

Grundflächen und Rauminhalte nach DIN 277

Erdgeschoss

Brutto-Grundfläche: (Rohbaumaße plus 3.0 cm Außenputz)

$$18.9 \times 9.18 - \frac{1}{2} \times 9.18 \times 1.93 - \frac{1}{2} \times 8.79 \times 0.858 - \frac{1}{2} \times 4.01 \times 0.392 + 13.8 \times 0.258 - \frac{1}{2} \times 0.258 \times 0.0542 + 10.3 \times 2.8 - \frac{1}{2} \times 2.08 \times 0.83 + \frac{1}{2} \times 0.0335 \times 0.343 + 0.03 \times (1 \times 0.258 + 1 \times 13.8 + 1 \times 9.64 + 1 \times 2.28 + 1 \times 0.719 + 1 \times 2.24 + 1 \times 9.5 + 1 \times 2.77 + 1 \times 4.38 + 1 \times 8.83 + 1 \times 4.34) = 193.46 \text{ m}^2$$

Netto-Grundflächen: (Rohbaumaße minus jeweiliger Innenputzstärke)

Nutzfläche (a) überdeckt und allseitig in voller Höhe umschlossen:

Nebenraum (1.5 cm Putz)	2.45 × 1.51 - ½ × 2.44 × 0.239 - ½ × 0.023 × 0.00225 - ½ × 1.27 × 0.124 + ½ × 0.0231 × 1.64 + 7.09 × 4.1 - (0.015 × (7.09 + 1.64 + 1.49 + 2.32 + 8.37 + 4.1))	=	32.03 m ²
Flur (1.5 cm Putz)	1.03 × 2.56 - (0.015 × (1.03 + 2.56 + 1.03 + 2.56))	=	2.54 m ²
Kühlraum (1.5 cm Putz)	2.02 × 1.48 - ½ × 1.48 × 0.145 - (0.015 × (1.49 + 2.02 + 1.48 + 1.87))	=	2.79 m ²
Windfang (1.5 cm Putz)	1.62 × 1.5 - ½ × 1.47 × 0.165 - ½ × 1.5 × 0.146 - (0.015 × (1.51 + 1.62 + 1.33 + 1.48))	=	2.11 m ²
Gastraum (1.5 cm Putz)	6.47 × 8.68 - ½ × 8.68 × 1.82 + 7.01 × 5.92 - ½ × 5.92 × 0.578 + 6.77 × 0.0343 - ½ × 0.0343 × 0.00335 + 0.387 × 4.81 + 0.0393 × 2.93 + 1.43 × 2.18 + 0.1 × 2.17 + 0.464 × 1.78 + 0.761 × 2.18 - (1.33 × 0.24 + 0.24 × 0.736) - 0.909 × 0.24 - (0.015 × (12.9 + 5.98 + 1.96 + 0.851 + 1.78 + 0.464 + 0.1 + 0.0393 + 0.747 + 1.43 + 0.0131 + 0.1 + 0.00621 + 0.761 + 2.18 + 2.76 + 0.24 + 2.76 + 4.64 + 8.87))	=	94.60 m ²
Küche (1.0 cm Putz)	½ × 0.145 × 1.48 + 3.28 × 1.48 + 0.206 × 1.21 + 0.1 × 0.062 + 0.49 × 1.25 + 2.14 × 0.0665 + 1.17 × 0.761 + 0.97 × 0.665 + 0.243 × 0.99 + 0.243 × 1.13 + ½ × 0.00958 × 0.0981 + 2.5 × 5.87 - (0.01 × (2.14 + 0.38 + 1.17 + 0.761 + 1.38 + 0.213 + 0.1 + 0.113 + 0.97 + 0.908 + 0.99 + 0.243 + 0.1 + 0.243 + 1.13 + 0.733 + 2.13 + 1.49 + 0.0986 + 2.51 + 5.87 + 2.56))	=	22.42 m ²
WC H (1.0 cm Putz)	½ × 0.468 × 1.17 + 0.301 × 1.39 - ½ × 0.714 × 0.284 + 0.816 × 1.17 + 2.29 × 1.34 + 1.03 × 0.0164 + 1.16 × 0.975 - (0.01 × (2.59 + 1.34 + 2.29 + 0.05 + 2.29 + 1.17 + 0.975 + 1.16 + 0.05 + 1.16 + 0.816 + 2.03 + 0.673))	=	5.60 m ²
NF - EG gesamt		=	<u>162.08 m²</u>

