

ROLL FORMING - "Lock-Joint and Lipped Tubes"

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Mr. A S Shetty

In this fourth series of continuing articles on ROLL FORMING we will discuss about the various types of LOCK-JOINTED tubes by roll forming method. During the initial period of development of roll forming technology mostly open types of sections were produced. Gradually the future trend is moving in the direction of closed type of sections which have the highest strength to weight ratio.



FIG.1

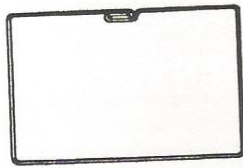


FIG.2



FIG.3

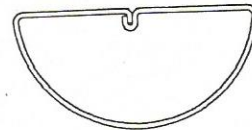


FIG.4

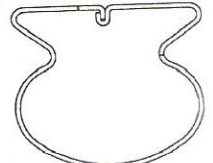


FIG.5

Even different shaped closed sections other than round tubes could also be roll formed and welded. We will discuss about these later in our forthcoming series of articles. Presently we will discuss about non-welded i.e lock-jointed closed sections.

It is a known fact in the theory of strength of materials that once it is in a fully closed shape the strength/rigidity of the section goes up enormously as compared to open sections of the same weight. Another advantage of lock-jointing is to make use of pre-coated/painted strips as starting material. Welding of pre-coated strip material will burn off the coating material and hence the need for lock-jointing.



FIG.7



FIG.8

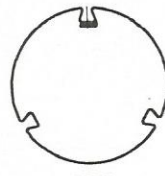


FIG.6

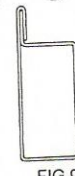


FIG.9

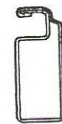


FIG.10

etc.

& 4 like rectangles squares, D-shaped sections apart from round tubes Staircase Railing sections could be produced as shown in Figure 4 & 5. Lock-Jointed closed sections with dove tails shaped hollows as shown in Figure 6 & 7 have wide range of applications. Smaller version of the lock-jointed tubes as shown in Figure 1 are used as lancing tubes filled with alloying elements in powder form by steel foundries.

LIPPED TUBES: Another variation of Lock-Jointed tubes which are also called lipped tubes as shown in Figure 8 & 9 find applications in window shutter making, manufacture of cots, frames for hoardings, gates etc.

Apart from imparting higher strength the lips help to support glasses, sign-boards etc. In the case of cot making the lip portion could be used to make drilled holes to fix springs. The lip could also be bent to shape as shown in Figure 10 to produce frame sections for fixing fibreglass mosquito nets.

Mr. A S Shetty can be contacted at 080-2545 2952 and email at sedvik@vsnl.com

There are still some other areas like curtain rods, office-interior sections, handles for vacuum cleaners etc, where no inside liquids or gases are involved lock-joint tubes could be used. Because there is no costly welding process involved and also thinner thickness pre-coated or galvanized material could be used it becomes more economical than welded tubes. For the same outside diameter welded tubes require thicker strip material than lock-jointed tubes.

Among the continuing in house development if newer types of roll formed sections by M/s Sedvik Industries, Bangalore who are pioneers in the manufacture of roll forming

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