

Resilient Homes: Materials and Components

Building Component Resilience Rating Tool

Many New Zealanders look to build or buy their dream home as part of a long and happy retirement. For many it's an opportunity to buy a place with views, be near the beach, or be close to rivers.

Large windows, decks and glass doors to give indoor/outdoor flow are often favoured. However, these features can be more vulnerable to natural events which can damage our biggest investment in our futures – our homes.

We are all aware of earthquakes in New Zealand. These are difficult to avoid in many parts of the country, which is why our building regulations attempt to ensure our homes are built to keep us safe during earthquakes.

But we face other natural events that can have huge impacts. Storms/high winds are one of the most common adverse natural events in New Zealand and even cyclones and tornados are an all too real experience. Generally, our building regulations attempt to ensure that our homes are built to keep us safe from these hazards too. However, experience teaches that homes are still damaged when these events occur.

We can make our homes more resilient and we can choose to buy or build new homes using components and materials that are more resilient. Spending time now to assess your home will always be a good investment.

This guide provides you with a quick way to identify components and materials that enhance or reduce the resilience of your home.

Professional help: Always get professional help if you are concerned about the vulnerabilities of your home. This is just a quick guide to highlight some issues that you might want to explore. It cannot replace a professional assessment.



Acknowledgement

This tool was produced as part of the research programme *Resilient Communities: Doing Better in Bad Times*. The research was funded primarily by the Public Good Science Fund with assistance from the BRANZ Levy.

BRANZ and CRESA would like to thank the individuals including the many older people and organisations who piloted the tool in its early forms.

We must acknowledge too the contributions of those who served on the programme's national reference group and our overseas Advisory Group: Catherine Bridge, Associate Professor, Faculty of Built Environment, University of New South Wales, Sue Roaf, Professor of Architectural Engineering, Heriot Watt University, Edinburgh, and Rob Wiener, Executive Director, California Coalition of Rural Housing.

In addition we would like to thank the research team who have contributed to our understanding of older people's resilience needs: Kay Saville-Smith and Ruth Fraser (CRESA), Bev James (Public Policy & Research), Roman Jaques (BRANZ), Rob Bell (NIWA), Ryan Paulik (NIWA), Mark Jones (BRANZ), Nick Marston (BRANZ), Sally Priest (Flood Hazard Research Centre), Middlesex University, London.

For more information about the project as well as previous publications please see the research website www.goodhomes.co.nz and go to the resilience page.

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Building Component Ratings

Whenever you buy, build or renovate a home you have an opportunity to reduce the risks to your assets by choosing components that are relatively less vulnerable to damage and degradation by extreme natural events.

The following pages contain tables that provide a Resilience Rating for each component that may be present as part of a home.

Foundation	Resilience Rating
Precast Concrete Piling	High
Slab on Ground	High
Timber Piling	High

Timber Joists & Bearers	Resilience Rating
Hardwood Joists & Bearers	High
Softwood Joists & Bearers	High

Flooring	Resilience Rating
Compressed Fibrecement	High
Hardwood Floorboards	High
Particleboard	Low
Plywood	High
Softwood Floorboards	Moderate
Strand Fibre Product	Low

Floor Insulation	Resilience Rating
Expanded Polystyrene Board	High
Glasswool	Low
Polyester	Moderate
Polyester / Wool	Moderate

Primary Structure	Resilience Rating
Hardwood Stud	High
In-situ Concrete	High
Light Gauge Steel	High
Precast Concrete	High
Softwood Stud	High
Steel Structural Sections	High

External Wall Claddings	Resilience Rating
Aluminium Cladding	High
Autoclaved Aerated Concrete	High
Calcium Silicate Brick	High
Cement Plaster	High
Clay Brick	High
Concrete / Masonry Block	High
Concrete Brick	High
Fibre cement Board	High
Fibre cement Weatherboard	High
Galvanised Steel Cladding	High
Glass Block	High
Granite Block	High
Hardwood Weatherboard	High
In-Situ Concrete	High
Marble Block	High
Plywood	High
Precast Concrete	High
PVC Cladding	High
Slate Block	High
Softwood Weatherboard	High

Roof Structure	Resilience Rating
Engineered Timber Elements	Moderate
Galvanised Light Steel	High
Timber	High

Roof Insulation	Resilience Rating
Cellulose	Low
Expanded Polystyrene	High
Glasswool	Low
Polyester	Moderate
Polyester / Wool	Moderate
Rockwool	Low
Wool	Moderate

Roof Cladding	Resilience Rating
Aluminium Profile	High
Cedar Shingles or Shakes	High
Clay Tiles	High
Concrete Tiles	High
Copper	High
Modified Bitumen Membrane	High
Plywood / Asphalt Shingle Roofing	High
PVC Membrane	High
Slate	High
Stainless Steel	High
Steel Profile	High
Steel Tiles	High
Strand Fibre / Asphalt Shingle Roofing	Moderate
Synthetic Liquid Applied Membranes	High
Synthetic Rubber Membrane	High
Zinc	High

