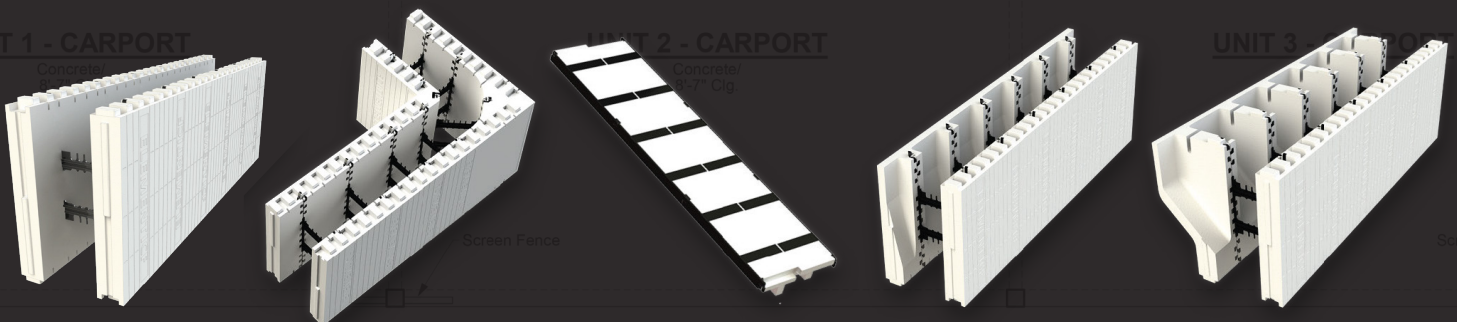
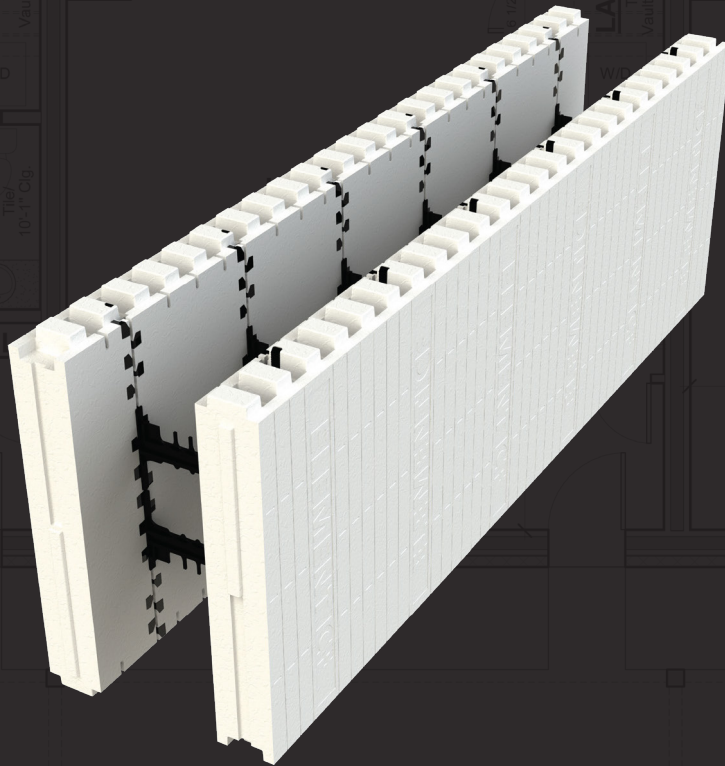


ELEMENT ICF ESTIMATING

1st Edition



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3.1 – INTRODUCTION

Calculating the number of blocks needed is a simple task with Element ICF.

An important thing to remember in estimating is that walls with different heights should be calculated separately. As the wall heights change, so do the quantities required.

There are several tools available to aid in estimating:

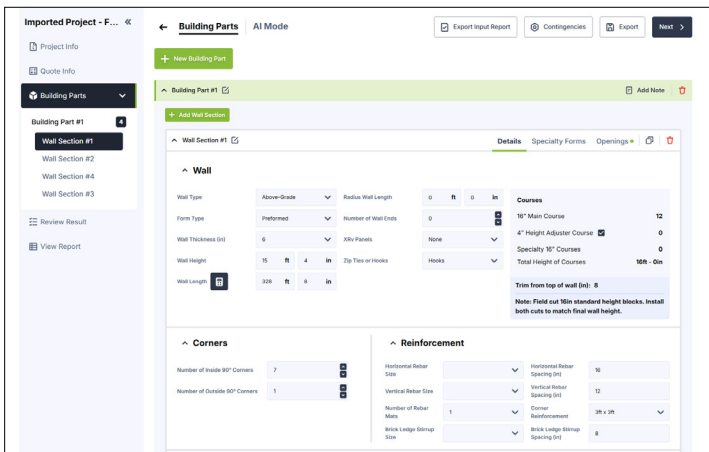
Drawing a wall section on graph paper before estimating a project saves time and effort.

