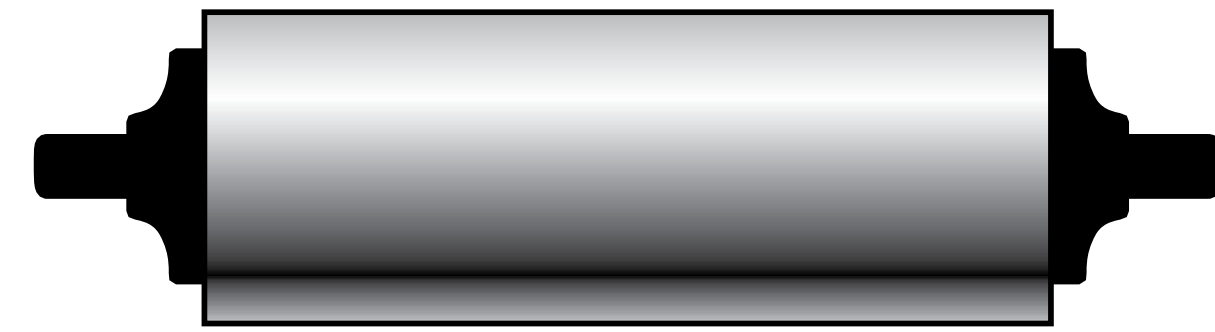


THE CASE FOR PRECISION GRINDING OF CALENDER ROLLS ON LINERBOARD MACHINES

PRECISION



ROLL GRINDERS

Over 50 years of value-added service

**WEBINAR
SERIES**

precisionrollgrinders.com

CALENDER ROLL PERFORMANCE ON LINERBOARD

It's just linerboard, I don't need that level of precision...

YES, YOU DO! LINERBOARD MACHINES NEED:



- **Strength (STFI/Ring Crush)**
 - ✓ Caliper variation directly correlates to strength variation
- **Good caliper control**
 - ✓ Building a good reel – reducing spool losses, improving winder runnability
- **Longer calender roll run life**
 - ✓ Reduced maintenance demand (time and people)
- **Also...**
 - Best in class smoothness, crowns in control, eliminating CD 'fixers'

CALENDER ROLL PERFORMANCE = STRENGTH

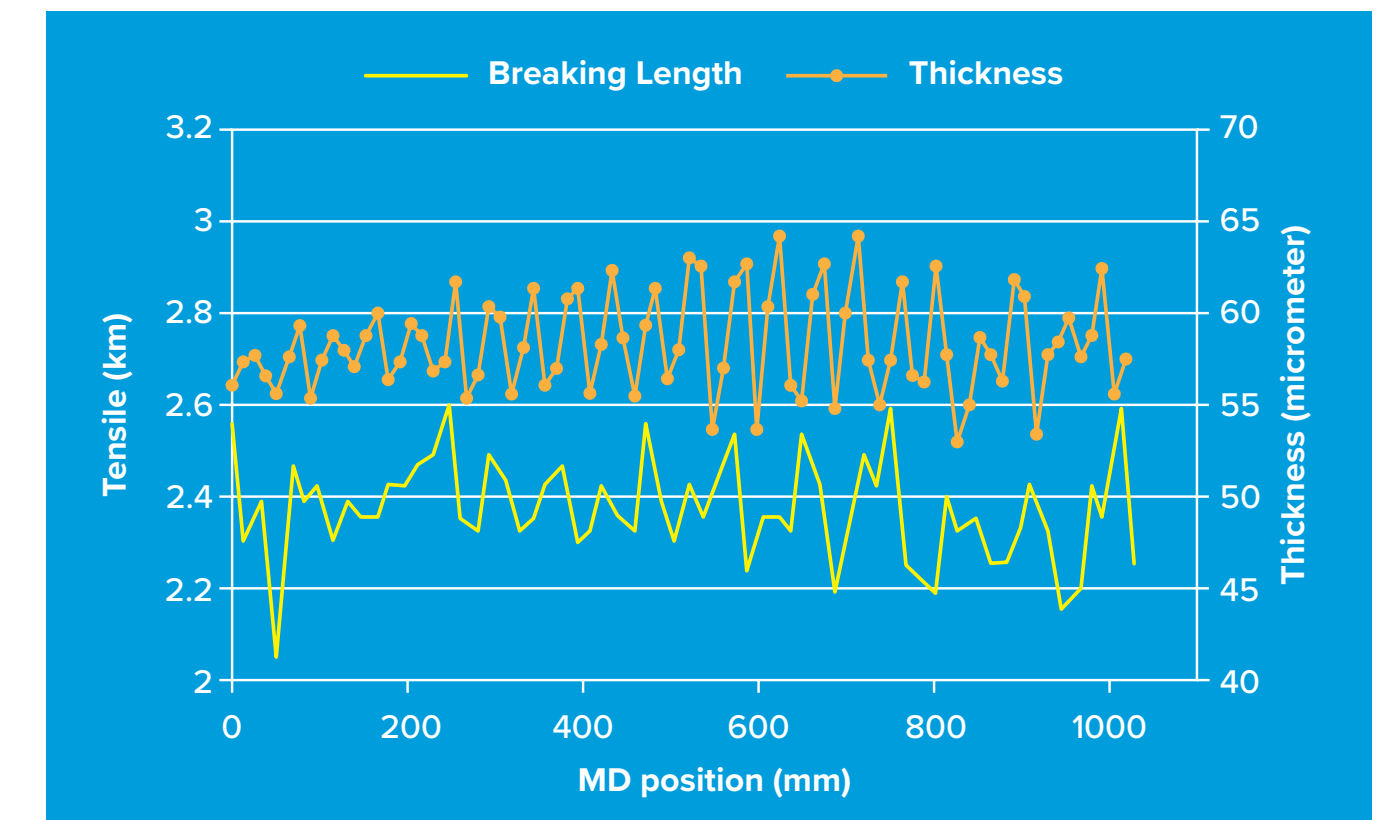
The reason for 0.0002" OEM roundness specification

