

12. INDEPENDENT MARKET RESEARCH REPORT



**VITAL FACTOR CONSULTING**  
Creating Winning Business Solutions

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21 September 2004

The Board of Directors  
Tek Seng Holdings Berhad  
51-21-A, Menara BHL Bank  
Jalan Sultan Ahmad Shah  
10050 Penang

Dear Sirs/Madam

**Assessment of the Plastic Calendering Industry**

The following is a summary of the Assessment of the Plastic Calendering Industry Focusing on PVC Floor Covering, and PVC Films and Sheets in Malaysia prepared by Vital Factor Consulting Sdn Bhd for inclusion in the Prospectus of Tek Seng Holdings Berhad in relation to its proposed listing on the Second Board of the Bursa Malaysia Securities Berhad.

**1. BACKGROUND**

- Tek Seng Group is principally involved in the manufacture and trading of PVC based products. Its products and services include the following:
  - Manufacture of PVC Floor Covering;
  - Manufacture of PVC Films and Sheets;
  - Manufacture of PVC Decorative Films;
  - Trading of Plastic products and materials.
- As manufacture of PVC Floor Covering, and PVC Films and Sheets (including PVC Decorative Films), are the major revenue contributors of Tek Seng Group, the report will focus on PVC Floor Covering, and PVC Films and Sheets under the umbrella of the Plastics Industry.

**2. INDUSTRY OVERVIEW**

- Plastic Products are part of the Polymer Industry, which uses petroleum-based products as feedstock for its raw materials. As Malaysia is a major Oil and Gas producing country, the Plastics Industry plays an important downstream role in creating demand for the Oil and Gas Industry.
- In addition, the Plastics Industry is very diversified and has myriad uses and applications in consumer and industrial products.

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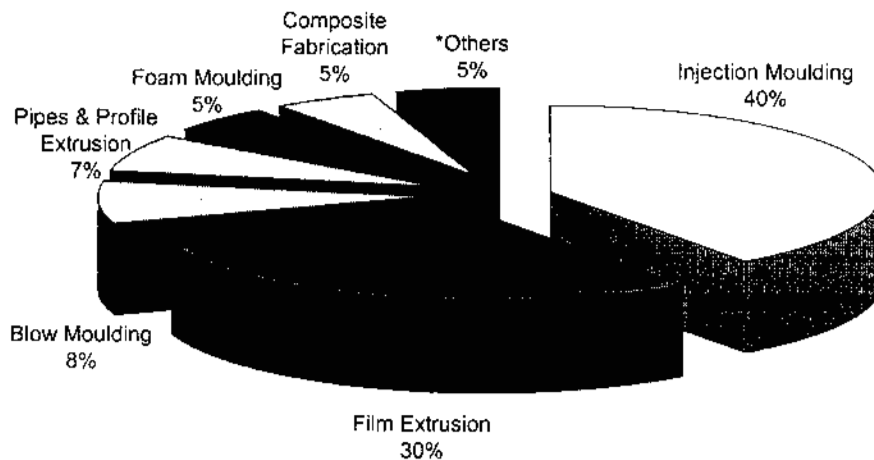
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- From 2001 to 2003, capital investments for plastic products amounted to RM1.6 billion (Source: *Mid-Term Review of the Eighth Malaysia Plan 2001 – 2005, Economic Planning Unit, Prime Minister's Department*)
- The Plastics Industry plays a major supporting role in the growth and development of Malaysia's manufacturing sector. This is reflected by the fact that ex-factory sales value of the manufacture of Plastic Products (including Plastic Calendered Products) increased at an average annual rate of 11.3% between 1999 and 2003. In 2003, turnover of the Plastics Industry reached RM9.4 billion (Source: *Malaysian Plastics Manufacturers Association*).
- The Plastics Industry also contributes significantly to the nation's foreign exchange earnings. In 2003, exports from the Plastics Industry reached RM4.5 billion (Source: *Malaysian Plastics Manufacturers Association*).

## 3. INDUSTRY STRUCTURE

**Processes of Manufacturing Plastic Products**

- The Plastic Products Industry can be segmented by different types of processes and their respective estimated market shares in 2003 were as follows:



**Figure 1 Market Share of the Plastic Industry by Type of Process - 2003**

- Plastic Calendered Products represent a relatively small segment of the overall Plastics Industry.
- Calendering is a process, where molten Plastic is poured between four cylindrical rollers and pressed to form a continuous Plastic sheet, which then goes through a series of hot roller pairs that progressively make the Plastic sheet thinner. When it reaches the required thickness, it goes through a pair of cold rollers to solidify the Plastic film or sheet. If the film is flexible (non-rigid) the film is commonly wound into rolls.

