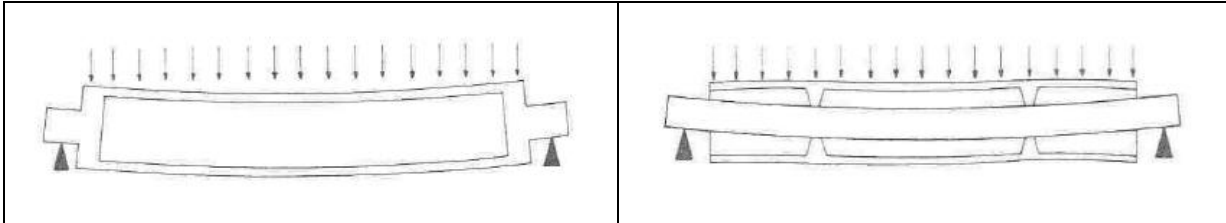


# **BETA PATENTED ROLLS** **FOR PADDERS**



OLD TRADITIONAL  
ROLLS

BETA PATENTED  
EQUIPRESSURE ROLLS

The old traditional roll construction is obtained by a tube with two welded supporting pins at its tips: the external working pressure acts directly on the tube surface. In this way the roll bends under this load, the deflection is high and the resulting distribution of contact pressure is not even along the roll span and this leads to bad and not uniform final effects of treatment.

In order to avoid these problems, the ideal solution consists in keeping the pressure distribution as uniform as possible along all the roll's sections and this can be achieved by minimizing the deflections due to bending loads.

With this important target, BETA was the first manufacturer, nearly 50 years ago, to introduce a revolutionary Patent concerning the padder rolls: this Patent regards the working pressure distribution, by making it regular and perfectly even and uniform along the whole roll span. For this reason the padder rolls equipped with this patent were called equipressure padder rolls and the residual deflection of these BETA rolls under maximum load is about one hundred times lower than deflection of traditional rolls.

This Patent, now expired, was a complete revolution in the padders' world where only old traditional rolls were used, and it was such an extraordinary invention that it has been copied by all padder manufacturers.

The BETA Patented equipressure roll consists in a simple mechanical system, unlike complicated systems produced by other manufacturers, and requires very low maintenance, thus drastically reducing machine's operating costs.

The BETA Patented roll consists in an assembly of two main items: the internal steel axle and the external tube (normally this is a rubber-coated tube).

The external tube is supported by two oscillating bearings placed on the axle and, in case of driven roll, has an internal gear to couple the axle to the external tube (so that rotation can be transmitted from pulleys fixed on axle's ends to the rubber-coated tube).

---

**Officina Meccanica BETA**

Via Edison, 1/3 – 20025 Legnano (MI) – Italy

Tel. 0331-595300 Fax 0331-547491 E-mail [info@betaspa.com](mailto:info@betaspa.com) Website [www.betaspa.com](http://www.betaspa.com)

When working load is applied, the resulting deflection is therefore reacted by the axle which deflects, while the internal oscillating bearings follow the axle deflection thus allowing the external tube's surfaces to remain plain with absolutely negligible residual deflection: the final pressure distribution is therefore perfectly even and constant along the whole roll span thus leading to the best results in the uniformity of treatment with respect to the high deflections of the traditional roll construction.

Some manufacturers adopting traditional rolls have to produce crown rolls (larger diameter at the centreline and smaller diameter towards tips) in order to partially compensate for the bending. In this way, the padder works correctly only at the design pressure where the deflections are compensated: but at different pressure values the deflection is not compensated anymore and the problem remains unchanged because the pressure distribution is not even.

Instead, the equipressure rolls of BETA padders are all parallel ground (same diameter for any section) and this is obviously a great contribute to achieve a perfectly even load distribution at any working pressure value (from zero to the maximum).

The use of padders equipped with BETA Patented rolls is therefore much more flexible compared to padders with traditional and crown rolls because it allows to face each treatment and each working pressure while maintaining the best precision and uniformity of pressure distribution with the best final results on fabrics.

BETA rolls for padders can work from zero to max load (up to 100N/mm) always maintaining a negligible deflection on the centreline while BETA competitors with their traditional or crown rolls are forced to work with lower pressure load (max 50N/mm).

---

## **Officina Meccanica BETA**

Via Edison, 1/3 – 20025 Legnano (MI) – Italy

Tel. 0331-595300 Fax 0331-547491 E-mail [info@betaspa.com](mailto:info@betaspa.com) Website [www.betaspa.com](http://www.betaspa.com)