CALENDER ROLL PERFORMANCE = CALIPER VARIATION PERFORMANCE

- Machine direction variation or barring



- This causes strength variation



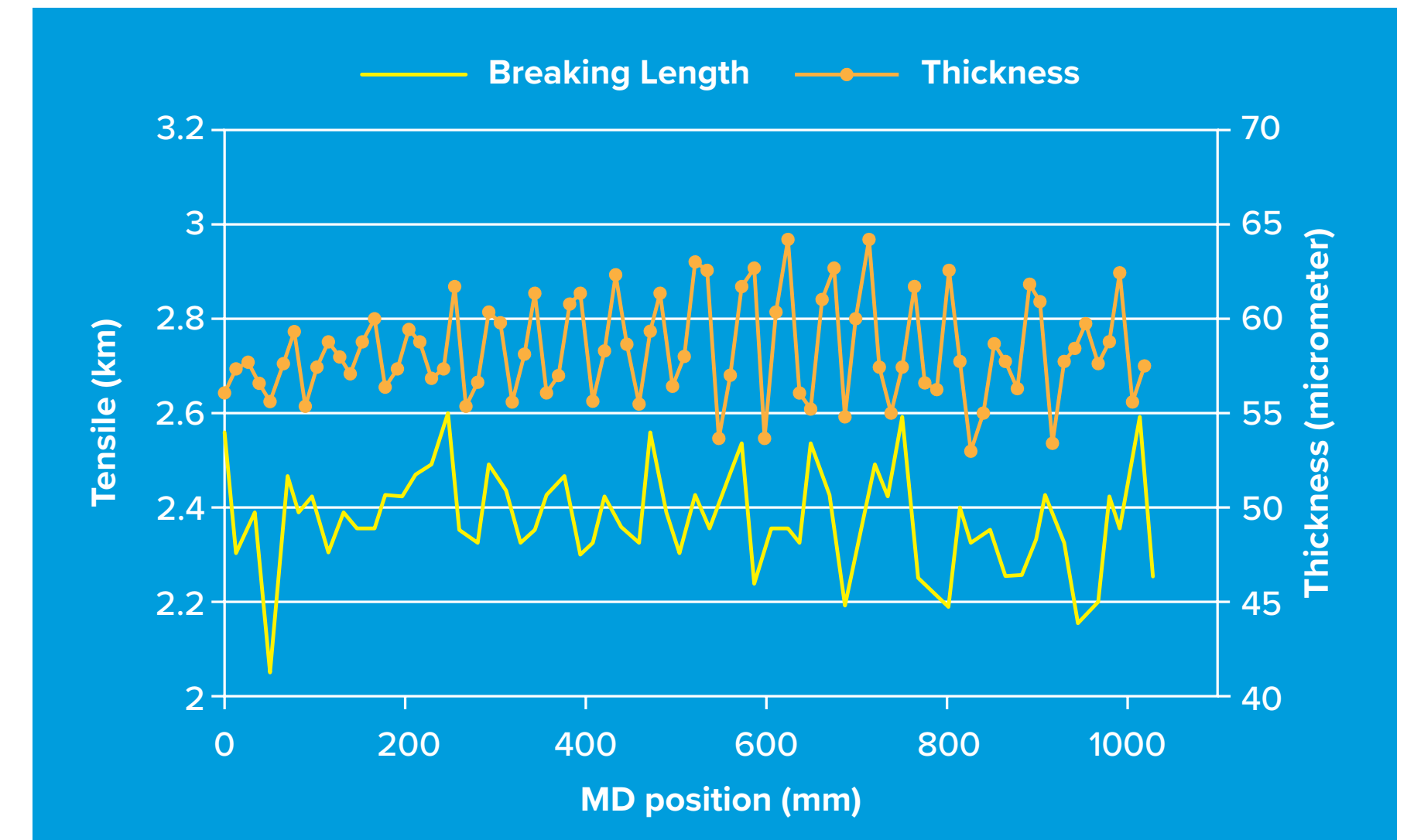
Caliper variation 5-10 um =
Strength variation of 20%
(FPInnovations Study)

