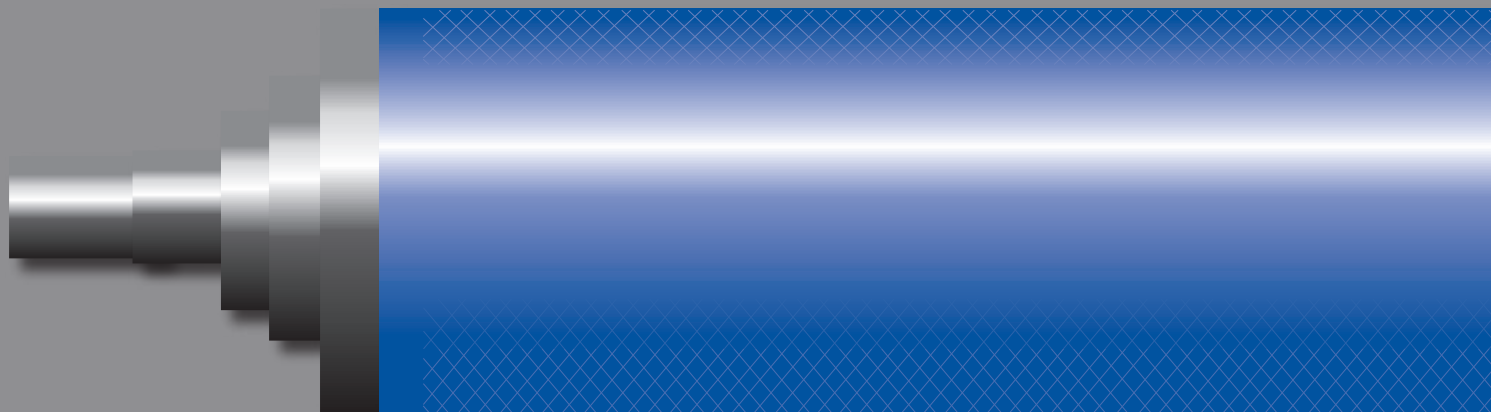


Incorporating



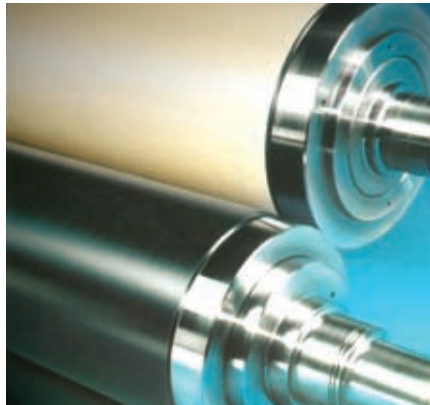
World Leaders in Calender Roll Manufacture for over 200 years

Richard Hough Limited (incorporating David Bentley) manufactures a specialist range of high quality rolls for embossing.

Industry leading manufacturing facilities and the unrivalled experience and expertise of Richard Hough Limited and David Bentley ensure optimum roll quality and performance.

The highest manufacturing standards are maintained in compliance with a fully documented quality system covering every stage of roll production.

Richard Hough Limited regularly supply specialist rolls for embossing to customers in over 30 countries worldwide, and offer a high level of technical support on all aspects of roll use.



Typical Embossing Applications

- Papers
- Board
- Wallcoverings
- Serviettes
- Tissue
- Foils
- Metallised Papers
- Book Cloth
- Leather Cloth
- Vinyls
- Plastics
- Films
- Textile fabrics
- Non-wovens

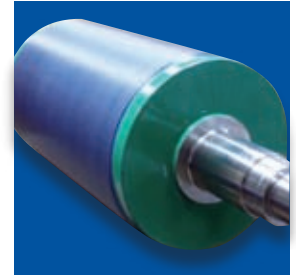
Embossing Backing Rolls

Fibre filled backing rolls represent the best performing and most cost effective alternative for the majority of embossing applications today:



Woolen Paper

- Cotton and wool paper based cover of a pressed construction
- Wool content (10-45%) and hardness can be varied to suit the application
- Conforms to the engraved steel roll to give a precise emboss
- Suitable for fine or deep designs
- Geared and un-geared applications



Woolen Paper

Superelastic

- 100% woven cotton based cover of a pressed construction
- Suitable for fine designs (under 1mm pattern depth)
- Greatly reduced run-in time
- Shallow patterns can be run over each other without the need for regrinding (ideal for Turret Embossers)
- Highly resilient – minor damage marks recover easily
- Less machining means longer roll life and reduced downtime
- Geared and un-geared applications
- Increased roll life and improved productivity over traditional Woollen Paper rolls



