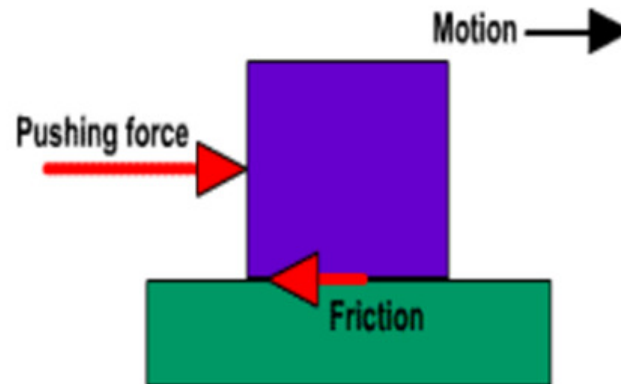


CHAPTER 12

FRICTION

Force of friction

- Force of friction is a force which opposes the motion of an object over a surface.
- Force of friction acts between the object and the surface.



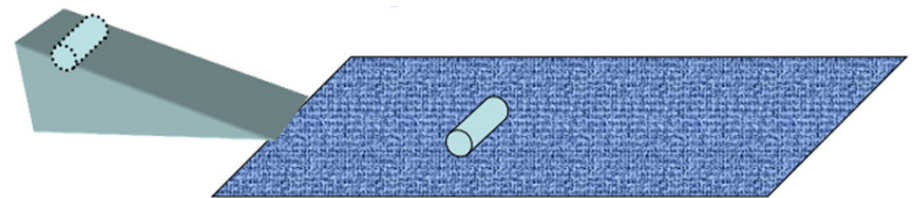
Factors affecting friction

- Friction depends upon two factors
- i) Nature of the surfaces in contact
- ii) How hard the surfaces press together