The **Element One Minute Estimator** provides rough estimates for preliminary estimates, and is available [online](#).

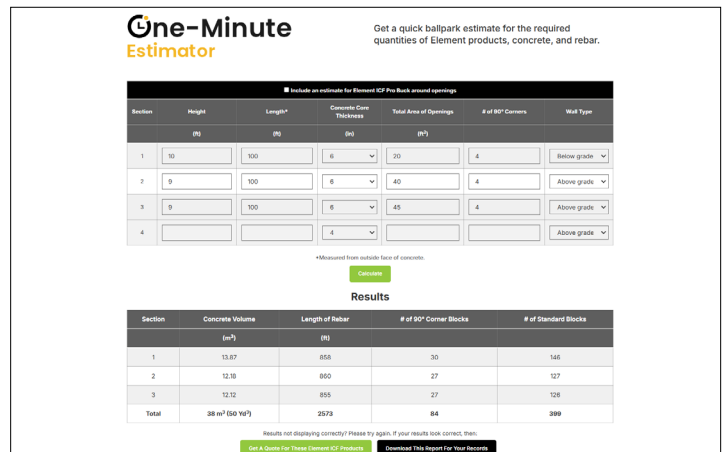
The **Element Project Estimator** provides more accurate and very detailed estimates and is available as a web app.

The Project Estimator and One Minute Estimator can be accessed by clicking on the “Estimating” link at the top right corner of the [Element home page](#).

ESTIMATING



Element Project Estimator



Element One Estimator

3.2 – MATERIAL TAKE-OFF LIST

The material take off is the first step in any estimate.

- ___ Linear feet of exterior and interior Element ICF walls
- ___ Height of walls
- ___ Number of courses in wall
- ___ Thickness of wall (4", 6", 8", 10" or 12")
- ___ Number of 90° corners (both inside and outside)
- ___ Linear feet of Brick Ledge
- ___ Linear feet of Taper Top
- ___ Square feet of parge coating "stucco" (height x length) between grade and siding
- ___ Square feet of water proofing (height x length) from grade to lap over footing
- ___ Square feet of door and window openings
- ___ Linear feet of buck material
- ___ Linear feet of Height Adjusters (both sides of wall)

ESTIMATING

SQUARE FOOTAGE OF DIFFERENT BLOCK TYPES

Standard (straight):	5.33sf
Brick Ledge:	5.33sf
Taper Top:	5.33sf
Double Taper Top:	5.33sf
90° Corner (outside face):	6.78sf
4" Height Adjuster:	1.33sf



3.3 – ESTIMATING BLOCKS

Standard, 90° Corner, Brick Ledge, and Taper Top blocks are 16" (406 mm) in height. The following steps are based on this standard block height.

3.3.1 – STANDARD BLOCKS & CORNERS

NOTE: Corner blocks are available in 90° units only. Forty-five degree corner applications require miter cutting Standard blocks on site.

STEP 1: Determine the total lineal feet of walls (both interior and exterior walls that will be built using Element). Add an extra 2ft for every 90° inside corner to the total lineal feet of walls. With this new lineal footage, multiply by the height of the walls to determine the property's total square footage. When figuring the total square footage of walls with different heights it's easiest to figure each wall separately and then add totals together.

Subtract the total square footage of all window and door openings.

STEP 2: Determine number of 90° corner blocks (A) by multiplying number of 90° turns by the number of courses (i.e. 6 courses x 4 turns). Then multiply the number of 90° blocks by 6.78 sf/block. Then subtract this from your square footage of wall determined in Step 1.

STEP 3: Divide square footage of wall determined in Step 2 by 5.33 to determine gross number of Standard blocks required. (B)

NOTE: Standard blocks are all 16" (406mm) tall and 48" (1220mm) long with a wall area of 5.33sf each. All 90° Corners are 16" tall. The 4", 6", 8", 10" and 12" Ninety degree corner blocks cover a wall area of 6.78sf (measured at the longer side of the corner block).

