

Aerosol 101 – Aluminum Cans

2011

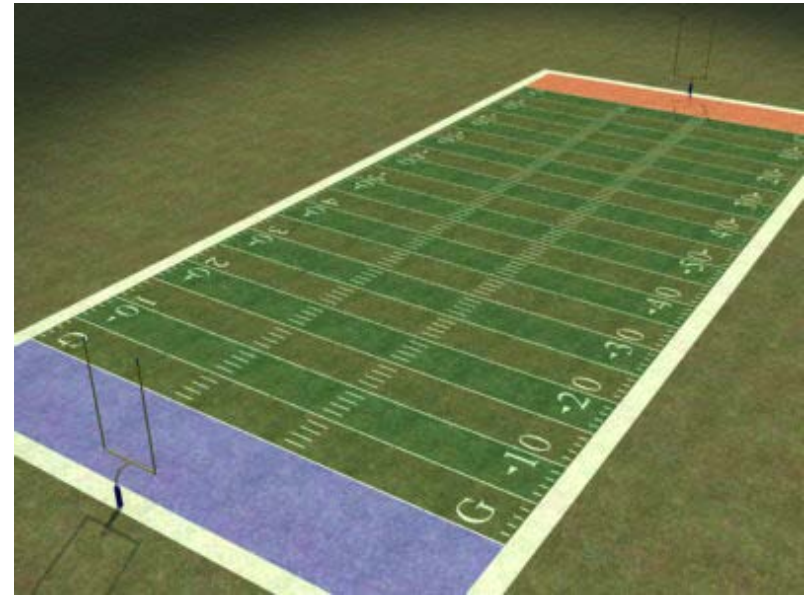


Scope of Presentation

- ▶ *Detail can making basics*
- ▶ *Exrusion, Inside Lining, Lithography, Neckdown*
- ▶ *Can Parameters (need to know)*
 - *Size*
 - *Pressure Resistance*
 - *Internal Coating*
 - *Shoulder*
 - *Curl*

