

B.1 PREPARATION AND PLANNING

This manual has been prepared under the assumption that you have a basic knowledge of conventional construction methods, techniques, and terminology. Advance planning and preparation during all phases of the construction process are key factors to your success. In order to get a good start on your PolySteel project, there are some basic steps you should take that will help you get off on the right foot. Estimating the materials you will need to complete the PolySteel portion of your project, having the proper tools and supplies in hand, and an understanding of the terminology and techniques that are unique to our product, you will be better able to handle the on-the-job requirements that come with any PolySteel construction project.

CAUTION: If you are initially working with a set of plans designed for a framed wall that is not as thick as a PolySteel wall, you should consult with your PolySteel Dealer, or designer, to ensure that you take into account the additional wall thickness and square footage that will be added to the structure you intend to build. Generally speaking, you will push the outside walls of the plans to the exterior by the amount of the additional wall thickness PolySteel provides over the original material specified for example, for plans calling for 2x4 framed walls [i.e., 3-1/2" thick], you would add 5-3/4" to the thickness of the walls for 6" PolySteel forms, which are 9-1/4" wide).

B.2 ESTIMATING BASIC MATERIALS

Some of the materials and supplies you will need for your project are unique to the installation of PolySteel Forms. The dimensions and layout of your plans will help determine the number of forms you need, the amount of adhesives or clips to put them together, the rough opening forming material, rebar, and concrete. Your PolySteel Dealer may have a computer program or worksheet to help in this process, however, the following worksheet and formulas should guide you in the basics of this process. In addition to the forms, concrete, rebar, and VBuck included in the Basic Material Estimating Worksheet that follows, your estimating process might also include:

<u>Item</u>	<u>Estimated Quantity</u>
Foam2Foam Adhesive	Approximately 1 can per 50 forms
Carolina Clippers	Two clips per form
Framing Lumber	If VBuck is not used, you may need treated or felt-wrapped lumber to build your window bucks per Section C.9.3 in the Manual
Rebar Saddles	As required by design
Electrical Zip Ties	As required
1-1/2" PVC Pipe	One 1-1/2" ring for each vertical rebar dowel

Be sure to consult with your PolySteel Distributor or Dealer for any other items you may need.

BASIC MATERIALS ESTIMATING WORKSHEET
PS•3000 Waffle Grid Forms

1. PolySteel Forms. You must know the total linear feet of walls to be formed and the height of each wall.

_____ Total Wall Lengths Divided by 4 = _____ Forms per course

_____ Forms Per Course X _____ Courses = _____ Gross Wall Forms

_____ Gross Wall Total - _____ * Window and Door Area Forms = _____ Net Wall Forms

_____ Corners X _____ Courses = _____ **Total Corner Forms**

_____ Net Wall Forms - _____ Total Corner Forms = _____ **Total Straight Forms**

* Take window and door opening area X 70% then divide by 5.33 to determine forms to be deducted for openings.

2. Reinforcing Steel (Rebar). You must know the spacing of the vertical and horizontal rebar required.

Horizontal.

Perimeter Length _____ Divided by 16 = _____ X _____ Horizontal Rebar Runs = 20' Rebar ... _____ pcs.

Vertical.

Perimeter Length _____ Divided by Foot Spacing _____ = Rebar (wall height) _____ in length ... _____ pcs.

Openings. Per Engineered Design

3. Concrete. Concrete should be a minimum 2,500 psi mix with 1/2" or less aggregate and delivered at a 5" slump.

_____ PS•3600	6" Straight Forms Divided by 13.5 Forms per yard	_____ yds.
_____ PS•3645	6" 45° Corner Forms Divided by 54 Forms per yard	_____ yds.
_____ PS•3690	6" 90° Corner Forms Divided by 16.5 Forms per yard	_____ yds.
_____ PS•3800	8" Straight Forms Divided by 10 Forms per yard	_____ yds.
_____ PS•3845	8" 45° Corner Forms Divided by 40 Forms per yard	_____ yds.
_____ PS•3890	8" 90° Corner Forms Divided by 12.5 Forms per yard	_____ yds.
_____ PS•3100	10" Straight Forms Divided by 7.5 Forms per yard	_____ yds.
_____ PS•3190	10" 90° Corner Forms Divided by 14 Forms per yard	_____ yds.
TOTAL CONCRETE TO ORDER.....		_____ yds.

