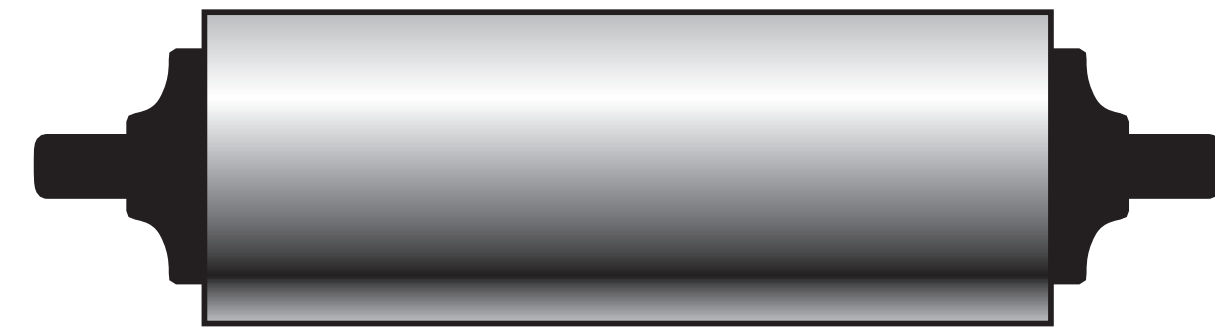


**PRECISION  
COATING DEMANDS  
PRECISION ROLLS  
FOR OPTIMUM  
PERFORMANCE**

**PRECISION**



**ROLL GRINDERS**

*Over 50 years of value-added service*

**WEBINAR  
SERIES**

[precisionrollgrinders.com](http://precisionrollgrinders.com)

