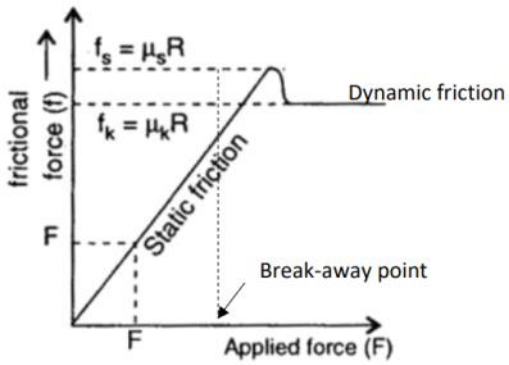
Friction

Tuesday, 27 February 2024 2:37 pm

Friction is a force which tries to stop two surfaces from sliding past each other. It occurs because surfaces are not smooth on the microscopic scale.

More smooth the surface - less friction



Type of friction
Static friction - exist when the object stop, stop object from moving
- during this process - the push force and friction are balanced
- F(push) = Friction

Dynamic friction - friction exist when object moving, which slow down the moving object
- Depends on the normal force (support force)

From static to dynamic - break point

static friction is always greater than dynamic friction at maximum point which means the force need in static friction is higher than the object in dynamics

The coefficient of friction depends on the two surfaces that are rubbing (these are constant)
The coefficient of friction is a ratio of forces and is dimensionless. It has no units.
Coefficient of S is bigger than D.

Friction is a force between 2 surface trying to slide part each other

$$F_s \leq \mu_s R$$

When Fs = Us R
The friction is in the break point as F is maximum is in maximum point, which UsR indicate the friction at break point(maximum friction)

R is normal force (support force)

$$F_d = \mu_d R$$