

- Wave amplitude is greater than body wave.
- These waves are almost responsible for the damage and destruction during the earthquakes.

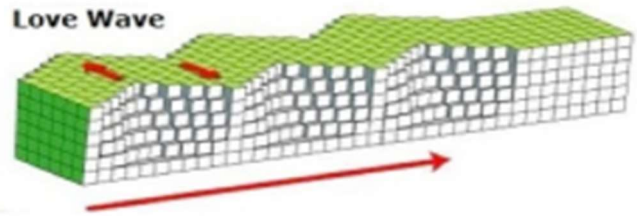
Surface waves are classified under various categories among them most common are:

- Love wave
- Rayleigh Wave

i. **Love wave:**

These are the fastest surface waves, which produces entirely the horizontal motion.

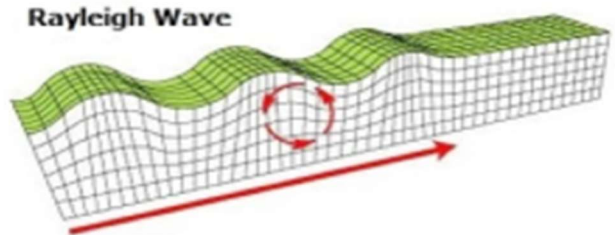
- During the propagation of the wave, the ground moves side to side in a horizontal plane but perpendicular to the direction of propagation of wave.
- This wave particularly damages the foundation of the structure and cause horizontal shearing of the ground.
- This cannot propagate through liquids.



ii. **Rayleigh Wave:**

The wave produces up and down, and side to side, movement of the ground in the same direction along which the wave is moving. Like ripples in sea or ocean.

- The wave moves in both vertical and horizontal plane pointing direction of wave propagation.
- Much of the shaking of the ground is felt due to this wave.



- ✓ Surface waves are the destructive wave (as they travel on the surface of earth)
- ✓ Love wave is the most destructive wave.

GORKHA EARTHQUAKE

Nepal is a seismically active region situated between Indian and Eurasian plates of the world where a devastating earthquake has occurred in the past.

In April 25 2015, Earthquake struck in Nepal with a magnitude of 7.8 Mw at 11:56 AM local time with epicenter at **Barpak, Gorkha**. The earthquake was 28.230°N and 84.731°E at depth about 8.2Km. This was later named “**Gorkha earthquake**”. This killed nearly 9000 people and injured nearly 22000.

The main shock was followed by two large **aftershocks** of Mw 6.7 (on 26 April 2015) and Mw 7.3 (on 12 May)

According to USGS (United States Geological Survey), **Gorkha earthquake** was caused by a sudden thrust, or release of built up stress along the major fault line where **Indian plate** is slowly diving **underneath** the **Eurasian plate**.

- Gorkha earthquake destroyed many buildings and infrastructure in urban and rural areas.
- Numerous landslides and rock falls in the mountain areas, blocking roads and hampering rescue and recovery activities.