PRODUCE COMPOSITES MORE EFFICIENTLY

Waste to Product with Dieffenbacher's LFT-D Technology
SPE ACCE
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1. Dieffenbacher Company Overview

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DIEFFENBACHER COMPANY OVERVIEW
REVIEW OF DIEFFENBACHER LFT-D TECHNOLOGY

- Two machine technique for optimized compounding and gentle fiber integration
- High profitability
  - No semi finished part required = cost saving
  - Less logistics = cost savings
- Individual adaption of the compound to the required properties of the component
- High level of mechanical properties
  - Homogeneous fiber distribution
  - Optimized fiber length of 20-50 mm
- Excellent flow properties leads to improved surface quality
- In-Line processing of recycled material
  - Material cost savings
- More than 65 LFT-D lines sold worldwide
REVIEW OF DIEFFENBACHER LFT-D TECHNOLOGY
Economics

- In past 2 years that has been a drastic increase in material costs such as steel, wood, and plastics. This includes polymers typically used in the thermoplastic compression molding and injection molding industries.
- Climate change and natural disasters have also put plastic supply chains at risk of meeting market demand.
- Recycled materials have a much lower price point compared to virgin materials.

Source: The Plastic Exchange  
9_17_2021.pdf (theplasticsexchange.com)
MOTIVATION FOR USE OF RECYCLED PLASTICS

Environment
- Reduce the amount of waste ending up in landfills
- Reduce our extraction of natural resources
- Reduce processing energy thus reducing global energy consumption and greenhouse gas emissions to combat climate change
**Challenge:** Recycled materials may be supplied in a wide range of challenging forms to process into components

**Solution:** Integrating the latest in dosing technology
- Capable of accurately dosing a variety of material forms
  - Pellets
  - Regrind
  - Powder
  - Agglomerates
- System is fully dust contained to prevent contamination in plant
- Closed loop control to ensure actual throughputs meet set-points

Source: Motan
**Challenge:** Recycled materials with low melt flow and high viscosity

**Solutions:** Higher performance extruder
- Single Twin Screw Extruder
- Capable of processing LDPE, HDPE, PP, PA, PET, and more
- Higher torque motor/gearbox for low MFI materials
  (Materials less than 1g/10min)
- Large barrel for higher material throughputs
- Input for fibers such as fiberglass for increased stiffness and strength in final product
MATERIAL HANDLING

- Collecting the molten LFT-D plastic material on heated conveyor belt system after adjustable output die on end of extruder
- Customizable charge size in terms of length, thickness, and spacing
- Variable pre-positioning of the plastic material on the loading belts
- Robotic loading with End of Arm Tooling to accurately place material in mold
Fiberpress (DCL)

- Short stroke press (working upstroke)
- Column design
- Press forces: 10.000 - 50.000kN
- Cycle times ≥ 25 s
- High speed and short pressure buildup times
- Low machine height
- Active parallel levelling
- Energy efficient
- Modular design
TURNKEY RECYCLING LFT-D LINE
Replace virgin materials with recycled materials
Low cost components
Non-structural and semi-structural
Industries
- Automotive
- Consumer Goods
- Industrial
- Construction
Recycled materials are becoming increasingly attractive due to economic and environmental reasons.

Wide range of applications in the following industries: Automotive, Consumer Goods, Industrial, Construction.

Dieffenbacher building on over 20 years of LFT-D experience.

Advancing the dosing and extruding technologies enables a wider range of recycled plastics to be processed.

High speed and high tonnage presses are required for molding recycled thermoplastics.

Dieffenbacher offers complete turnkey solutions for recycled composite part production.
NOW LET'S MOVE TOGETHER Forward