CALENDER ROLL PERFORMANCE = STRENGTH

REAL WORLD CASE STUDY

STFI Variation Improvement of 54%

- Allowed for BWT Reduction of 0.2#/MSF
 - ✓ Potential speed increase
 - ✓ Potential fiber cost reduction
- Before PRG Calender Grinds: **3.7**
- After PRG Calender Grinds: **1.7**
- 54% Improvement led to BWT reduction 35.3# to 35.1# = **\$500,000/YR**

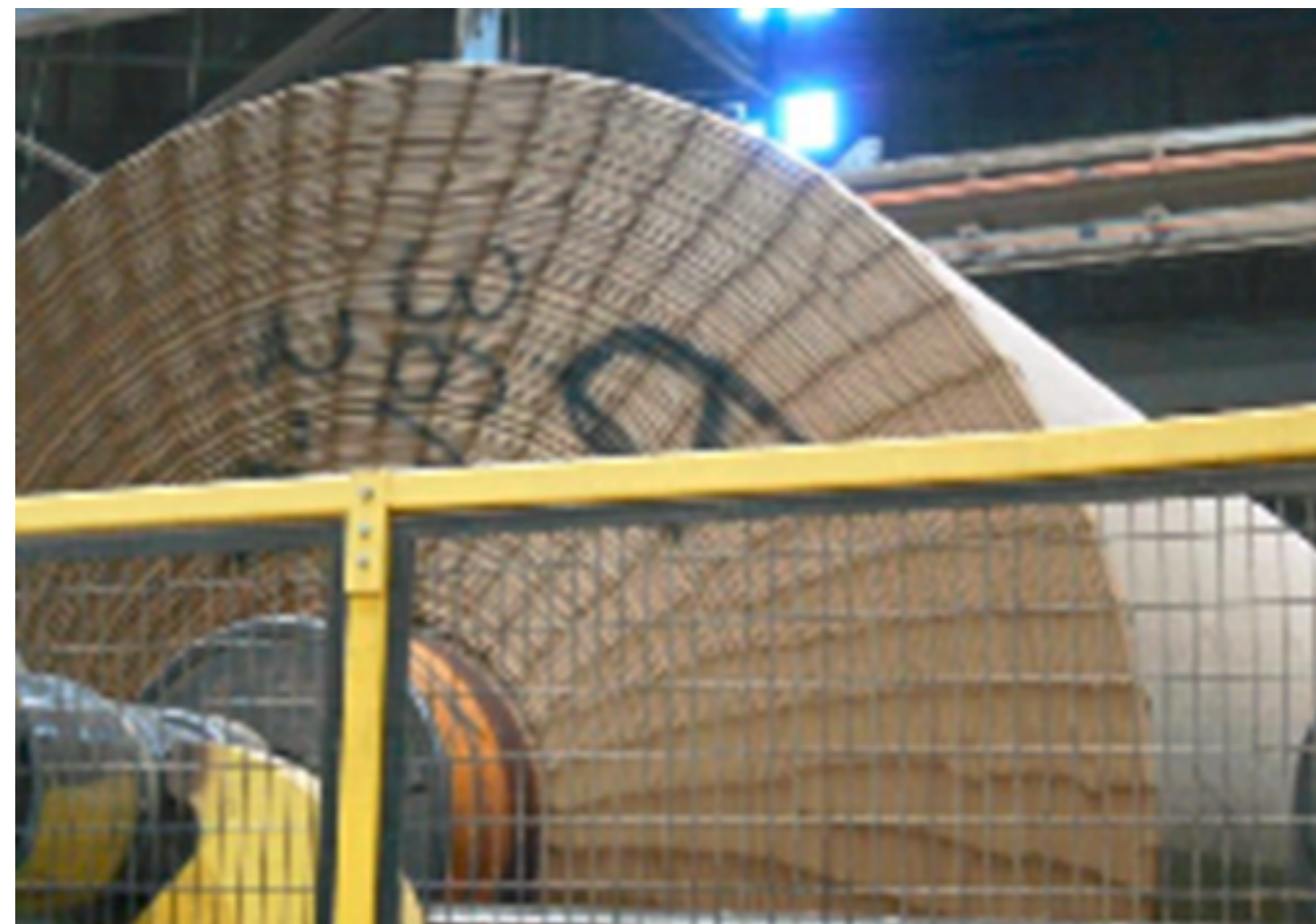


CALENDER ROLL PERFORMANCE = LESS SCRAP

The reason for 0.0002" OEM roundness specification

CALENDER ROLL PERFORMANCE = CALIPER VARIATION PERFORMANCE

