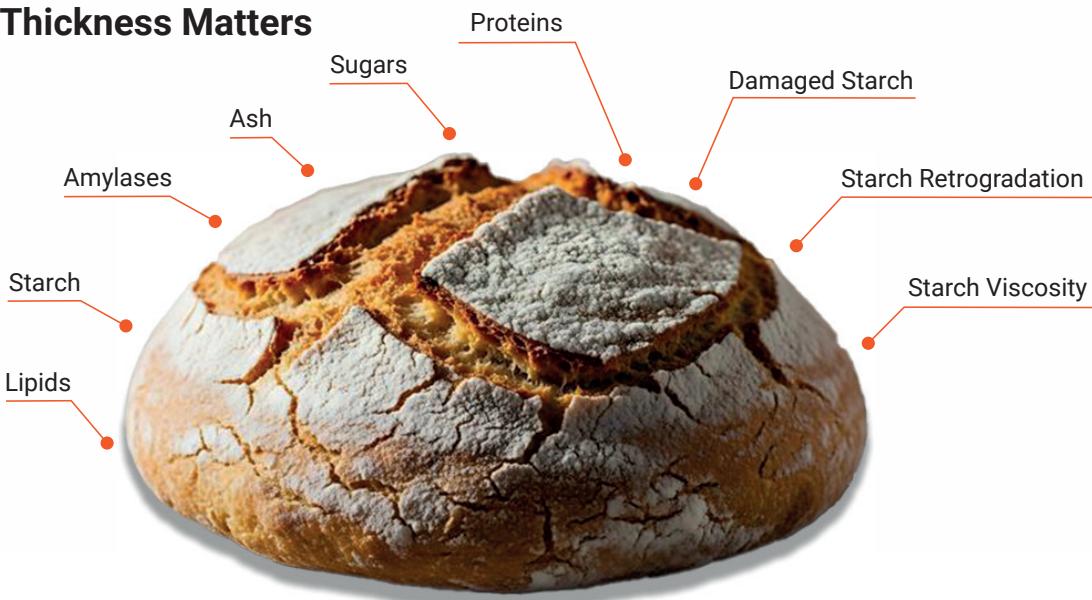


Why Crust Thickness Matters



- Texture & Mouthfeel:** A thin crust gives a soft, delicate bite, while a thicker crust adds crunch and chew, shaping the overall eating experience.

- Moisture Control & Freshness:** Thin crusts help retain moisture and keep soft breads fresh. Thicker crusts act as a barrier, slowing staling but sometimes drying the crumb.

- Structural Integrity:** Crust thickness affects the product's strength and durability. A well-developed crust supports delicate, airy interiors, such as in sourdough.

- Baking & Storage Considerations:** Thicker crusts often need longer baking and offer better protection. If too thick, they can become hard or difficult to chew.

- Consumer Preference & Product Type:** Different products require different crust profiles, thick for bagels and artisan loaves, thin and soft for dinner rolls or cakes. Matching expectations is key for perceived quality.

- Flavor Development:** Crust thickness influences browning through Maillard reactions, thicker crusts brown more, creating deeper, richer flavors.

Key Flour Components Affecting Crust Thickness

Key Flour Components	Contribution to Crust Thickness	Mechanisms
Proteins	23%	High levels produce a stronger gluten network that improves gas retention and can lead to a slightly thicker crust due to longer baking and surface drying.
Starch Viscosity	18%	Proper gelatinization helps retain moisture and supports balanced crust thickness; excess gelatinization can create a dense, thin crust.
Damaged Starch	18%	Increases water absorption; higher levels can thin the crust by reducing free surface water, while the released sugars enhance browning and may slightly thicken the crust with longer baking.
Amylase (Enzyme Activity)	14%	Moderate activity supports balanced fermentation and crust thickness; excess can cause overproofing and a thinner crust.
Ash Content (Minerals)	11%	Higher ash content strengthens dough and stabilizes fermentation, supporting a thicker crust; too much makes the dough heavy and can thin the crust.
Lipids	6%	Lipids coat starch and protein, reducing water absorption and slowing drying; this often produces a thinner, softer crust.
Sugar	6%	Sugars caramelize during baking, contributing to browning and crust formation; adequate levels help thicken and harden the surface.
Starch Native	4%	Higher starch content with good hydration ensures smooth dough that can be rolled thin without tearing; under-hydration causes cracks or uneven thickness.

 Consistent Impact Across Most Products

 Impact Varies Significantly by Product Type



UNDERSTANDING WHAT IMPACTS CRUST THICKNESS OF BAKED PRODUCTS

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How Flour Components Impact Crust Thickness of Different Products ?

Crust Thickness	Starch (Native)	Starch Viscosity	Damaged Starch	Proteins	Amylase (Enzymatic Activity)	Ash Content (Minerals)	Sugars	Lipids
Flat Bread			2	2	1	2	2	1
Pan Bread		3	2	3	2		2	1
Wafer		3	2	3	2	2		2
Wheat Tortilla		3	2	2	1	1		1
Baguette		3	2	3	1	1	1	
Pizza Crust		3	2	3	2	2		

3: Strong Impact

2: Average Impact

1: Low Impact

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Connecting Flour Components With Bakery Product Excellence.
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KPM Equipment for Monitoring These Key Flour Components



SpectraStar



Alveograph



Mixolab



SDmatic



Rheo F4