

SYNCAST™

Syncast™ Polyamide Rolls for Geotextile Calenders

Syncast™ Polyamide calender rolls from RHL are a high performance alternative to conventional Blue Denim rolls for Geotextile calendering.

Excellent resistance to surface damage and edge marking ensure greatly reduced web defects, maximised production output, and long roll service life.

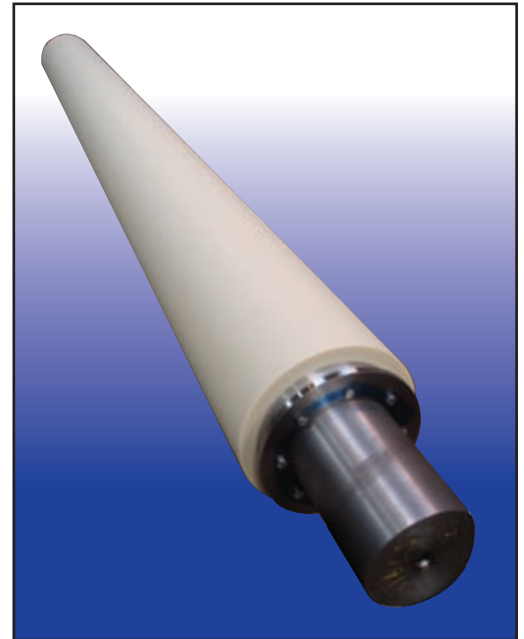
Syncast™ can be supplied as a complete new roll or can be fitted as a replacement cover to an existing polyamide roll. Alternatively Syncast™ covers can be fitted over an existing Blue Denim roll.

Construction

Syncast™ is a uniquely elastic, thermoplastic polymer that has been specially developed for textile calendering rolls. Roll covers of over 7m (280") face length and up to 1.25m (50") diameter can be manufactured utilising the largest centrifugal casting capacity in the industry.

Syncast™ roll covers are centrifugally cast guaranteeing perfect quality due to the exceptionally high revolving speed (2000rpm) utilised in the casting process. This high speed 'spin casting' ensures the expulsion of all air bubbles and impurities from the cover. Then natural atmospheric cooling of the cast polymer in the moulding process ensures the maximum reaction time, allowing longer molecules to form.

The optimised molecule length gives the Syncast™ calender roll cover excellent elasticity and mark recovery, with minimum shape distortion. This results in excellent run-ability in the calender and maximum service life. Internal stresses are minimised in the Syncast™ calender roll cover as it is produced at temperatures below the melting point of the polymer. Syncast™ calender roll covers are finally fully annealed and ultrasonically checked, guaranteeing optimum quality and performance.



Spin-Casting vs Extrusion

In contrast to Syncast™ which is centrifugally cast, other Polyamide covers marketed for Geotextile calenders are an extruded construction, limiting cover quality and roll specification.

With extruded covers, internal stresses reach 10x that of centrifugally cast covers due to the extremely high formation temperatures (350c). In addition, the granulate polymer raw material used for extruded covers is melted and rapidly cooled at least twice in the extrusion process. This sets up large internal stresses and results in the shortening of molecule length.

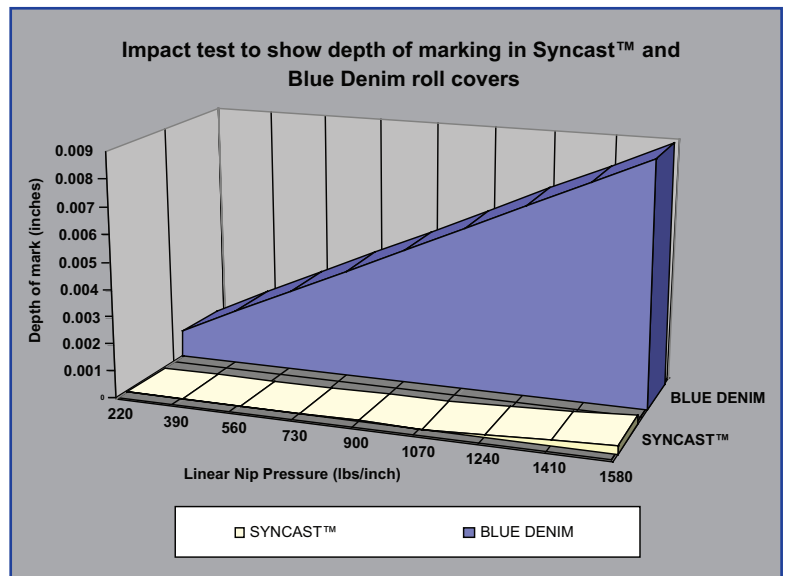
Extrusion also involves the cutting and bending of the polymers which shortens the molecules and increases inner stress. Shorter molecules mean reduced elasticity and mark recovery and internal stress can lead to calender roll cover profile distortion. Also extruded calender roll covers can only be produced in one diameter (approx 500mm / 19.6”), with resultant calender design constraints.

Syncast™ vs Blue Denim

The Syncast™ cover has a much greater elasticity than ‘Blue Denim’. This means that surface damage and edge marking are significantly reduced which in turn reduces quality defects and maximises production output.

Figure I demonstrates the reduction in surface marking of Syncast™ roll covers compared to Blue Denim Paper filled rolls. Reduced surface marking also means reduced maintenance and significantly improved service life compared to Blue Denim.

Figure I



Syncast™ Benefits

- Syncast™ covers can be spun cast up to 7m (280”) long x 1.25m (50” diameter) allowing for maximum flexibility of Geotextile machine design.
- High elasticity of Syncast™ results in excellent resistance to surface damage and edge marking
- Reduced quality defects and maximised output
- Minimised roll maintenance and significantly increased roll service life
- Low internal stresses promote excellent run-ability and avoid vibration and noise in the calender
- Syncast™ can be fitted over existing blue denim roll covers, enabling cost effective upgrade to existing Geotextile calenders