

5.2 CODAL PROVISIONS

CODES AND STANDARDS

ASCE 7-02

The American society of civil engineers minimum design load for buildings and other structure (ASCE,2002) has a section on general structure integrity that reads thus building and other structures Shall be design d to sustain local Damage with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage.

This shall be achieved through an arrangement of the structural element That provides stability to the entire structural system by transferring loads from Any locally damaged region to adjacent regions capable of resisting those Loads without collapse.

This shall be accomplished by providing sufficient continuity , redundancy, or energy-dissipating capacity (ductility) or a combination there of in a members of the structure clearly the focused in the ASCE standard is on redundancy and alternate load paths overall other means of avoiding susceptibility to disproportionate collapse. But the degree of redundancy is not specified and the requirements or entirely threat - independent

ACI 318-02

The American concrete institution building code requirement for structural concrete (ACI, 2002) include extensive requirement for structural integrity in the chapter on reinforcing steel details. Though the commentary states that it is an intend of This section...to improve 6 redundancies there is no explicit mention of redundancy or alternate load paths in the code.

The code provisions include a general statement that "In the detailing of reinforcement and connections members of a structure shall be effectively tied together to improve integrity of overall structure" and many specific prescriptive requirements for continuity of reinforcing steel and interconnection of components.

There are additional requirements for the tying together of precast structural components. None of the ACI provisions are threat specific in anyway.

GSA PBS Facilities Standards 2003

The 2003 edition of the GSA's facilities standards for the public buildings service (GSA, 2003 a) retained the "Progressive Collapse" heading from the 2000 edition.

GSA Progressive Collapse Guidelines 2003 GSA Progressive Collapse Analysis and Design Guidelines for new federal of his buildings and major Modernization Projects (GSA, 2003b) begin with a process for determining whether a building is exempt from progressive collapse considerations.

Exemptions based on the type and size of the structure (for instance, any building of over 10 stories is non- exempt) and is unrelated to the level of threat.

Typical non-exempt buildings in steel or concrete have to be shown by analysis to be able to tolerate removal of one column or one-30 ft length of bearing wall without collapse. Considerable detail is provided regarding the features of the analysis and the acceptance criteria.

GSA Progressive Collapse Guidelines 200

The GSA Progressive collapse analysis and design guidelines for new federal office buildings and major modernization projects(GSA,2003b) begins with a process for determining whether a building is exempt from Progressive Collapse considerations. Exemption is based on the type and size of the structure (for instance any building of over 10 stories is non-exempt) and is unrelated to the level of threat.

Typical non-exempt buildings in steel or concrete have to be shown by analysis to be able to tolerate removal of one column or one-30 ft length of bearing wall without collapse.

Considerable detail is provided regarding the features of the analysis and the acceptance criteria.