



Blaine and Production · what fineness costs in tons

The output at any Blaine, the tons given up for each 100 cm²/g, and what today's output should be making.

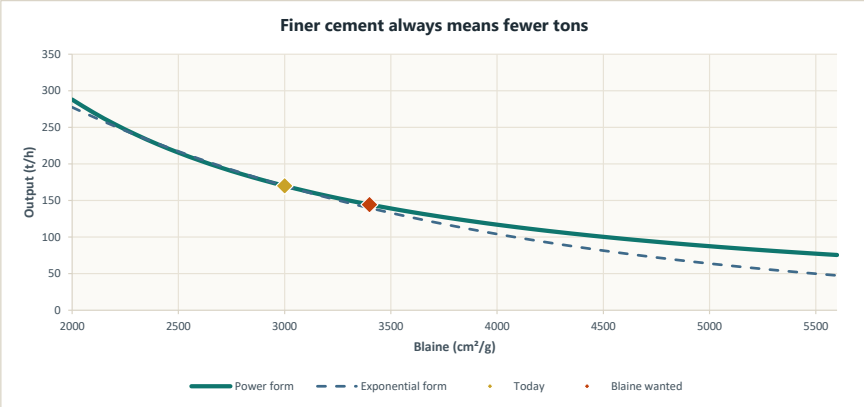
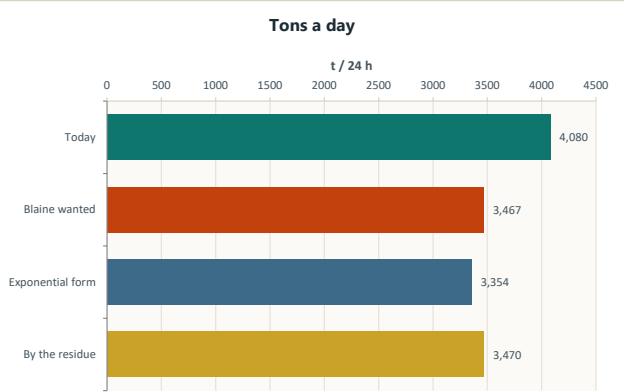
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OUTPUT AT THE NEW BLAINE	CHANGE
144.5 t/h	-25.5 t/h

PER DAY	COST OF 100 cm²/g
-613 t / 24 h	5.53 t/h

YOUR FIGURES				RESULTS					
	Today				Today				What it means
The mill today									
Output today	170.0		t/h	Output at the Blaine wanted (t/h)	144.5				Power form: output × (Blaine today / Blaine wanted) ^{1.3} .
Blaine today	3,000		cm²/g	Same, by the exponential form (t/h)	139.7				Output / e ^{^(0.49 × change in Blaine / 1000)} . Use the two as a range.
The question				The two forms differ by (%)	3.3	GOOD			Normally 3 to 4 %; wider when the target is far from today.
Blaine wanted	3,400		cm²/g	Change in output (t/h)	-25.5				
Output actually being run (optional)	160.0		t/h	Change per day (t)	-613				
Residue today (45 µm) (optional)	9.14		%	Each extra 100 cm²/g costs (t/h)	5.53				Measured around the Blaine wanted.
Residue wanted (45 µm) (optional)	6.00		%	Blaine the running output should give (cm²/g)	3,143	WATCH			The same relation, run backwards from the output actually being run.
				Output by the residue instead (t/h)	144.6				Output × (2 – log R today) / (2 – log R wanted).

Yellow cells are yours. Everything else is worked out as you type.



WHAT TO DO FIRST

READ	WHAT THE CHANGE COSTS Going from 3,000 to 3,400 cm²/g (finer) takes the output from 170.0 to 144.5 t/h by the power form, or 139.7 t/h by the exponential form: a loss of 25.5 t/h, or 613 t a day. Do: Use the two figures as a range, not a single number; confirm with a trial before promising tonnage. Why: Both are calibration relations anchored to one operating point; they describe the trend honestly but are not a guarantee.
GOOD	THE TWO FORMS AGREE Only 3.3 % between them, the normal spread. The answer is as solid as this method gets. Do: Work with the power form and keep the other as the margin. Why: Two independent fits landing together is the best confirmation available without a trial.
READ	THE EXCHANGE RATE Around the Blaine wanted, every extra 100 cm²/g costs about 5.53 t/h, or 133 t a day. Do: Keep this number in mind when a finer cement is requested; multiply by the running hours to get the real cost. Why: It turns a quality request into a tonnage figure, which is the only way to have that discussion properly.
WATCH	THE MILL IS NOT DOING WHAT THIS OUTPUT IMPLIES At 160 t/h the same relation says the mill should be making about 3,143 cm²/g, 257 below the target. Do: Check the laboratory result: if the cement is that coarse, look at the circulating load and the ball charge. Why: The gap between what the mill should make and what the laboratory reports is the fastest check on whether the reference point has drifted.
READ	BY RESIDUE INSTEAD Going from 9.14 % to 6.00 % residue puts the output at 144.6 t/h. Do: Compare it with the Blaine answer; if they disagree badly, one of the two laboratory measurements has drifted. Why: Blaine and residue should tell the same story. When they do not, it is usually the instrument, not the mill.
