

### 1.3. SEISMIC PERFORMANCE OBJECTIVES

#### 1.3.1. Classification of buildings

For the purpose of identifying seismic performance objectives as well as analysis and design requirements, buildings shall be classified into two groups, namely low- to medium-rise buildings and tall buildings.

**1.3.1.1** – Tall buildings are those of minimum 60 meter height measured from the lowest ground level, excluding basement stories completely underground and surrounded with high-stiffness peripheral walls all around.

**1.3.1.2** – Buildings other than those described in **1.3.1.1** are defined as low- to medium-rise buildings.

#### 1.3.2. Performance levels and ranges

Performance levels of low- to medium-rise and/or tall buildings, wherever applicable, are defined below with respect to estimated damage levels in earthquakes.

**1.3.2.1** – *Immediate Occupancy – Minimum Damage (IO – MD) Performance Level* describes a performance condition such that no structural or nonstructural damage would occur in buildings and in their elements under the effect of an earthquake or, if any, the damage would be very limited. In this condition, the building can be occupied uninterruptedly and the problems, if any, can be fixed in a few days.

**1.3.2.2** – *Life Safety – Controlled Damage (LS – CD) Performance Level* describes a performance condition where limited and repairable structural and nonstructural damage is permitted in buildings and in their elements under the effect of an earthquake. In this condition, short term (a few weeks or months) problems related to occupancy of the building may be expected.

**1.3.2.3** – *Collapse Prevention – Extensive Damage (CP – ED) Performance Level* describes a performance condition where extensive damage may occur in buildings and in their elements under the effect of an earthquake prior to the collapse of the building. In this condition, long term problems related to occupancy of the buildings may occur or the occupancy of the buildings may be terminated.

**1.3.2.4** – The regions in between the above-defined performance levels are identified as *performance ranges* as indicated in a strength – typical deformation curve (**Fig. 1.2**). The region below (IO – MD) Performance Level is defined as *Immediate Occupancy / Minimum Damage Performance Range*, the region in between (IO – MD) Performance Level and (LS – CD) Performance Level is defined as *Life Safety / Controlled Damage Performance Range*, the region in between (LS – CD) Performance Level and (CP – ED) Performance Level is defined as *Collapse Prevention / Extensive Damage Performance Range* and the region above the (CP – ED) Performance Level is defined as *Collapse Range*.