



Combined Reduction Index (Rw) — Glass + Frame

Preliminary; final design must be checked against the relevant standards by competent engineers.

Project	Sample Project
Subject	Combined Rw for Glass + Frame
Prepared by	Civil Engineer
Approved by	Technical Lead
Date	14/09/2025

1) Inputs

Symbol	Description	Value
S_{glass}	Glass area / share	0.800
S_{frame}	Frame area / share	0.200
R_{glass}	Single-number sound reduction	36.00 dB
R_{frame}	Single-number sound reduction	25.00 dB

2) Result

Combined R_w	30.79	Unit	dB
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Note: This is the single-number combination. To obtain **C** and **C_{tr}**, 1/3-octave band data $R(f)$ are required (ISO 717-1).

3) Formula & References

Combined reduction (ISO 12354-3, §4.1 & §4.2):

$$R = 10 \cdot \log_{10} \left(S_{\text{total}} / [S_{\text{glass}} \cdot 10^{(-R_{\text{glass}}/10)} + S_{\text{frame}} \cdot 10^{(-R_{\text{frame}}/10)}] \right)$$

Reporting (ISO 717-1): Rw (C; C_{tr})