

The ULTIMATE Sourdough Proofing Guide

By Tom Cucuzza, The Sourdough Journey – December 2021©

Part 1: How to Read a Sourdough Crumb

Underproofed or Overproofed?

Companion Guide to the Video: <https://youtu.be/JzvZ6vMxHcw>

	Significantly Underproofed	Slightly Underproofed	Nicely Proofed	Slightly Overproofed	Significantly Overproofed
Loaf Height	Flat	Tall and pyramidal sometimes with a “belly” on bloom	Tall loaf with high shoulders and “bunny” profile	Past peak height, falling shoulders	Flat
Alveoli / Holes	Dense, gummy, spongy crumb with some tunnels	Dense areas with tunnels or large holes	Even distribution of small, medium and large holes	Mostly medium to small holes	Smaller holes throughout with ragged edges on holes
Crumb Profile	Dense strip at bottom, tunnels or holes on top	Dense strip at bottom, “fools crumb” or large holes near top	Consistent distribution of holes edge to edge and top to bottom	Consistent distribution of small to medium holes throughout	Small holes throughout with separation of crust from crumb
Ear / Ovenspring	No ear, no ovenspring	Sometimes a very tall ear and tall ovenspring	Tall, pronounced ear with tall ovenspring	Smaller ear with less ovenspring	No ear and minimal ovenspring
Bloom (Opening at Scoring Line)	Does not open	A large “belly” bulging under the bloom	Gluten strands across bloom	Less strands and more bubbles visible in bloom	“Bubbles” visible and irregular edged bloom
Crust Color	Pale, blonde crust	More blonde than brown	Multiple shades of light to dark brown	Multiple shades of light to dark brown	Blonde or dark, mottled crust

Significantly Underproofed



Flat overall shape, low oven spring
Dense, gummy, spongy crumb
Dense clusters of small holes
Tunneling near top of loaf, penetrating through loaf
No ear

Typically, a compact loaf with shiny, blonde crust (not shown here)

Note: Significant underproofing is typically caused by a weak/immature starter, or bulk fermenting for too short of a time or too low of a temperature.

Slightly Underproofed



A taller, pyramidal shaped loaf
Dense crumb at bottom
Large holes or tunnels, usually near top
Uneven distribution of holes
“Fools crumb” ~ irregular large holes on top half of loaf
A tall ear with gas bubble under the bloom

Typically, a more blonde than brown crust (not shown here)

Note: Slight underproofing is a very common result for beginning sourdough bakers. Do not be afraid to push your bulk fermentation time each time you bake. Add 30 minutes to your bulk fermentation each time you bake (all other variables unchanged) until you find the point where your loaf is overproofing. Fully proofed loaves are right on the edge of overproofing.

Nicely Proofed

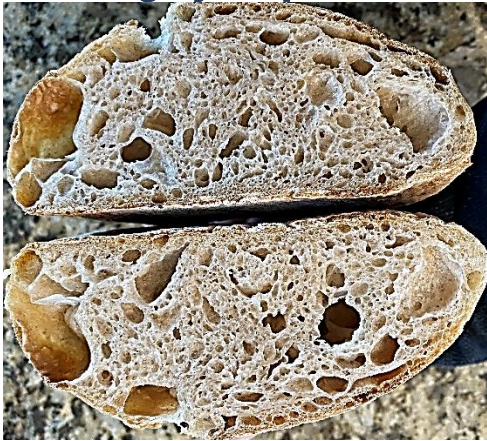


Tall, airy loaf with high shoulders and “bunny” profile
Consistent distribution of small, medium and large holes
No areas of dense, gummy crumb
Fully proofed top to bottom and side to side
A tall, pronounced ear

Typically, gluten strands visible across bloom (not shown)
Typically, multiples shades of light to dark brown crust (not shown)

Note: Everyone has a different opinion of the “perfect crumb.” Some people seek a more open, irregular crumb with larger holes. Other examples are included in the gallery later in this document.

Slightly Overproofed



A flattening loaf with falling shoulders
Past peak height
Fully proofed top to bottom and side to side
Higher density of small to medium sized holes, larger holes near crust
A small or no ear
Separation of crust from crumb, thinning crust

Typically, fewer gluten strands and more bubbles visible across the bloom (not shown)

Note: As loaves begin to overproof they lose their height and shape. The crumb becomes more dense. The holes become more ragged and irregular in shape. The crust begins to thin and separate from the crumb.

Significantly Overproofed



A flat loaf with minimal ovenspring and no ear
Tighter crumb with some density at bottom
Smaller holes throughout the loaf, more ragged-edged holes vs. round holes
Deterioration of crumb and starting to separate from crust
Gluten deterioration visible on ear (ragged edge)

“Bubbles” visible in bloom (not shown)
Slack, irregular, asymmetrical shaped loaf

Note: Overproofed loaves commonly occur when beginners attempt overnight bulk fermentation at too warm of a temperature, or with seasonal changes as everything speeds up at warmer temperatures. Many recipes also call for “doubling” of the volume of the dough during bulk fermentation, but many recipes will overproof if allowed to double in volume, especially when bulk fermenting at warmer temperatures.

For many more examples, visit [The Sourdough Journey](#) on YouTube.













Check out the comparison of loaves in the following videos on The Sourdough Journey series [“When is Bulk Fermentation Done?”](#)

- Episode 1: [The 30-Minute Effect](#)
- Episode 2: [The Curse of the Weak Starter](#)
- Episode 3: [The Bulk-O-Matic System](#)
- Episode 4: [Overproofing Problems](#)
- Episode 5: [Impact of Leaven Percentage](#)
- Episode 6: [Starter Strength and Leaven Percentage](#)
- Episode 7: [Some Like it Hot : The Temperature Effect](#)
- Episode 8: [Low and Slow at 70F/21C](#)

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HOW TO READ A SOURDOUGH CRUMB - GALLERY

 <p style="text-align: center;">Badly Underproofed Dense, gummy crumb</p>	 <p style="text-align: center;">Underproofed Dense crumb, tunneling</p>	 <p style="text-align: center;">Underproofed Spongy crumb and caverns</p>
 <p style="text-align: center;">Underproofed Dense areas and giant holes</p>	 <p style="text-align: center;">Slightly Underproofed Pyramidal Shape with tunneling</p>	 <p style="text-align: center;">Nicely Proofed Slightly closed crumb</p>
 <p style="text-align: center;">Nicely Proofed "Open, Irregular Crumb"</p>	 <p style="text-align: center;">Nicely Proofed "Molten Crumb"</p>	 <p style="text-align: center;">Nicely Proofed "Wild Crumb"</p>
 <p style="text-align: center;">Fully Proofed Somewhat Tight Crumb</p>	 <p style="text-align: center;">Slightly Overproofed Nice crumb but losing shape</p>	 <p style="text-align: center;">Significantly Overproofed Dense crumb and flat shape</p>

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