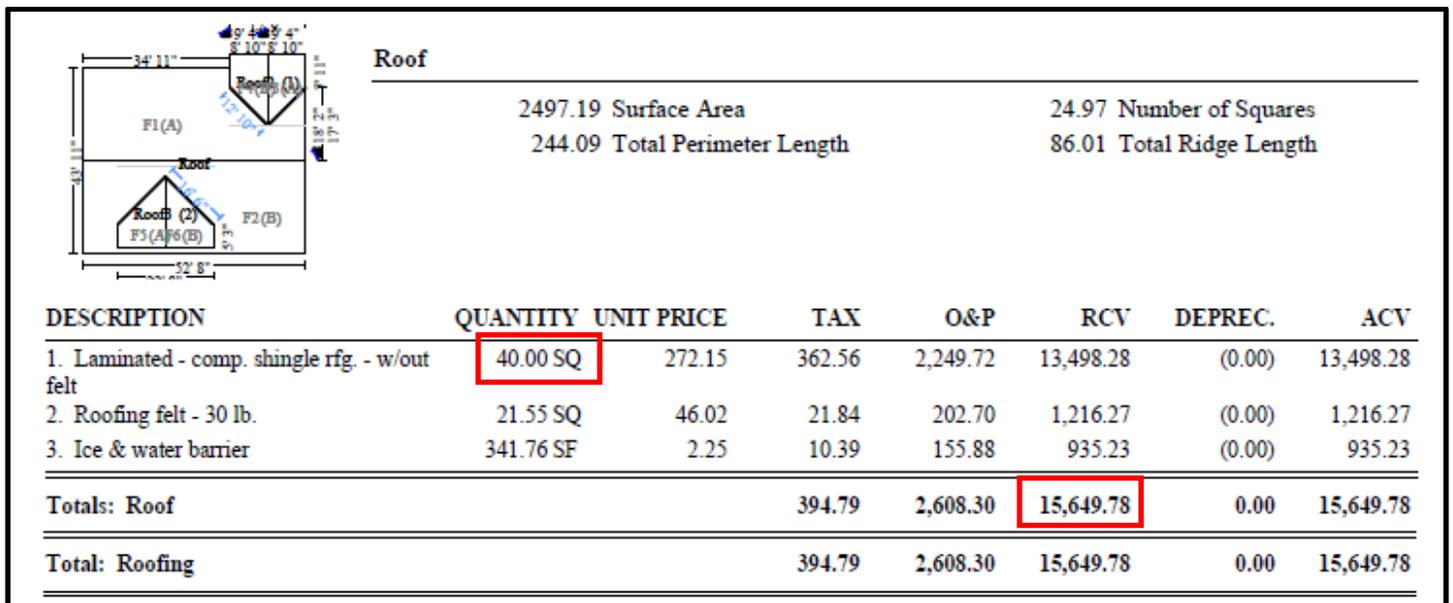


Figure 6: Showing a total 59% applied waste factor – accounting for 10% shingle waste and 49% additional to account for omitted ridge cap, starter, flashings and vent line items.



It is a common misperception that a standard waste factor percentage of 10-15% also covers the cost of accessories – such as ridge, hip, starter, flashing and vents. In reality, the percentage increase required to cover the cost of these accessories can exceed the industry-standard shingle waste factor by four to five times. Roof layouts of increased complexity – or roofs requiring material removal – even further increase the additional waste percentage required. If overlooked, these omissions can have dire consequences to contractors who have the intent of performing reliable, reputable and code-compliant reconstruction.

An estimator can account for roof accessory items by searching for each component separately within an applicable Xactimate price list and adding to their estimate. Alternatively, if an estimator opts to allow for accessory components by increasing the waste factor percentage, they should accurately quantify what those costs are, and manually apply the additional waste percentage necessary to cover such costs.

Ultimately, it is up to the estimator and the parties involved in a job to determine which items to use in an estimate, how they are applied, and the pricing.



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