



### **Cascades Tissue Group Success Story**



#### **The Challenge: Emergency Roll Repair**

As with any large piece of production equipment that runs practically non-stop for years at a time, unexpected failures can occur and tissue paper machines are no exception. Bearings, couplings, bolts, rolls, cables, felts and more can wear and fail, causing costly downtime and loss of productivity.

When a cable for the lifting mechanism on the tending side of the breast roll of the tissue machine at Cascades Tissue Group in Memphis, TN, broke, the breast roll fell and hit another roll which dented the shell of the breast roll.

Cascades decided to remove the roll and send to a roll repair center where the damage to the roll and any damage to the journals could be determined. The roll repair center ran an initial inspection and found that the journals were not damaged, but there was a significant dent in the breast roll shell.

With their spare breast roll out for repair during this same time period and a new breast roll shell costing upwards of \$370,000 – plus the cost of 12 to 14 weeks of extended machine downtime while waiting on a new shell – Cascades elected to have the roll repair center attempt to remove the dent. In order to repair the damage, the roll repair center would have to use a hydraulic ram to remove the dent by pushing outward on the shell. Since they could not guarantee that the shell would not crack or that other deformities would not occur, the roll repair center elected to not attempt it.

Cascades then stepped in and decided that they would remove the dent themselves while supervising the roll repair center technicians. After the dent was removed, Cascades decided to bring in a company that could measure the shell to determine the overall extent of the damage after the dent removal.

#### **Dimensional Metrology Services Needed: OASIS Called In**

Daniel Paradis, Paper Machine Specialist from Cascades Tissue Group in Candiatic, QC, Canada, contacted the OASIS Canadian Service Center in Montreal for help. Having worked with OASIS on many projects at several of the Cascades mills in the U.S. and Canada, Mr. Paradis has first-hand knowledge of the dimensional metrology capabilities of OASIS.

Because the crash occurred at the Cascades facility in Memphis, TN and the damaged roll was shipped to the roll repair center in West Monroe, LA. , the OASIS Service Center in Pensacola, FL was called to assist. Gary Arsenault, OASIS Metrology Engineer, traveled to the roll repair center within hours after receiving the call.

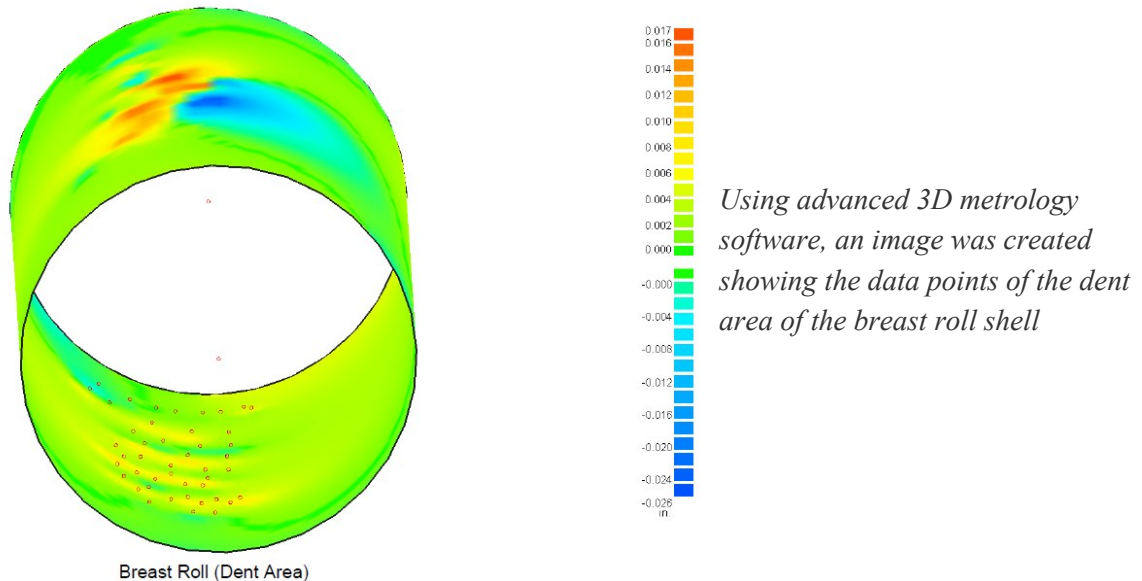
## Project Overview: Metrology Services

OASIS was asked to provide metrology services for:

- Concentricity and cylindricity inspections of the inside diameter of the breast roll shell after repairs performed at the roll repair center
- Alignment of the breast roll after reinstallation at the Cascades plant in Memphis, TN
- Alignment of the stretch roll in the wire section

## Roll Shop Measurements

Using a laser tracker (see Figure 1), Mr. Arsenault began by inspecting the inner diameter of the shell approximately three feet out on either side of the dent. Using this data, a best-fit cylinder was developed and the area of the dent was inspected. The inspections showed that the dent had been removed to within  $-0.026''$  to  $+0.017''$ . These results were determined to be acceptable.



## Results: Return on Investment

The tissue machine at Cascades in Memphis produces approximately 120 tons of tissue per day. With tissue selling at approximately \$350/ton, incurring 12 to 14 weeks of machine downtime due to the roll damage could have potentially cost Cascades over \$3M in revenue.

By repairing the dented breast roll shell quickly and avoiding weeks of machine downtime, Cascades was able to prevent a considerable hit to their bottom line.

***“The 3D Metrology Services from OASIS saved us weeks in downtime and thousands of dollars in lost productivity. Their fast response, plus their ability to quickly and accurately inspect the damaged breast roll was beyond what we could have hoped for. I highly recommend their services.”***

- - Daniel Paradis, Paper Machine Specialist, Cascades, Inc.