# HOW CAN PRECISION ROLLS DRIVE OPTIMIZATION?

## GRINDING TO PROPER TOLERANCES AND SHAPE

- Reducing Variation

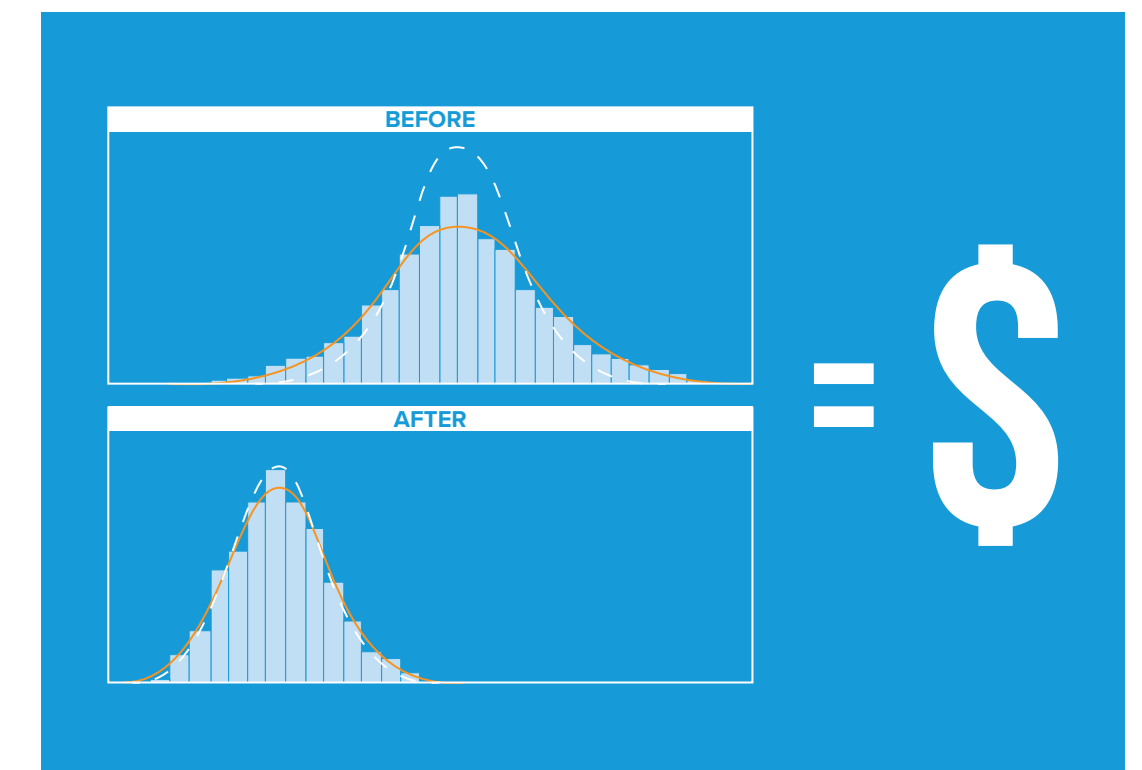


## MECHANICAL AND MACHINING SERVICES TO MAXIMIZE PERFORMANCE AND ROLL LIFE

- Start-up and roll life performance



## VALUE-DRIVEN RESULTS THROUGH MATERIAL SAVINGS



# DRIVING OPERATIONAL EXCELLENCE WITH PRECISION ROLLS – REDUCING VARIATION

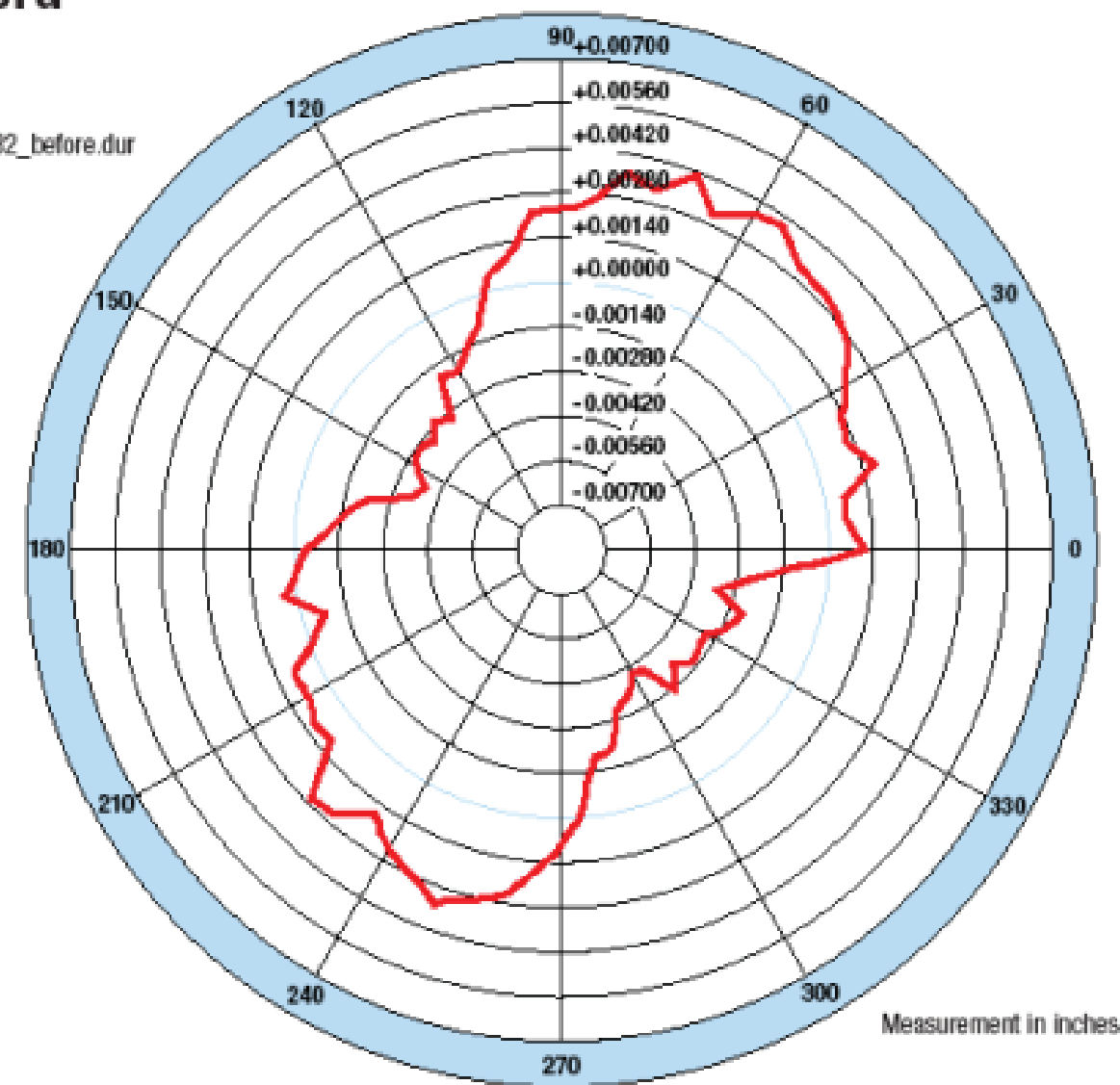
- **Eliminating barring (Machine Direction Variation)**
  - **With optimum roll roundness and concentricity**
- **Reducing streaks (Cross Machine Direction Variation)**
  - **With optimum roll shape**
- **Coating savings**
- **Extended roll-life between grinds**

# REDUCING VARIATION – ROLL TIR/ROUNDNESS

## IMPROPERLY GROUND

### Measurement Record

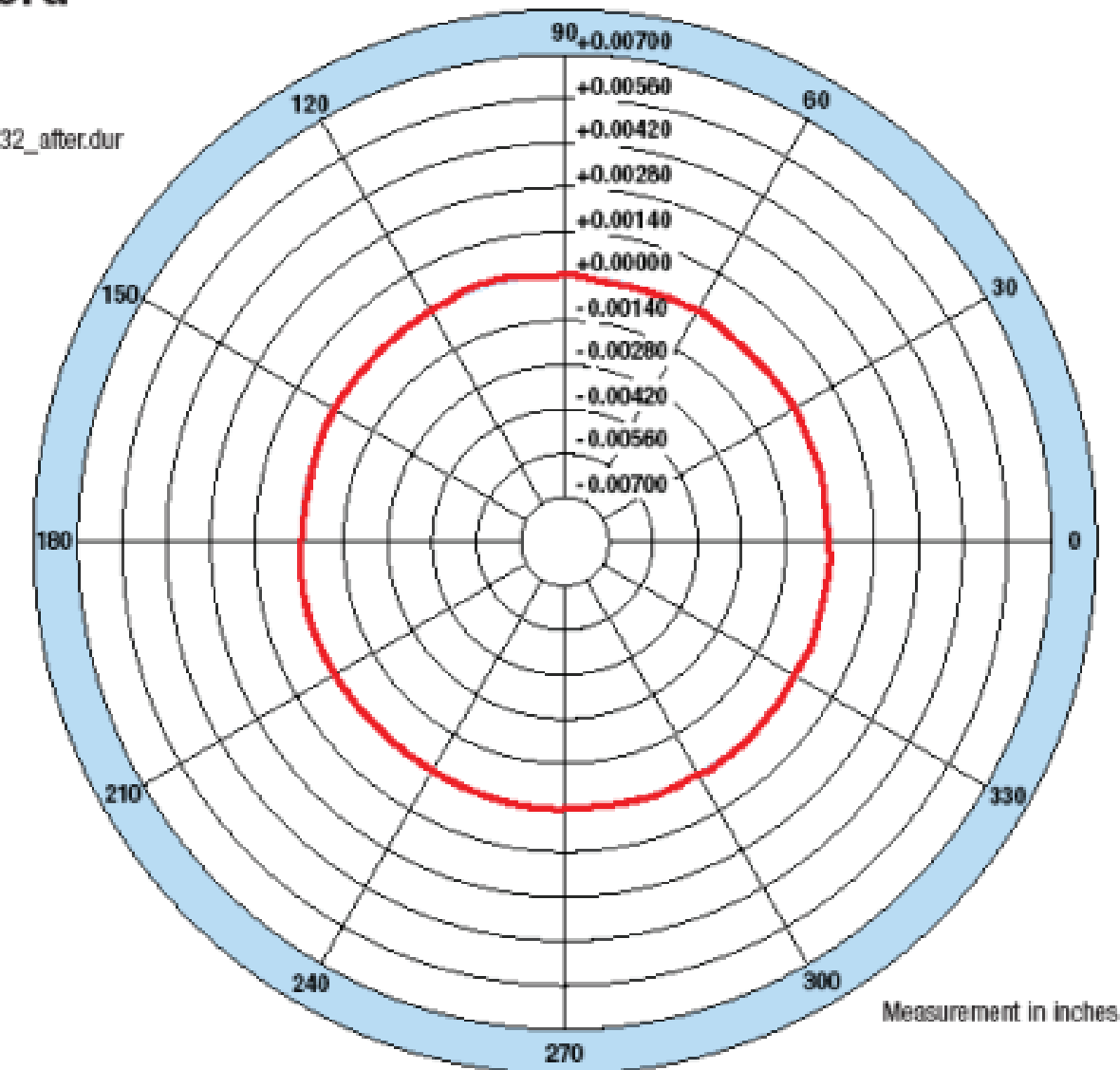
Customer: Confidential  
Customer Roll Number: competition\q00732\_before.dur  
Roundness: 0.00682  
Measure Time: 18-10-05, 21:07  
Probe Mode: T1+T2  
Curve Zero Point: 77.0000 inch  
Measurement Position: 263.5000 inch  
Roundness: 0.00682



