

3.6 Design Life

The design life does not represent structural failure of the component, and there may be a considerable margin between the design life of the protective system and potential structural failure. Typically for residential buildings, the required design life is 60 years, representing a sensible time to major maintenance of the primary components.

The design life predictions for galvanized steel in common applications in buildings are summarised below. The following two tables are taken from the 2nd Edition of SCI Publication "Durability of Light Steel Framing in Residential Building" – P262.

Product application	Environmental conditions	Predicted design life
Walls and floors in warm frame applications	No risk of water ingress or condensation	250 years
Non-load bearing stud partitions	Warm internal environment and no risk of water ingress	250 years
Infill external walls in multi-storey buildings	Warm frame and no risk of water ingress	250 years
Roof structures (insulated)	Low risk of condensation	200 years
Suspended ground floors (with over-site membrane)	Low risk of water ingress; some risk of condensation	100 years
Roof structures (uninsulated)	Some risk of condensation	100 years
Purlins and side rails supporting metal cladding	Low risk of condensation; some dust and pollution	60 years
Sub-frames to over-cladding panels	Low risk of water ingress; some risk of condensation	60 years
Suspended ground floors (without over-site membrane)	Low risk of water ingress; higher risk of condensation	50 years

Note: All values are for Z275 (The weight of zinc coating = 275 g/m²)