Chapter 5

5.1 Discussion of results

Bar molding is specific field of bra manufacturing process & anyone who working with intimate apparel it is advantage get to familiar with bra cup molding,

While working with molding field bellow question is frequently asked by my self & try to find out answer for those questions & its leads me to doing this research on bra molding &. Bellow is list of questions which frequently asked by my self.

1. Is molding temperature depend on Elastane percentage?
2. Is time substitute for temperature?
3. less than 10% Elastane can be molded?
4. Is higher weight fabric required higher temperature?
5. Is molding height & diameter depend on temperature?
6. Is it difficult task Converting 2D to 3D?
7. ls molding conditions depend on fabric color?
8. How to affect fabric finishes for molding process?

Answer for the most of above questions was find out during the project

a, Standardizing molding temperature

Main variable which discuss during whole project is molding temperature. This is most important factor for the molding process. Using research data’s setup best molding temperature range for main three fiber compositions which currently using in molded bra manufacturing industry.

A, Best molding temp for Cotton / Elastene - 175 -178C
B, Best molding temp for Nylon / Elastene - 186 - 190C
C, Best molding temp for Cotton / Elastene - 185 -188C

Note – Above mention best temperature set up using my research data’s & it is common value can be used any fabric composition describe above. But required temperature for specific sample can be varying under different conditions.

b, Standardizing molding time (Dwell Time)
After mold temperature next most important factor is molding dwell time. As prove in chapter -4

Best Molding dwell time is 35 S
Note – Above value set up using my research data & under standard condition & common value can be used fabric types describe above. But required time for specific sample can be vary under different conditions.

c. Standardizing molding pressure
This factor not much important for molding process & this is constant for the particular machine. During my study two machines have been sued & their setting as bellow.

Machine 1 = 6 & 4 Bar
Machine 2 = 2 Bar

Previously several molding trials are done to find out best settings by changing different settings. But using above predetermined settings now we could be able to complete new molding job by saving time & energy.

By saving lead time & energy can same cost of the product.

Using above findings new molding job can be plan as bellow

Example – Fabric Supplier – TJ Lanka
Fabric Quality - Q 50139
Composition - 90% cotton 10% Elastane
Fabric weight - 220 Gsm

Predetermined settings
Temperature = 175 – 178 C
Dwell Time = 35 seconds
Mold Pressure = If use machine 1 – 6 Bar / If used machine 2 – 2 Bar.

Now using different mold depth’s & diameters required cup shape & parameters can be achieved easily.

Bellow is brief discussion of the above questions.

1. Is Molding temperature depend on the Elastane%?

Using project data’s it can be proved that molding temperature not depend on Elastane % & it’s depend only main fiber composition.

When analysis graph number 13, 14, 15 It can be seen molding temperature plotted against percentage of elastane & while increase percentage of elastane significant variation of the molding temperature can’t be seen.

Base on above results determined that “Molding temperature not depend on elastane %”

2. Is time substitute for temperature?

With refer graph number 7 molding time (Dwell time ) is plotted against molding height . By using this graph above statement can be described as bellow.
As per graph no 7th, when molding time (Dwell time) increased, molding height also getting increased rapidly while keeping temperature other variable constant. After its reach 35 seconds even increase dwell time mold height increased slowly or keeping constant. That mean after its taken appropriate time for formation mold shape at given temperature. Even we increased dwell time more it is not help to molding properties.

Further more if temperature not reaches required level for molding particular sample it is not given appropriate result even dwell time increased more and more.

As per above finding bellow statement can be made “Time is not substitute for temperature”

3, Less than 10% elastane can be molded?

As per the graph number 13 you can see product’s which having Elastane less than 10% can be molded & can achieve required parameters. But durability of the product very low & after few washes cup shape getting destroyed.

So recommended minimum Elastane percentage is 10% for good quality end use.

4, Is higher fabric weight required higher molding temperature?

When go through graph number 16th it can be describe above statement. As per graph while increased fabric weight significant different of the temperature can’t be seen. So that it can prove that fabric weight is not depend on the molding temperature. So above statement in correct.

5, Is Molding height &diameter depend on the molding temperature?

As per graph number 11 & 12 it is easily determined that molding height & diameter not depend on the molding temperature.

6, It is difficult covert 2D structure 3D foam?

Beginning of the this project, as per feedback getting form people which involve molding process it is very difficult & complicate process. Today I get to know that required material & setting requirements can be meet it is not difficult task to done molding job.

7, Is molding parameters depend on the fabric color?

During whole project I am using only white color fabric. So it is difficult to prove above statement using my project output.

8, How to effect fabric finishes to molding process?

Lack of resources & limitation on the study effect of the fabric finishes not considered during my study.