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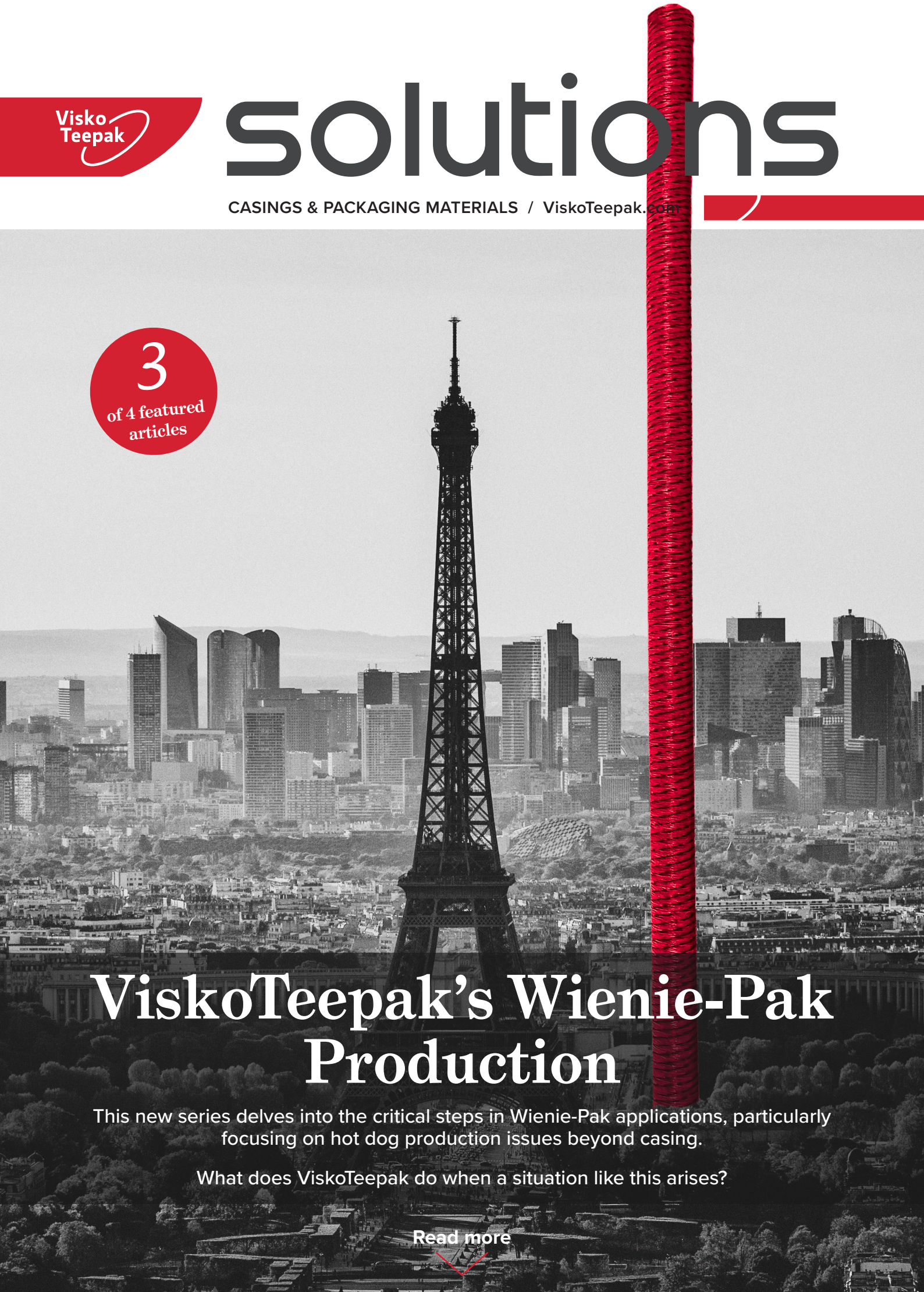


3 of 4 featured articles

ViskoTeepak's Wienie-Pak Production

This new series delves into the critical steps in Wienie-Pak applications, particularly focusing on hot dog production issues beyond casing.

