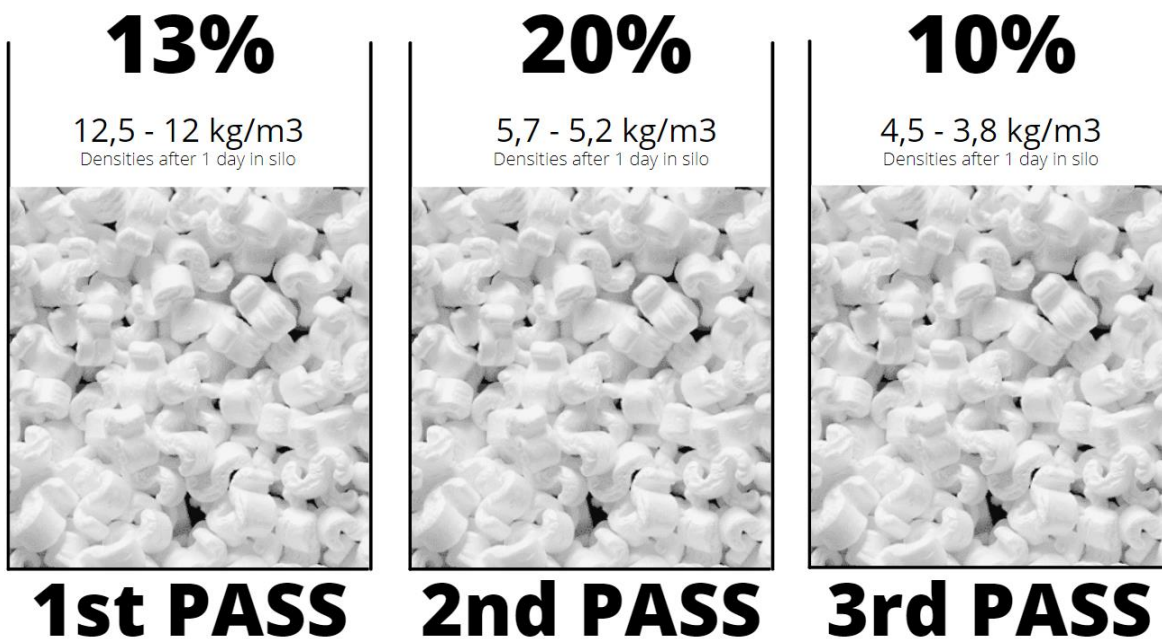# FUMOSO INDUSTRIAL S.A

HOW TO OBTAIN LOWER DENSITIES?

Shrink back is a technique used during expansion to obtain a very low density loose-fill. By increasing steam temperature and residence time inside the expander, loose-fill shrinks immediately after exiting the expander, which allows loose-fill peanuts to later overexpand in the silo.

Normally steam pressure must be 0,2-0,3 bar. Saturated steam is ideal. Temperature inside the expander range from 91 to 98°C. You should regulate these parameters to obtain the following:

Targeted shrinkage percentages

13%
12,5 - 12 kg/m3
Densities after 1 day in silo
1st PASS

20%
5,7 - 5,2 kg/m3
Densities after 1 day in silo
2nd PASS

10%
4,5 - 3,8 kg/m3
Densities after 1 day in silo
3rd PASS

How to measure shrinkage?

To measure the shrinkage percentage, put a container (approx. Size: 200mm diameter and 300mm height) at the exit of the pre-expander and fill it to the edge in less than five seconds. Don't move it or shake it. And after 5 minutes, measure the volume the material has. The difference will tell you the shrinkage percentage and you will be able to regulate the steam temperature and residence time accordingly.

Frequently asked questions

What happens when peanuts overexpand in the silo?

- When the material is expanding in the silo, it is recommended to re-circulate the material with a blower from the bottom cone to the inner top, to avoid excessive pressure inside the silo and to allow a better overexpansion, improving density.

Should I worry if the aspect of the material looks bad?

- Some customers are afraid of shrink back because they believe material will never shrink-back overexpanding and will increase final density. When the material shrinks also shows very bad aspect. Don't be afraid of the aspect and follow shrinkage figures if you wish to obtain low densities.

What will happen if I pass the expansion very slowly?

- The longer residence time inside the expander the more resilient the final product. Exceptionally long residence times in the 1st pass results in obtaining very low densities.

What happens if I shrink too much?

- Shrink back percentages over those indicated, improve resilience on the final product but increase the final density.