- Machine direction variation or barring

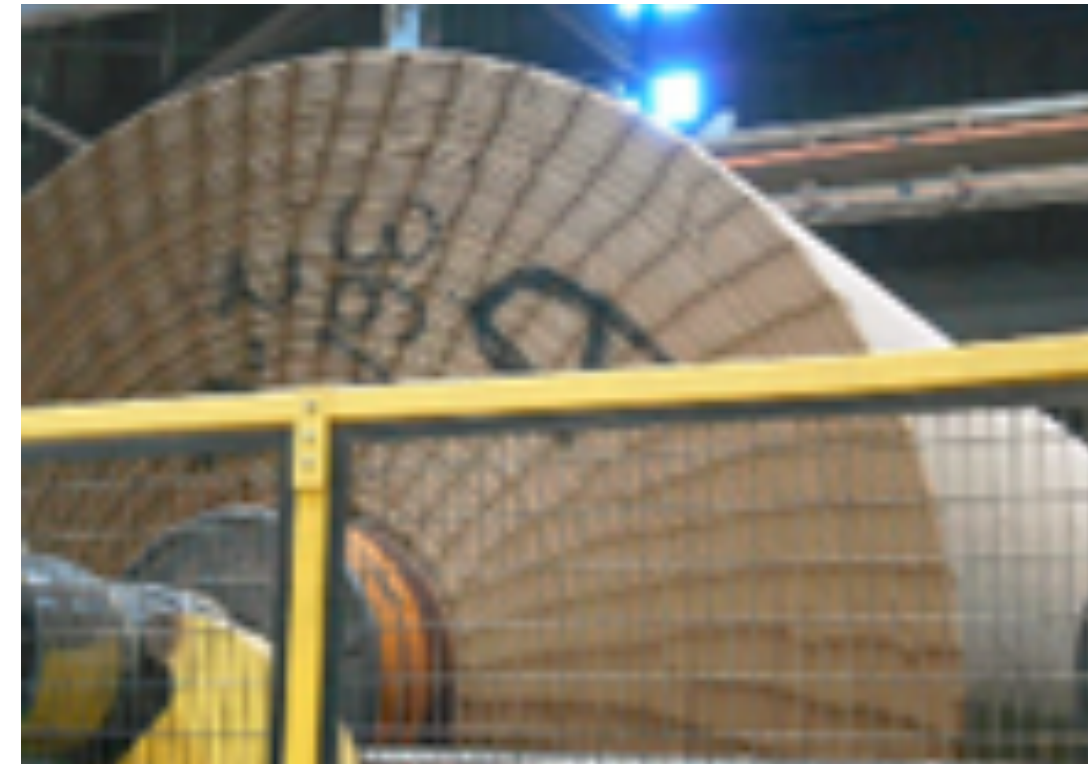


- This causes spool losses, winder runnability losses, sheet breaks

CALENDER ROLL PERFORMANCE = LESS SCRAP

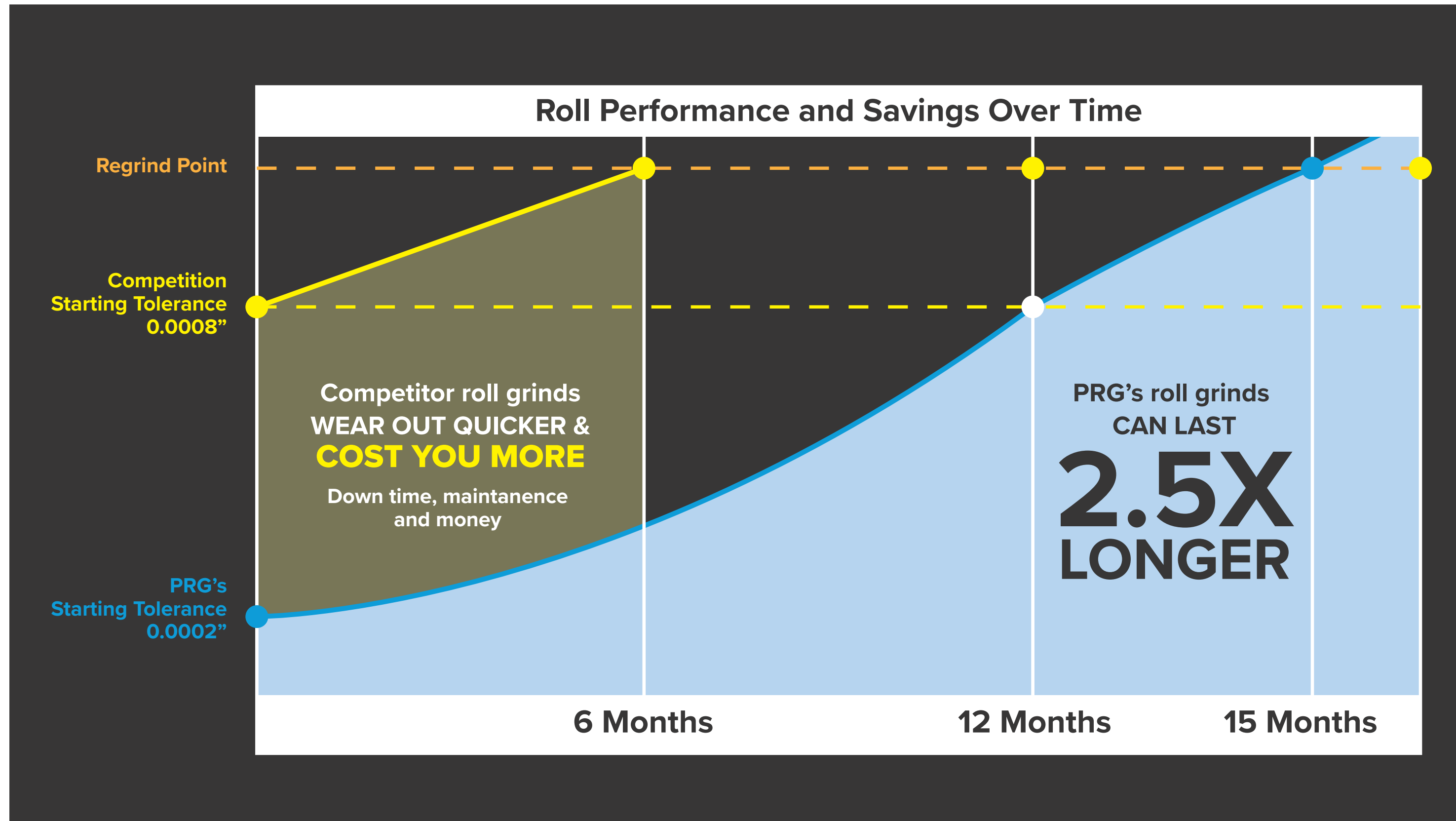
REAL WORLD CASE STUDY

- Improved spool losses by 250# per reel
- 250# per reel (approx. 12 seconds of run time)



= 1,000 TONS PER YEAR = \$300,000 (THIS MILL ALSO REALIZED \$100,000 PER YEAR IN REDUCED WINDER BREAKS)

CALENDER ROLL PERFORMANCE = LONGER RUN LIFE



IT'S ALL ABOUT VALUE
PRG's more precise roll grinds start your rolls at a tighter tolerance than competitor's grinds. The result? **Longer roll life. Every time.**

CALENDER ROLL PERFORMANCE = REAL ROI \$\$

The reason for 0.0002" OEM roundness specification

REAL WORLD EXAMPLE

- Caliper CD variation ————— 0.6 → 0.3
- STFI variation ————— 3.7 → 1.7
- Sheffield smoothness ————— 380 → 365
- Calender roll life ————— 6 months → 18 months
- CalCoil and Air Hoses ————— Removed
- Crowns ————— In control