What does ViskoTeepak do when a situation like this arises?

Read more

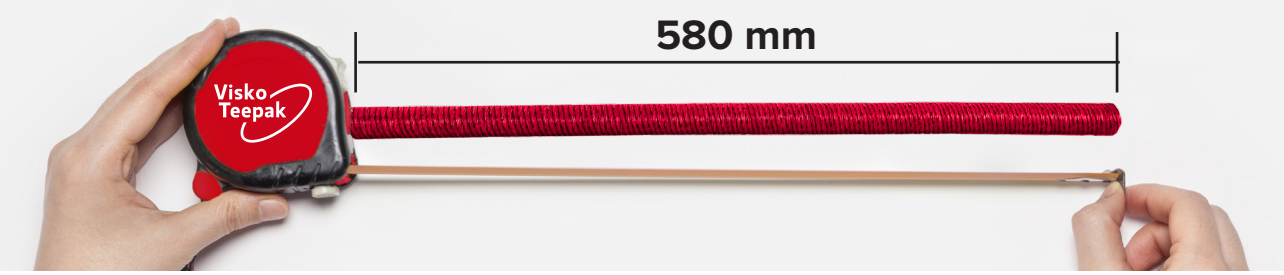
“Longest is not always best”

This article is the third in a series regarding the production of hot dogs. The request was to highlight the hotdog process in relation to our Wienie-Pak casing. Since the casing is only a part of the whole process, the focus in these articles is broader than just the processing.

The first article discussed processing issues related to hotdog recipes and heating. The second article focused on the functionality and optimization of Wienie-Pak during the stuffing process.

This article addresses the pitfalls and limitations of strand properties in relation to the filling process, aiming to find a proper balance between processing and strand load.

The last article, which will be published in mid-2025, will focus on the Wienie-Pak process at the Lommel facility in relation to the end users’ requirements. The intention behind this series of articles is not to advertise but to shed light on challenges with respect to the use of Wienie-Pak.



“Longest is not always best”

The slogan “Longest is not always best” applies to many aspects of life, and certainly to the Wienie-Pak strand load.

When discussing Wienie-Pak optimization, we must consider the four main parameters of the strand. These four parameters are:

1. Meters/feet of Wienie-Pak requested in a strand, also known as the strand load
2. SLIT limitations, which refer to the allowed length of a Wienie-Pak strand
3. The inner bore of the strand, in relation to the stuffing tube size
4. Shirring technology, reflecting the newest technology available for demanding shirring requirements.

With these strand properties in mind, we can apply them to a customer’s situation. It is surprising to hear customers’ thoughts about the optimum strand length. Some decisions for a certain product are self-evident, others are historically based, or even based on ignorance. Let us try to break down these factors:

1. **Equipment limitations:**
Obviously, we must work with the available equipment. The hopper width of automatic machines is a limitation for strand length. These widths are fixed but differ from machine to machine. The hopper sizes of the newest automatic stuffers set the bar high for shirring specialists. It seems to be a competitive game between the shirring engineers and machine suppliers, both pushing to meet the increasing customer requirements. Now, the challenge is in our hands, as the hopper size has increased to 60cm. Market demand has created the need for a robust, usable strand with a load of more than 250 feet.

2. **Stuffing tube length:**
The effective stuffing tube length is another consideration. Stuffing tubes currently vary from 35cm to 60cm. Referring to the slogan “Longest is not always best,”

there are valid reasons for dealing with both 35cm and 60cm tube lengths. Both extremes could require a high level of shirring expertise.

3. **Strand load and casing size:**
For two reasons, the optimum number of feet load in a strand is related to the casing size. The size directly affects the number of loops that can be accepted on a smoke stick.