Can Making Basics – EXTRUSION

- ▶ A typical extrusion line is over 300 feet long

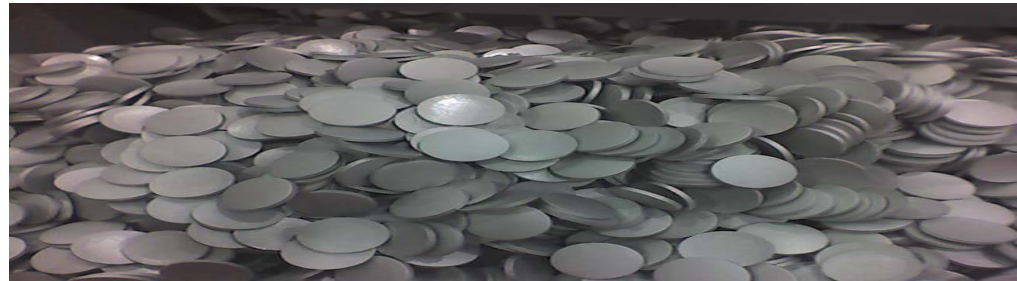


Can Making Basics

▶ Slug Tumbler



▶ Extrusion Press



Can Making Basics – EXTRUSION

- ▶ Wall Ironing and Trimming



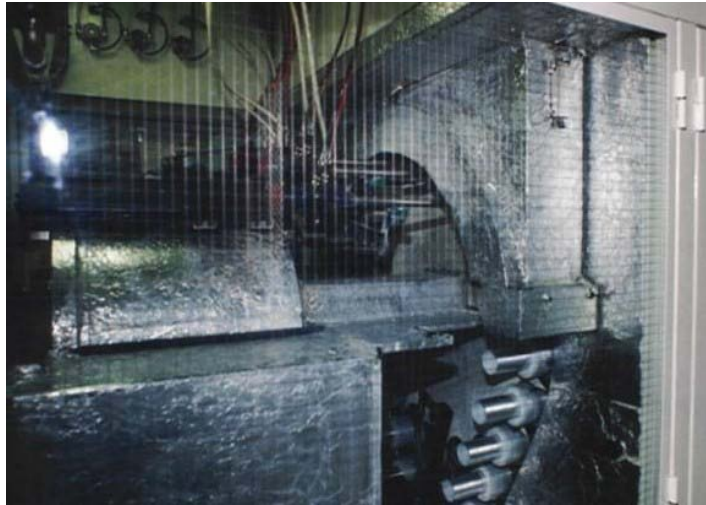
Can Making Basics – EXTRUSION

- ▶ Washing



Can Making Basics – INSIDE COATING

- ▶ Inside lining



Can Parameters – INSIDE COATING

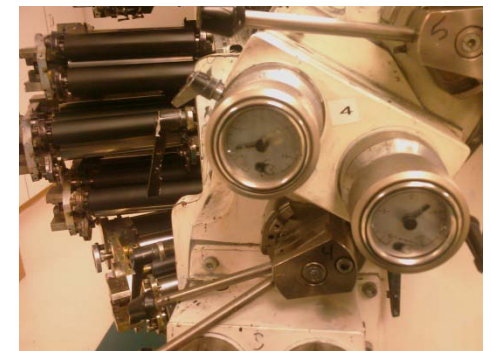
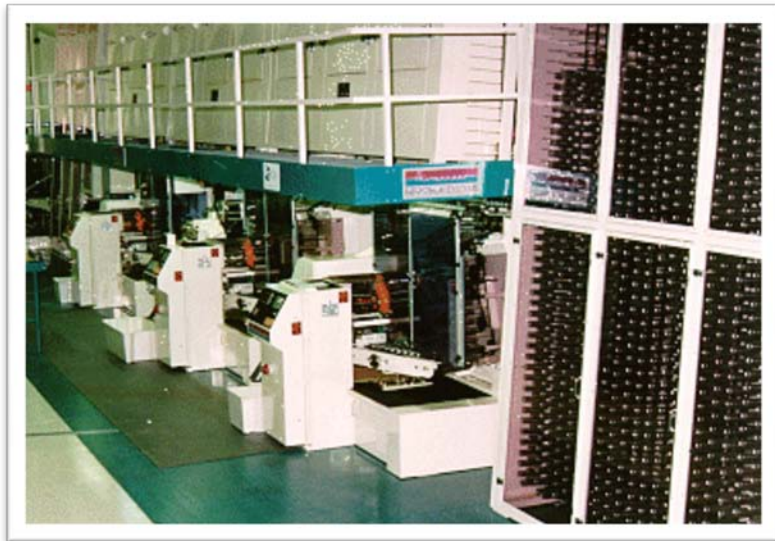
- ▶ Internal Coatings by group
 - Epoxy Phenolic
 - Most common
 - EP–Vinyl (Organisol)
 - Less Common today
 - Polyamide Imide (PAM)
 - Used more often today with increased use of Dimethyl Ether (DME) as a propellant