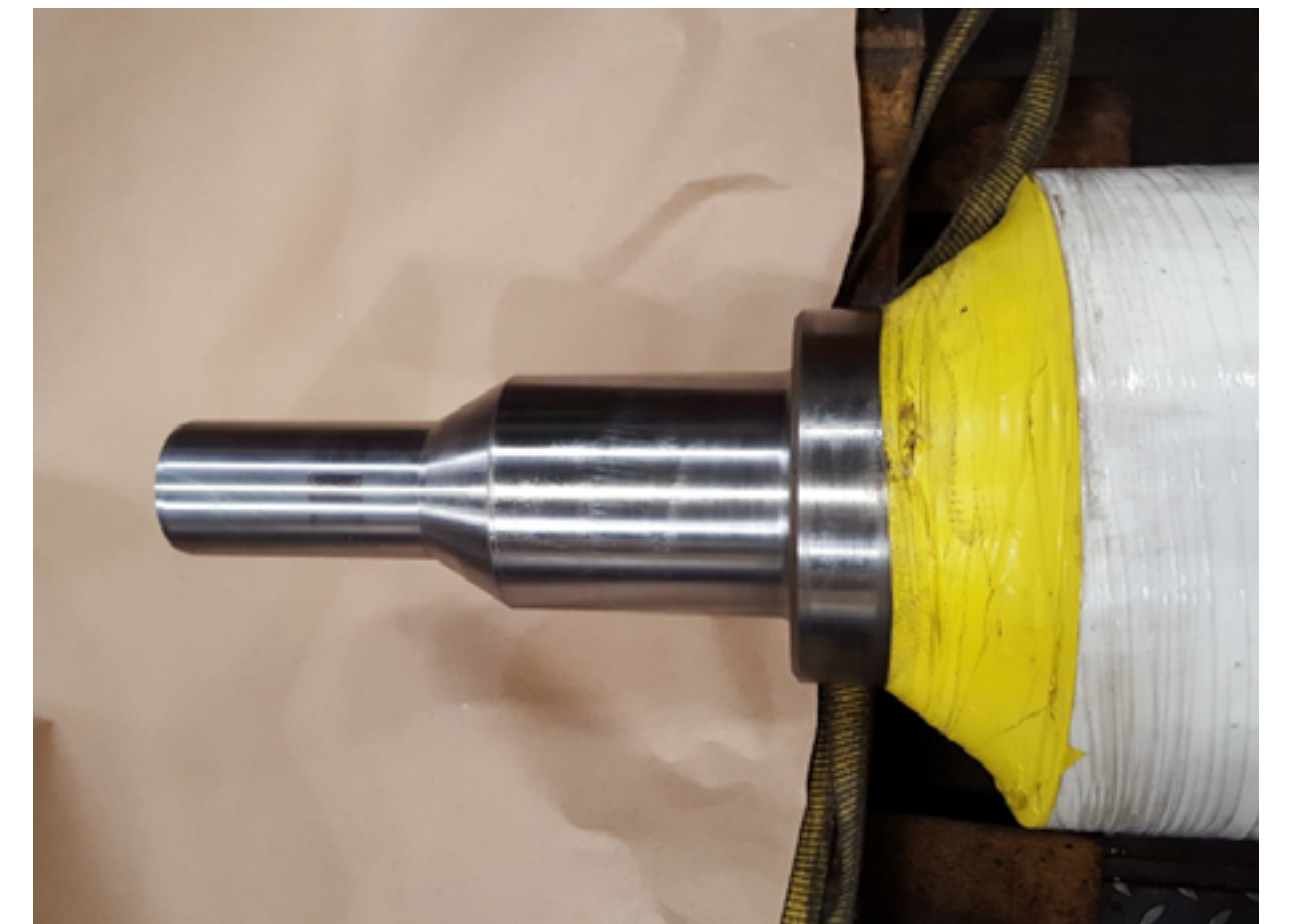
BOTTOM LINE

\$900,000+ PER YEAR OF ROI

This is a payback of 2 months or less even if a non-precision grind is FREE!

ROLL LIFE AND START-UP – MECHANICAL EXCELLENCE

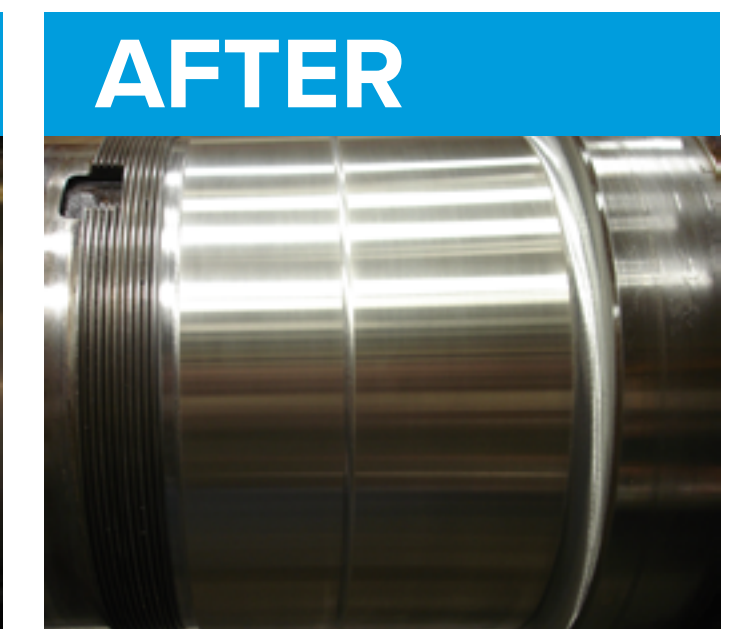
- Bearing Inspection
- Bearing Seat Grinding
- Bearing Replacement
- Complete Roll Inspection
- Complete Rebuilds/
Reconditioning
- Dynamic Balance
- Dynamic Leak Test
- Grinding
- Head Fit Repairs
- Journal Repairs
- NDT
- New Housings
- New Journals
- New Rolls
- Roll Modifications
- Vacuum Testing
of Suction Rolls