## PRECISION GROUND

### Measurement Record

Customer: Confidential  
Customer Roll Number: competition\q00732\_after.dur  
Roundness: 0.00021  
Measure Time: 19-10-05, 09:13  
Probe Mode: T1+T2  
Curve Zero Point: 77.0000 inch  
Measurement Position: 263.5000 inch  
Roundness: 0.00021



# REDUCING VARIATION – GRINDING ON BEARINGS



- Roll “moves” when ground
- Roll moves in and out with defects
- Roundness at OEM specification is not possible
- True concentricity is not possible
- Shape is not attainable

# GRINDING RESULTS — EXAMPLES

**OUR TYPICAL TOLERANCE IS 5 UM.**

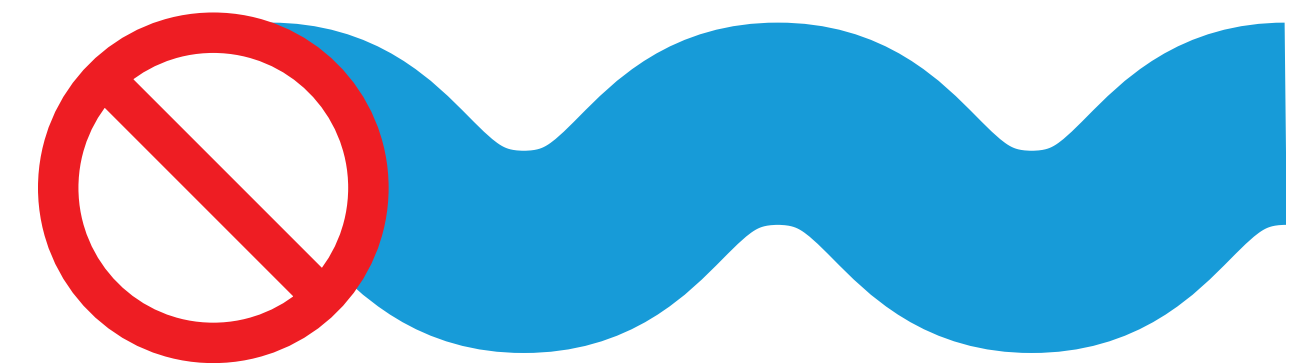
**10% OF OUR WORK HAS TOLERANCES LESS THAN 2.5 UM.**

	Diameter	Face Length	Tolerances	Finish
Battery	400	420	2 um	0.05
Battery	320	280	2 um	0.05
Battery	445	305	1 um	0.025
DOD	880	990	1 um	0.1
Coating	365	610	1.3 um	0.15
Coating	305	460	1 um	0.15
DOD	320	280	2 um	0.05
Plastics	610	1730	1.5 um	0.15
Plastics	610	1820	1 um	0.05
Plastics	610	1830	2 um	0.1
Plastics	720	2690	2 um	0.02

# REDUCING VARIATION IN COAT WEIGHT

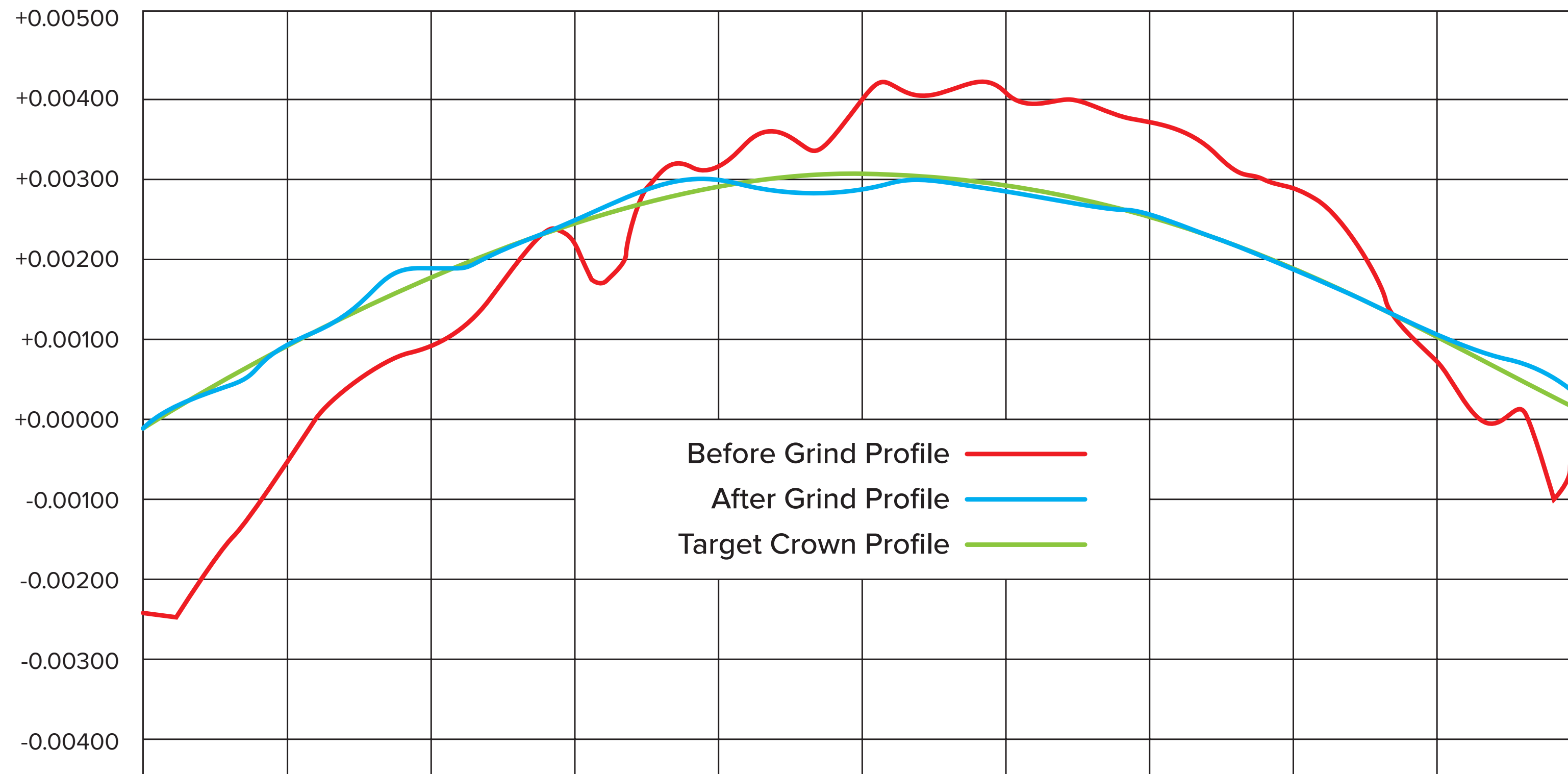
## UNIFORM MATERIAL THICKNESS

- Reduced material usage due to a thick or “wavy” sheet
- Reduced defects due to localized thinning in the material profile
- Improved end-product construction
  - Reduce defects caused by a deviation in the coat weight
  - Improved construction productivity with a more uniform coat weight



