

# ROLL FORMING

## “CURVED SECTIONS”

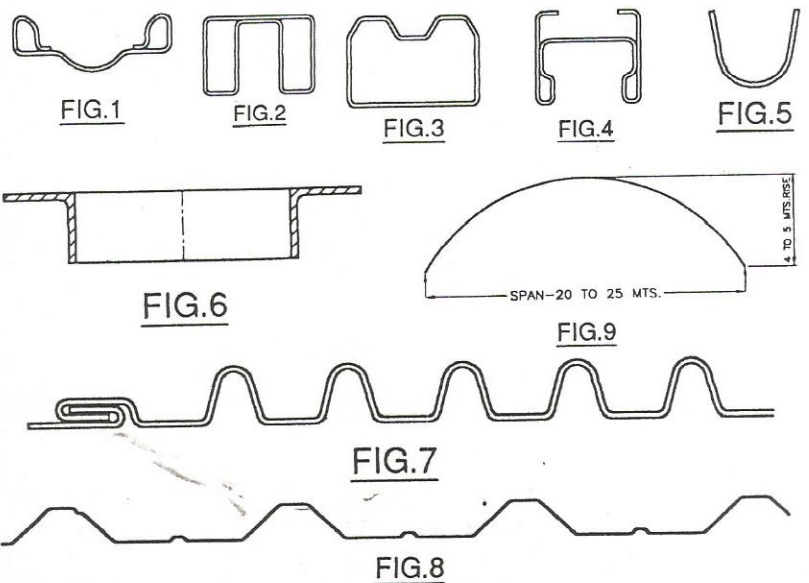
A S Shetty

In this ninth series of continuing articles on Rollforming we will discuss about the various types of curved rollformed sections. It is generally believed that ROLLFORMING can be done only to produce straight sections. In fact, by introducing a properly designed deflector roll system curved sections could be continuously produced on line. There is no need to produce straight sections first and subsequently bend to the required radius.

The requirement is that the basic shape should have an uniform radius. The most popular curved sections are- Cycle, motor cycle Rims and Mudguards. Some of the typical cross sections are shown in Fig.1. They leave the rollforming machine as spiral or cut to the desired fixed length. Both methods have their advantage. The spiral is taken and cut off after 2-30 turns. The desired length can then be cut off on a manual operating station equipped with a blanking punch.

This somewhat labour-intensive method of production minimizes investment costs. The reverse applies to a plant in which fixed length are automatically cut directly after forming and curving. Full automation provides a higher output and dispenses with the need for manually operating stations and the intermediate stores which they require. The other area of curved rollformed sections are automobile bumpers as shown in Fig.2 & 3 and automobile sash sections as shown in Fig.4. One more area is forming of Ring sections which are used in the area of washing machines, stiffener rings for automobile head light assemblies, containers etc. Typical sections are shown in Fig.5 & 6. There is great economy achieved in making rings as shown in Fig.6 by rollformed method.

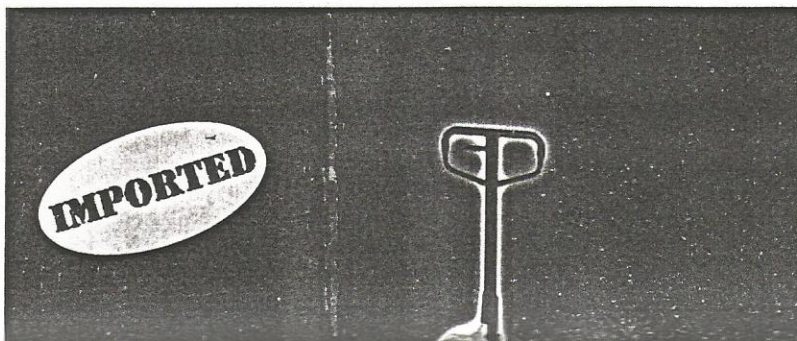
Earlier, these types of rings used to be produced on a deep drawing press using costly EDD/DD quality strip, punching out the inner hole and the outer part. The ring is spirally produced and the cut ends flash butt welded. There is practically no scrap and the costly EDD/DD quality strip is not required for rollforming but only D quality strip could be used. Further area is the production of Helitubes used for ventilation ducting, voidformers and tendon sheathing in reinforced concrete construction, piling



sleeves etc as shown in Fig.7. Here the coil strip is helically fed forming a continuous lock-joint tube. The advantage here is that using a single width strip any diameter tube can be formed. The most recent and the interesting area with high growth potential of rollforming of curved sections is CURVED CORRUGATED ROOF SECTIONS. Here the building are designed to resemble aircraft hangers from ground level (as shown in Fig.9). Roofing sheets of shapes similar to as shown in Fig.8 are rollformed to the required curved shape straight from the rollforming machine at the project site itself.

They are used for covering warehouse/Bulk storage areas for a single span of 20 to 30 Meters. They are also used to cover modular gymnasiums convention halls etc. There are many more areas where this roofing concept can be used. Mobile rollforming machines with coiled stock mounted on the machine are brought to the construction site and the required long sections are produced without causing any damage to the material during transit and also saving on enormous transport and installation cost.

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