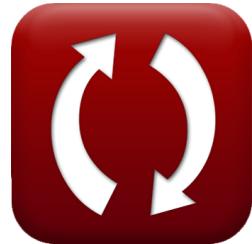




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List of 16 Open Frame Formulas

Open Frame ↗

Area & Perimeter of Open Frame ↗

1) Area of Open Frame ↗

$$fx \quad A = (2 \cdot t \cdot h_{Outer}) + (t \cdot w_{Inner})$$

[Open Calculator ↗](#)

$$ex \quad 78m^2 = (2 \cdot 3m \cdot 9m) + (3m \cdot 8m)$$

2) Perimeter of Open Frame ↗

[Open Calculator ↗](#)

$$P = w_{Outer} + w_{Inner} + (2 \cdot (t + h_{Outer} + h_{Inner}))$$

$$ex \quad 58m = 14m + 8m + (2 \cdot (3m + 9m + 6m))$$

Inner Edges of Open Frame ↗

3) Inner Height of Open Frame ↗

$$fx \quad h_{Inner} = h_{Outer} - t$$

[Open Calculator ↗](#)

$$ex \quad 6m = 9m - 3m$$



4) Inner Height of Open Frame given Perimeter **fx****Open Calculator** 

$$h_{\text{Inner}} = \frac{P - w_{\text{Outer}} - w_{\text{Inner}} - (2 \cdot t) - (2 \cdot h_{\text{Outer}})}{2}$$

ex $7m = \frac{60m - 14m - 8m - (2 \cdot 3m) - (2 \cdot 9m)}{2}$

5) Inner Width of Open Frame 

fx $w_{\text{Inner}} = w_{\text{Outer}} - (2 \cdot t)$

Open Calculator 

ex $8m = 14m - (2 \cdot 3m)$

6) Inner Width of Open Frame given Area 

fx $w_{\text{Inner}} = \frac{A - (2 \cdot t \cdot h_{\text{Outer}})}{t}$

Open Calculator 

ex $8.666667m = \frac{80m^2 - (2 \cdot 3m \cdot 9m)}{3m}$

7) Inner Width of Open Frame given Perimeter **fx****Open Calculator** 

$$w_{\text{Inner}} = P - (w_{\text{Outer}} + (2 \cdot (t + h_{\text{Outer}} + h_{\text{Inner}})))$$

ex $10m = 60m - (14m + (2 \cdot (3m + 9m + 6m)))$



Outer Edges of Open Frame ↗

8) Outer Height of Open Frame ↗

fx $h_{\text{Outer}} = t + h_{\text{Inner}}$

[Open Calculator ↗](#)

ex $9m = 3m + 6m$

9) Outer Height of Open Frame given Area ↗

fx
$$h_{\text{Outer}} = \frac{A - (t \cdot w_{\text{Inner}})}{2 \cdot t}$$

[Open Calculator ↗](#)

ex $9.333333m = \frac{80m^2 - (3m \cdot 8m)}{2 \cdot 3m}$

10) Outer Height of Open Frame given Perimeter ↗

fx
$$h_{\text{Outer}} = \frac{P - w_{\text{Outer}} - w_{\text{Inner}} - (2 \cdot t) - (2 \cdot h_{\text{Inner}})}{2}$$

[Open Calculator ↗](#)

ex $10m = \frac{60m - 14m - 8m - (2 \cdot 3m) - (2 \cdot 6m)}{2}$

11) Outer width of Open Frame ↗

fx $w_{\text{Outer}} = (2 \cdot t) + w_{\text{Inner}}$

[Open Calculator ↗](#)

ex $14m = (2 \cdot 3m) + 8m$



12) Outer Width of Open Frame given Perimeter **fx****Open Calculator** 

$$w_{\text{Outer}} = P - (w_{\text{Inner}} + (2 \cdot (t + h_{\text{Outer}} + h_{\text{Inner}})))$$

ex $16m = 60m - (8m + (2 \cdot (3m + 9m + 6m)))$

Thickness of Open Frame **13) Thickness of Open Frame** 

fx
$$t = \frac{w_{\text{Outer}} - w_{\text{Inner}}}{2}$$

Open Calculator 

ex $3m = \frac{14m - 8m}{2}$

14) Thickness of Open Frame given Area 

fx
$$t = \frac{A}{(2 \cdot h_{\text{Outer}}) + w_{\text{Inner}}}$$

Open Calculator 

ex $3.076923m = \frac{80m^2}{(2 \cdot 9m) + 8m}$

15) Thickness of Open Frame given Outer and Inner Height 

fx
$$t = h_{\text{Outer}} - h_{\text{Inner}}$$

Open Calculator 

ex $3m = 9m - 6m$



16) Thickness of Open Frame given Perimeter **fx****Open Calculator** 

$$t = \frac{P - w_{\text{Outer}} - w_{\text{Inner}} - (2 \cdot h_{\text{Outer}}) - (2 \cdot h_{\text{Inner}})}{2}$$

ex

$$4m = \frac{60m - 14m - 8m - (2 \cdot 9m) - (2 \cdot 6m)}{2}$$



Variables Used

- **A** Area of Open Frame (*Square Meter*)
- **h_{Inner}** Inner Height of Open Frame (*Meter*)
- **h_{Outer}** Outer Height of Open Frame (*Meter*)
- **P** Perimeter of Open Frame (*Meter*)
- **t** Thickness of Open Frame (*Meter*)
- **w_{Inner}** Inner Width of Open Frame (*Meter*)
- **w_{Outer}** Outer Width of Open Frame (*Meter*)



Constants, Functions, Measurements used

- **Measurement:** Length in Meter (m)
Length Unit Conversion 
- **Measurement:** Area in Square Meter (m^2)
Area Unit Conversion 



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