HANDOUTS

Chapter 4

Chapter- 4

Shank & its design types

What is shank means?

Shank: - A shank is one of the most vital components in a shoe. In providing essential support for the arch of the shoe, it has to withstand heavy bending and stresses whilst maintaining alignment of forepart and heel throughout all the stresses of shoe's life.

The Shank is a metal strip that from part of the insole. It maintains the longitudinal arch of the foot. Generally shank is made of high grade carbon steel which is properly tempered in order to impart the required material properties. In ladies high heeled shoes, the shank is shaped in such a way that it extends into the heel. Dimensions of typical shank are 10 mm width x 1 mm thickness and length of 85, 95, 105 mm as per size of footwear.

4.1 Different types of Shank

Based on the type of material used, there are various material used for making shank. These are the following.

1. **Metal:** are manufactured from steel. Two thickness of steel are commonly used 1.2 mm and 1.42mm the first being the more common. These are available in two widths: 9.5 mm and 12.7 mm although other widths and thickness are used.

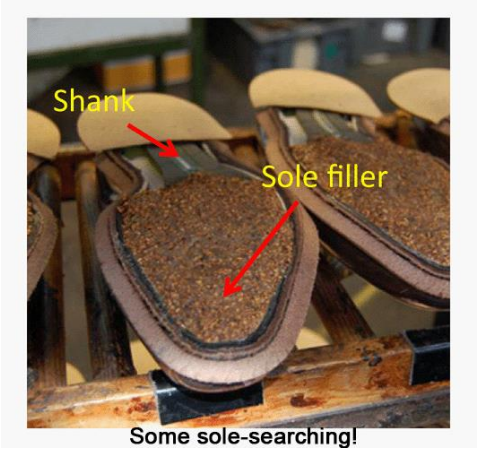
Shank length (mm)	Minimum Total Shank Depths (mm) for:	
	9.5 mm wide shanks	12.7 mm wide shank
Less than 50	2.18	1.22
50-74	2.82	2.18
75-99	3.40	2.82
100 and over	Not recommended	3.45

2. **Wood:** wooden shanks are not as strong as steel shank. But they are light in weight. Bamboo shanks are also used for a low heel shoes. In welted footwear a special board wooden shank is used which ultimately covers the space between welt ribs, doing an important job both filler and a shank. Wooden shanks are skived to give a tapered edge at each end and along the side.

3. **Plastic:** the plastic shanks are the edition among the shank materials. It is generally used for the PVC unit soles. The shanks are made from polystyrene or polypropylene injection moldings. It is hard plastic but less inflexible than wood or steel shank.

4.2. Importance of shank

Shank is one type of bottom component that can be used for shoe. The basic importance of shank is used to distribute the load of the body and give comfort to our body and keep the durability of the shoe. It inserted between insole and shank board (half insole).



4.3. Method of shank attachment

Procedures of attaching shank are:-

1. **Selecting the shank (in this step answer the shank types, which material shank does you prefer?)**

Note: The following points to observe when selecting the steel shank.

a. The shank is the correct width and length and thickness.

b. Shank is fitted 1mm back from highest point.

c. Shank follows the bottom profile of the last. Specify shank by angle.

d. Shank should end 20 mm under seat of heel.

e. Fill all the relevant details in on a sample card.

2. **Prepare all required rivet, molded insole and grooved shank board.**
3. **Placing shank steel on grooved area and rivet it**
4. **Cementing shank board on the areas of shank steel and also cementing molded insole on the back sides**
5. **Keep dwell time 15min.**
6. **Then placing insole and shank board.**
7. **Finally check the quality and write information on it.**

End of chapter four