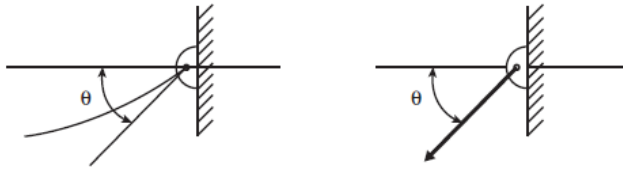


## Session 9: Support reactions

### Actions and reactions

#### Flexible cable or rope



Force exerted by the cable or rope is always tension away from the fixing, in the direction of the tangent to the cable curve.

#### Smooth surfaces



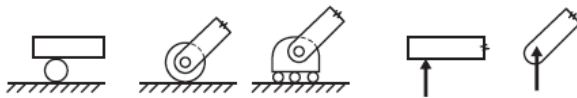
Reaction is normal to the surface, i.e., at right angles to the tangent.

#### Rough surfaces



Rough surface is capable of supporting a tangential force as well as a normal reaction. Resultant reaction is vectorial sum of these two.

#### Roller support



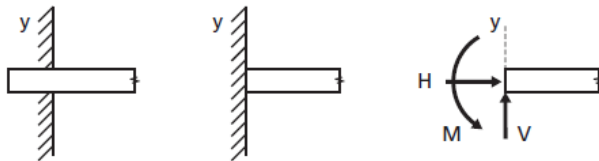
Reaction is normal to the supporting surface only.

#### Pin support



A freely hinged support is fixed in position, hence the two reaction forces, but is not restrained in direction - it is free to rotate.

#### Built-in support



The support is capable of providing a longitudinal reaction (H), a lateral or transverse reaction (V), and a moment (M). The body is fixed in position and fixed in direction.