



Coperion on K 2010  
Hall 14, Booth B33

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## Press Release

### *Coperion at K 2010*

## **FET – Optimised Feeding for Throughput Improvements**

*Stuttgart, July 2010.* – For a significantly increased feeding capacity when processing powdered material on twin screw extruders, Coperion GmbH, Stuttgart/Germany, formerly Werner & Pfleiderer, has developed the so called Feed Enhancement Technology (FET). The basic principle: The feeding zone is equipped with a porous, gas permeable wall section to which a vacuum is applied externally. Intermediate particle air is sucked out of the powdered bulk material through this section. This compacting of the loose material reliably raises the feeding capacity by a factor of two to three whilst maintaining unchanged high product quality. FET is suitable not only for the feeding zone of the ZSK twin screw extruder, but also for the ZS-B twin screw side feeder that doses powder materials directly into the melt. A ZS-B twin screw side feeder with FET will be on show on the Coperion booth B33 in hall 14 at K 2010 (Oct. 27 to Nov. 3, 2010 in Düsseldorf, Germany).

Amongst the most important advantages of FET for feed limited compounding processes are:

- Low investment cost, because a smaller compounding unit can provide the required throughput,
- lower specific energy input,
- lower production costs through a move to non-compacted and therefore cheaper fillers,
- improved compound quality through gentler processing of sensitive products due to the higher utilisation of the available processing volume,

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- reduced dust levels, because back venting is not necessary,
- improved process security through a larger processing window in respect of the feeding zone limit.

### **FET – Successful in Many Applications**

The FET system has proven itself on many new Coperion machines since its market launch. Moreover in close cooperation with Coperion process engineers several compounding plants have been retro-fitted in order to achieve higher throughputs.

A ZSK twin screw extruder with 240 mm screw diameter for the processing of polyolefin powders was fitted with an FET system. This increased throughput from 14 to 17 t/h, that is a 20% improvement.

At its pilot facilities of the Innovation Headquarters in Linz, Austria, Borealis uses a very fine talc, which has a tendency to bridge, to manufacture talc filled compounds. With the help of FET it was possible to raise the throughput by up to 200% and realise a cost effective debottlenecking. Another compound manufacturer achieved a significant performance increase with FET on a ZSK 92. At 20% by weight of talc the throughput rose from 2.4 to 3.3 t/h, that is 40%, and with 48% loading from 1.1 to 1.4 t/h (+ 30%).

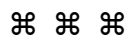
In extensive tests on a ZSK 40 and a ZSK 50 with various talc grades throughput improvements of up to 300% were achieved. Further successes with other additives were also possible: Trials on a ZSK 40 resulted in a 55% increase in throughput with flame retardants and with graphite by as much as 200%.

On a ZSK 76 MEGAvolume PLUS used to manufacture polypropylene with micro hollow spheres the ZS-B 92 side feeder was fitted with FET. This allowed a 40% increase in throughput.

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On two further compounding lines for the manufacture of halogen free flame retardant (HFFR) cable compounds the FET system was installed upstream. On both lines, a ZSK 76 MEGAvolume PLUS and a ZSK 92 MEGAcoupler PLUS, back venting was no longer necessary. In addition the throughput of the ZSK 92 MEGAcoupler PLUS was raised from 1.4 to 2.2 t/h, that is 57%.

Coperion ([www.coperion.com](http://www.coperion.com)) is the international market and technology leader in compounding systems, bulk materials handling systems and services. Coperion designs, develops, manufactures and maintains systems, machines and components for the plastics, chemicals, food and aluminium industries. With its three Competence Centers Compounding & Extrusion, Materials Handling and Service, 1,700 employees and nearly 30 sales and service companies worldwide, Coperion achieves annual sales of 400 to 600 million euros.