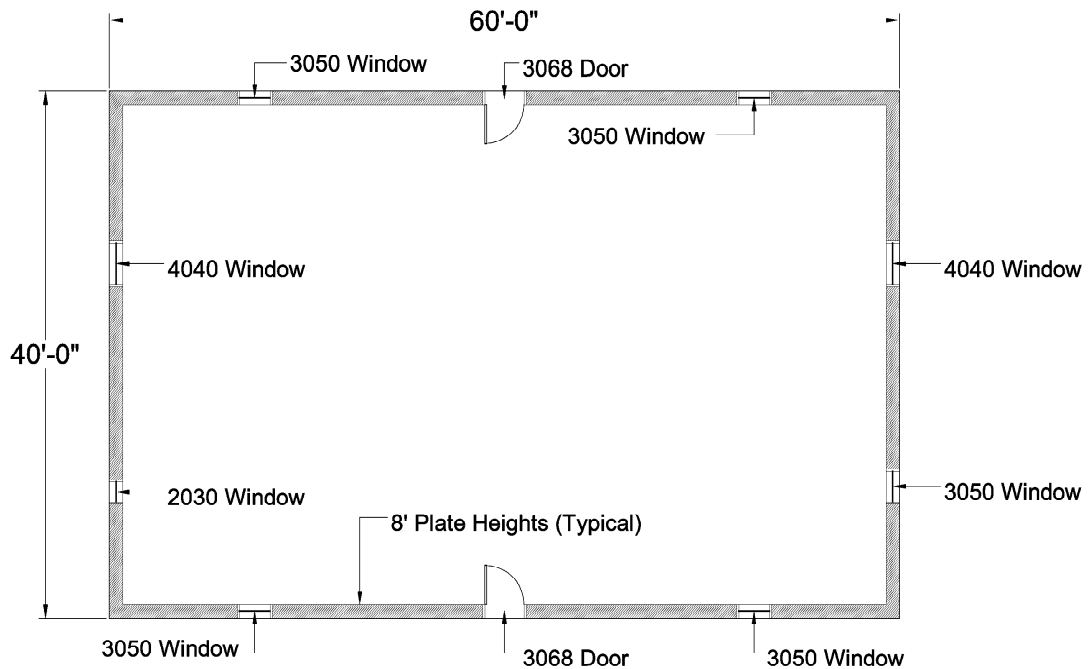
4. VBuck. You must know the number and size of the window and door rough openings you want to form.

VBuck. Perimeter of Openings _____ Divided by 16 = _____ (Round up to next largest number and add 1 piece per every 10 openings) = _____ pieces of VBuck.

Connectors. Window Openings X 8 for 6" Forms + Door Openings X 4.
Add center connectors for 11" VBuck and larger.

B.2.1 ESTIMATING EXAMPLE

ESTIMATING BASIC MATERIALS EXAMPLE



The diagram above illustrates a 2,400 sq. ft. house (60' X 40'), with four corners and a wall height of 8 feet. It also has the following openings:

<u>Description</u>	<u>Sq. Ft. of Wall Area</u>	<u>Linear Feet of Buck Material</u>
(2) 3068 doors	3 X 7 X 2 = 42	(3 + 7 + 7) X 2 = 34
(5) 3050 Windows	3 X 5 X 5 = 75	(3 + 3 + 5 + 5) X 5 = 80
(1) 2030 Window	2 X 3 X 1 = 6	(2 + 2 + 3 + 3) X 1 = 10
(2) 4040 Windows	4 X 4 X 2 = 32	(4 + 4 + 4 + 4) X 2 = 32
TOTALS	<u>155 sf.</u>	<u>156 lf.</u>

The following sample BASIC MATERIALS ESTIMATING WORKSHEET (Figure 2.1) has been completed using this project.

Note: In determining the number of forms to subtract from the Gross Wall Total for Window and Door Area Forms, you must divide the square footage of wall area for these openings by 5.33, the number of sq. ft. in each PS•3000 Form, and multiply that total by .7 to allow for waste. You need to calculate the total linear feet of the openings in order to determine how much VBuck material to order.

We will use this same project to calculate the labor required for installation in Section B.3.

FIGURE 2.1 BASIC MATERIALS ESTIMATING WORKSHEET EXAMPLE

**PS•3000 Waffle Grid Forms
SAMPLE**

1. **PolySteel Forms.** You must know the total linear feet of walls to be formed and the height of each wall.

200 Total Wall Lengths Divided by 4 = 50 Forms per course
50 Forms Per Course X 6 Courses = 300 Gross Wall Forms
300 Gross Wall Total - 21 * Window and Door Area Forms = 279 Net Wall Forms
4 Corners X 6 Courses = **Total Corner Forms** 24
279 Net Wall Forms - 24 Total Corner Forms = **Total Straight Forms** 255

* Take window and door opening area X 70% then divide by 5.33 to determine forms to be deducted for openings.

2. **Reinforcing Steel (Rebar).** You must know the spacing of the vertical and horizontal rebar required.

Horizontal.

Perimeter Length 200 Divided by 16 = 12.5 X 2 Horizontal Rebar Runs = 20' Rebar ... 25 pcs.

Vertical.

Perimeter Length 200 Divided by Foot Spacing 2 = Rebar (wall height) 8' in length ... 100 pcs.

Openings. Per Engineered Design

3. **Concrete.** Concrete should be a minimum 2,500 psi mix with 1/2" or less aggregate and delivered at a 5" slump.

<u>255</u> PS•3600	6" Straight Forms Divided by 13.5 Forms per yard	<u>19</u> yds.
PS•3645	6" 45° Corner Forms Divided by 54 Forms per yard	_____ yds.
<u>24</u> PS•3690	6" 90° Corner Forms Divided by 16.5 Forms per yard	<u>2</u> yds.
PS•3800	8" Straight Forms Divided by 10 Forms per yard	_____ yds.
PS•3845	8" 45° Corner Forms Divided by 40 Forms per yard	_____ yds.
PS•3890	8" 90° Corner Forms Divided by 12.5 Forms per yard	_____ yds.
PS•3100	10" Straight Forms Divided by 7.5 Forms per yard	_____ yds.
PS•3190	10" 90° Corner Forms Divided by 14 Forms per yard	_____ yds.
TOTAL CONCRETE TO ORDER		<u>21</u> yds.

4. **VBuck.** You must know the number and size of the window and door rough openings you want to form.

VBuck. Perimeter of Openings 156 Divided by 16 = 9.75 (Round up to next largest number and add 1 piece per every 10 openings) = 11 pieces of VBuck.

Connectors. Window Openings X 8 for 6" Forms + Door Openings X 4.
Add center connectors for 11" VBuck and larger.