

OVERSTRESS

VERSUS

WEAR

TWO WAYS TO CAUSE A FAILURE

OVERSTRESS



Occurs when a critical limit of a material or structure is exceeded

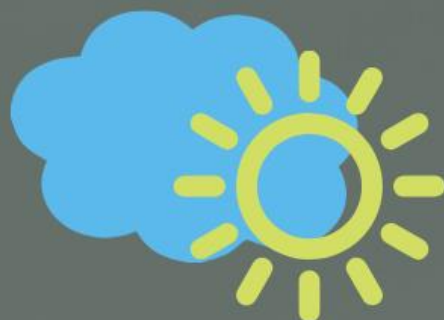
Typically involves very high stresses such as high temperature or high voltage

Can happen for example in manufacturing, storage, and due to misuse

Critical limits can be found using step stress testing

Examples of failure include: melting, cracking, buckling, delamination, and dielectric breakdown

WEAR



Develops slowly when materials and structures age

Often happens with low stress values for example due to small cyclic stresses

Happens slowly in storage and use conditions

Can be studied using different accelerated life tests

Examples of failure include: cracking due to fatigue or creep, embrittlement, electromigration, and corrosion