

EVA RESIN TRANSFER GUIDE

ETHYLENE COPOLYMERS

EVA copolymers are very heat sensitive. They have lower melting points than many resins. Copolymers with higher levels of vinyl acetate incorporated have even greater heat sensitivity. The temperature of the blowing air used for transfer of EVA resins must be closely monitored and cooled to temperatures below 90°F. Resin unloading should be completed as quickly as possible. The chance of heat build-up and blocking increases the longer it takes to transfer the material; and when the material blocks, it sticks together. Since high EVA copolymers are quite tacky, blocking of the transfer lines can be a very serious problem.

HOPPER CAR OFF-LOADING RECOMMENDATIONS

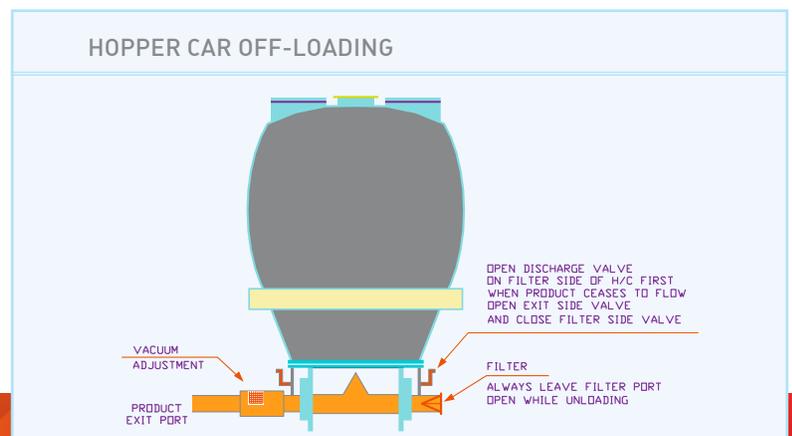
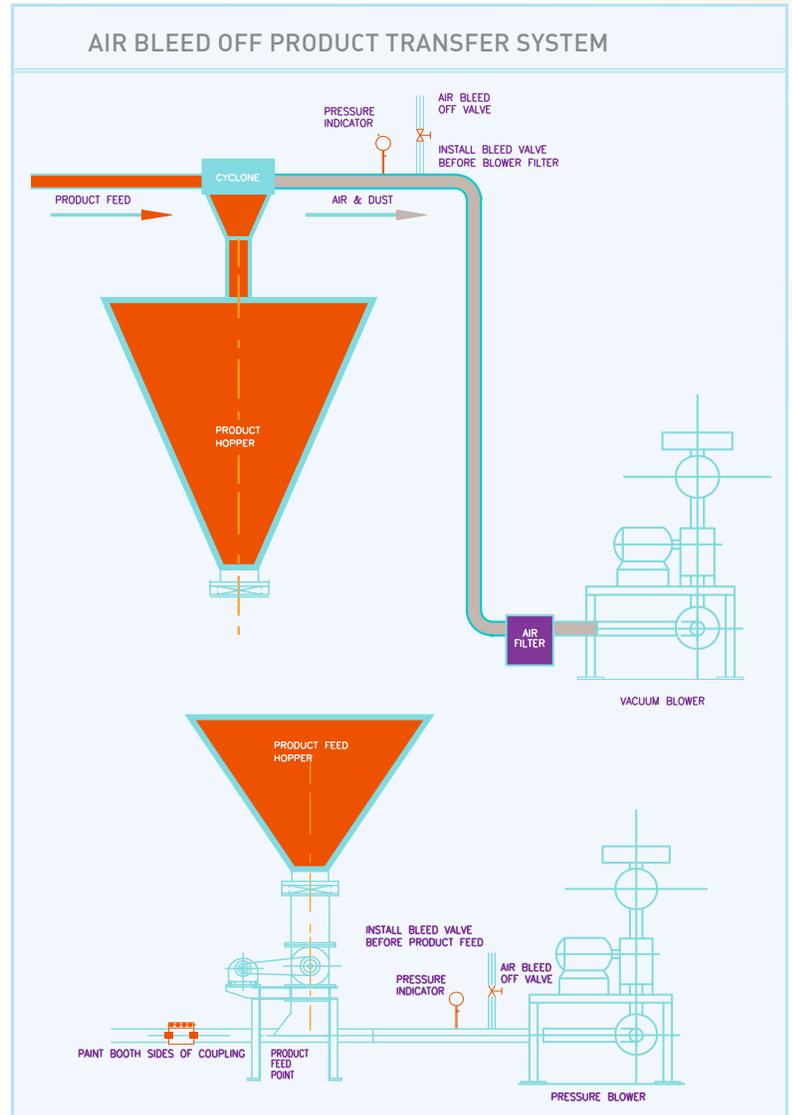
The hatch cover of the compartment to be unloaded should be opened. The railroad car may indicate that the hatch is vented and does not need to be open. **This does not apply to Celanese EVA railroad cars. We install a plastic seal over the compartment opening before closing the hatch, to ensure product integrity by minimizing the risk of moisture ingress, which in effect makes the car a non vented car.** This seal should be removed before the vacuum blower is turned on and the unloading of the car commences. It is recommended that a loading platform be fabricated c/w handrails installed to facilitate the opening of the top hatches. The design of such a platform should comply with federal and state regulations governing fall protection.