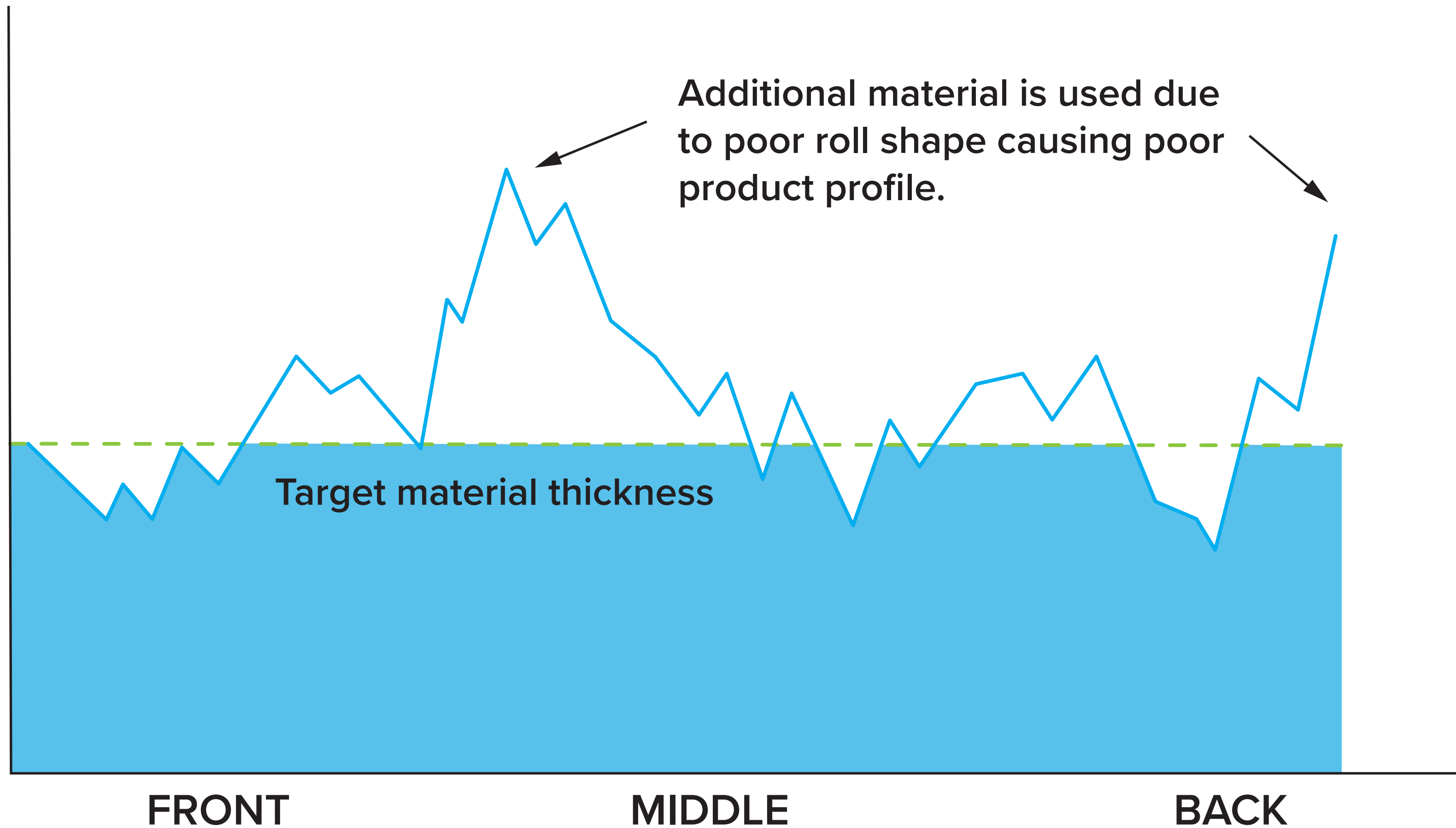
# PROPER ROLL SHAPE IS CRITICAL

Measure in inch  
Curve zero point: +67.3300 inch  
(Diameter)

