

To create a stationary wave using a rope, one end must be connected to a fixed point and the other end is made to vibrate continuously.

This initially gives rise to INCIDENT PROGRESSIVE WAVES . As they strike the fixed end , they get reflected in the opposite direction, giving rise to REFLECTED PROGRESSIVE WAVES.

The superposition of these two waves results in the formation of stationary waves. The incident and reflected waves have the same frequency, wavelength, amplitude and they are travelling in opposite directions. The wave produced is known as a STATIONARY or STANDING WAVE because the wave formed does NOT move in the direction of either the incident wave or the reflected wave.

In a stationary wave there are certain points know as nodal points or nodes (N) which exhibits zero displacement. Midway between two nodes are the anti nodal points or antinodes(A) which exhibits maximum displacement.