ROLL LIFE AND START-UP – MECHANICAL EXCELLENCE

PRECISION MAINTENANCE IS MORE THAN JUST PRECISION GRINDING

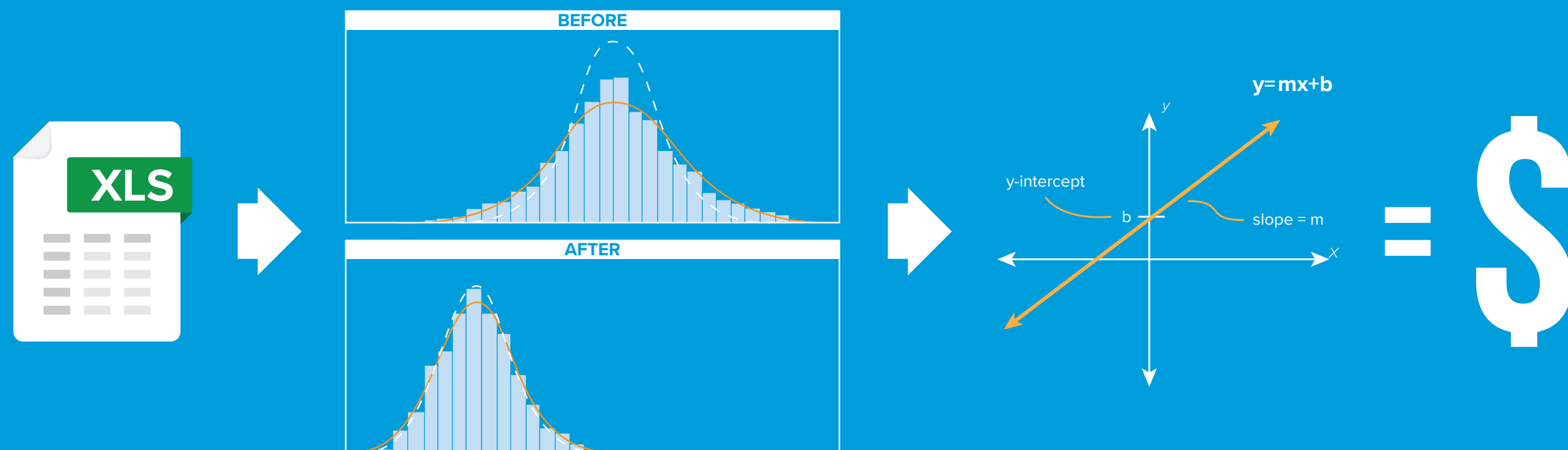
- Thorough inspection of bearings and housings
- Proper assembly of bearings and housings
- Replacing worn or damage bearings and bushings
- Journal repair and replacement
- On-time start-up and profitable production



PROMISE TO PROVIDE REAL ECONOMIC VALUE

PROCESS VARIATION IMPROVEMENT = \$

- Joint Design of Experiment to reduce variation
- Data analysis on current process
- Implement plan for variation improvement
- Data analysis on improved process – predictive equation



PROVIDING VALUE IN A VIRTUAL WORLD

PARTNERING WITH YOUR ROLL SERVICE PROVIDER TO IMPROVE YOUR PROCESS ➡ REDUCING VARIATION

- Data analysis, sampling and testing
- Statistical validation of real benefits (\$\$)
- Virtual troubleshooting (pics/video)

Send us your data, samples, pics, video



COST OF IMPROPERLY GROUND ROLLS

**SHOW
ME THE
MONEY**

DESCRIPTION	VARIABLE	AMOUNT
PRG Grind Cost	\$20,000.00	
PRG Roll Life (months)	14.00	
Competitor's Grind Cost	\$10,000.00	
Competitor's Roll Life (months)	6.00	
Annual Savings due to Extended Roll Life		\$2,857.14
Production Hours Lost due to Improperly Ground Roll	2.00	
Lost Revenue Per Hour	\$3,500.00	
Total Lost Revenue due to Improperly Ground Roll		\$7,000.00
Scrap While Running Improperly Ground Roll (pounds)	50.00	
Cost per pound	\$50.00	
Total Scrap Cost due to Improperly Ground Roll		\$2,500.00
Revenue Per Hour at Normal Production Speed	\$3,500.00	
Percent Production Lost due to Degraded Speed	0.10	
Hours Run at Degraded Speed	24.00	
Revenue Lost Due to Degraded Speed		\$8,400.00
TOTAL COST OF IMPROPERLY GROUND ROLL		\$17,900.00