A simple calculation for the optimum number of loops is: **[smoke stick length – 8 cm] / [calibre + 1.5cm] = number of loops**

The second limitation of the strand load is the weight of the filled strand. It's not just bodybuilders beside the stuffing machine who need to carry the filled strands from the conveyor chain to the trolley or to the automatic processing lines. The final weight of the strand can limit its load.

Some data on filled strand weights in relation to calibre, link length and strand load:

Calibre (mm) / link length (cm) / strand load (feet)	Weight of filled strand
20 / 10 /84	6.37 kg
30 / 10 / 84	12.93 kg
20 / 20 / 84	7.10 kg
20 / 20 / 210	16.10 kg
30 / 20 / 210	24.16 kg

4. **Smoke stick length:**
Smoke stick lengths vary between 80cm and 150cm. Using the above formula, the optimum loop load can be calculated. The number of loops is one factor, but the optimum number of links inside a loop (loop length) also requires attention. In principle, there is no limitation to the strength of the cellulose casing for the number of links inside a loop. Efficient (heat) processing is the key parameter in determining whether the number of links is even or uneven in a loop.

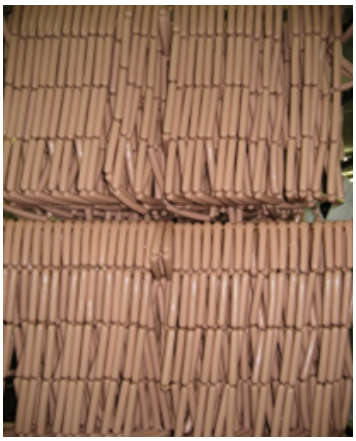
5. **Strand load balance:**
The balance between the available casing in a strand and the link length is another decisive factor for the technical strand load, as shown in the table below. The length of the sausage determines the number of sausages that can be made from a certain strand.

Effective used casing for filling emulsion in relation to the link length:

Link length (cm)	Casing lost for twist and top/bottom
4	30%
8	20%
12	17%
20	10%
30	5%

(*) calibre oriented; these figures represent size 20

6. **Neglected considerations:**
This consideration is often neglected, especially when natural smoke is used to treat the sausages. For proper smoke treatment of hotdog products, both the drying and smoking steps are crucial. These steps must be properly executed, and this depends mainly on the capabilities of the smokehouse.



An optimum chamber load is related to the strand load. A proper trolley load should allow enough space all around the links, ensuring a balance between smokehouse capabilities and chamber load. For the drying step, a certain amount of humidity must be able to escape in a limited time, and for adequate smoke treatment, the smoke—whether natural or liquid—must evenly surround the sausages for proper smoke smell, color, and penetration.

In the end, achieving all of this is a fine balance. It requires time management, planning, and, of course, the right strand load!

"Longest is not always best" means finding a good balance between meat preparation, stuffing, processing & peeling, and packaging. None of these steps should be a bottleneck in the process. For a reliable calculation, we can count on a stuffing speed of 7 feet per second. Peeling takes half the time. Strand load can balance cooking and smoking time without causing an accumulation of trolleys or crates. Sometimes, a less loaded trolley or slower stuffing speed (with less manpower on the machine) is more profitable.

Conclusion: The optimum strand load is a balance between possibilities, expectations, and efficiency.

Possibilities: The choice of strand depends on the customer's process options and limitations in the stuffing room and cooking department.

- Chamber cooking with trolley hanging
- In-line automatic heat and smoke treatment (stick-length)
- J-con line (conveyor chain transport)

Expectations: This is related to the final appearance of the sausage. The sausage process can be compared to painting a house—it's what makes the product stand out. Considerations include the color of the link, sausage consistency, weight loss, peelability, and the final appearance.

Efficiency: Efficiency relates to the process flow. Here, the filling level must be balanced with the available space and process capacity. In simple terms, efficiency means optimizing the number of links, loops, and kilograms produced in a given time unit.

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