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DISCLAIMER

By using the FORTRUSS Product Manual, in part or in whole, the user accepts the following terms and conditions.

The FORTRUSS Product Manual shall be used for the sole purpose of estimating, design or construction of the FORTRUSS System used in residential, commercial or industrial structures.

The information represented herein is to be used as a reference guide only. The user shall check to ensure the information provided in this manual, including updates and amendments, meets local building codes and construction practices by consulting local building officials, construction and design professionals, including any additional requirements.

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The user shall check to ensure that any construction projects utilizing the FORTRUSS Product Manual includes the latest updates/amendments (related to the version of the FORTRUSS Product Manual being used at the time of the construction project). Contact your local Fortruss representative for updates/amendments to the FORTRUSS Product Manual.

A methodology for calculating estimates of the Fortruss components, concrete and reinforcement are provided. The estimates are determined based on the square footage of the floor area that Fortruss will be built on.

The unit section of floor area 2 feet wide and 1 ft long is used to determine the estimates. This section includes a 2 feet wide by 1 ft long concrete slab and a 1 ft long concrete beam section. Since the spacing of the beams are at 2 feet on center. This section also includes one full width of Floor Panel, and Beam Form. The unit area then becomes 2 feet wide by 1 feet long - $2ft^2$. Determining quantities within this unit area results in quantities only within this area (or quantities per unit area). Multiplying the quantity determined per unit area by the total floor area yields the total estimate.

To estimate the total length of Floor Panels and Beam Forms:

STEP 1: Determine the square footage of floor, **(A)**

STEP 2: To estimate total length, in feet, of Floor Panel, **(B)**:

(B) = 0.50 x **(A)**

STEP 3: To estimate total length, in feet, of Beam Forms, **(C)**:

(C) = 0.50 x **(A)**

Make sure the units used for **(A)** are in feet squared.

The above formula is derived below.

For a unit length of span (ie, 1 ft) there is a 1 ft length of Form Panel and Beam Form.
A 2 ft beam spacing provides one whole section of Floor Panel and Beam Form. Therefore, for every 1 ft length of span the floor area
= 2 ft^2 (2 ft x 1 ft). Or (1 ft length) / (2 ft^2) = 0.5 ft/ft^2
(0.5 ft of Floor Panel or Beam Form for every square foot of area)
Multiplying 0.5 ft/ft^2 by the floor area will give the total length of Floor Panel or Beam Forms.

5.1.2 - CONCRETE VOLUME

To calculate the total volume:

STEP 1: Determine square footage of floor area, **(A)**.

STEP 2: Determine slab thickness, in inches, **(D)**.

STEP 3: Determine concrete beam depth, in inches, **(E)**.

STEP 4: Estimate the slab volume, in cubic feet **(F)**.

(F) = (24 in x 12 in) x **(D)** / 1728

STEP 5: Estimate the concrete beam volume, in cubic feet **(G)**.

(G) = (5.5 in x 12 in) x **(E)** / 1728

STEP 6: Estimate total volume of the slab, **(H)**,by multiply by the floor area **(A)**

(H) = **(G)** x **(A)**

Estimating the total volume of the slab and concrete beam can be done together or seperately following the above step. The total volume will be in cubic feet. To convert to cubic yard divide **(H)** by 27. To convert to cubic metres multiply **(H)** by 0.0283.

5.1.3 - SLAB REINFORCEMENT

The span tables in Section 4 lis t the slab reinforcement. For builder/designer preference and availability, two or three different options are provided for slab reinforcement. In this example, the options are:

To calculate the total longitudinal reinforcement (slab reinforcement parallel to beams):

STEP 1: Determine square footage of floor area, **(A)**.

STEP 2: Determine bar spacing, in inches, **(I)**.

STEP 3: Determine number of longitudinal bars per unit area (2 ft^2), **(J)**.

(J) = 24 in / **(I)**

STEP 4: Estimate the length per unit area of 2 ft^2, **(K)**

(K) = **(J)** X 1 ft. **(K)** will be units of feet.

STEP 5: Estimate the total length, **(L)**, by multiplying by the floor area, **(A)**

(L) = **(K)** X **(A)**

The total length will be in units of feet.

To estimate the total length of rebar in the transvers direction (slab reinforcement normal to beam span) follow Step 1, 2 and 5. In Step 3 replace 24 inches with 12 inches. And in Step 4 replace 1 ft with 2ft.

5.1.4 - BEAM REINFORCEMENT

The total length of longitudinal beam reinforcement will be the same as the total length of Beam Forms estimated in Section 5.1.1.

STEP 1: Determine the square footage of floor, **(A)**

STEP 2: To estimate total length, in feet, of reinforcement, **(M)**:

(M) = 0.50 x **(A)**

If there are more than one longitudinal bar in the beams multiply **(M)** by the number of bars in a beam.

STIRRUPS
Stirrup spacing = 16 in (from span table)
Number of stirrups per unit length of span of 1 ft (12 in):
(12 in) / (16 in) = 0.75 stirrups

Therefore, based on a total length of beam = 250 ft:
0.75 stirrups x 250 ft = 188 stirrups

STIRRUPS
To estimate the total number of stirrups:

STEP 1: Determine the square footage of floor, **(A)**

STEP 2: Determine the stirrup spacing, **(N)**

STEP 3: Determine the number of stirrups per unit length of beam (1 ft), **(O)**

(O) = 12 in / **(N)**

STEP 4: To estimate the total number of stirrups in a beam, **(P)**, multiply by the length of stirrup reqion, **(Q)**, required in the beam.

(P) = (Q) x **(N)**

NOTES: Rebar estimates do not include provisions for splices and should be considered when estimating rebar.

Fortruss

PERFORMANCE FORMING WITH EPS

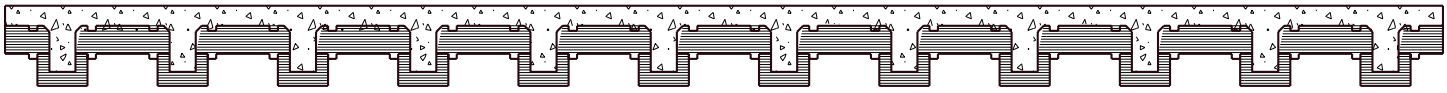
RESIDENTIAL ▪ COMMERCIAL

Floor ▪ Deck ▪ Roof ▪ Green Roof

Fortruss Performance Value:

- Superior Structure
- Durable
- Safe
- Healthy
- Fire Rated
- Energy Efficient
- Sustainable
- Green Building

CROSS SECTION OF FORTRUSS AND POURED CONCRETE



Construction

- LOGIX ICF
- FORTRUSS FORMING
- INSULWORKS
- INSULWALL
- FROSTCUSHION
- TERRAFOAM
- DYNAVOID
- G-TEC
- TERMINATOR
- GEOFOAM

Grower Products

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- SILVICULTURE
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