If the top hatch is not opened then the following procedures are recommended:

1. Open both discharge ports of the compartment to be emptied.
2. Remove the plastic seals from both ports.
3. Attach a vacuum hose to the exit port.
4. Install a filter in the opposite port.
5. Open Hopper Car product discharge valve on the filter side of the hopper car (not the hose side) and set to desired flow.
6. When product ceases to flow, open hose side discharge valve and close filter side valve.
7. Do not close filter side port until vacuum blower is turned off.

NOTE

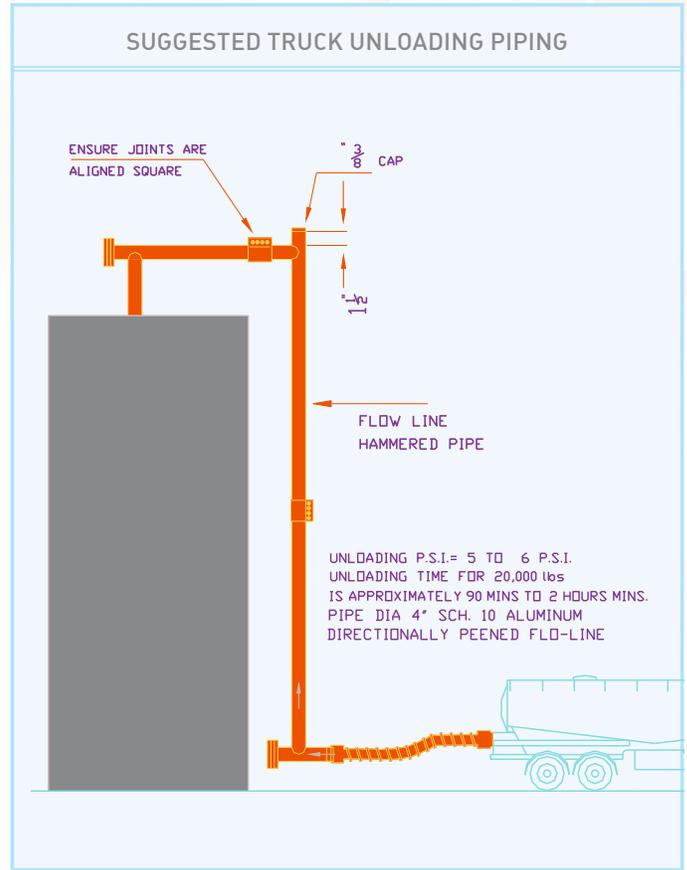
If the top hatch is not opened and seal removed, it is extremely important to ensure that the port opposite the hose connected port is open when withdrawing material from the hopper car. If this is not adhered to the hopper car walls could collapse.