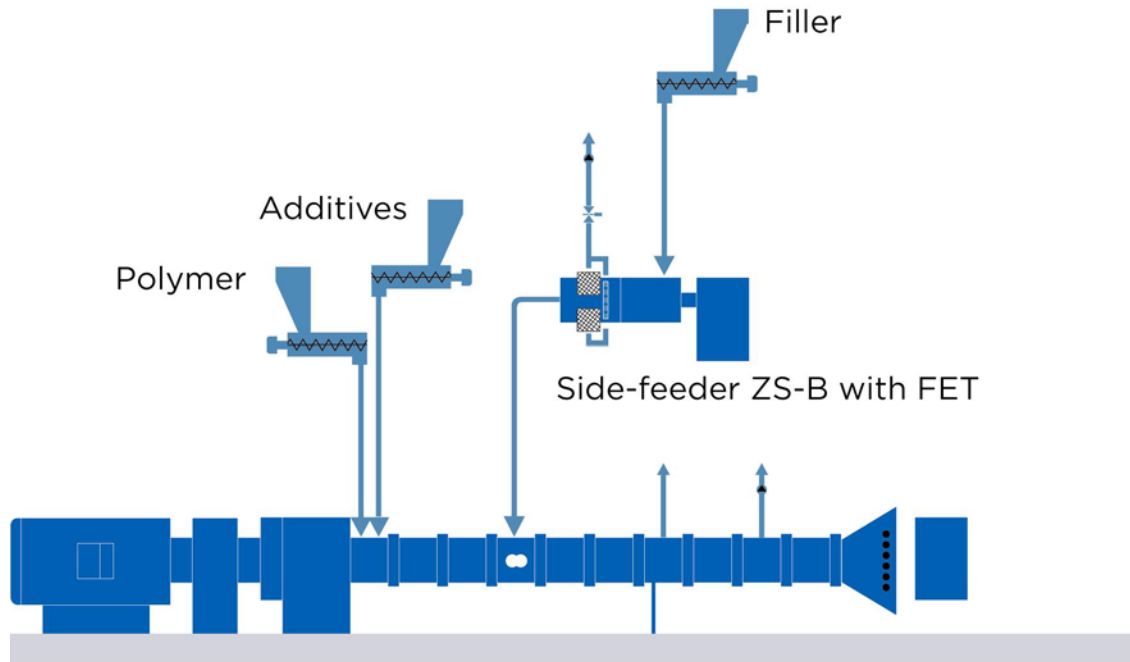


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**<http://www.coperion.com/technicalpress>**

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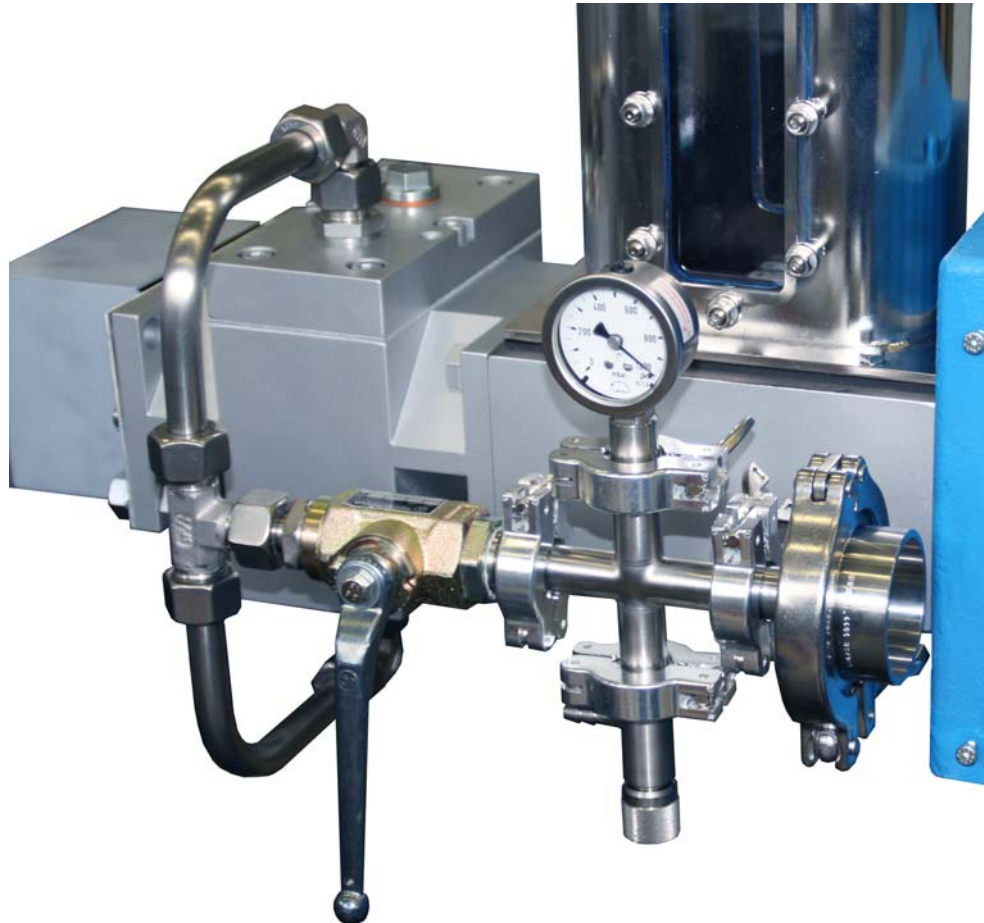
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*Typical set-up of a compounding line with a ZSK twin screw extruder where the ZS-B twin screw side feeder is equipped with FET*