Netto-Grundfläche gesamt:

$$94.60 \text{ m}^2 + 5.60 \text{ m}^2 + 2.54 \text{ m}^2 + 22.42 \text{ m}^2 + 2.79 \text{ m}^2 + 32.03 \text{ m}^2 + 2.11 \text{ m}^2 = 162.08 \text{ m}^2$$

Konstruktions-Grundfläche:

$$193.46 \text{ m}^2 - 162.08 \text{ m}^2 = 31.37 \text{ m}^2$$

Brutto-Rauminhalt:

$$2.8 \times (18.9 \times 9.18 - \frac{1}{2} \times 9.18 \times 1.93 - \frac{1}{2} \times 8.79 \times 0.858 - \frac{1}{2} \times 4.01 \times 0.392 + 13.8 \times 0.258 - \frac{1}{2} \times 0.258 \times 0.0542 + 10.3 \times 2.8 - \frac{1}{2} \times 2.08 \times 0.83 + \frac{1}{2} \times 0.0335 \times 0.343) + 2.8 \times 0.03 \times (1 \times 0.258 + 1 \times 13.8 + 1 \times 9.64 + 1 \times 2.28 + 1 \times 0.719 + 1 \times 2.24 + 1 \times 9.5 + 1 \times 2.77 + 1 \times 4.38 + 1 \times 8.83 + 1 \times 4.34) = 541.67 \text{ m}^3$$

1. Obergeschoss

Brutto-Grundfläche: (Rohbaumaße plus 3.0 cm Außenputz)

$$\frac{1}{2} \times 0.0041 \times 2.72 + 14.5 \times 9.25 - \frac{1}{2} \times 0.0745 \times 12.6 - 1.93 \times 0.0745 - \frac{1}{2} \times 9.18 \times 1.93 + 7.49 \times 2.77 - \frac{1}{2} \times 0.0443 \times 7.49 + 13.7 \times 0.258 - \frac{1}{2} \times 0.258 \times 0.0542 - \frac{1}{2} \times 0.258 \times 0.0252 + 4.36 \times 9.26 - \frac{1}{2} \times 8.79 \times 0.858 - \frac{1}{2} \times 4.36 \times 0.471 + 0.03 \times (1 \times 13.7 + 1 \times 9.64 + 1 \times 5.12 + 1 \times 2.77 + 1 \times 7.5 + 1 \times 2.72 + 1 \times 4.39 + 1 \times 8.83 + 1 \times 4.36 + 1 \times 0.259) = 186.55 \text{ m}^2$$

Netto-Grundflächen: (Rohbaumaße minus jeweiliger Innenputzstärke)

Nutzfläche (a) überdeckt und allseitig in voller Höhe umschlossen:

Pers.WC (1.5 cm Putz)	$1.35 \times 1.34 - 0.002 \times 0.00799 - \frac{1}{2} \times 1.33 \times 0.002 - \frac{1}{2} \times 1.35 \times 0.00204 - \frac{1}{2} \times 0.00799 \times 1.35 + 0.0221 \times 1.16 - \frac{1}{2} \times 1.16 \times 0.00175 - \frac{1}{2} \times 1.16 \times 0.00175 + 1.34 \times 1.06 - \frac{1}{2} \times 1.06 \times 0.0016 - \frac{1}{2} \times 1.33 \times 0.00201 - (0.015 \times (1.35 + 2.49 + 1.36 + 1.06 + 1.33 + 0.1 + 1.33 + 1.34))$	=	3.09 m²
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Gastraum 2 (1.5 cm Putz)	$8.94 \times 8.72 - \frac{1}{2} \times 0.0515 \times 8.72 - \frac{1}{2} \times 0.0417 \times 7.06 - 1.82 \times 0.0417 - \frac{1}{2} \times 8.68 \times 1.82 + 0.763 \times 6.37 - \frac{1}{2} \times 0.0376 \times 6.37 - \frac{1}{2} \times 0.00428 \times 0.725 - \frac{1}{2} \times 0.0376 \times 6.37 + 3.66 \times 4.42 - \frac{1}{2} \times 0.0261 \times 4.42 - \frac{1}{2} \times 4.06 \times 0.397 - \frac{1}{2} \times 3.66 \times 0.357 + \frac{1}{2} \times 3.68 \times 0.401 - 0.24 \times 4.08 - (0.015 \times (12.9 + 4.48 + 3.7 + 1.95 + 0.725 + 2.35 + 7.06 + 8.87))$	=	87.96 m²
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WC D (1.5 cm Putz)	$\frac{1}{2} \times 1.37 \times 0.00808 + 1.26 \times 1.37 + 0.1 \times 0.0186 + \frac{1}{2} \times 0.76 \times 0.00449 + 1.25 \times 0.76 + 0.1 \times 0.0141 + \frac{1}{2} \times 0.742 \times 0.00439 + 1.24 \times 0.742 + 0.1 \times 0.0122 + 0.00366 \times 1.6 + 1.17 \times 3.07 - (0.015 \times (1.37 + 1.26 + 1.35 + 0.1 + 1.45 + 1.36 + 0.76 + 1.25 + 0.746 + 0.1 + 1.58 + 0.1 + 0.73 + 1.25 + 0.742 + 2.51 + 0.375 + 0.639 + 0.39 + 0.644 + 1.02 + 2.53))$	=	6.86 m²
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Flur 1 (1.5 cm Putz)	$4.03 \times 4.09 - \frac{1}{2} \times 0.024 \times 4.06 - \frac{1}{2} \times 0.0405 \times 3.61 - 0.395 \times 0.0405 - \frac{1}{2} \times 4.05 \times 0.395 - \frac{1}{2} \times 0.0238 \times 4.03 + 0.725 \times 1.81 - (0.015 \times (4.75 + 1.81 + 0.725 + 2.25 + 3.61 + 4.07))$	=	16.53 m²
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Vorraum (1.5 cm Putz)	$2.39 \times 2.51 - \frac{1}{2} \times 0.0141 \times 2.39 - (0.015 \times (2.39 + 2.5 + 2.39 + 2.51))$	=	5.85 m²
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NF – OG gesamt		=	<u>120.29 m²</u>
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Netto-Grundfläche gesamt:

$$87.96 \text{ m}^2 + 6.86 \text{ m}^2 + 5.85 \text{ m}^2 + 3.09 \text{ m}^2 + 16.53 \text{ m}^2 = 120.29 \text{ m}^2$$

Konstruktions-Grundfläche:

$$186.55 \text{ m}^2 - 120.29 \text{ m}^2 = 66.26 \text{ m}^2$$

Brutto-Rauminhalt:

$$0.509 \times (5.19 \times 9.25 - \frac{1}{2} \times 4.3 \times 0.464 - \frac{1}{2} \times 9.25 \times 0.891 - \frac{1}{2} \times 8.79 \times 0.858) + 2.8 \times (\frac{1}{2} \times 0.0041 \times 2.72 + 14.5 \times 9.25 - \frac{1}{2} \times 0.0745 \times 12.6 - 1.93 \times 0.0745 - \frac{1}{2} \times 9.18 \times 1.93 - \frac{1}{2} \times 8.62 \times 0.83 + 7.49 \times 2.77 - \frac{1}{2} \times 0.0443 \times 7.49 + 13.7 \times 0.258 - \frac{1}{2} \times 0.258 \times 0.0542 - \frac{1}{2} \times 0.258 \times 0.0252 + 0.0609 \times 0.639 - \frac{1}{2} \times 0.632 \times 0.0609 - \frac{1}{2} \times 0.0609 \times 0.00657) + 2.8 \times 0.03 \times (1 \times 13.7 + 1 \times 9.64 + 1 \times 5.12 + 1 \times 2.77 + 1 \times 7.5 + 1 \times 2.72 + 1 \times 4.39 + 1 \times 8.83 + 1 \times 4.36 + 1 \times 0.259) = 432.70 \text{ m}^3$$