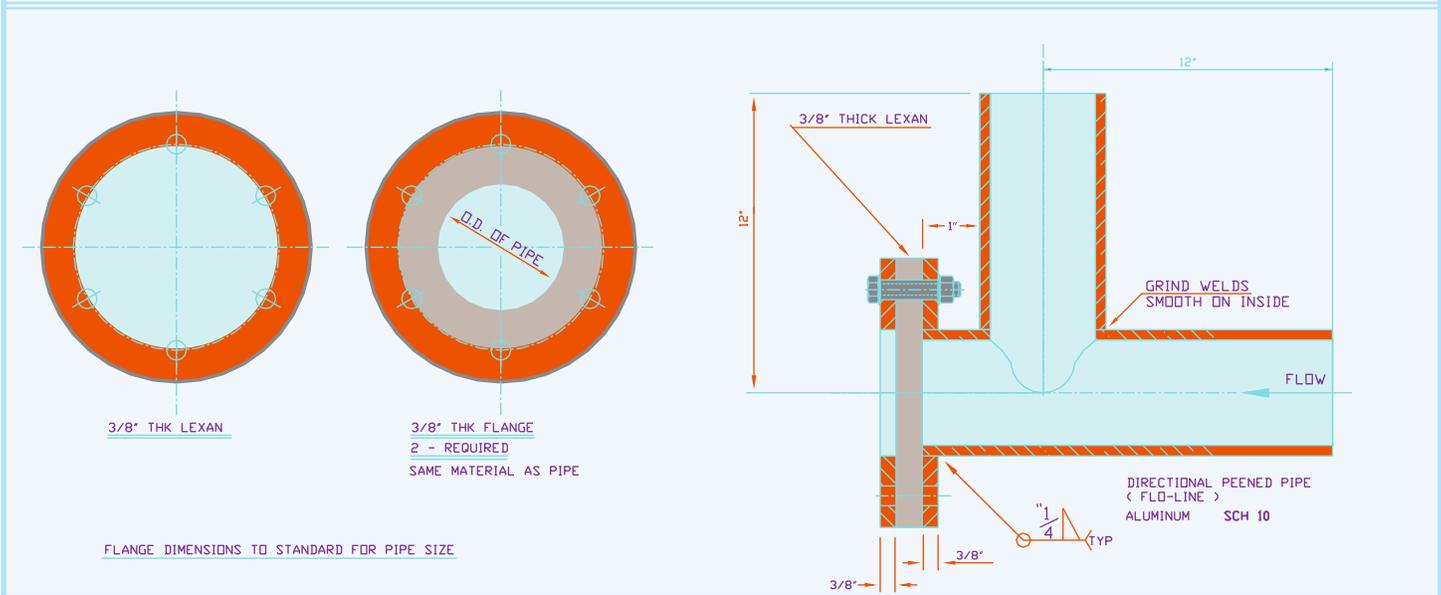
HOPPER TRUCK UNLOADING RECOMMENDATIONS

Hopper trucks should have transfer air coolers. With air coolers installed the transfer air temperature should be close to ambient air temperature. Angel hair and fines are caused by the velocity of the pellets as they travel along the piping. One way to reduce the degradation of the product is to slow the velocity of the product down. This can be achieved by increasing the pellet to air ratio, which will cause the pressure to increase and the velocity to decrease. The correct product to air ratio is determined by trial and error.

It is recommended that blind tees be used in place of long radius elbows. (see sketch)



TEE BEND FOR DILUTE PHASE PNEUMATIC CONVEYING



Troubleshooting Suggestions

Problem	Probable Causes	Suggested Cause of Action
Line Plugs	Air velocity below saltation point	Increased air volume
	Reduction in conveying air	Ensure filters are clean
		Check for line leakage
		Check supply blower for damage or wear
	Receiver full	Check for bridging in receiver
		Repair or replace discharge feeder
	Material build-up	Ensure air is cooled for tacky materials
		Eliminate any sources of moisture
Improper line configuration	Avoid using more than two consecutive changes in direction	
	Avoid long radius bends	
Streamers	Friction-induced smearing on pipe walls	Roughen interior surface of lines
		Cool down conveying air to prevent the resin from softening
		Reduce air velocity as much as possible without going below the saltation point
		For long transfer lines, reduce air velocity in the last 40 ft by increasing pipe diameter
		Avoid cyclonic separation in the receiving vessel (allow material to free fall)
		Install blinded tees or other specialty elbows designed to reduce the generation of fines and streamers
Fines	Pellet clipping by rotary feeder	Install wedged or baffled entry rotary feeder so feeder pocket does not operate fully
	Pellet breakage from long-radius elbows	Install blinded tees or other specialty elbows designed to reduce the generation of fines and streamers

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