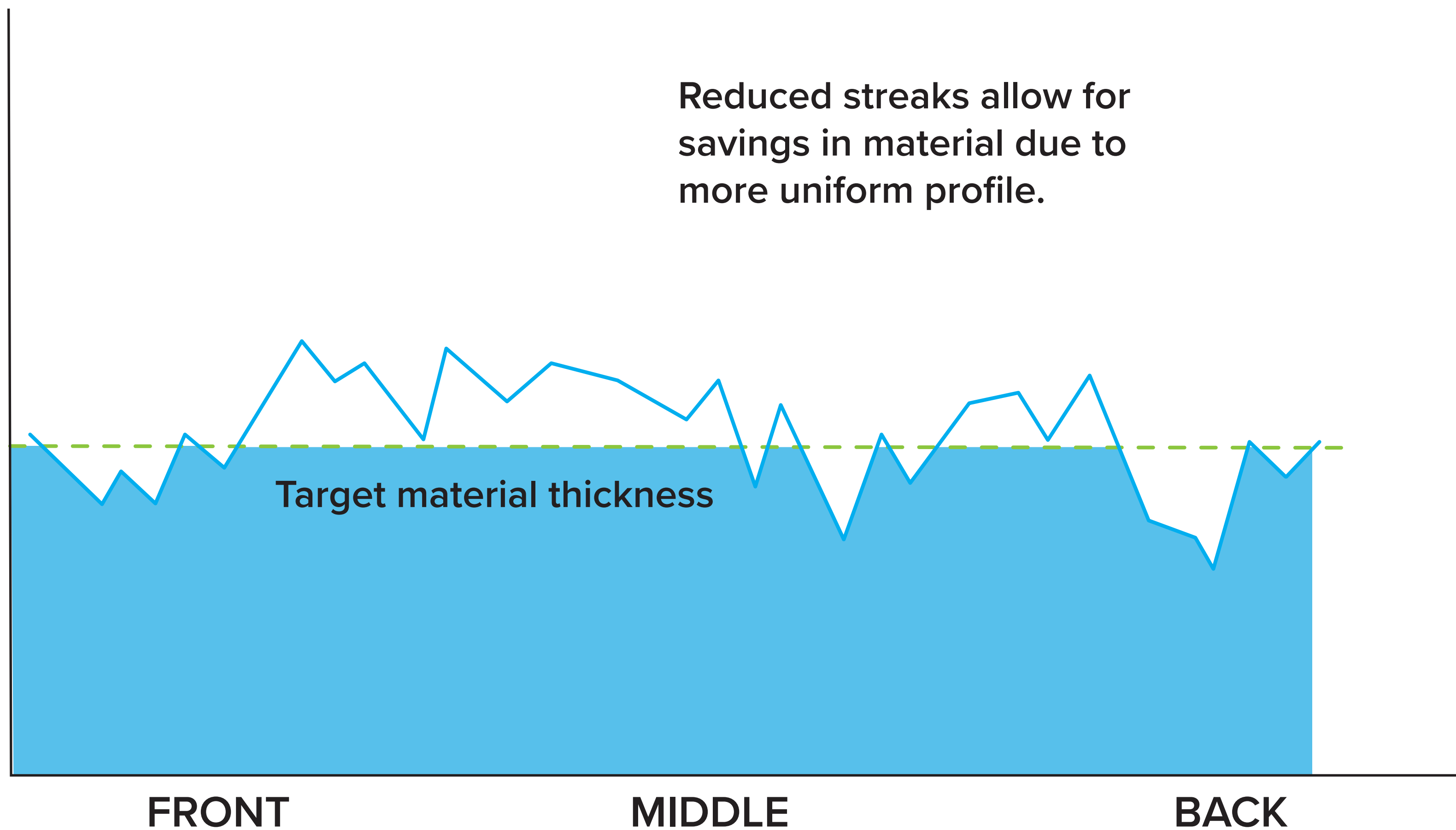




# POOR ROLL SHAPE = LOST COATING



# GOOD ROLL SHAPE = COATING SAVINGS



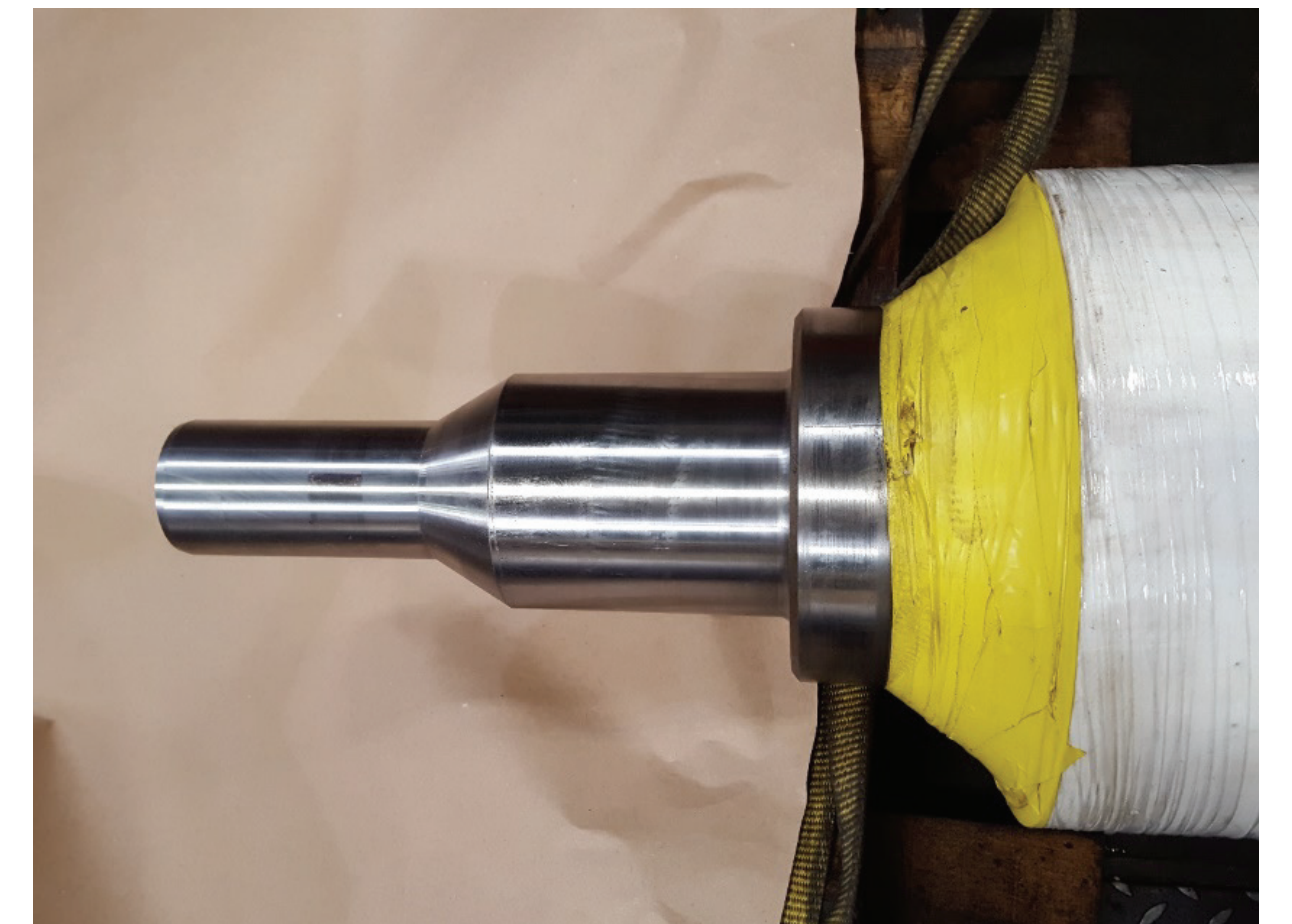
# COST OF IMPROPERLY GROUND ROLLS

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
<b>TOTAL COST OF IMPROPERLY GROUND ROLL</b>		<b>\$17,900.00</b>

To use this justification tool simply insert the values appropriate for your operation into the green cells. Your projected savings will be automatically calculated and displayed in the lowest cell on the right.

