

Range of applications **Cable compounds**



THE CHALLENGE.

Generally cable compounds have to fulfill higher quality requirements, than most other technical compounds. On one hand this is due to multiple safety aspects imposed for cable compounds, e.g. electrical insulation, heat resistance, low flammability, long lifetime, low smoke emissions and high elasticity. On the other hand this is due to the high value

of cables, which results from the expensive conductors used in combination with these compounds. The challenge for compounding extruders is to produce the demanding types of cable compounds e.g. semiconductive compounds, peroxide based XLPE or halogen free flame retardant compounds (HFFR).

THE SOLUTION: the ENTEX Planetary Roller Extruder.

Semiconductive compounds are used as thin layers around the insulation layer (XLPE) in power cables to smoothen the electric field between conductor and ground layer. In this function they have to withstand high temperatures and therefore need to be cross linkable in addition.

The conductivity of such a compound is reached by mixing approx. 39% of high structure carbon black (CB) in a Polyolefin matrix. Due to its low shear mixing this is an unbeatable advantage of the Planetary Roller Extruder (PRE). It is even proven, that the content of the expensive CB can be reduced, while still maintaining the required conductivity.

An additional advantage of the PRE is its unique cooling ability, which allows to cool down the compound below the reaction temperature of the crosslinking agent (peroxide). This gives the revolutionary possibility to introduce and incorporate the peroxide already at the end of the compounding step. The typical peroxide soaking process of the semiconductive pellets becomes obsolete.



Benefits of producing semiconductive compounds

- Carbon black incorporation at low shear, without damaging their structure
- Reduction of the carbon black (CB) content from 39% to 31%
- After CB incorporation the compound is cooled down below peroxide reaction temperature
- Introduction of peroxide at the end of the compounding step, no soaking process needed

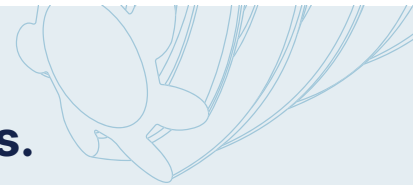
Precision extrusion A system concept that delivers.

This system's combination of a targeted, process-oriented feed of various fluids and solid materials in defined process zones with mechanical configurability and efficient tempering allows it to conduct

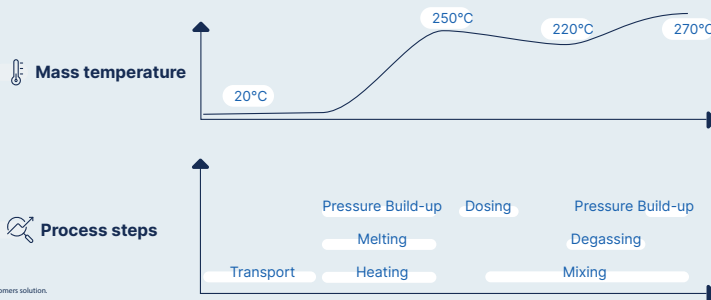
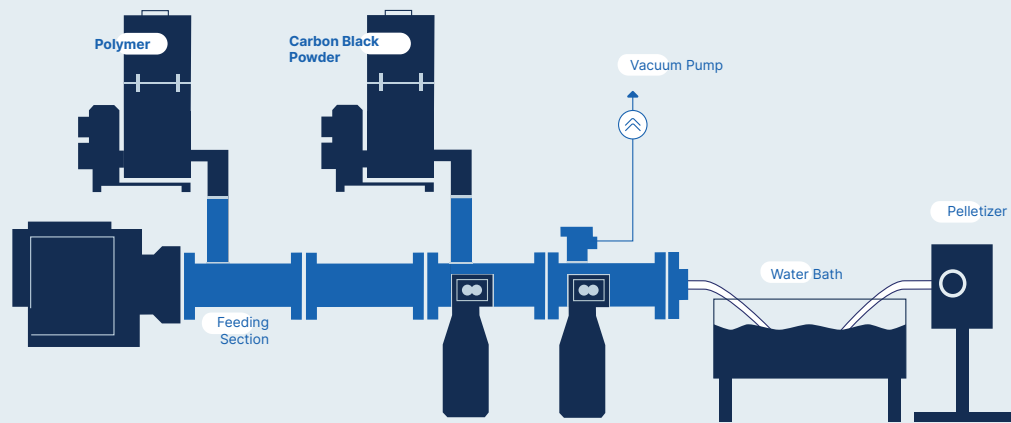
gentle, low-shear compounding to produce extrudates with outstanding homogeneity. Every single step in the process can be controlled individually.



Reduced carbon black amount in semi conductive cable compounds.



PRE-M3
Cable Compounds



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