



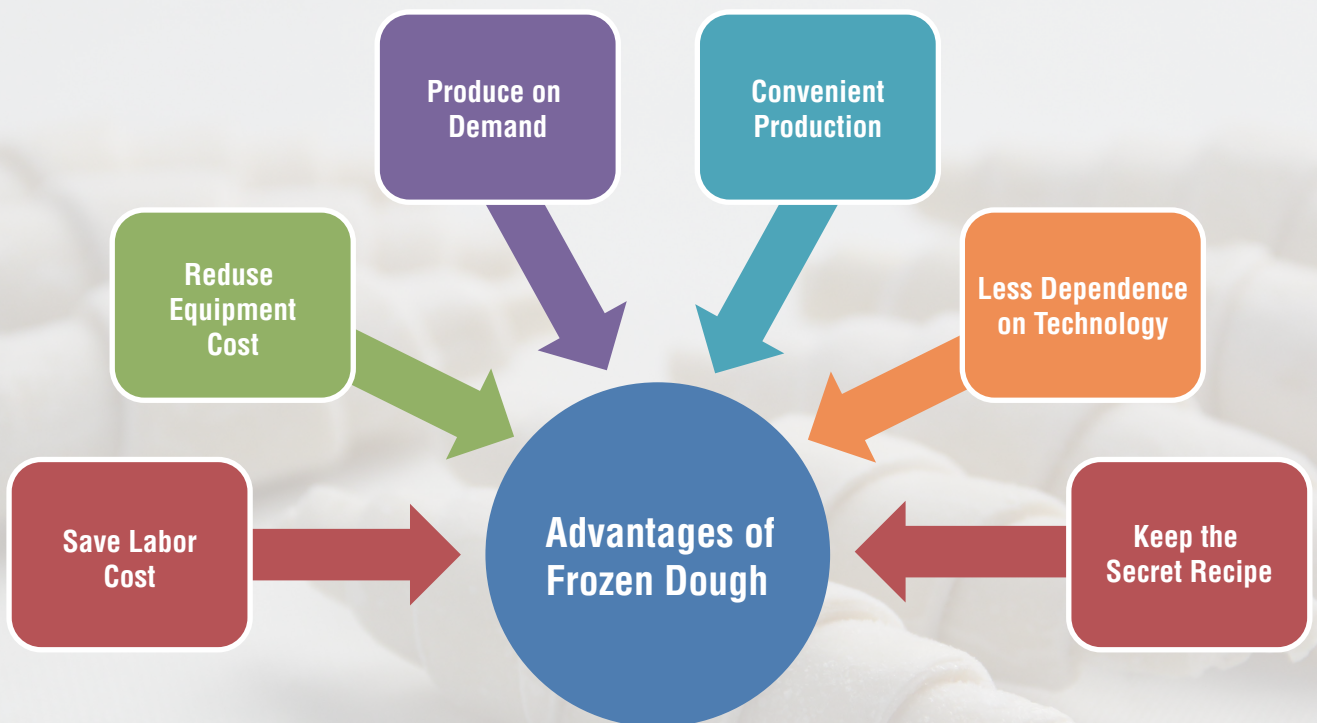
# FROZEN DOUGH TECHNICAL SCHEME



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Frozen dough technology is developed in Europe and grown in the United States. Frozen dough accounts for about 40% of the bread industry in Europe and about 70% in the US.

The use rate of frozen dough is directly related to the economic quality. In areas with more developed economy, the use rate of frozen dough is higher. The main reason is that the labor and rental cost is higher in the developed area.

