INVISTA™
POLYPROPYLENE

Pellet Transfer Guide

Introduction

This document provides guidelines for transferring INVISTA polypropylene pellets in a manner that minimizes the generation of fines (fluff) and streamers (angel hair, snake skins). The scope of this document is limited to transferring pellets from the railcar or hopper truck to the silo. Good housekeeping practices during the unloading should also be observed to minimize contamination.

Guidelines

Excessive material transfer velocity is the primary cause of fines and streamers. High temperature during the pellet transfer is also a contributing factor. The pellet transfer velocity is a function of the blower capacity and the pipe diameter.

There are two general conveying technologies for pellet transfer: dilute phase which utilizes higher air velocity and lower transfer volume and dense phase which utilizes lower air flow and maximum transfer volume. Dense Phase transfer is at lower pellet speeds, generating less heat and fewer fines and streamers. Dense phase conveying requires larger pipe diameter, higher pressure and additional pipe support due to the vibrations caused by the pellets slug flow.

For dilute phase conveying (the most common), the recommended velocity range is 50 to 80 foot per second. The transfer pipe diameter should be sized based on the blower capacity to provide a velocity within the recommended range. Conveying distance should be kept to a minimum, placing a hopper car or truck as close as practical is preferred.

Optimal air temperature after the blower is 90ºF. An inter-cooler may be required to maintain this temperature since air temperature across the blower and filter increases about 15º Fahrenheit for each psi of air pressure.

For more detailed pellet conveying system design recommendations, please contact the following vendor:

- Pelletron Corporation: www.pelletron.com

Hopper Truck Loading and Unloading

If a bulk truck is used in the loading and unloading of pellets, care must be taken to minimize contamination with the environment (dust, dirt, sand, water). The transfer hoses should be kept clean and capped at all times when not in use. A clean suction filter should be placed on the open end of the railcar tube to catch any dust from the conveying air.

If streamers are generated during the pellet transfer, it is recommended to throttle the air flow to reduce the air velocity. The actual blower pressure will vary depending on the piping configuration.