Can Parameters – INSIDE COATING

- ▶ Internal Coating– Major Suppliers
 - HOBA
 - Valspar
 - Sistiaga
 - Kolack

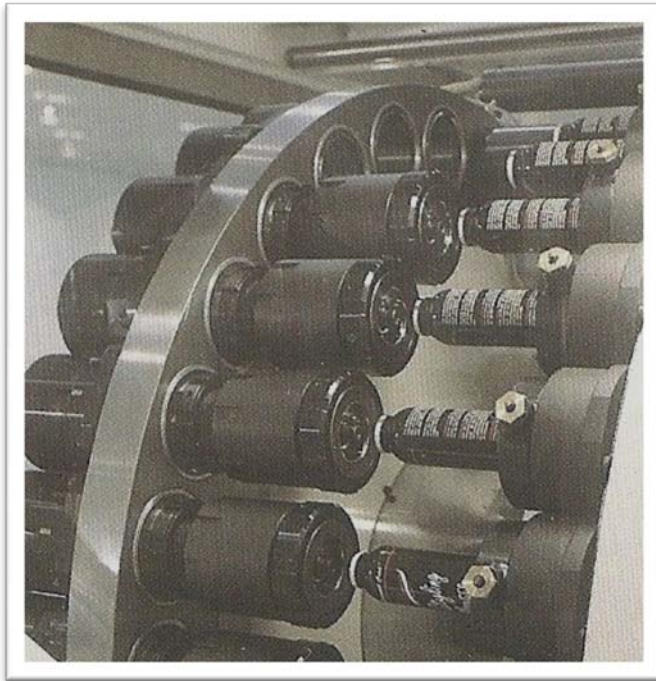
Can Making Basics – LITHOGRAPHY

- ▶ Basecoat, Printing, Overvarnish & Curing



Can Making Basics – NECKDOWN

▶ Neckdown – dies

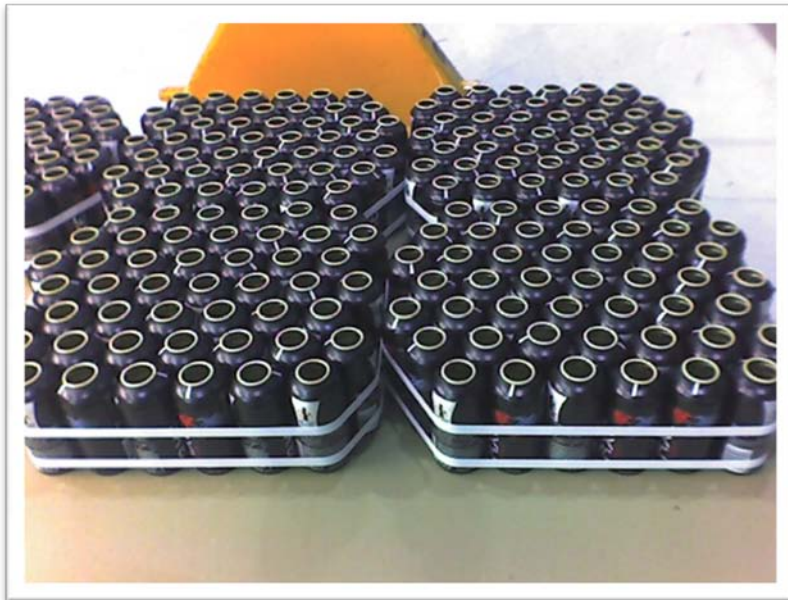


▶ Neckdown – back view



Can Making Basics – NECKDOWN

- ▶ Can Bundles



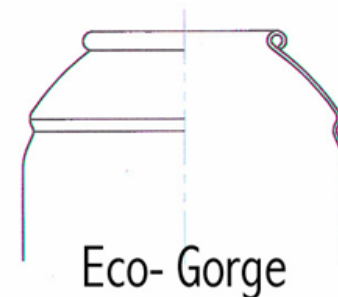
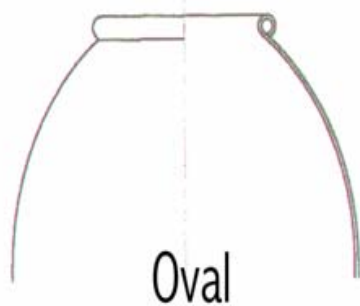
- ▶ Can Bundler



Can Parameters

▶ Shoulder profiles– major

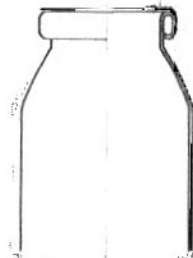
- Oval – shoulder radius greater than $\frac{1}{2}$ the can diameter
- Round – shoulder radius equal to or less than $\frac{1}{2}$ the can diameter
- Eco-Gorge– accommodates single shell overcap



Can Parameters

▶ Curl Styles–20mm

- Available 22mm, 25mm, 35mm, 38mm, 45mm, and 50mm diameter containers
- Curl thickness either 2.5 mm or 4mm



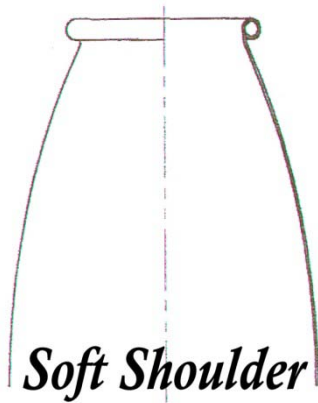
20mm mouth 4 mm curl



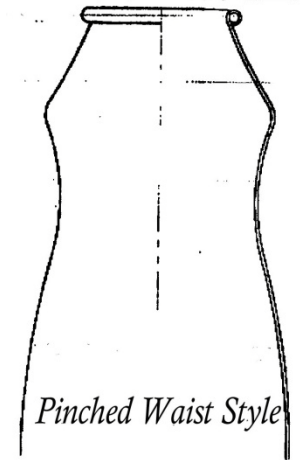
20mm mouth 2.5 mm curl

Can Parameters

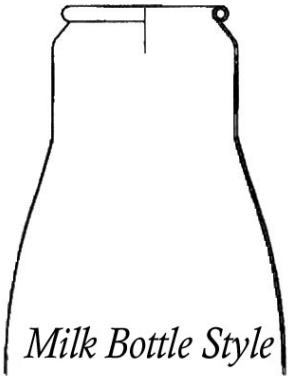
- ▶ Shoulder Profiles – Sample of shapes



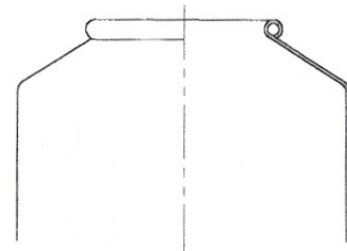
Soft Shoulder



Pinched Waist Style



Milk Bottle Style

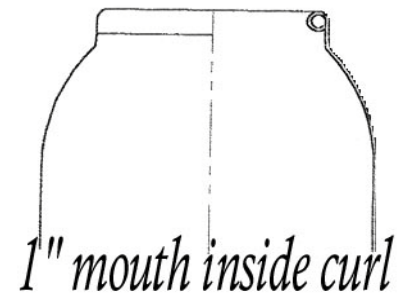
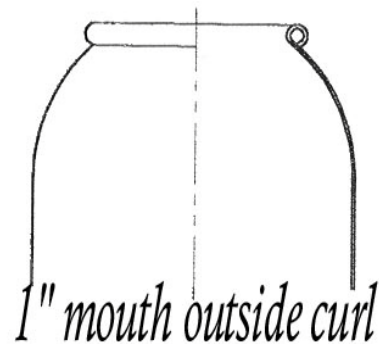


