

## Operations in a shuttle loom

The first operation in a shuttle loom is called shedding. This is where a gap is created in the warp so that the weft can go straight in through the gap. A hield frame is used to shed the warp, which only contains one yarn. So what happens is all the odd number warps would rise above the even number warps so that weft insertion could take place. The gap between the odd and even warps is known as the shed. There are three frames for odd warps and three frames for even warps.

The second operation is known as picking which is basically weft insertion. This is where the weft goes through the shed. A shuttle is used for picking which keeps going from one side to the other side of the fabric through the shed. The edge of the fabric is known as the selvedge, which is very strong, which is important so the fabric does not become frayed. There is a bristle inside of the shuttle, which stops the yarn becoming loose. This is important as if the yarn becomes loose it can lead to knots which would slow down the process. The area between the yarn and the fabric is known as cloth fell which is the point of fabric formation.

Beat up is the process where the weft gets pushed into the cloth fell. To do this a reed is needed. There are three to four ends in each dent, which are the gaps in each reed. Then what basically happens is that the ends get beat up into the fabric.

Section warping is a method of assembling yarns. To begin with warp yarns are wound onto a drum in parallel sections. Each section only contains a certain fraction of the finished warp. All the warp packages are placed in a frame known as the creel. It is important that all the threads have the same tension so they passed through individual tensioning devices. Then the warp threads pass through a detector. If the thread breaks or loses its tension the beaming on process will stop. The warp then goes into a leasing reed and then into a guide reed which sets the width of each section which then gets wound onto the winding drum. At the end of each section a lease is placed in the warp to keep all the yarns separate from each other. After each section is wound on the yarns are cut and the yarn tails are tucked in so they don't get attached to the machine during other beaming operations. The beaming process is complete when the required numbers of sections are assembled onto the drum. After all this is completed the tails from each section are attached to the weavers beam and the beam is then rotated to draw off the warp yarn from the drum as a complete sheet.

