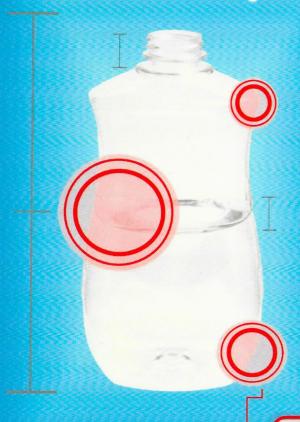
# THE RAPID GUIDE TO PERFECT PET BOTTLES

A Practical Troubleshooting Handbook



**Ottmar Brandau** 

# THE RAPID GUIDE PERFECT PET BOTTLES

### About the Author

Ottmar Brandau has worked in the PFT industry since 1988 in various capacities. He is president of Apex Container Tech Inc, a Canadian company involved in all aspects of blown container manufacturing. He has comprehensive knowledge of the stretch blow molding process, materials, and



machinery and has trained hundreds of operators and engineers all over the world. His web site www.blowmolding.org offers support for the blow molding community.









# The Rapid Guide to Perfect PET Bottles

## Contents

1.	Introduction	_ 1	
2.	Band in Bottle Body	_ 5	
3.	Base Fold	_ 7	
4.	Base rupture	11	
5.	Bent Neck	13	
6.	Blown out Neck Finish	17	
7.	Burst Test Failure	19	
8.	Cracked Gates	23	
9.	Damaged or Deformed Neck Finish 25		
10.	Drop Impact Test Failure	29	
11.	Fill Level Test Failure	31	
12.	Flat on Parting Line	33	
13.	Haziness or Opalescence	37	
14.	Invisible Logo or Recycling Mark	41	
15.	Neck Fold	43	
16.	Off-Center Gate	45	
17.	Panel Sink	49	
18.	Pearlescence or Stress Whitening	53	

19.	Rocker Bottom or Insufficient Ba	se
Clearand	e 57	
20.	Spine in Oblong Bottle	6
21.	Stress Cracking Test Failure	6!
22.	Thick Spot in Base (Lens)	69
23.	Thin Base	73
24.	Thin Corners in Oblong Bottle	
25.	Thin Shoulder	81
	Top Load or Vacuum Test Failure	
27.	Touch Marks (TS only)	85
	Under-blown Bottle	
	Uneven Axial Distribution	
	Uneven Heel or Base	
	Uneven Wall Thickness	
32.	Balancing Ventilation and Preform	า
emperat	ure	99
	Changing Preform Temperatures 1	
34.	Finding the Correlation between	
neform T	emperature and Bottle Wall	
Tickness	103	

35. Making Bottles with Optimal

105

#### The Rapid Guide to Perfect PET Bottles

the piston. Make sure pressure compensation valve works properly.

C: Check blow mold leader pins and bushings

D: Vents should be not more than 0.25 mm (0.010") deep; typically they are 0.1 mm (0.004")

E: Increase blow time and/or check cooling water flow

#### Further explanation:

When molds are new, the vents have been properly cut, and the machine clamping mechanism (whether hydraulic or mechanical, with or without pressure compensation) works well, mold split lines should not be noticeable and barely visible. If vents are too deep (greater than 0.25 mm or 0.010") and stretch ratios are small material may flow into the vents. On the other side, as time goes on and molds wear vents can get crushed. This leads to venting problems that may create hot bottle parts as the air inside the mold may prevent or delay the cooling of the material in the mold.

When leader pins and bushings wear molds are no longer aligned. This can felt when running a finger over the parting line. If on one side the parting line is proud in one way and the other way on the other side the mold halves are offset.





EFITS / ADVANTAGES

Comparison of Blow Mold Formats

COMBR Energy

LESS Floor Space

Fapid Change Over

#### **TECHNOLOGY OPTIONS**

- o Air Recovery
- o Preferential Heating
- Neck Orientation
- o Heat Set
- o Sure Grip

WODEL	BOTTLE	NECK	OUTPUT
12 12 12 12 12 12 12 12 12 12 12 12 12 1	12.01	55mm	1,800 bph
TXXL	30.0 L	60mm	600 bph
	4.01	38mm	3,800 bph
41_	4.0 L	38mm	7,500 bph



info@1BLOW.com www.1BLOW.com