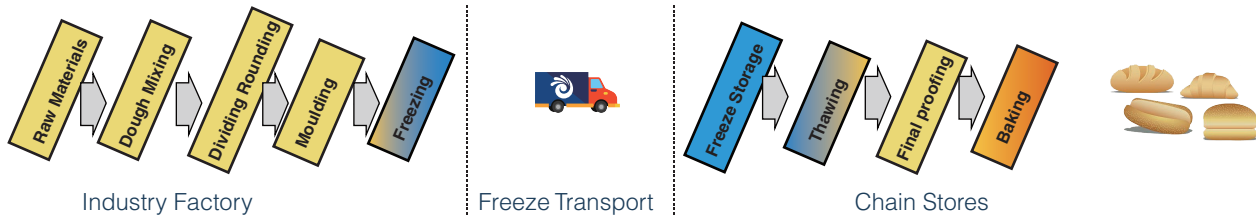


**Advantages of Frozen Dough Procedure for Bakery Chain Stores**



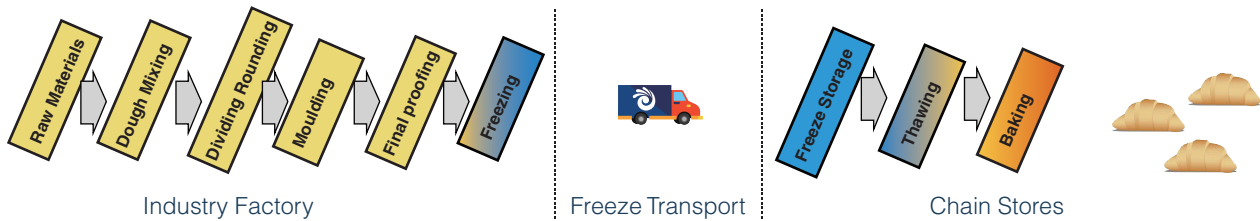
# FROZEN DOUGH PROCESSES

## 1, Un-proofed Frozen Dough



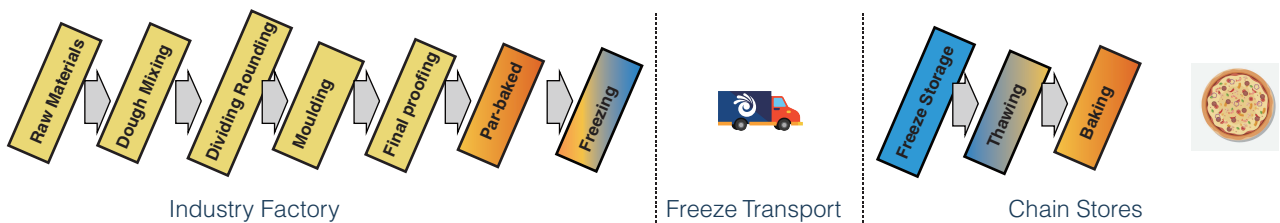
**Un-proofed frozen dough** is mainly sweet dough and crispy bread dough, the technology of making these two kinds of dough is relatively mature. The shop has simple technical requirements and only needs to judge the fermentation state. The flow efficiency of un-proofed frozen dough is good, the space required for store storage is relatively small, and natural thawing is usually adopted.

## 2, Proofed Frozen Dough



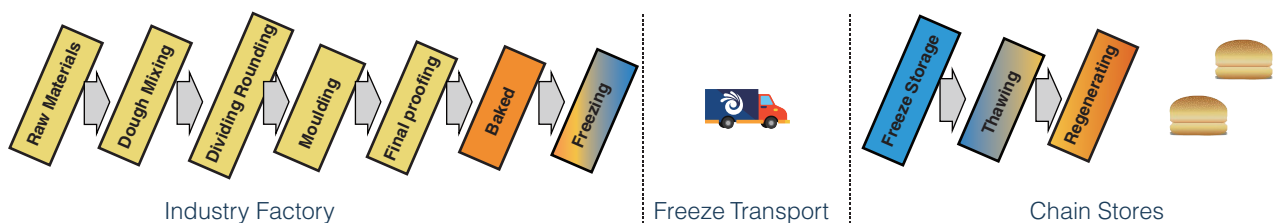
**Proofed frozen dough** is mainly dough of small bag and croissant. Now a small number of customers have started to use this technology. This technology has low technical requirements for shop mechanics, and the general operators can complete the operation. The shop can bake this kind of frozen dough for many times. The number can be adjusted at will, the operation is simple, and the demand for freshly baked bread in the bakery is greatly satisfied.

## 3, Parbaked Frozen Dough



**Parbaked frozen dough** is mainly frozen pizza and a small amount of European crispy bread, which has a small range of use. The semi-finished pizza products widely sold in the commercial circulation department are also used in cafes, restaurants and other users.

## 4, Baked Frozen Dough



**Baked frozen dough** is mainly made up of various types of hamburger and other sandwich products. As the raw materials of coffee shops and the chain western restaurants, and as the breakfast of and some hotels, this kind of frozen dough is also potential for development in the hospital and school catering system.

# FROZEN DOUGH PROCESSES

## 5, Freezer to Oven (FTO) Croissants



**Freezer-to-oven (FTO) croissant**, a frozen, unproofed laminated dough that can be baked without being thawed or proofed and that provides a desirable specific volume of the backed product. Only freezer and oven are needed at the consumer end, saving equipment, space and personnel investment. From freezer to oven, saving time, flexible for customers.

## TWO TYPES OF FROZEN DOUGH

According to the development's trend of the frozen dough at home and abroad In the near future, the engineers in Angel classify it into two groups in accordance with the storage time of frozen dough:



- It is more suitable for short distance transport because the transport time is short.
- It has better taste and flavor maintain its original flavor because of the frozen time is short, and less yeast.
- The more quality of flour can be chosen in general, we should choose more protein of flour to make frozen dough. The longer time we freeze, the higher content of protein we need. It also means the higher prize, so we can save money.
- Compared to frozen dough of the 3 to 6 months, we can add less improver of frozen dough.