Flat / Angled Shoulder



Can Parameters

- ▶ Curl Styles– 1 inch
 - Available in diameters 35mm and above
 - Available with inside curl or outside curl



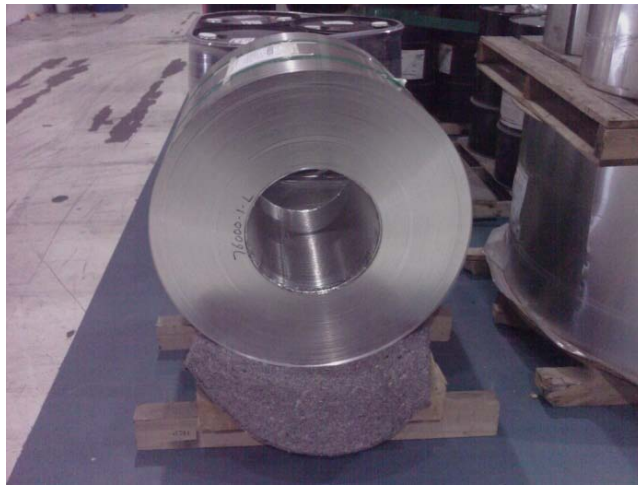
Can Making Basics

Quality Assurance

- ✓ Visual Inspection of each bundle
- ✓ Pressure Rating
- ✓ Waco Reading
- ✓ SPC DATA

Aluminum Scrap

Extruded 1070 aluminum can scrap is sold to an aluminum can recycler and in many cases ends up as a beverage container within 60 days.



Can Parameters

Can Sizes

- ▶ 22mm
- ▶ 25mm
- ▶ 35mm
- ▶ 38mm
- ▶ 45mm
- ▶ 50mm
- ▶ 53mm
- ▶ 55mm
- ▶ 59mm
- ▶ 66mm

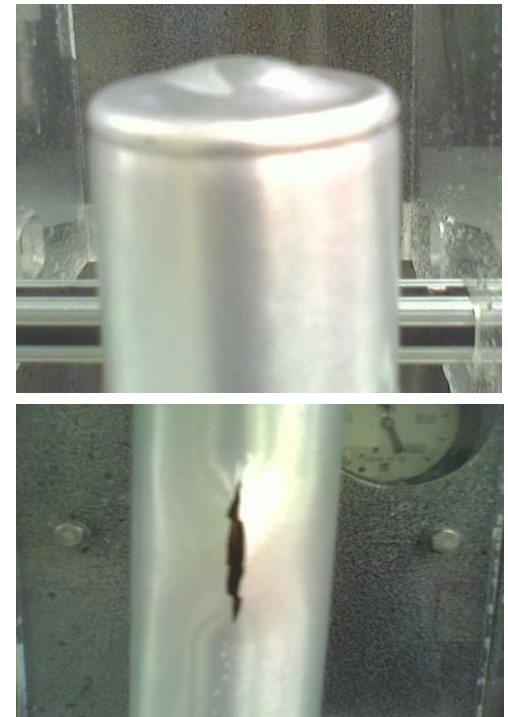
Can Size Determination

- ▶ Size
 - Determine correct size
 - Label Claim + gram retention, aerosol density, headspace are must haves
 - Diameter (in mm's) x Height (in mm's)
 - Height determined by measuring from top of curl to bottom

DOT Regulations

- ▶ Pressure Resistance
 - Determine equilibrium pressure at 130 deg F.
 - DOT Regulations using above information are:

Pressure	Buckle	Burst
2N	140 psi	210 psi
2P	160 psi	240 psi
12 bar	174 psi	208 psi
2Q	180 psi	270 psi
18 bar	261 psi	313 psi



What do I need to order a can

- ✓ Diameter x Height
- ✓ Pressure Spec
- ✓ Inside lining
- ✓ 1" or 20mm opening
- ✓ Shoulder \ Machined or non machined curl
- ✓ Printed or plain



New Aluminum Technology

C2C (Coil 2 Can) line (Uses up to 50% post consumer content)

- ▶ Green Package



Thank You..... Any questions?

▶ EXAL

- One Performance Place,
Youngstown, OH 44502
- www.exal.com