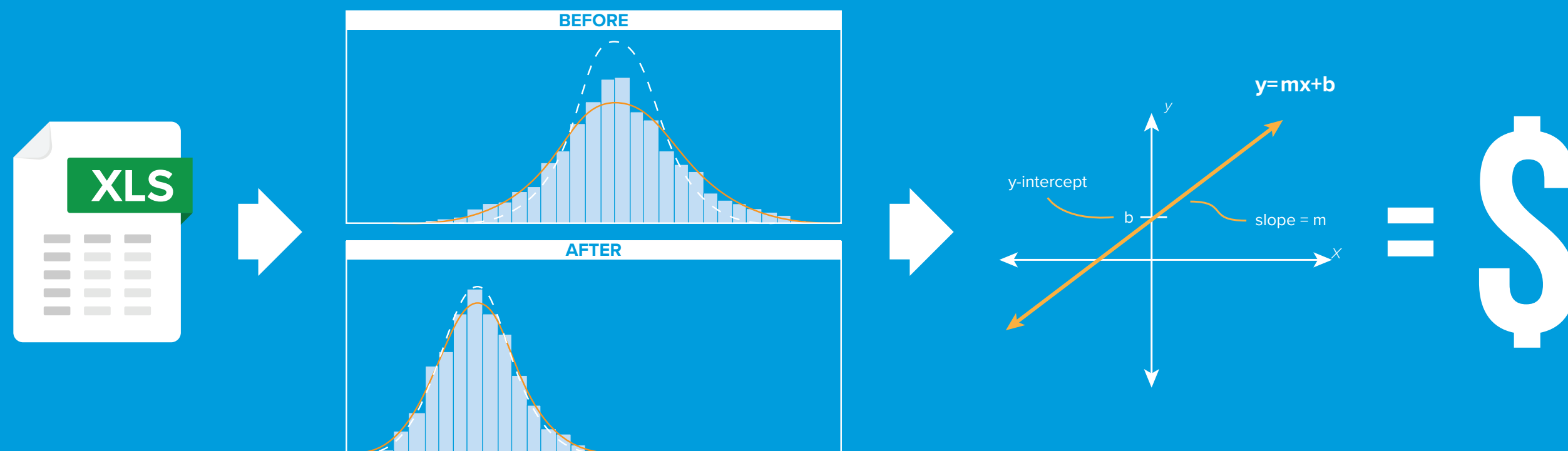
This total cost calculator tool will allow you to project the operational cost of an improperly ground roll and potential savings with an investment in PRG grinding services.

[CLICK HERE](#) to access your own fully functional calculator as a Microsoft Excel file. Simply insert your values within the green cells and your projected savings will be automatically calculated.

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- Implement plan for variation improvement
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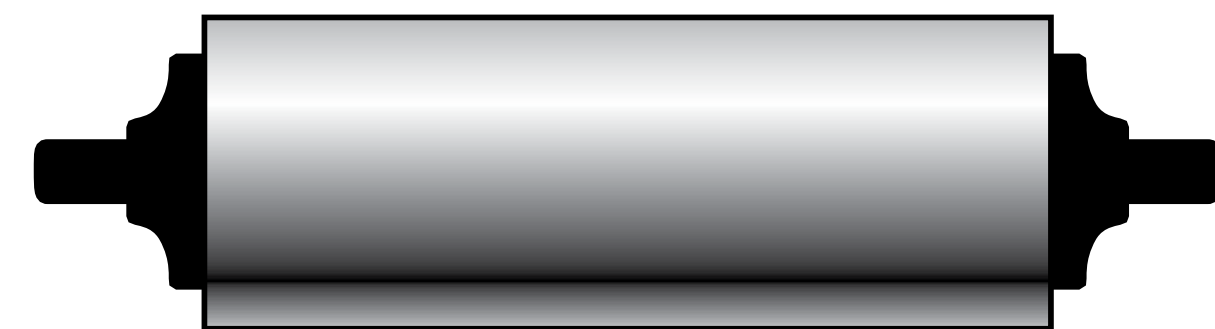
TEXARKANA, ARKANSAS

(870) 216-4000



QUESTIONS?

PRECISION



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**THANK YOU FOR
YOUR TIME.**

PRECISION



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