Presenting a View of:

Thermo Forming

Copyright 2006 GRIFform Innovations, Inc.
Why Form?

Can I do this?

Can I justify the expense?

- Thermo forming a convenient means to create form.
- Name items you have created using this technology.
- Reasons to use forming.
Point #1

• Is Forming two complicated to employ?

• Does this procedure replace all other fabrication techniques?

• Should it be used in cases where large curves are required.

• We should discuss the reasons for forming and the advantages and disadvantages.
Point #2

- **Equipment:**
  - Ovens verses platen heaters.
  - Temperatures.
  - Speed of bending.
  - Membrane Presses.
Point #3

- Molds and fixtures.
  - One piece molds.
  - Two piece molds.
  - Power verses manual compressions.
  - Mold function and action.
Point #4

• **Materials**: Are not created equal.
  
  • Acrylic.
  • Acrylic Solid Surface.
  • Polyesters.
  • Epoxy.
Point #5

- Heated Material Handling:
  - Safety first.
  - Reheating
  - Product strength and flexing.
  - Opening and closing molds.
Point #6

• **Bending Material:**
  
  • Speed into mold.
  
  • Pressure, can there be too much?
  
  • How long does it stay in the mold?
  
  • Cooling materials before removal and use.
Point #7

• Expansion & Contraction:
  • The long side is stretching.
  • The short side is compressing.
  • Cause and effect.
  • What are some of the results?
Point #8

• **Thickness ratio to radius:**
  
  • Every color and brand is different.
  
  • Following manufactures recommendations.
  
  • 2D verses 3D.
Point #9

• White out:
  • Where did it come from?
  • What can I do to correct it?
  • Will it go away?
  • Are all color subject to white out?
Point #10

• Tear out:

• Why did it disintegrate?

• What can I do to correct it?

• What did I do wrong?
Point #11

• **Finishing Formed Material:**
  - The material will sometimes become rough.
  - Sanding and finishes?
  - Gloss finish or not?
Point #12

- Some do’s and don’ts:
  - Do **NOT** seam before bending, why?
  - Do expect some disappointments.
  - Do **NOT** believe everything you hear.
  - Do plan, plan, plan?
Point #13

- Troubles, it just didn’t work:
  - Re-bending is a great salvation.
  - How many times?
  - Will white out go away when re-bent?
Final Points:

• Have fun being creative:
• Enjoy using forming as a new opportunity.
• Let forming speed your production.
• It won’t always work the first time.
• Start small and build.

• Remember...

• “From the wee acorn the mighty oak grew.”