# ROLL LIFE AND START-UP – MECHANICAL EXCELLENCE

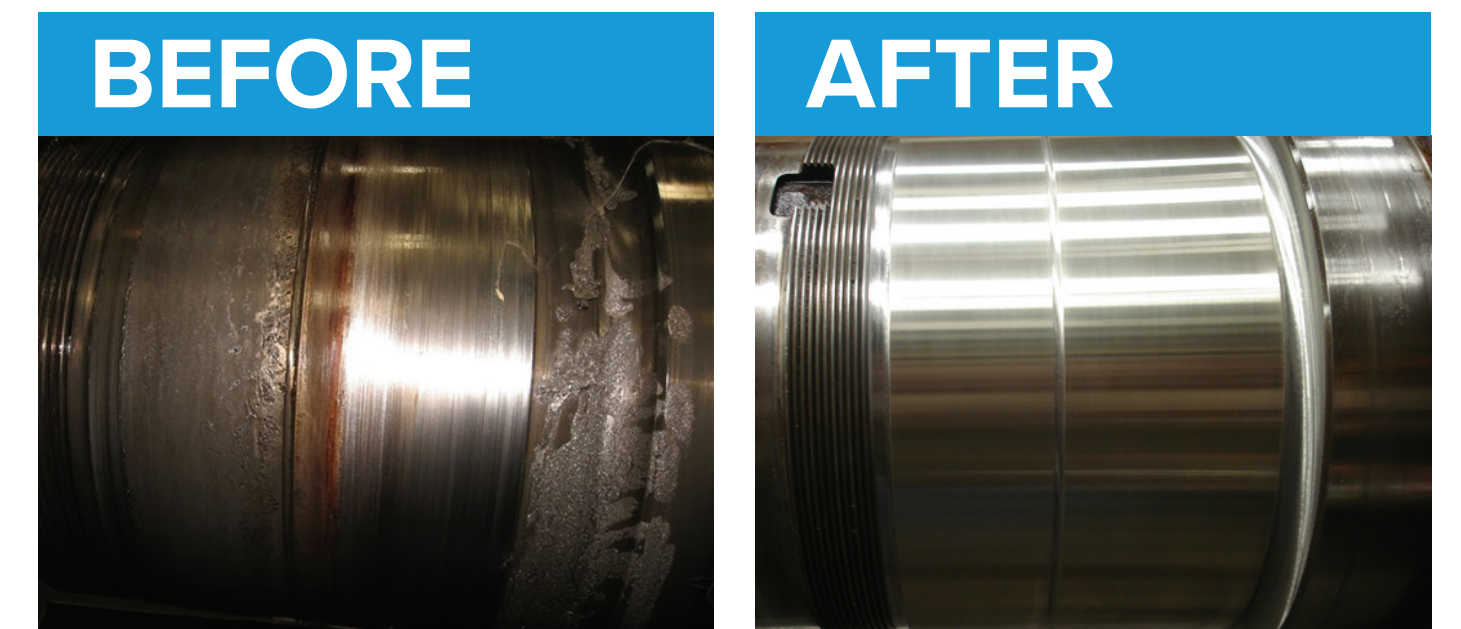
- Bearing Inspection
- Bearing Seat Grinding
- Bearing Replacement
- Complete Roll Inspection
- Complete Rebuilds/  
Reconditioning
- Dynamic Balance
- Dynamic Leak Test
- Grinding
- Head Fit Repairs
- Journal Repairs
- NDT
- New Housings
- New Journals
- New Rolls
- Roll Modifications
- Vacuum Testing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



# ROLL LIFE AND START-UP – MECHANICAL EXCELLENCE

## PRECISION MAINTENANCE IS MORE THAN JUST PRECISION GRINDING

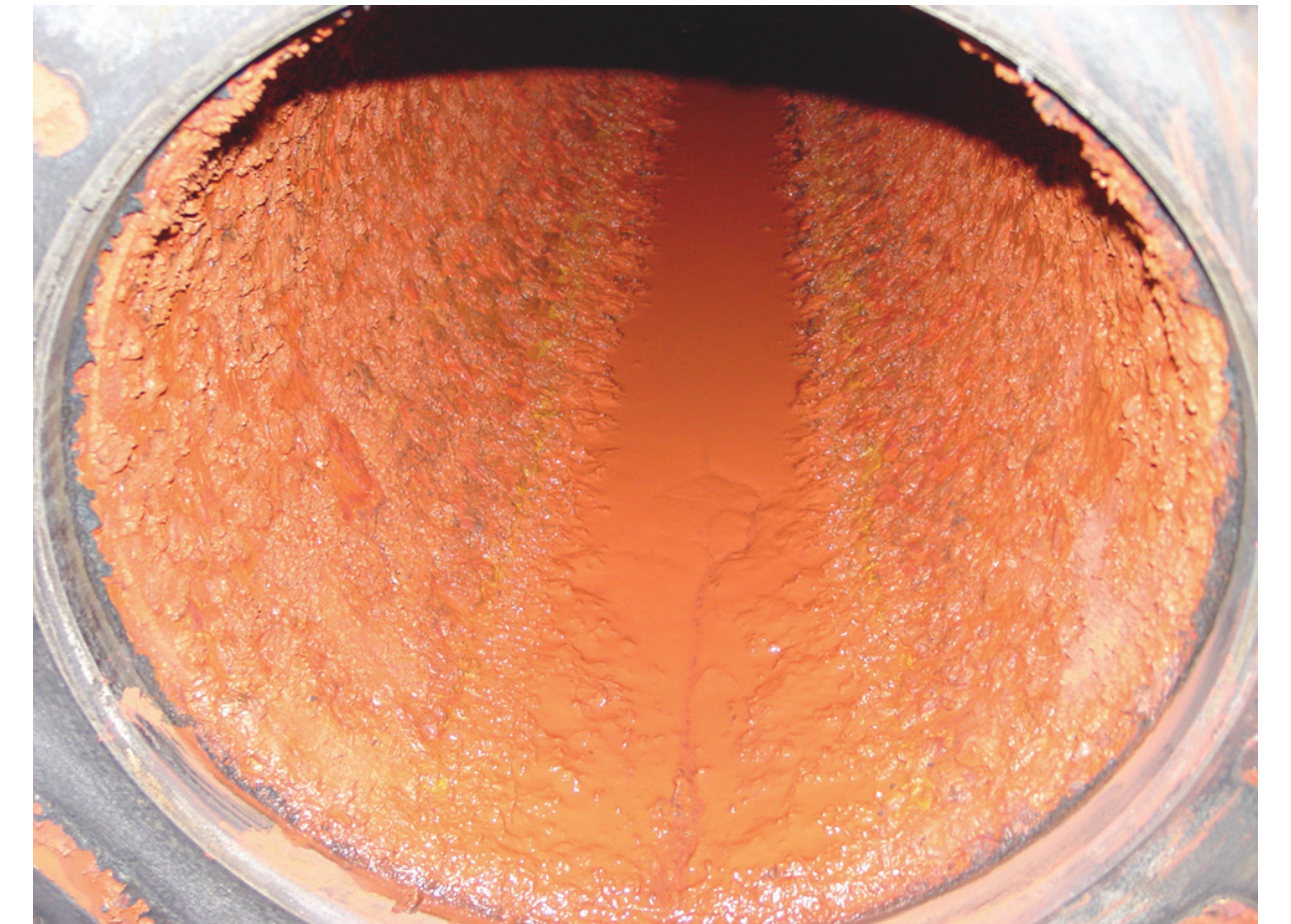
- Thorough inspection of bearings and housings
- Proper assembly of bearings and housings
- Replace worn or damaged bearings and bushings
- Journal repair and replacement
- Start up on time and producing profitable product



