Table 9.7: Approaches to disproportionate collapse

Construction type		Building class			
		1	2A	2B	3
Steel frame		No additional considerations	Provide horizontal ties	Provide horizontal and vertical ties	Carry out a risk assessment but as a minimum provide the same as 2B
				Or notional element removal	
				Or key element design	
Concrete frame	*In situ*	No additional considerations	Rebar continuity typically provides adequate ties	Rebar continuity typically provides adequate ties	Carry out a risk assessment but as a minimum provide the same as 2B
				Or notional element removal	
				Or key element design	
	Precast		Ensure connections provide adequate horizontal ties	Ensure connections provide adequate horizontal and vertical ties (vertical ties can be hard to form)	
Timber	Loadbearing stud and joist floor (platform timber frame)	No additional considerations	Typically, connections provide requirements for horizontal ties and no further consideration is required at scheme design	Provide rim beam, and sequentially check wall removal	Carry out a risk assessment but as a minimum provide the same as 2B
	Solid timber (CLT and unidirectional laminated timber (ULT))			Ensure solid wall panels can act as beams, and connections can carry hanging floor load	
	Frame (sawn timber/glulam/ laminated veneer lumber (LVL))		Provide horizontal ties	Horizontal and vertical ties	
				Or notional element removal	
				Or key element design	
Masonry		No additional considerations	Provide horizontal ties	Not recommended. Provide horizontal and vertical ties — in practice this is very difficult to achieve	Not recommended