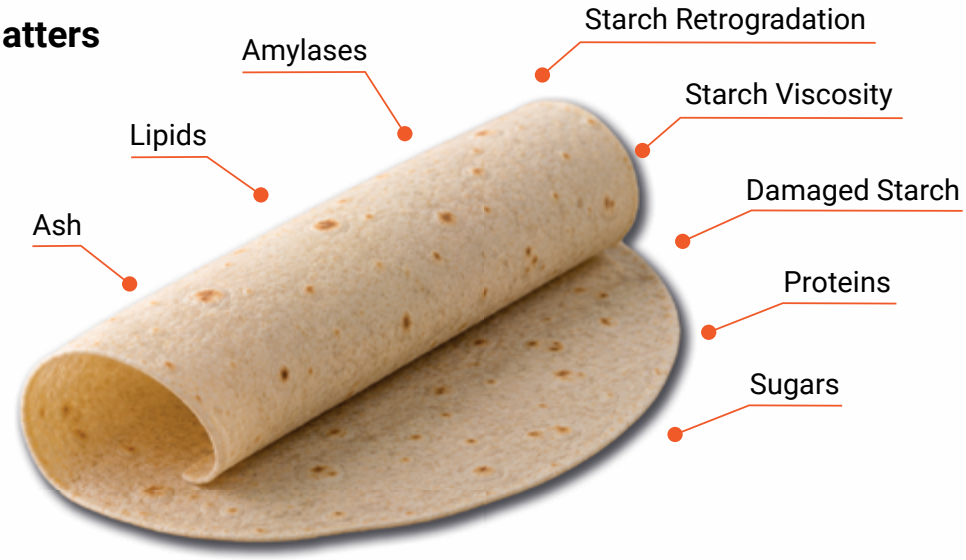
KPM

UNDERSTANDING WHAT IMPACTS FLEXIBILITY OF BAKED PRODUCTS

Back to Flour Series

Why Flexibility Matters



• **Ease of Wrapping & Folding:** Flatbreads and tortillas must wrap or fold without cracking, making them ideal for burritos, wraps, and gyros while keeping the dish intact.

• **Dipping & Scooping:** Flexibility lets flatbreads bend without tearing to scoop dips, curries, or stews, and lets tortillas hold toppings in tacos or fajitas.

• **Durability During Cooking:** Flexibility lets flatbreads and tortillas handle grilling or frying without cracking and stay intact during stuffing or rolling.

• **Softness and Pleasing Texture:** Flexibility usually correlates with a soft, tender texture; stiff breads turn tough and unpleasant to chew.

• **Maintaining Freshness & Moisture:** Flexible flatbreads retain moisture better, staying pliable and fresh longer rather than drying out or turning brittle in the air.

• **Ease of Serving & Handling:** Flexible breads are easier to cut, fold, and manage, and can hold other foods in a portable way without tearing.

• **Customisation for Dishes:** Flexibility lets flatbreads and tortillas adapt to many dishes, from folded wraps to stuffed options across culinary traditions.

• **Authenticity in Traditional Recipes:** Tortillas, naan, and pita all rely on remaining flexible, which is essential to the authenticity of their traditional recipes.

Key Flour Components Affecting Flexibility

Key Flour Components	Contribution to Flexibility	Mechanisms
Damaged Starch	22%	Damaged starch absorbs more water, making dough more extensible and flexible at first, though excessive damage leads to a tough or dry product.
Proteins	22%	Protein needs vary by product, but gluten is always a critical parameter for achieving good flexibility.
Starch Viscosity	19%	During cooking, starch granules gelatinise by absorbing water and swelling, contributing to the product's structure and pliability.
Amylase (Enzymatic Activity)	11%	Amylase breaks starch into sugars that soften structure and aid gelatinisation, but excessive activity weakens dough and reduces flexibility.
Starch Retrogradation	8%	Over time, gelatinized starch recrystallizes, causing it to harden and lose flexibility; limiting retrogradation through a new formulation or the addition of additives improves shelf life and flexibility.
Ash Content (Minerals)	7%	Minerals influence gluten formation and dough handling, and a moderate ash content supports flexibility without compromising softness.
Lipids	7%	Lipids lubricate the dough, reducing friction between gluten and starch, improving extensibility and preventing drying during cooking and storage.
Sugars	4%	Sugar attracts and holds water to support extensibility and, in small amounts, maintains softness post-baking by slightly weakening gluten.

Consistent Impact Across Most Products Impact Varies Significantly by Product Type

How Flour Components Impact Flexibility of Different Products ?

Flexibility	Starch Viscosity	Starch Retrogradation	Damaged Starch	Proteins	Amylase (Enzymatic Activity)	Ash Content (Minerals)	Sugars	Lipids
Flat Bread	2		3	3	3	1	1	1
Wheat Tortilla	3	2	3	3		1		1

3: Strong Impact 2: Average Impact 1: Low Impact

Explore the Back to Flour Series
Connecting Flour Components With Bakery Product Excellence.
- Click here -

KPM Equipment for Monitoring These Key Flour Components


SpectraStar


Alveograph


Mixolab


SDmatic


Rheo F4