A new generation of MDI slabfoam technology for HR and VE foams

2008 UTech seminar
Shanghai
3 Sep, 2008
Introduction

In 80s, ICI pioneered in MDI moulded foams.

In 90s, introduced MDI slabstock and grown rapidly.

MDI slabfoam has successfully become a major material for mattress.

production sites: Shanghai/ Taiwan/ Thailand;
Technical center: Shanghai
Positioning – a novel product

MDI泡綿與現今亞洲生產泡綿不同
Different from the foams currently produced in Asia

MDI泡綿為一具有環保意識的產品
An environmental conscious product design

可提供好的舒適感與濕壓縮形變
A good hand-feel, high comfort, wet compression set foam

其目標在提供「高品質品牌床墊」業
一項嶄新的產品
Aimed at providing the branded mattress industry with novel products.
MDI slabfoam is best suitable for HR/VE foam

Asia, the major flexible foam production region

Remarkable growth from HR/VE foam

China: the top mattress export since 2005, valued 192 million USD.

### Mattress exports

<table>
<thead>
<tr>
<th>Country</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>63</td>
<td>69</td>
<td>85</td>
<td>153</td>
<td>192</td>
</tr>
<tr>
<td>Belgium</td>
<td>124</td>
<td>135</td>
<td>155</td>
<td>181</td>
<td>191</td>
</tr>
<tr>
<td>Denmark</td>
<td>67</td>
<td>63</td>
<td>101</td>
<td>112</td>
<td>166</td>
</tr>
<tr>
<td>Italy</td>
<td>82</td>
<td>98</td>
<td>138</td>
<td>148</td>
<td>150</td>
</tr>
</tbody>
</table>

Source: “The world mattress industry”, Jul 06, P. 14, CSIL.

China: from OEMs to branded mattress

床墊出口大國均有知名床墊品牌

**床墊出口大國均有知名床墊品牌**

Top exports countries are sustained by branded mattress

**床墊出口大國均有知名床墊品牌**

China: from OEMs to branded mattress
中國都市人口可支配收入自1997到2006年成長320%。
The urban household per capita annual disposal income grew by 320% from 97 to 06.

收入最高10%都市家庭約有10,700美金年收入
The top 10% rich household income $10,700.

其他已開發或發展中亞洲國家，
對高品質及醫療床墊需求亦逐年成長
The developed and emerging Asia demand from more sophisticated and medical mattress.
**MDI 可帶來的利益**
**Benefits MDI can bring**

- 高性能的床墊泡沫
  - From the unique foam quality
  - 手感 *Hand feel* 乾淨 *Clean foam* 開孔 *Open cell*
  - 湯壓縮形變 *Wet compression set*
- 生產環境及高產率
  - From the production and high yield
  - 快熟化 *Fast curing*  高產率 *Yield height* 品質均一 *Uniform distribution*
- 拓展出口市場
  - Entrance ticket to the export market
  - 歐盟規範 *EU regulation*
  - 防火測試 *Fire test*
  - 化學氣體 *VOC emission*
## How consumers feel...

### 消費者感受

<table>
<thead>
<tr>
<th>物理性質 (technical features)</th>
<th>MDI 泡綿特性 (MDI foam property)</th>
<th>消費者感受 (How consumers feel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 高回彈性能 (MDI HR quality)</td>
<td>較高的舒適因子 (SAG factor) 及回彈性 (resilience)</td>
<td>好的手感 (soft to touch)</td>
</tr>
<tr>
<td>2 泡孔結構與天然開孔性 (open cell)</td>
<td>獨特泡孔結構 (unique cell structure)</td>
<td>好的支撐性 (support) 高透氣性 (breathability) 舒適的睡眠環境 (comfort sleeping environment)</td>
</tr>
<tr>
<td>3 耐久性 (durability)</td>
<td>改善濕壓縮形變 (wet compression set)</td>
<td>較不形變 (keep the shape) 產品使用壽命長 (long life)</td>
</tr>
<tr>
<td>4 無須添加有機、重金屬 (No added halogens or heavy metal)</td>
<td>乾淨的配方 (clean formulation) 無錫觸媒 (Tin free)</td>
<td>環保產品 (environmental friendly)</td>
</tr>
<tr>
<td>5 防火特性 (fire retardance)</td>
<td>符合防火測試 (fire test)</td>
<td>安全的產品 (safe product)</td>
</tr>
<tr>
<td>6 密度及硬度分布 (density &amp; hardness distribution)</td>
<td>較佳的上下密、硬度分布 (uniform distribution)</td>
<td>產品一致性 (product consistency)</td>
</tr>
<tr>
<td>7 膨鬆性</td>
<td>Visco-elastic</td>
<td>壓力釋放、增進睡眠品質 (pressure release, improve sleep)</td>
</tr>
<tr>
<td>8 認證 (certification)</td>
<td>Eco-label, LGA, CertiPUR</td>
<td>增強消費者使用信心 (confidence)</td>
</tr>
</tbody>
</table>
Huntsman’s MDI is ready for the market!!!

- Suprasec 6510 and 2635 are specially designed for slabfoam.

MDI products now are ready to supply in drum or bulk from Huntsman Caojing plant, China.

- The MDI products, by using individually or combined, can meet a robust range of HR or VE foams.
Summary

The novel product, with unique physical properties and more environmental consciousness, especially suitable for mattress.

A new generation of MDI slabfoam has now introduced to the Asian market.

HR/VE has grown sharply in the past decade and expected a continuous growth.

China became the major mattress exports and „a branded mattress world“ is a trend.

The novel product, with unique physical properties and more environmental consciousness, especially suitable for mattress.

The production process of MDI foam provides foamers better quality foam, higher yield and cost saving.
Talk to us... 期待與您更多的對談...

- 如果您也相信隨著收入與生活水平的提升，對於高品質泡綿床墊的需求將與日俱增
  if you agree a soaring demand for full foam high quality bedding because of the increase in income and evolving life style in Asia

- 如果您有興趣了解MDI提供您在成本、生產效益、高品質泡綿的好處
  if you’re interested in set of advantages of cost saving, production efficiency, foam quality... that MDI could bring.

- 我們十分願意和您分享我們對品牌床墊市場的了解並與您一起來開發此市場
  we’re delighted to share our understanding of the branded mattress market and explore the market along with you
感謝您的參與並請指教
Thanks for your attention