A. Number of 90° blocks required: _____

B. Number of Standard blocks required: _____

C. Total number of blocks required: _____

3.3.2 - BRICK LEDGE BLOCKS

NOTE: Brick Ledge blocks are available in straight units only. Corner applications require miter cutting Brick Ledge blocks on site.

STEP 1: Measure the total linear feet of Brick Ledge needed and divide by 4 (the length in feet of each block) to determine the total number of Brick Ledge blocks needed. When miter cutting Brick Ledge corners, add one Brick Ledge block for waste at each corner to the total Brick Ledge count.

STEP 2: Subtract the number of Brick Ledge blocks from the total number of Standard blocks determined earlier to avoid ordering too many Standard blocks.

3.3.3 - TAPER TOP BLOCKS

NOTE: The above blocks are available in straight units only. Corner applications require miter cutting the blocks on site.

Follow Steps 1 and 2 in Section 3.3.2 to estimate the number of Taper Top blocks required.

3.3.4 - HEIGHT ADJUSTERS

A 4 feet (1220mm) length of Height Adjuster covers 1.33sf of wall area. The number of Height Adjusters needed is equal to half the total linear footage.

NOTES: Height Adjusters come in one size, 4" x 48" x 2.75" thick (102 x 1220 x 70 mm). Remember to count both sides of the wall. Height Adjusters can be used in window openings to adjust height without cutting standards.

3.4 – ESTIMATING ACCESSORIES

Element ICF wall systems require accessory components in addition to blocks, including items such as Bridging Flexties, Form Lock, zip ties, bracing and alignment systems, and Pro Buck for door and window openings.

Estimating accessories are not addressed in this guide. For detailed, project-specific accessory estimates, refer to the Element Project Estimator available by clicking on the “Estimating” link at the top right corner of the [Element home page](#).



3.5 – CONCRETE

3.5.1 - 4" (102 mm) WALLS

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply by 0.333ft (the width of the cavity) to get the cubic feet of concrete required.

STEP 3: Divide by 27cf to determine the total number of yards of concrete required (or divide by 35.32 to determine meters of concrete required).

Example: The total wall area is 1,845 sf. After subtracting 322 sf for window and door openings, the net wall area is 1,523 sf. At a wall thickness of 0.333 ft, this results in a concrete volume of 507 cubic feet. Dividing by 27 cubic feet per cubic yard yields approximately 18.8 cubic yards of concrete required.

For metric units, dividing 507 cubic feet by 35.32 results in approximately 14.4 cubic metres of concrete.

3.5.2 - 6" (152 mm) WALLS

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply by 0.5ft (the width of the cavity) to get the cubic feet of concrete required.

STEP 3: Divide by 27cf to determine the yards of concrete required (or divide by 35.32 to determine meters required).

Example: The total wall area is 1,845 sf. After subtracting 322 sf for window and door openings, the net wall area is 1,523 sf. At a wall thickness of 0.5 ft, this results in a concrete volume of 793 cubic feet. Dividing by 27 cubic feet per cubic yard yields approximately 29.4 cubic yards of concrete required.

For metric units, dividing 793 cubic feet by 35.32 results in approximately 22.5 cubic metres of concrete.

3.5.3 - 8" WALLS

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply by 0.667ft (the width of the cavity) to get the cubic feet of concrete required.

STEP 3: Divide by 27 to determine the yards of concrete required (or by 35.32 to determine meters required).

Example: The total wall area is 1,845 sf. After subtracting 322 sf for window and door openings, the net wall area is 1,523 sf. At a wall thickness of 0.667 ft, this results in a concrete volume of 1,016 cubic feet. Dividing by 27 cubic feet per cubic yard yields approximately 37.6 cubic yards of concrete required.

For metric units, dividing 1,016 cubic feet by 35.32 results in approximately 28.8 cubic metres of concrete.

3.5.4 - 10" (254 mm) WALLS

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply by 0.833ft (the width of the cavity) to get the cubic feet of concrete required.

STEP 3: Divide by 27cf to determine the total number of yards of concrete required (or by 35.32 to determine meters of concrete required).

Example: The total wall area is 1,845 sf. After subtracting 322 sf for window and door openings, the net wall area is 1,523 sf. At a wall thickness of 0.833 ft, this results in a concrete volume of 1,269 cubic feet. Dividing by 27 cubic feet per cubic yard yields approximately 47 cubic yards of concrete required.

