Starke 70 SELtd Accepted Joinery

Twenty-one frame profiles of Starke70 frames have been modelled by Starke70 to determine Uf value and fRsi of the frames. Sustainable Engineering has reviewed these reports and collated the data for use in PHPP.

Boundary conditions are set per ISO 10077-2 in Flixo Frame software.

Table 1: PHPP Data

Window frames									
		U_f-Value				Frame width			
ID	Description	left	right	bottom	above	left	right	bottom	above
		W/(m²K)	W/(m²K)	W/(m²K)	W/(m²K)	m	m	m	m
01ud	Starke 70 Fixed White	1.30	1.30	1.30	1.30	0.070	0.070	0.070	0.070
02ud	Starke 70 Awning White	1.34	1.34	1.34	1.34	0.117	0.117	0.117	0.117
03ud	Starke 70 Tilt & Turn White	1.38	1.38	1.38	1.38	0.119	0.119	0.119	0.119
04ud	Starke 70 Hinge Door White	1.43	1.43	1.43	1.43	0.147	0.147	0.147	0.147
05ud	Starke70 Sliding Door Fixed	1.37	1.62	1.34	1.34	0.056	0.055	0.056	0.056
06ud	Starke 70 Sliding Door Operable	1.62	1.52	1.52	1.56	0.055	0.145	0.145	0.145
07ud	Starke 70 Fixed Black	1.34	1.34	1.34	1.34	0.070	0.070	0.070	0.070
08ud	Starke 70 Awning Black	1.36	1.36	1.36	1.36	0.117	0.117	0.117	0.117
09ud	Stake 70 Tilt & Turn Black	1.47	1.47	1.47	1.47	0.119	0.119	0.119	0.119
10ud	Starke 70 Hinge Door Black	1.44	1.44	1.44	1.44	0.147	0.147	0.147	0.147

Note that the Sliding door operable head and jamb fails the PHPP9 fRSI criteria in warm and warm-temperate climates. We recommend discussing with your certifier and using the PHPP10 criteria.

Both Black and White options meet the fRSI criteria for PHPP9 in warm and warm-temperate climates.

Table 2: White

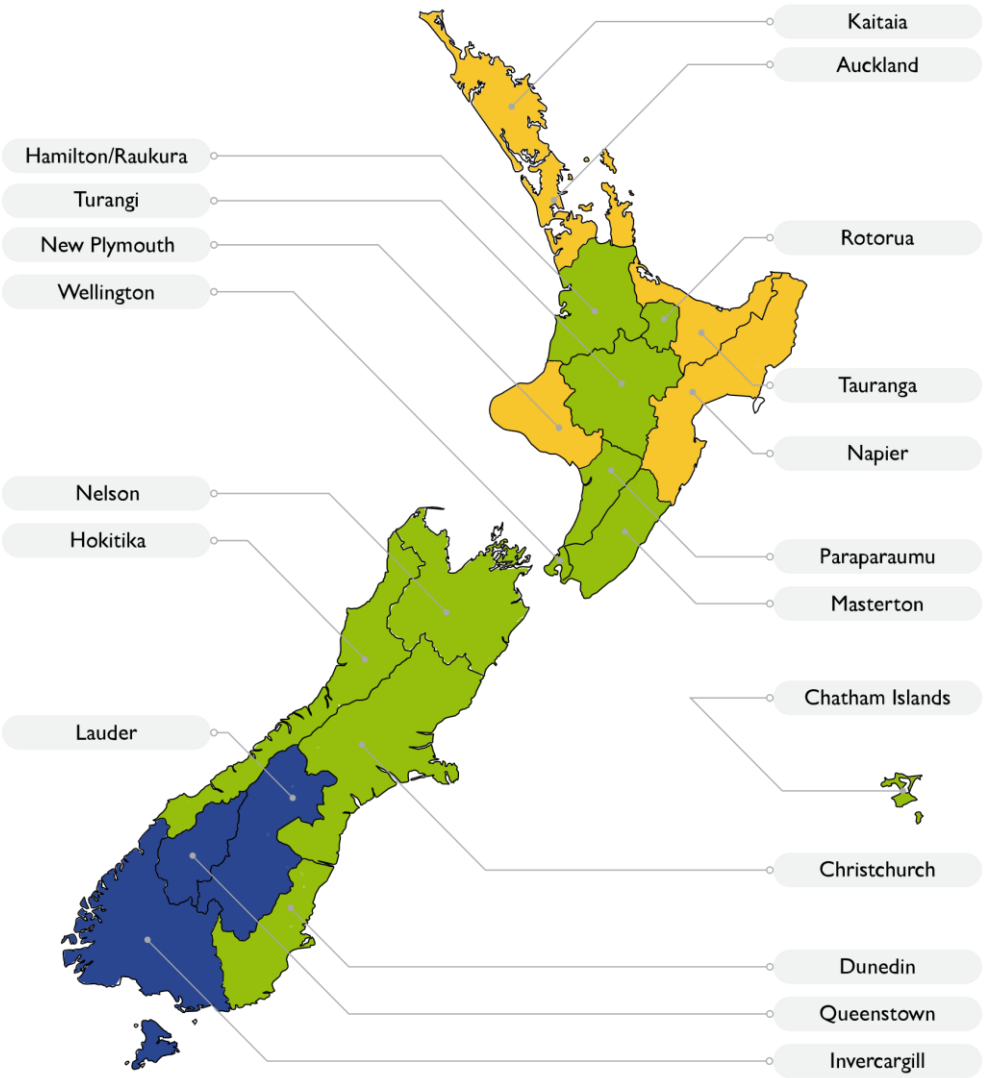
Window Frame	Uf [W/(m²K)]	Frame height (m)	fRsi
Fixed	1.30	0.070	0.73
Awning	1.34	0.117	0.68
Hinge Door	1.43	0.147	0.74
Tilt and Turn	1.38	0.119	0.66
Mullion Double Tilt Turn	1.07	0.166	0.65
Mullion Fixed	1.39	0.084	0.74
Mullion One Tilt and Turn Sash	1.48	0.125	0.67

Table 3: Black

Window Frame	Uf [W/(m²K)]	Frame height (m)	fRsi
Fixed	1.34	0.070	0.73
Awning	1.36	0.117	0.68
Hinge Door	1.44	0.147	0.65
Tilt and Turn	1.47	0.119	0.65
Mullion Double Tilt Turn	1.07	0.166	0.65
Mullion Fixed	1.39	0.084	0.74
Mullion One Tilt and Turn Sash	1.48	0.125	0.67

Table 4: Sliding

Window Frame	Uf [W/(m²K)]	Frame height (m)	fRsi
Fixed Head	1.34	0.056	0.72
Fixed Jamb	1.37	0.056	0.72
Fixed Sill	1.34	0.056	0.72
Mullion	1.62	0.109	0.67
Sliding Head	1.56	0.145	0.53
Sliding Jamb	1.52	0.145	0.54
Sliding Sill	1.52	0.145	0.55



Climate zone	Minimum Temperature Factor fRSI = 0.25 m^2K/W
Arctic	0.80
Cold	0.75
Cool-temperate	0.70
Warm-temperate	0.65
Warm	0.55
Hot	-
Very hot	-

Figure 1: This map shows the three different fRSI zones at the weather station altitudes. The climate zone and thus the fRSI requirements also vary with altitude as the average temperatures typically drop by 0.6C per 100m of elevation gain. In general these zones can be used without considering the elevation change. Illustration: Sustainable Engineering Ltd. fRSI requirements from [PHI Passive House Standard Building Criteria](#).