



Precision Rollers You Can Rely On™

September 2013

TruShape™ Roll Analysis for Roll 1210.5828

Customer: [name removed]

Concerning: Roll Geometry Inspection for New Cover & Grind Produced by [name removed]

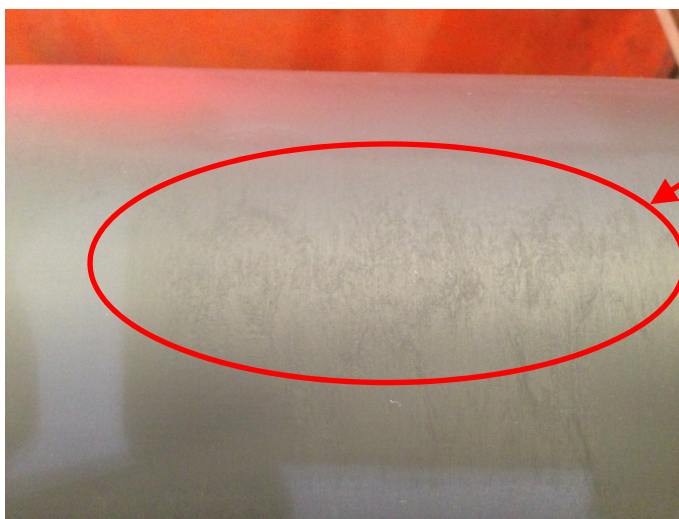
Author: Stephen Huff, Director of Engineering and Technology

Background:

Imperial Rubber Products was asked to inspect the geometry of a new cover and its grind produced by [company name removed]. Roll # 1210.5828 was inspected with the TruShape™ optical micrometer, non-contact measuring system. The purpose of this inspection was to understand what the roll's geometry was before it was put into production.

Findings:

Before performing the TruShape™ inspection, the inspector wiped down the entire surface of the roll to check for any surface irregularities. Immediately, the surface finish stood out as a problem. Marble-like formations were visible throughout the entire surface. This phenomenon is usually attributed to layers of a calendar build process that have not properly knit together in the vulcanization process. The marbled patches not only were visible but also consisted of texture differences.



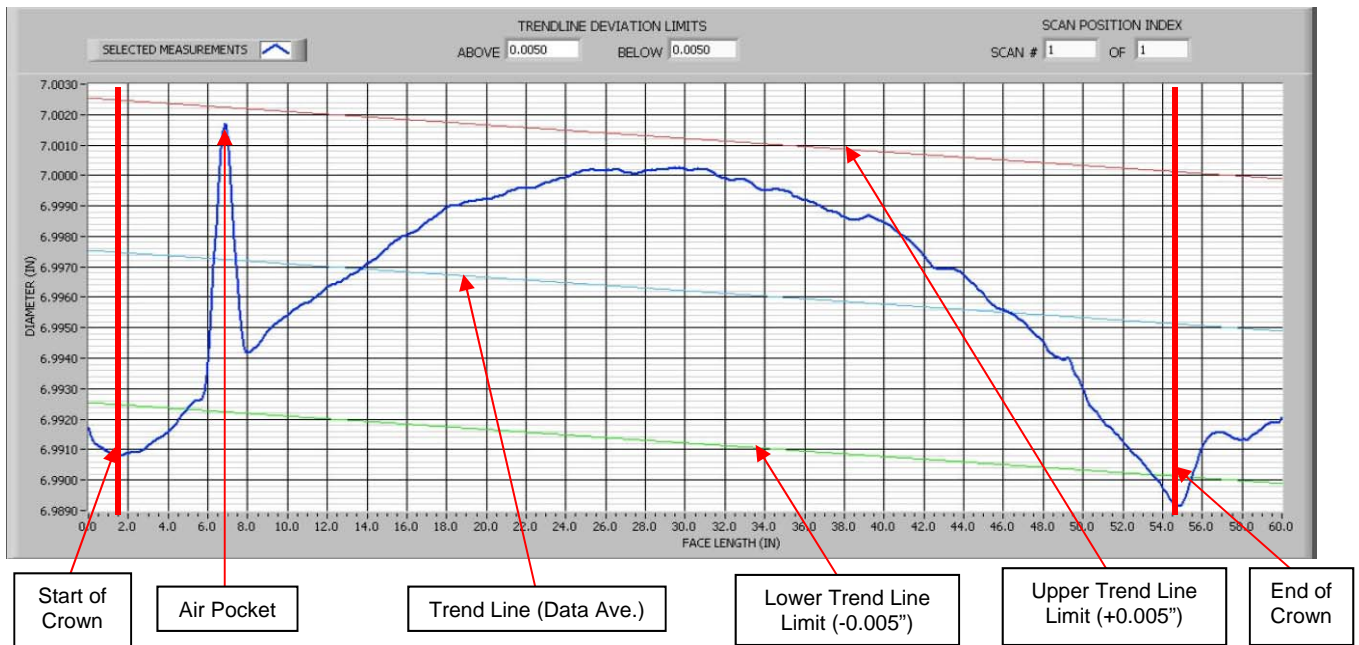
MARBLE-LIKE FORMATIONS
VISIBLE ON ROLL SERVICE,
USUALLY DUE TO IMPROPER
CALENDAR BUILD AND
VULCANIZATION.

While wiping the surface, the inspector also discovered two large air pockets in the cover. These bubbles of trapped air below the surface move differently than the rest of the cover usually leading to process issues with the web.



AIR POCKET LOCATION

The diameter scan for roll #1210.5828 is pictured below:





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At first glance, the crown looks good. However, upon closer inspection, a large peak at about 7 inches in from the start is visible. This peak coincided with the large air cell that was discovered. Other points worth mentioning include an overall taper in the shape of 0.003", a crown start at nearly 2 inches from the leading edge of the roll, and a crown end at about 3.5 inches from the end of the roll with a "gutter" occurring at 54.5" that could lead to uneven squeegeeing.

Conclusions:

Squeegee roll #1210.5828 was inspected by Imperial Rubber Products to record the roll's geometry before it was put into service. While the roll does have a crown of approximately 0.010", there are several problems with the roll. The roll surface has marbling and varied textures throughout the cover. Grinding wheel trailing lines are visible in the finish and most importantly, there are several air pockets trapped in the cover.

The geometry of the roll is off with a 0.003" overall taper to the shape and a crown start and stop that are not symmetrical to the working face. Finally, a dip or "gutter" is present on one of the ends that will prevent the squeegee roll from properly squeegeeing.

Sincerely,

Stephen Huff
Director of Engineering and Technology
Imperial Rubber Products, Inc.