Appendix A Special Provisions for Various Engineering Structures

A. 1 Special Provisions for Building Structures

A. 1. 1 The safety of the building structure shall be classified according to the consequence of failure of the structure as shown in Table A. 1. 1.

Table A. 1. 1 Safety Classes of Building Structures

Safety Classes	Consequence of failure	Examples
Class Ⅰ	Very serious: having a large impact on the human life, economy, society or environment	Large-scale public buildings
Class Ⅱ	Serious: having an impact on the human life, economy, society or environment	Ordinary residential buildings and office buildings
Class Ⅲ	Less serious: having a little impact on the human life, economy, society or environment	Small or temporary storage buildings

Note: The safety class for the buildings of category A and class B in seismic design should be Ⅰ; the safety class for the buildings of category C should be Ⅱ; and the safety class for the buildings of category D should be Ⅲ.

A. 1. 2 The design reference period of building structures is 50 years.

A. 1. 3 The design working life of the building structures shall be adopted according to Table A. 1. 3.

Table A. 1. 3 Design Working Life of Building Structures

Classifications	Design working life (years)	Examples
1	5	Temporary building structures
2	25	Easy replaceable structural members
3	50	Ordinary buildings and special structures
4	100	Landmark buildings and very important building structures

A. 1. 4 The reliability index of ultimate limit states design of building structural members in the persistent design situation shall not be less than those specified in Table A. 1. 4.

Table A. 1. 4 Reliability Index, β of building Structural Members

Types of failure	Safety classes		
	Class Ⅰ	Class Ⅱ	Class Ⅲ
Ductile	3. 7	3. 2	2. 7
Brittle	4. 2	3. 7	3. 2

A. 1. 5 The reliability index of serviceability limit states design of building structureal members in the persistent design situation should be in a range of 0～1. 5 based on its reversibility.

A. 1. 6 The following requirements shall be complied with for the persistent design situation and transient design situation in the ultimate limit states design:

1 The design value of effect of a combination of actions shall be the unfavorable value