

6 ROTATIONAL MOULDING

ROTATIONAL MOULDING TROUBLESHOOTING GUIDE

Problem/Issue	Cause(s)	Potential Solution(s)/Action(s)
Air Entrapment	Insufficient heating	Cook to a higher peak internal air temperature
	Powder quality	Powder may be too coarse or contains tails. Consult powder supplier
	Cycle time too short	Increase heating time
Corners do not fill	Design – sharp corners or small gaps between walls	Redesign mould
	Powder has poor dry flow	Contact Powder supplier
Failure during Chemical Storage	Contents not compatible with container	Discontinue or revise service life appropriately
	Design – Stress concentrators present	Redesign mould
	Thickness insufficient	Increase shot weight
	Service temperature too high	Increase shot weight, reduce maximum exposure temperature
Flashing	Contamination in part line	Ensure good cleaning practices
	MFI of polymer too high	Change to a lower MFI grade
	Unevenly clamped mould	Check clamping mechanism
	Poor venting	Check vent is not blocked and is of sufficient size
Insufficient Rigidity in Moulding	Wall thickness too thin	Increase shot weight
	Density of Resin too low	Trial higher density resin
	Design	Design stiffening features or ribs may be required
Odour, shiny yellowish internal surface	Overcuring	Reduce temperature or heating time. Reduce peak internal air temperature
Parts Stick in Mould	Insufficient mould release due to inadequate application	Reapply mould release
	Mould release diminished with number of shots	Reapply mould release
	Design	Check for undercuts
	Mould damage	Inspect mould and repair if required
	Poor mould finish	Inspect mould and repair if required
Poor Impact Properties	Design	Review Design, minimising any sharp corners or areas of stress concentration
	Undercure – Small voids are present in wall sections	Cook to a higher peak internal air temperature
	Overcure – Internal surface is shiny	Cook to a lower peak internal air temperature
	Choice of Polymer	Lower Density and/or lower MFI grades may enable increased impact resistance
Wall Thickness Variation	Poor powder quality. Tails and poor flowability	Contact Powder supplier
	Incorrect rotation	Alter rotations
	Variable heating of the mould walls	Check for thickness variation of the mould wall. Check for shielding effects
Warpage	Uneven Cooling due to large thickness variations	Alter rotation ratio. Review design
	Uneven Cooling due to premature separation from mould surface	Reduce mould cooling or apply internal cooling. Reduce mould release
	Poor Venting	Check vent is not blocked and is of sufficient size

Disclaimer

The proposed solutions in this guide are based on conditions that are typically encountered in the manufacture of products from polyethylene. Other variables or constraints may impact the ability of the user to apply these solutions. Qenos also refers the user to the disclaimer at the beginning of this document.