*Picture: Coperion, Stuttgart/Germany*

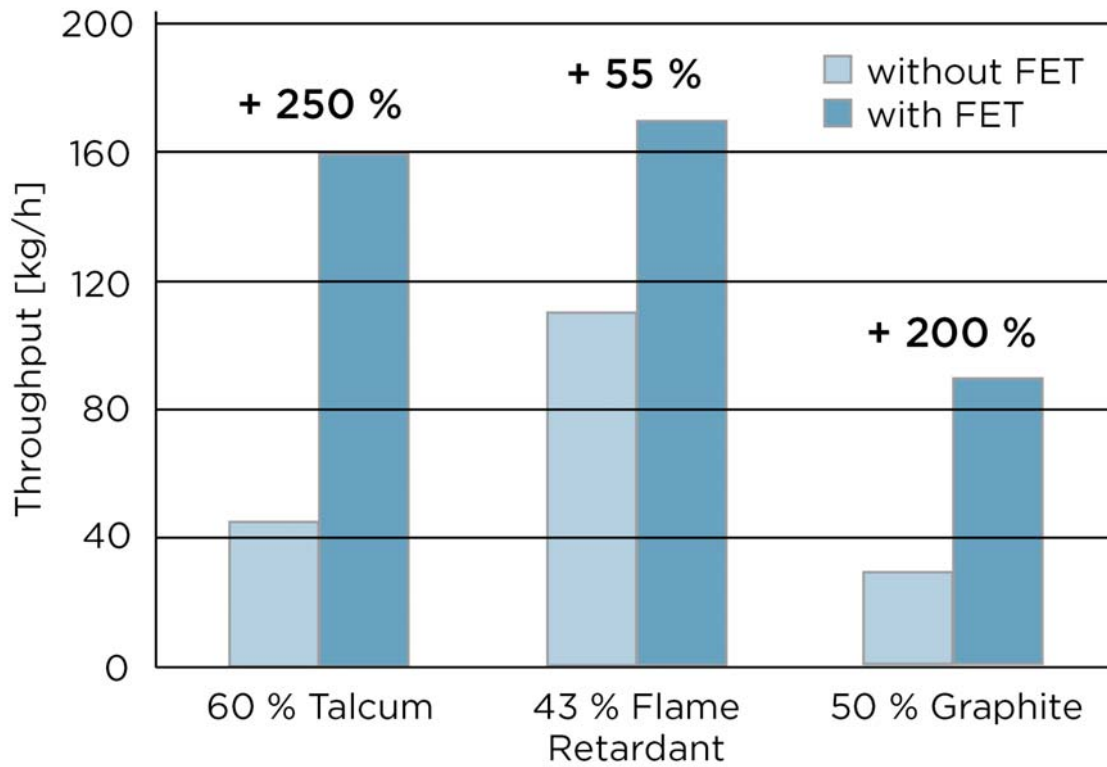
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*FET system on a ZS-B twin screw side feeder*

*Picture: Coperion, Stuttgart/Germany*

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*Throughput improvements for various applications on a ZSK 40 MEGAc ompounder PLUS that can be achieved by using FET*

*Diagram: Coperion, Stuttgart/Germany*