Types of slope failure

- Plane failure
- Wedge failure
- Circular failure
- Toppling failure
Plane failure

Typical view of Plane failure
Plane failure with condition of failures
Plane failure with condition of failures

- The dip direction of the planar discontinuity must be within (±20°) of the dip direction of the slope face.
- The dip of the planar discontinuity must be less than the dip of the slope face (Daylight).
- The dip of the planar discontinuity must be greater than the angle of friction of the surface.
Wedge Failure:

wedge failure with dip and dip direction.
The necessary structural conditions for this failure are summarized as follows:

1. The trend of the line of intersection must approximate the dip direction of the slope face.
2. The plunge of the line of intersection must be less than the dip of the slope face. The line of intersection under this condition is said to daylight on the slope.
3. The plunge of the line of intersection must be greater than the angle of friction of the surface.
Occurance of Wedge failure in a slope
Toppling failure

- Pre-existing Discontinuities
- Rotation and Shearing
- Base of Rotation
- Slope Crest
- Structural Discontinuities

view of Toppling failure
Flexural toppling

block toppling of columns of rock containing widely spaced orthogonal joints (a);

flexural toppling of slabs of rock dipping steeply into face (b)
Rockfalls

Typical view of Rock fall
Rotational Failure

Typical view of Circular failure

Typical view of Non Circular failure