For metric units, dividing 1,269 cubic feet by 35.32 results in approximately 35.9 cubic metres of concrete.

3.5.5 - 12" (305 mm) WALLS

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply by 1ft (the width of the cavity) to get the cubic feet of concrete required.

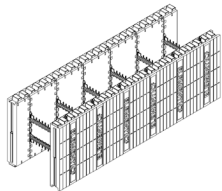
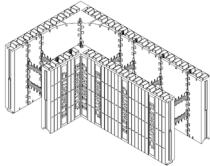
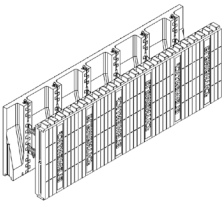
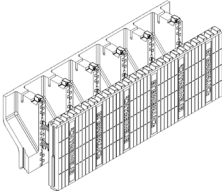
3.5.6 - ADD EXTRA CONCRETE FOR TAPER TOPS

Multiply linear feet of Taper Top by 0.003 cubic yards or cubic meters 0.002 to determine the additional yards or meter of concrete needed.

Example: 200lf of Taper Top blocks would require an additional 0.6 yards of extra concrete (200lf x 0.003 = 0.6 yards).

3.5.7 - ALTERNATE METHOD FOR CALCULATING CONCRETE

An alternate method to calculate concrete is to use the chart below. This chart provides the concrete volume per block. Simply multiply the total number of blocks by the appropriate multiplier to determine the cubic yards or cubic meters of concrete required.

	Block Size				
	4"	6"	8"	10"	12"
Standard Block 	0.07 yd ³ (0.05 m ³) Available only in Site-assembled	0.1 yd ³ (0.08 m ³) Available in Site-assembled & Preformed	0.13 yd ³ (0.10 m ³) Available in Site-assembled & Preformed	0.16 yd ³ (0.13 m ³) Available only in Site-assembled	0.2 yd ³ (0.15 m ³) Available only in Site-assembled
90 Degree Corner Block 	0.07 yd ³ (0.05 m ³) Available only in Site-assembled	0.1 yd ³ (0.08 m ³) Available in Site-assembled & Preformed	0.12 yd ³ (0.10 m ³) Available in Site-assembled & Preformed	0.16 yd ³ (0.12 m ³) Available only in Site-assembled	0.18 yd ³ (0.14 m ³) Available only in Site-assembled
Taper Top Block 	0.08 yd ³ (0.06 m ³) Available only in Site-assembled	0.11 yd ³ (0.08 m ³) Available only in Site-assembled	0.14 yd ³ (0.11 m ³) Available only in Site-assembled	0.18 yd ³ (0.14 m ³) Available only in Site-assembled	0.21 yd ³ (0.16 m ³) Available only in Site-assembled
Brick Ledge Block 	0.11 yd ³ (0.08 m ³) Available only in Site-assembled	0.14 yd ³ (0.11 m ³) Available only in Site-assembled	0.18 yd ³ (0.14 m ³) Available only in Site-assembled	0.21 yd ³ (0.16 m ³) Available only in Site-assembled	0.24 yd ³ (0.19 m ³) Available only in Site-assembled

ESTIMATING

3.6 – REBAR

Rebar estimating varies from wall to wall depending on factors such as height, vertical loading, horizontal loading, backfill heights, etc.

NOTE: Each Brick Ledge will require six stirrups to tie the horizontal rebar in the corbel to the horizontal rebar in the interior of the block.

3.7 – WATERPROOFING

Multiply linear footage of walls by the height of backfill. When calculating backfill height, make sure to add enough height to allow the waterproofing materials to extend over the edge of the footing.

Divide this number by the square footage per roll of membrane material to determine the total number of rolls required.

If using a rigid waterproofing board, do not include a footing overlap in your calculations.

3.8 – PARGING

Parging typically covers from the top of the waterproofing membrane to a height 2” above the bottom edge of the siding.

Multiply the linear footage of wall by height of parging to determine total square footage of parging required.

Divide this number by the square footage per bag of parging material to determine the total number of bags required.

3.9 – COURSE HEIGHT TABLE

This table shows wall heights achievable using Standard Element blocks with 4" (102 mm) Height Adjusters, 8" (203 mm) half-height blocks, or 12" (305 mm) blocks. Half-height and 12" blocks may be field-cut from Standard blocks as required, and a 12" height may also be achieved combining a course of half-height blocks and Height Adjusters. Height Adjusters are factory-manufactured.