- It is more suitable for long distance transport to reach far distance to deliver, as well as for export;
- Because of the longer storage time and more yeast in dough, the flavor has been changed;
- It needs the higher quality of the flour the content of protein need greater than 13% to prevent flour from damaging by ice crystal when it is frozen;
- Compared to frozen dough of 1 month, we can add more improver of frozen dough.

## RECOMMENDED PRODUCTS



**SEMI-DRY YEAST** is a strain of baker's yeast (*Saccharomyces cerevisiae*) specially designed to ensure optimum stability of yeast activity in frozen dough.

※ It is also used in fresh dough.

Package: 1kg × 10 / box

### ADVANTAGES:

- Significantly extends shelf life of frozen product.
- Longer shelf life than compressed yeast.
- Reduced amount required (only 50% as much as compressed yeast).
- Free-flowing granules for easy and accurate scaling. Gives the baking product better flavor.

### DOSAGE

shelf life of frozen dough (months)	The dosage of Semi dry yeast
<1	1.5-2
2-3	2-2.5
4-6	3-3.5



**F-99 frozen dough improver** is suitable for sweet dough, conditioning dough and other types of frozen dough, can improve the dough's wet gluten content, reduce damage caused by frozen storage, and increase the volume of bread made from frozen dough, suitable for unwrapped frozen dough process.

Recommended dosage: 1% -2% on the flour

Packing: 1kg x10 / box



**A-plus Croissant bread improver** is suitable for all kinds of crispy bread making. It is especially suitable for the long-term shelf life of shredded bags, Danish bread and crispy frozen dough. It can be used for the wake-up of frozen dough. Hair and pre-awake technology.

Recommended dosage: 2-3%,

Package: 1kg × 10 / box

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## FAQ

### **1. The shelf life of fresh yeast is 45 days, why frozen dough made by fresh yeast can be kept for 6 months?**

Under cold storage, the fresh yeast will gradually lose its activity and dissolve. Its activity will decrease 20% in 45 days. Therefore, It is suggested that fresh yeast shall be used within 45 days. However, when fresh yeast is added into dough then immediately frozen and stored, the yeast under frozen status will not dissolve and the process of losing activity will be relatively slow. That is why, when the frozen dough defrosted after 6 months, the yeast will gradually come to life and in activity.

### **2. Why holes occur in bread made from frozen dough and how to solve this?**

Fermentation before freezing may cause holes. We finish cutting and shaping ASAP before freezing.

### **3. Why croissant will release unpleasant smell when frozen too long?**

This unpleasant smell is caused by lipid oxidation during freezing. To solve it, it shall change to natural butter.

### **4. Why yeast activity is insufficient after defrosting the frozen dough?**

Yeast is fermented before rapid freezing, which causes the loss of active yeast during freezing. The solution is to reduce dough temperature and freeze immediately after shaping, avoiding the fermentation of yeast.

Blast freezer is not qualified and freezing time is too long. The solution is to freeze immediately in avoiding yeast fermentation.

Temperature fluctuates too much during storing and transportation, which causes the activity loss. The solution is to guarantee the stability of temperature during storing and transportation, in order to avoid activity loss.

Yeast is insufficient during long period of frozen store. The solution is to add sufficient yeast.

### **5. How to solve the dryness taste of ready-to-bake pizza base after freezing?**

Fast freeze to reduce moisture loss.

Start fast freeze when paste temperature down to 35 °C after baking.

Spray water when baking, avoiding moisture loss. Choose appropriate improver.

### **6. What is the difference of Angel Fresh and Semi-dry Yeast?**

We can choose fresh yeast or semi-dry yeast to make frozen dough.

Compared to the activity of semi-dry yeast, the fresh yeast dropped quickly in shelf life. It's suggested to make frozen dough within 15 days after production.

The activity of semi-dry yeast drops slowly under frozen storage, so it is a better choice to those areas where transportation is underdeveloped. Yeast loses activity very slow under frozen storage. So in some remote areas without good facilities, it is better to use semi-dry for frozen dough.

### **7. Compared with instant dry yeast, what are the advantages of semi-dry yeast in frozen dough?**

Quality & Resistance to freezing is very stable for be stored in - 18 °C. It also can prevent the change of the yeast quality from the condition of transport.

The volume of bread is big, and aroma is nice compared with instant dry yeast.

The cold water resistance performance is good. The frozen dough requires the dough's temperature under 20 degrees. We usually use cold water to mix dough. The cold water resistance performance of the semi-dry yeast is good. It is more suitable for the requirement of frozen dough.

### **8. What is the characteristic of Angel Frozen Dough Improver?**

F-99 frozen dough improver is suitable for all types of frozen dough, can improve the dough's wet gluten content, reduce damage caused by frozen storage, and increase the volume of bread made from frozen dough.

A-plus Croissant bread improver is suitable for all kinds of Danish bread. Dough is easier to extend and shape. Bread volume gets bigger. Layers of Danish bread are better.

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