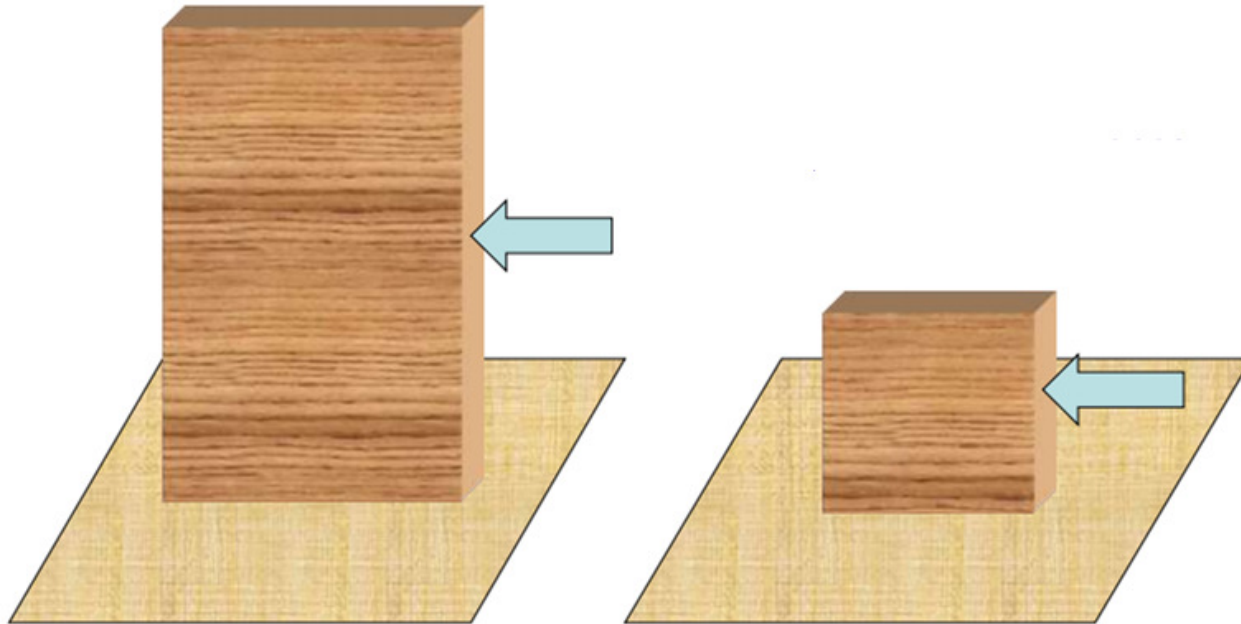
Friction is less on smooth surfaces



Friction is more on rough surface

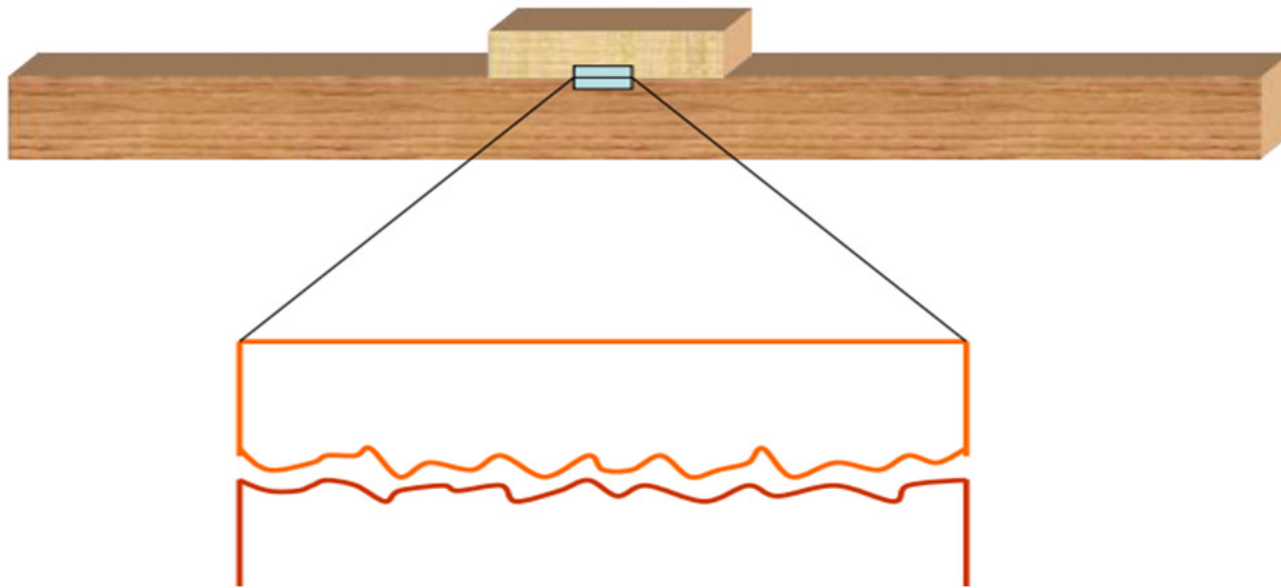


Friction is more if surface is pressed harder
Friction is less if surfaces are not pressed harder



Cause of friction

Friction is caused due to interlocking of irregularities between the two surfaces in contact



Type of friction

- Static friction
 - Sliding friction
 - Rolling friction
-
- Sliding friction is slightly less than static friction
 - Rolling friction is less than static and sliding friction

Friction is necessary

- It is possible to hold the tumbler due to friction between the hand and the tumbler
- Friction between the feet and the ground help us to walk
- It is possible to write due to friction between the pen and the paper
- Friction between the tyres and the road helps in moving the vehicle

Friction is undesirable

- Soles of shoes wear out due to friction.
- Knives lose their sharp edges due to friction.
- Tyres of vehicles wear out due to friction.



Increasing friction

- Friction can be increased by increasing the roughness of the surface.



8) Reducing friction :-

Friction can be reduced by :-

- i) Using lubricants like powders or oils and grease.**
- ii) Using rollers or wheels.**
- iii) Using ball bearings.**

We sprinkle powder on a carrom board to reduce friction.

Oil or grease is applied between moving parts of machines to reduce friction.

Rollers are used in luggage bags to reduce friction.

Wheels are used in vehicles to reduce friction.

Ball bearings are used in ceiling fans, bicycles and vehicles to reduce friction.



Reducing Friction

- Using lubricants like oil and grease
- Using rollers and wheels
- Using ball bearing



Fluid friction

The friction force exerted by liquid and gases on moving objects is called fluid friction or drag.

Fluid friction depends upon

Speed of object

Shape of the object

Nature of the object



THANK YOU