Number of 16" Tall Standard Courses	Height of Wall for Standard Courses	HEIGHT OF WALL		
		Standard Courses w/ a Course of 4" Tall Height Adjuster	Standard Courses w/ a Course of 8" Tall Half Height Block	Standard Courses w/ a Course of 12" Tall Block
1	1' - 4" (406mm)	1' - 8" (508mm)	2' - 0" (610mm)	2' - 4" (711mm)
2	2' - 8" (813mm)	3' - 0" (914mm)	3' - 4" (1016mm)	3' - 8" (1118mm)
3	4' - 0" (1219mm)	4' - 4" (1321mm)	4' - 8" (1422mm)	5' - 0" (1524mm)
4	5' - 4" (1626mm)	5' - 8" (1727mm)	6' - 0" (1829mm)	6' - 4" (1930mm)
5	6' - 8" (2032mm)	7' - 0" (2134mm)	7' - 4" (2235mm)	7' - 8" (2337mm)
6	8' - 0" (2438mm)	8' - 4" (2540mm)	8' - 8" (2642mm)	9' - 0" (2743mm)
7	9' - 4" (2845mm)	9' - 8" (2946mm)	10' - 0" (3048mm)	10' - 4" (3150mm)
8	10' - 8" (3251mm)	11' - 0" (3353mm)	11' - 4" (3454mm)	11' - 8" (3556mm)
9	12' - 0" (3658mm)	12' - 4" (3759mm)	12' - 8" (3861mm)	13' - 0" (3962mm)
10	13' - 4" (4064mm)	13' - 8" (4166mm)	14' - 0" (4267mm)	14' - 4" (4369mm)
11	14' - 8" (4470mm)	15' - 0" (4572mm)	15' - 4" (4674mm)	15' - 8" (4775mm)
12	16' - 0" (4877mm)	16' - 4" (4978mm)	16' - 8" (5080mm)	17' - 0" (5182mm)
13	17' - 4" (5283mm)	17' - 8" (5385mm)	18' - 0" (5486mm)	18' - 4" (5588mm)
14	18' - 8" (5690mm)	19' - 0" (5791mm)	19' - 4" (5893mm)	19' - 8" (5994mm)
15	20' - 0" (6096mm)	20' - 4" (6198mm)	20' - 8" (6299mm)	21' - 0" (6401mm)
16	21' - 4" (6502mm)	21' - 8" (6604mm)	22' - 0" (6706mm)	22' - 4" (6807mm)
17	22' - 8" (6909mm)	23' - 0" (7010mm)	23' - 4" (7112mm)	23' - 8" (7214mm)
18	24' - 0" (7315mm)	24' - 4" (7417mm)	24' - 8" (7518mm)	25' - 0" (7620mm)
19	25' - 4" (7722mm)	25' - 8" (7823mm)	26' - 0" (7925mm)	26' - 4" (8026mm)
20	26' - 8" (8128mm)	27' - 0" (8230mm)	27' - 4" (8331mm)	27' - 8" (8433mm)
21	28' - 0" (8534mm)	28' - 4" (8636mm)	28' - 8" (8738mm)	29' - 0" (8839mm)
22	29' - 4" (8941mm)	29' - 8" (9042mm)	30' - 0" (9144mm)	30' - 4" (9246mm)
23	30' - 8" (9347mm)	31' - 0" (9449mm)	31' - 4" (9550mm)	31' - 8" (9652mm)
24	32' - 0" (9754mm)	32' - 4" (9855mm)	32' - 8" (9957mm)	33' - 0" (10058mm)
25	33' - 4" (10160mm)	33' - 8" (10262mm)	34' - 0" (10363mm)	34' - 4" (10465mm)

ESTIMATING

3.10 – ESTIMATING FORM

Customer Name: _____ Date: _____

Project Name: _____

Wall Type (Circle): Frost Wall Basement Main Floor Second Floor Other

Block Size (Circle): 4" (102 mm) 6" (152 mm) 8" (203 mm) 10" (254 mm) 12" (305 mm)