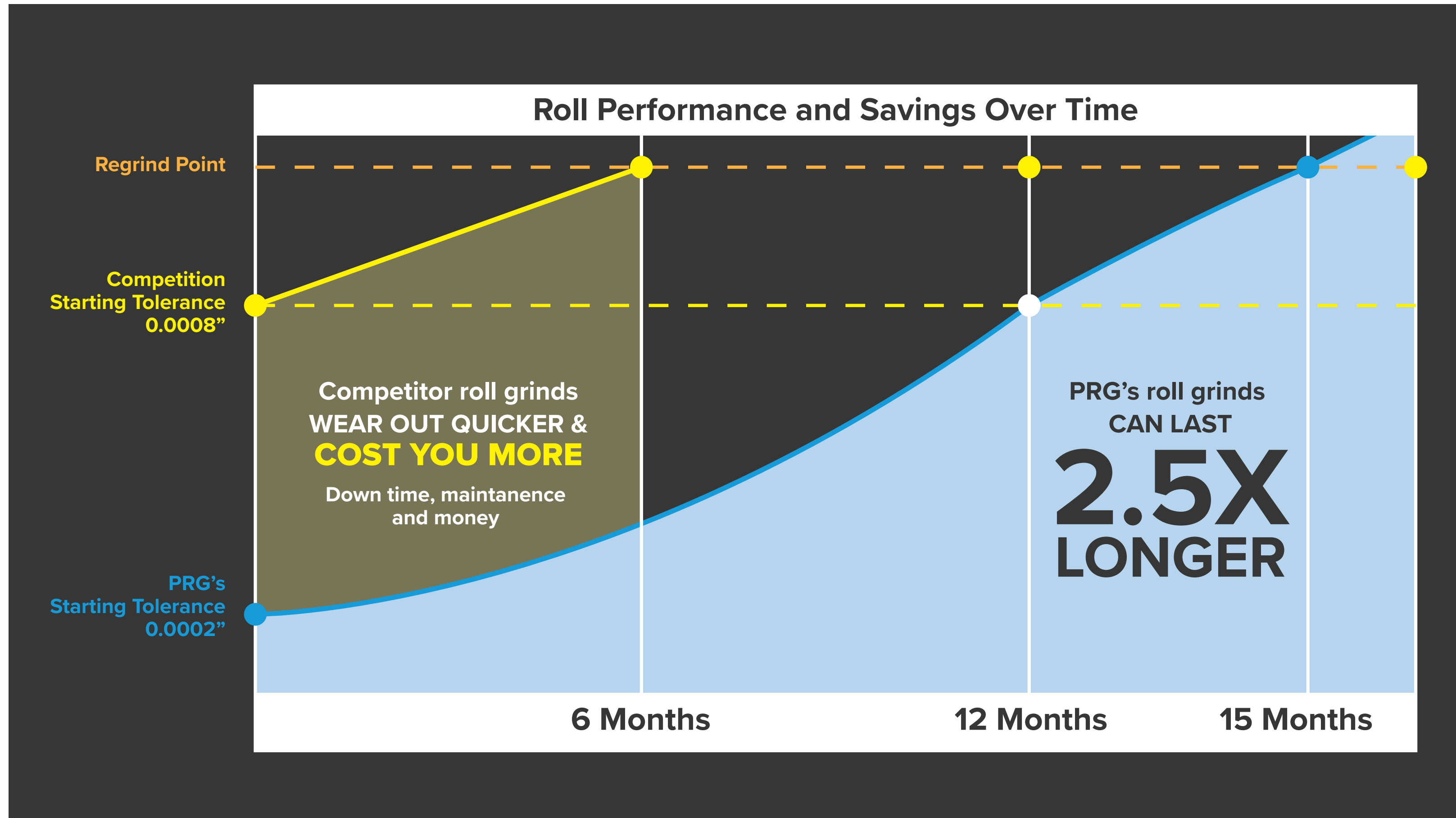
# ROLL LIFE AND START-UP – MECHANICAL EXCELLENCE

## UNIFORM ROLL SURFACE TEMPERATURE: TEMPERATURE TRANSFER AND ROLL TIR

- Temperature control
- Reduce sheet scorching and hot spots
- Prevent “thermal” runout (TIR) due to plugged passage
  - Can cause machine direction material variation
- Increase production speeds



# ROLL LIFE AND START-UP

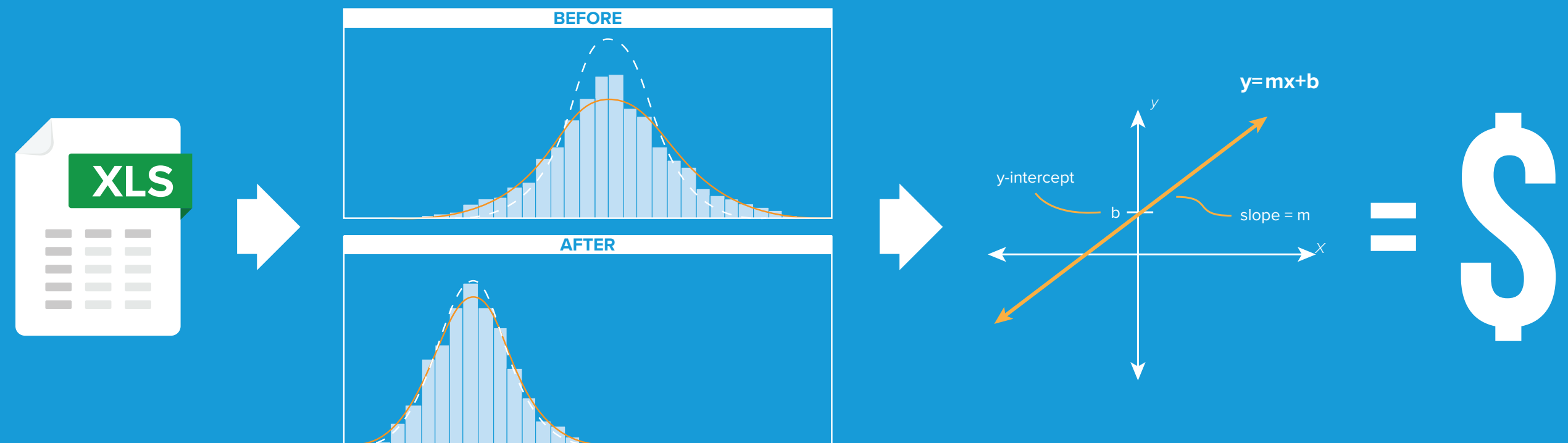


**ROLLS THAT  
START CLOSER  
TO PERFECTLY  
ROUND START  
UP FASTER &  
RUN LONGER!**

# PRG PROMISE TO PROVIDE VALUE

**WE ARE COMMITTED TO HELPING YOU REDUCE  
PROCESS VARIATION AND INCREASE YOUR PROFITS!**

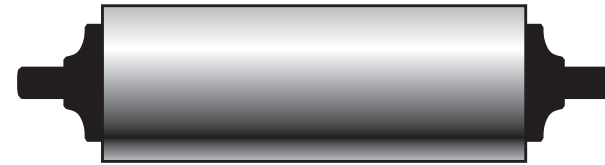
- Any troubleshooting on rotational equipment (video, pics)
- Data analysis on current process
- Joint Design of Experiment to reduce variation





# PRG PROMISE TO PROVIDE VALUE – CASE STUDY

PRECISION



ROLL GRINDERS

**50**  
Years

PRG has been the premier cylindrical shaft and roll grinding company in the Western hemisphere with over half a century of experience.

