

ASCE/CORPI 61-14

Seismic Design of Piers and Wharves

Design Classification	Performance Level at 72 year Earthquake	Performance Level at 475 year Earthquake	Performance Level at 1000 year Earthquake
Low	N/A	N/A	N/A
Moderate	N/A	N/A	N/A
High	Minimal Damage	Controlled and Repairable	Life Safety Protection

Modification to ASCE/CORPI 61-14

High +1	Minimal Damage	Minimal Damage	Controlled and Repairable
High +2	Minimal Damage	Minimal Damage	Minimal Damage

Design Classification:

Low: Structures not assigned a design classification of “high” or “moderate” shall be assigned a design classification of “low.”

Moderate: Structures shall be assigned a design classification of “moderate” if they are of secondary importance to the regional economy and not essential to post-event recovery but they require a level of seismic performance beyond life safety protection.

High: Structures shall be assigned a design classification of “high” if they are essential to the region’s economy or post-event recovery and they require a level of seismic performance beyond life safety protection.

High +1: GAC Recommendation, over and above 61-14 minimum requirements.

High +2: Practical interpretation of GAC Recommendation, considering “7 day repairable” not feasible.

Performance Levels:

Minimal Damage: A structure shall be classified as having achieved “minimal damage” when (a) it exhibits near-elastic structural response with minor or no residual deformation, (b) there is no loss of serviceability of the structure, and (c) there is no loss of containment of materials in a manner that would pose a public hazard.

Controlled and Repairable Damage: A structure shall be classified as having achieved “controlled and repairable damage” when (a) the structure responds in a controlled and ductile manner, experiencing limited inelastic deformations at locations where repair is possible; (b) **the required repairs result in a loss of serviceability for no more than several months**; and (c) there is no loss of containment of materials in a manner that would pose a public hazard.

Life Safety Protection: A structure shall be classified as providing “life safety protection” when (a) the post-earthquake damage state is such that the structure continues to support gravity loads, (b) damage that does occur does not prevent egress, and (c) there is no loss of containment of materials in a manner that would pose a public hazard.