Estimating Data

Lineal Feet (LF) of Wall	LF Height Adjusters
Wall Height	LF Brick Ledge
Number of 90° Turns	LF Taper Top
Number of Element ICF Courses	Height of Backfill
Number of Courses of Standards	Square Footage (SF) of Openings
LF Form Lock	Gross SF of Wall (GSF)
	Net SF of Wall (NSF)

ESTIMATING

Quantity	Description	Notes
	Standard Blocks	
	90° Corner Blocks	
	Brick Ledge Blocks	
	Taper Top Blocks	
	Number of Height Adjusters (4' each)	
	Number of Form Lock (12.5' each)	
	Filament Tape (1 roll/50 blocks)	
	Zip Ties (1 bag/200 blocks)	
	Waterproofing Membrane (200sf/roll)	
	Rolls of Fiber Mesh (475sf/roll)	
	Bags of Prepcoat (85sf/bag)	
	LF/Type Rebar	
	Cubic Yards of Concrete	
	LF Window/Door Buck	
	Number of Alignment System Sets	
	Man Hours/sf	

3.11 – LABOR HOURS ESTIMATING

The Labor Hours Estimating Worksheet is provided as a guideline to assist in developing preliminary labor hour estimates for Element ICF projects. The worksheet applies weighted factors to account for common project variables and converts them into an estimated man-hour rate per gross square foot of wall area.

This worksheet is intended to be used after material quantities and gross wall area have been determined and should be treated as a starting point only.

Actual labor requirements may vary and remain the responsibility of the contractor or estimator.

	POINTS
What weather is expected?	
Mild	1
Rain or snow	3
Severe hot or cold	5
How many ICF projects has the crew done?	
0-1	5
2-3	3
4+	1
What are site access and ground conditions?	
Ideal	1
Average	2
Poor	5
How many rip cuts needed at openings?	
None	1
At either the sill or lintel	2
At both the sill and lintel	5
How many embeddings?	
Few and simple	1
Many or complex	2
Many and complex	5
Crew size?	
1-4	1
5-10	2
11+	3
First course set on:	
Slab	1
Strip footing	2
Piles	3
Concrete placed by:	
Boom pump	1
Chute	2
Conveyor	2
Crane and bucket	3
Line pump	3
Building dimensioning is:	
Mostly 8" increments	1
Not in 8" increments	2
Many walls under 3'	3
Number of stories:	
1	1
2	2
3	3

	POINTS
Amount of 90-degree corners:	
Few or none	1
Several	3
A lot	5
Amount of non 90-degree corners:	
Few or none	1
Several	3
A lot	5
Courses per story:	
0-7	1
7.5-10	3
10.5+	5
Amount of openings:	
Few or none	1
Several	3
A lot	5
Openings with a radius:	
Few or none	1
Several	3
A lot	5
Lintel stirrups required:	
Few or none	1
Several	3
A lot	5
Irregular wall ends:	
0	1
1	2
6	5
Courses of height adjuster:	
0	1
1	2
2	3
Amount of brick ledge:	
Few or none	1
Several	2
A lot	3
Amount of rebar required:	
Little	1
Moderate	2
A lot	3

- 1) For each question, circle the point value that is associated with the most correct answer.
- 2) Add the points to determine the complexity points total.
- 3) Use the Man Hour Rate Chart to convert the point total to Man-Hours per Gross Square Foot (GSF) of wall space.
- 4) Determine GSF of wall space.
- 5) Multiply #3 x #4 to get Estimated Total - Labor Hours Required.

Complexity Points Total:	
↓	
Points:	Rate per GSF:
0	0.03
21	0.04
25	0.05
29	0.06
33	0.07
37	0.08
39	0.09
41	0.10
43	0.11
45	0.12
48	0.13
51	0.14
56	0.15
62	0.16
68	0.17
74	0.18
80	0.19
82	0.20
↓	
Man Hour Rate:	
X	
Gross Square Feet:	
=	
Labor Hours Total:	

Use this worksheet as a starting point to develop your own unique labor calculations.

ESTIMATING

Element Labor Rate Worksheet.doc REV 02202024



CONNECT WITH A LOCAL MANUFACTURER

888.838.5038

330 Cain Drive
Haysville, KS 67060-2004

888.453.5961

11581-272 St.
Acheson, AB T7X 6E9

888.706.7709

840 Division St.
Cobourg, ON K9A 5V2

888.453.5961

6333 Unsworth Rd.
Chilliwack, BC V2R 5M3

877.789.7622

35 Headingley Rd.
Headingley, MB R4H 0A8



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