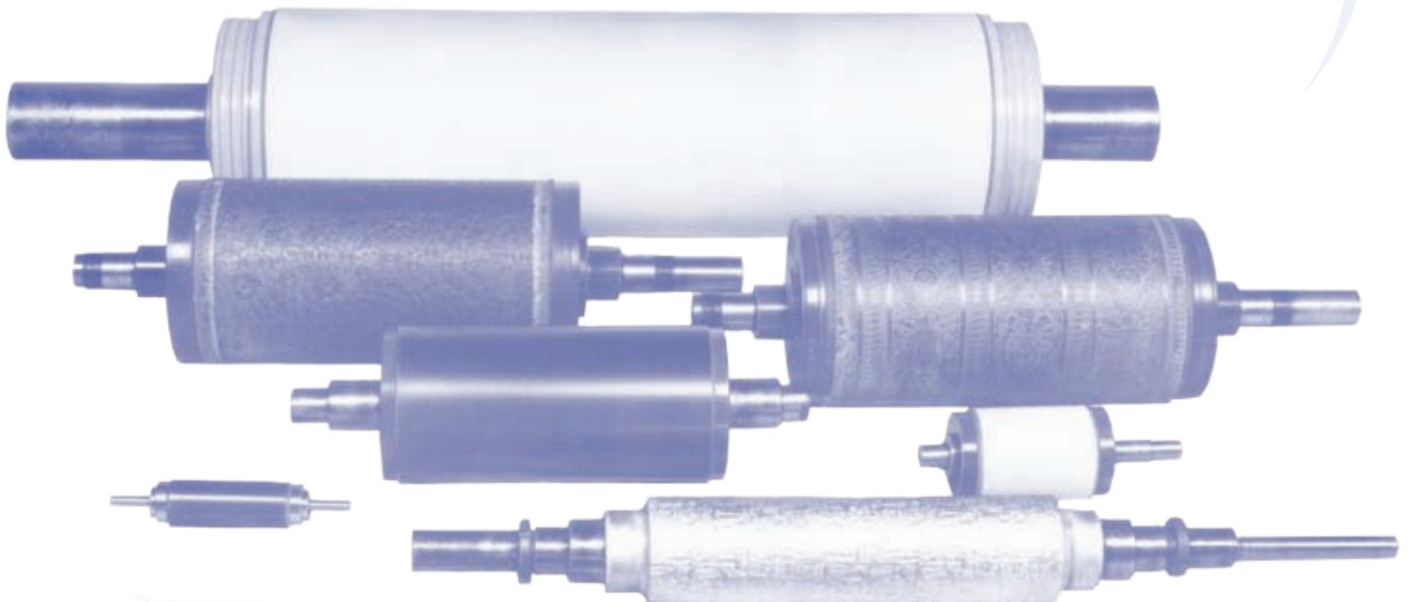
Superelastic

Steel Rolls

- Steel roll blanks for engraving
- Steel rolls for embossing calenders

Grinding Services

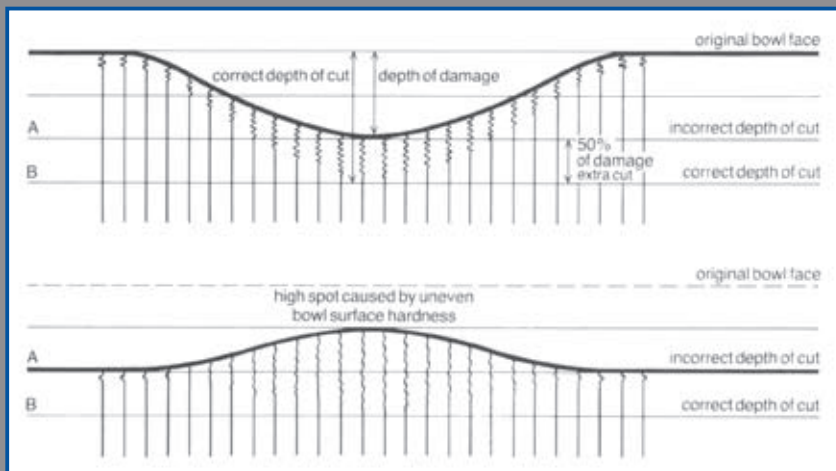
- Specialist grinding service for embossing rolls
- Precision parabolic camber grinding
- High accuracy roll profile measuring service



Running-in Guidelines

- Ensure correct 'running-in allowance' for geared applications (typically + 5-18 mm circumference depending on pattern depth).
- Ensure that the rolls are nipping evenly.
- Commence running under light pressure and apply water sparingly to the filled roll surface using a sponge.
- Gradually increase the pressure whilst continuing to wet the filled roll surface.
- When the pattern is near to final depth, continue running without water to allow the surface to dry off and harden.
- Run material samples through the nip. Make adjustments as necessary to achieve a satisfactory emboss.
- Running-in time will vary depending on the application and the filling material. Typically ½ - 1 hour for Superelastic, 6 - 8 hours+ for Woollen Paper.
- In geared applications, line pressure during production can often be reduced by up to 30% less than the running-in pressure.
- If the filled roll becomes damaged, marks can often be removed by repeating the running-in procedure. Severe marking should be removed by re-machining.

Guidelines for material removal during re-machining



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