

TROUBLESHOOTING GUIDE FOR COATING



1 Presence of Gels

1.1 Contaminated resin:

- Purge the residue of the extruder.
- Verify the absence of contaminants in the resin storage and transport systems.
- Contact the raw material supplier in order to rule out product contamination.

1.2 Non-cast pellets:

- Increase the extrusion temperature.
- Increase the counter pressure of the extruder.
- Decrease the extrusion speed.

1.3 Thermal degradation:

- Reduce the extrusion temperature.
- Increase the extrusion speed.
- Verify the proper operation of the heating and temperature control systems.

1.4 Poor additives dispersion:

- Increase the counter pressure of the extruder.
- Optimize the flow index of the resin and the concentrates.
- Contact the concentrate supplier.

2 Low seal resistance:

2.1 Surface contamination:

- Assess together with supplier of the resin and additive concentrate incorporated the possibility of exudation or seepage of additives to the surface.
- Examine the product use procedure in order to detect contamination sources.
- Add antistatic additives in order to reduce dust attraction to the work area.

2.2 Resin contamination:

- Contact the resin supplier.

2.3 Insufficient coating weight:

- Adjust the extrusion speed, the substrate speed and the resin specifications.
- Reduce the line speed.
- Increase the opening of the nozzle tip.
- Contact the resin supplier.

2.4 Product degradation or accumulation of carbonized material:

- Adjust the extrusion speed.
- Increase the extrusion speed during the purge process of the extruder.
- Verify the proper operation of the heating and temperature control systems.
- Adjust the crown treatment level.
- Unsuitable combustion in the flame treatment – verify the fuel quality.

3 Variations in thickness – rupture of the extruded weave.

3.1 Belts of greater thickness:

- Adjust the opening of the nozzle.
- Verify that there is a constant temperature profile along the nozzle.
- Verify the proper operation of the heating and temperature control systems.
- Increase the counter pressure of the extruder in order to improve the mixture.
- Verify the correct temperature selection of the head adaptor and the extruder transference duct.
- Make sure that the “nip roll” pressure is constant along its axis.

3.2 Tear of the edge weave:

- The resin is cold. Increase the extrusion temperature.
- Increase the temperature of the ends of nozzle and head.
- Verify there are no elements that obstruct the outflow or escape of the product in the ends of the nozzle and head.
- Use a resin with a greater flow.
- Increase the opening of the ends of nozzle.
- Increase the coating weight.
- Decrease the substrate speed.

3.3 Extrusion by waves or “surging”:

- Delay the polymer fusion in the extruder by reducing the temperature in the first areas of the barrel.
- Verify that the extruder feed is constant.
- Verify the cooling of the feed area.

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- Verify the wear of the screw and pay special attention that the feed section is not damaged by wear and/or corrosion.
- Check the screw design with the equipment supplier.

3.4 Cast resonance:

- Verify the proper operation of the heating and temperature control systems.
- Use a resin with greater flow.
- Reduce the height of the extruded weave.
- Increase the coating weight.
- Verify the cooling of the feed area.

3.5 Edge weave distortion:

- Reduce the extrusion temperature.
- Clean the nozzle.
- Verify that the temperature of the ends of the nozzle is not excessively high.

4 Pin Holes:

4.1 Substrate fibers penetrating the coating:

- Verify the substrate quality.
- Treat with flame the substrate surface.
- Reduce the extrusion temperature.
- Use a lower flow index resin.
- Increase the coating weight.

4.2 Coating areas that are too thin:

- Verify the absence of contaminants in the nozzle and head.
- Verify that the nozzle opening is constant.
- Verify that the temperature profile along the nozzle is suitable for the processed material.
- Verify the proper operation of the heating and temperature control systems.
- Increase the counter pressure of the extruder.

4.3 Excessive post-coating crown treatment intensity:

- Contact the equipment supplier.
- Verify that the distance of the electrode of the treatment equipment is suitable.
- Verify that the selected power level for the treatment operation is suitable.

4.4 Excessively high extrusion temperature:

- Reduce the extrusion speed.
- Verify the proper operation of the heating and temperature control systems.

4.5 Presence of gels:

- See previously indicated actions.

4.6 Presence of irregularities in the surface of rollers:

- Verify and rectify the surface of the cooling roller and the pressure roller.
- Clean the surface of the cooling roller and the pressure roller.

4.7 Expansion of volatile compound blisters:

- Dry the substrate and/or resin.
- Use a lower index flow resin.
- Reduce the temperature of the extruder.

4.8 The extruded material adheres to the cooling roller:

- Reduce the temperature of the extruder.
- Use a roller with a rougher surface.
- Use a Teflon band in order to reduce the adhesion to the roller.
- Shift the weave towards the pressure applying roller.
- Verify that the temperature of the cooling roller is suitable.
- Use the corrective measures in order to improve adhesion to the substrate.

5 Presence of "orange or shark skin":

5.1 Incompatibility among resins:

- Purge the residue from the extruder.
- Verify the absence of contaminating agents in the resin storage and transport systems.
- Contact the raw material supplier in order to rule out product contamination.

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This bulletin has been made by the Marketing Department of Polinter with the support of the specialists of Investigación y Desarrollo, C.A. (INDESCA) and by the Technical Services Department of CORAMER. This is intended for all clients and users of the Venelene® resins and we trust that the information contained herein is helpful and useful.

Please contact us at the following email address, info@polinter.com.ve or through our agent: Corporacion Americana de Resinas (CORAMER), with branch offices in Venezuela, Colombia, Peru, Ecuador and Chile (<http://www.coramer.com>), should you have any suggestions or comments regarding this issue.

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In order to obtain more detailed information of the security aspects regarding the use and disposal of our products we invite you to consult the security pages (MSDS) of the Venelene® polyethylene.