---

**Your Production Line Could be Saving Money and Time with Increased Quality.**

Your production line may be experiencing excessive material use, unplanned shutdowns, and even poor quality. Many of these problems could be improved or even avoided with something as simple as a high quality grind for your rolls.

“PRG can grind to tolerances as small as 0.00002 or 20 millionths of an inch”

Sheet Profile (Standard Grind)

Wasted Rubber

Sheet Profile (PRG Grind)

Worked Rubber

**VS**

PRG can significantly increase your material savings.

With the higher tolerances and quality at PRG, your rolls will always be ground to the proper specifications. The results that can be seen in your plant is a far superior rubber sheet profile. This leads to significant savings in material and more of your product falling within your desired tolerances. See the other side to learn more

*Tighter Tolerances Means Bigger Savings*

Parameter	Value
W = Sheet Width (In)	48
S = Sheet Speed (FPM)	130
D = Days/Year in Operation	230
C = Avg. Cost in \$ per lb (Mat'l & Labor)	1.5
SG = Specific Gravity of Material	1.2
PPI = Calculated lbs/in	0.04332
T = Tolerance With Current Grinding Method (+/- Inches)	0.0004
PRGT = Tolerance with PRG Grinding Method (+/- Inches)	0.0002
Average Annual Savings	<b>\$525,496</b>

1/10,000 inch may sound unimportant in an industry that creates thousands of feet of product a day in large scale operations, but the impact on the material savings is tremendous. The model to the left demonstrates the possible savings that our tolerances can achieve. As small as only a 2/10,000 inch difference can result in over a half million dollars in savings every year!

**We Do More Than Just Roll Grinds**

- Brush Electroplating
- Calender Rolls
- Coatings
- Chrome Plating
- Custom Grinding
- Descaling
- Dynamic Balancing
- Dynamic Leak Testing
- Heat Grinding
- Journal Repair
- Matrix Blasting
- Metal Industry Mill Rolls
- Metal Spraying
- Mirror Polishing
- New Chilled Iron Rolls and Shafts
- Regrooving Rubber and Polyurethane
- Roll Fabrication
- Section Roll Repullets
- Tanning
- Variable Crown (VC) Roll Repullets

**Calculation:**  
W\*IS\*12 in/ft\*D\*1440 min/day/(C\*PP)\*(T-T2)-PRGT\*50%

**Want to Find Out More?**  
Contact Precision Roll Grinders to Get a Free Quote!

**Locations**

Allentown, PA (610) 395-6966 6356 Chapmans Rd	Carrollton, GA (770) 830-6323 400 Barnes Dr
Lewisport, KY (270) 295-4990 200 Industrial Park Rd	Texarkana, AR (870) 216-4000 4000 E 19th St

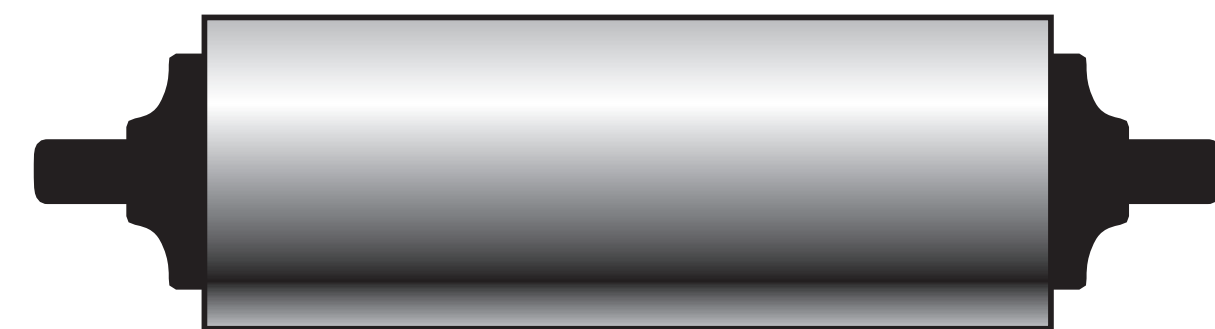
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# QUESTIONS?

## PRECISION



## ROLL GRINDERS

*Over 50 years of value-added service*

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# CONTACT US

**ALLENTOWN, PENNSYLVANIA**

**(610) 395-6966**

**CARROLLTON, GEORGIA**

**(770) 830-6323**

**LEWISPORT, KENTUCKY**

**(270) 295-4990**

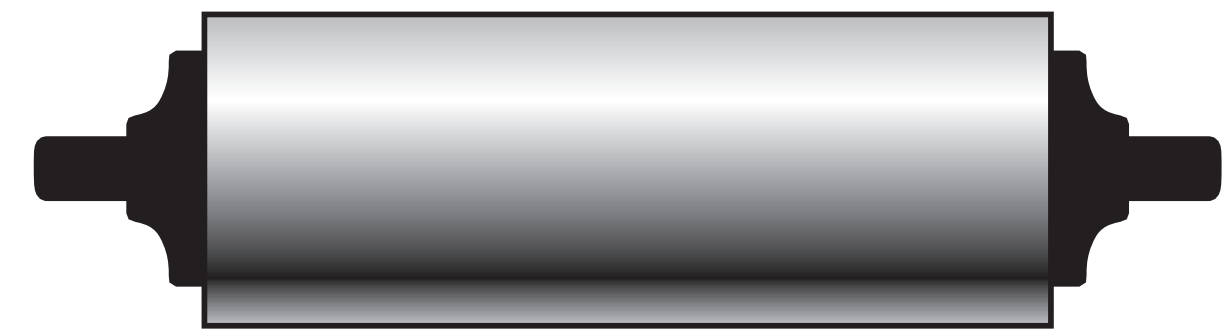
**TEXARKANA, ARKANSAS**

**(870) 216-4000**



**THANK YOU FOR  
YOUR TIME!**

**PRECISION**



**ROLL GRINDERS**

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