WIRE ROPE:- Wire rope consists of several strands twisted together like a helix. Each strand is likewise made of metal wires laid together like a helix. Initially wrought iron wires were used but today steel is the main material used for wire ropes.

PREFORMED WIRE ROPE:- Preformed wire rope is a rope whose wires and strands have been preshaped to conform to the curvature which they take in finished rope. Preforming eliminates the locked up stress and strain existing in non-preformed wire rope, prevents the rope from flying apart when cut or broken and resists kinking. Preforming helps to eliminate the tendency of a rope to rotate about its own axis. Preformed wire rope is more easily spliced since the strands fit perfectly into place. However, owing to the permanent helical shape of the strands, the technique of tucking the ends differs from that of non-preformed wire rope. This type of wire rope is designed to give extra life when used for operating ropes, particularly when used over small sheaves and when operating with small safety factors Performing is of greatest value when normal failures occur through fatigue. Preformed wire rope is of no advantage when used as standing rigging, or in applications where the chief cause of failure is abrasion or corrosion. In preformed wire rope, the internal stress has been eliminated and the rope is "at rest". Preforming makes the individual wires & strands lie down to fit ~~down~~ the rope. When individual wires are pulled away from a preformed cable, they hold the wavy shape into which they have been preset during manufacture. Field experience has proved that one of the greatest advantages of preformed wire, next to being cut is the increased bending-life property.

ADVANTAGES:- Preformed ropes have the following merits as compared with non-preformed ropes:-

A) Does not require seizing as they retain the rope structure.

B) Superior flexibility compared to non-preformed ropes & wires ropes Kinks scarcely ever occur during use.

longer life because preformed wire ropes have a great endurance to bending.

D) Broken wire ends do not protrude to injure workmen's hands, distort adjacent wires or cause wear to sheaves & drums.