Soffits	Resilience Rating
Fibreboard	High
Plywood	High
Timber Board	High

Internal Walls	Resilience Rating
Autoclaved Aerated Concrete Blocks	High
Calcium Silicate Brick	High
Clay Brick	High
Concrete / Masonry Blocks	High
Concrete Brick	High
Glass Blocks	High
Granite Facing	High
Hardwood Stud	High
Marble Facing	High
Sandstone Facing	High
Slate Facing	High
Softwood Stud	High

Linings & Trim	Resilience Rating
Calcium Silicate Brick	High
Clay Brick	High
Concrete Brick	High
Fibre cement Board	High
Fire Resistant Plasterboard	Low
Glass	High
Granite	High
Gypsum Plaster	Low
Marble	High
MDF Trim	Moderate
Oil-tempered Hard Board	Moderate
Plaster Trim	Low
Plasterboard	Low
Plastic Laminate	High
Sandstone	High
Slate	High
Timber Trim	High
Water Resistant Plasterboard	Low

Wall Insulation	Resilience Rating
Expanded Polystyrene	High
Glasswool	Low
Polyester	Moderate
Polyester / wool	Moderate
Rockwool	Low
Wool	Moderate

Windows	Resilience Rating
Aluminium Framed	High
Hardwood Framed	Moderate
PVC Framed	High
Softwood Framed	Moderate
Steel Framed	High

External Doors	Resilience Rating
Hardwood Door	High
Hollow Core Veneered Door	Low
Softwood Door	High
Solid Core Veneered Door	High

Garage Door	Resilience Rating
Aluminium Door	High
Hollow Core Veneered	Low
Plywood Door	High
Solid Core Veneered	High
Steel Door	High

Stairs	Resilience Rating
Concrete In-Situ	High
Concrete Prefabricated	High
Steel Internal	High
Timber Internal	High

Floor Finishes	Resilience Rating
Ceramic Glazed Floor Tiles	High
Terra Cotta Floor Tiles	High

Timber Feature Flooring	Resilience Rating
Block Parquet Flooring	Low
Hardwood Strip Flooring	Low
Mosaic Parquet Flooring	Low
Softwood Strip Flooring	Low

Interlocking Panel Flooring	Resilience Rating
Bamboo Floating Timber Flooring	Low
Laminated Timber Floating Timber Flooring	Low
Timber Veneer Floating Timber Flooring	Low

Carpet	Resilience Rating
Carpet Tiles	Low
Nylon Carpet	Low
Synthetic Yarn Carpets	Low
Wool Carpet	Low
Wool/Nylon Carpet	Low

Other Floorcoverings	Resilience Rating
Cork Tiles	Low
Rubber Tiles	High
Vinyl Sheet	High
Vinyl Tiles	High

Wall Finishes	
Paint Walls	Resilience Rating
Acrylic Paint (Internal)	High
Enamel Paint (Internal)	High
Wallpaper	Resilience Rating
Fabric Strip Wallpaper	Low
Strip Wallpaper	Low
Vinyl Strip Wallpaper	Low
Timber Panelling	Resilience Rating
Hardwood Panelling	High
Softwood Panelling	Moderate
Wood Veneer Panelling	Low
Panels	Resilience Rating
Glass Wall Panels	High
Internal Doors	Resilience Rating
Hardwood Door	High
Hollow Core Veneered Door	Low
Softwood Door	High
Solid Core Veneered Door	High
Ceiling Finishes	Resilience Rating
Acrylic Paint (Internal)	High
Enamel Paint (Internal)	High
Fabric Strip Wallpaper	Low
Strip Wallpaper / Acrylic Paint (Internal)	Low
Strip Wallpaper / Enamel Paint (Internal)	Low
Vinyl Strip Wall Paper	Low
Wallpaper / Paint Strip Wallpaper	Low
Ceiling Linings	Resilience Rating
Fire Resistant Plasterboard	Low
MDF	Low
Oil –tempered Hard Board	Moderate
Soft Board	Low
Standard Plasterboard	Low
Steel Profile	High
Timber	High
Water Resistant Plasterboard	Low
Wood Fibre or Cellulose Ceiling Panels	Low

Kitchen Furnishings	Resilience Rating
Laminated Hardwood Benchtops	High
Laminated MDF Floor Cupboards	Low
Laminated MDF Wall Cupboards	Low
Laminated Particleboard Benchtops	Low
Laminated Particleboard Floor Cupboards	Low
Laminated Particleboard Wall Cupboards	Low
Laminated Softwood Benchtops	High

Laundry Furniture	Resilience Rating
Laminated MDF Sink Base	Low
Laminated Particleboard Sink Base	Low

Lounge / Home Office Furniture	Resilience Rating
Hardwood Furniture	High
Laminated MDF Furniture	Low
Laminated Particleboard Furniture	Low
Softwood Furniture	High

Bedroom Furniture	Resilience Rating
Hardwood Based	High
Laminated MDF Based	Low
Laminated Particleboard Based	Low
Metal Framed	High
Softwood Based	High

Bathroom Furniture	Resilience Rating
Hardwood Furniture	High
Laminated MDF Furniture	Low
Laminated Particleboard Furniture	Low
Softwood Furniture	High

Garage Furniture	Resilience Rating
MDF Based	Low
Particleboard Based	Low
Steel Framed	High
Timber Framed	High