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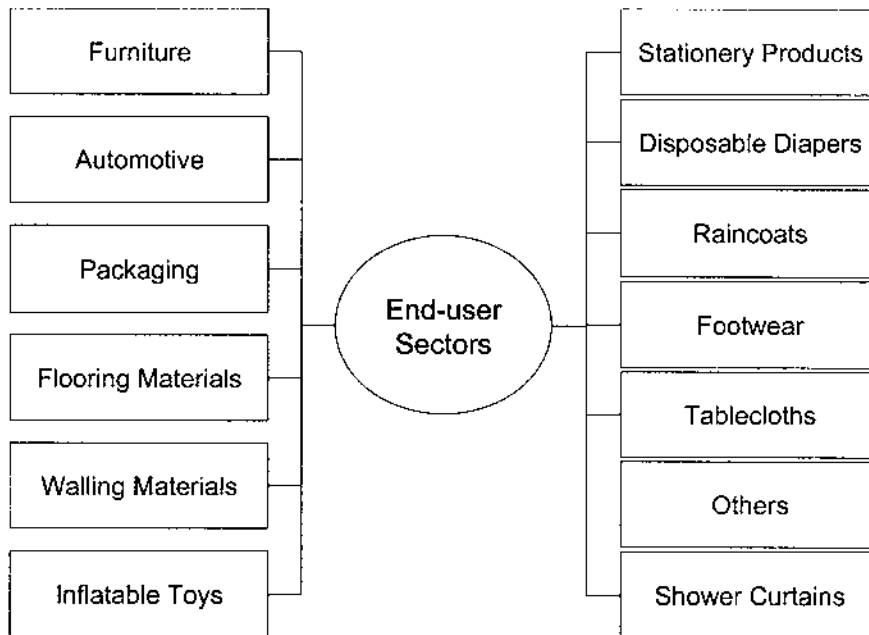
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- In 2003, there were approximately 10 Manufacturers of Plastic Calendered Products in Malaysia. (Source: Primary Market Research undertaken by Vital Factor Consulting Sdn Bhd).

**End-user Industries of Plastic Calendered Products**

- Plastic Calendered products, in its film and sheet forms, have many applications. Some of the end-user industries of Plastic Calendered Films and Sheets are as follows:



**Figure 2 End-User Industries of Plastic Calendered Films and Sheets**

- The diversity of Plastic Calendered Products in film and sheet forms is primarily due to its versatility in replacing other materials, for example:
  - fabric
  - leather
  - rubber
  - paper.
- However, the key characteristics that favours Plastic Calendered Films and Sheets are its:
  - strengths
  - flexibility or rigidity
  - waterproof properties
  - ability to be transparent, translucent, coloured or printed with designs.

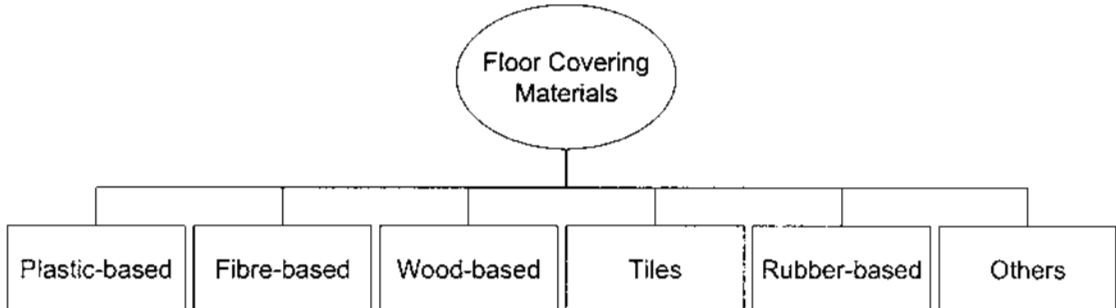


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### Material Segmentation for Floor Covering

- Floor Covering can be segmented by the different type of materials used and these are depicted in the diagram below:



**Figure 3 Floor Covering segmented by Material Used**

- Floor Covering materials include:
  - Plastic-based floor covering is made from polyvinyl chloride (PVC), polyurethane (PE) or other thermoplastics;
  - Fibre-based (natural and synthetic) floor covering is made from nylon, polyesters, polypropylene, wool or other textile materials, used in applications such as carpets and rugs;
  - Wood-based floor covering includes timber, laminated boards, parquet and cork;
  - Tile is a thin slab of man-made or natural material including ceramic, mosaic, clay, marble and granite;
  - Rubber based floor covering is made from natural or synthetic rubber and is commonly used as underlays for floor coverings to provide cushioning and sound dampening.
- Other floor covering materials include:
  - linoleum (commonly made from linseed oil, cork powder, wood powder, organic pigments, limestone and jute)
  - straw (for example tatami and straw mats).
- Floor covering materials do not include materials like specialised paints, coatings and epoxy flooring, which are primarily used for fire-retardant, anti-slip and anti-static purposes.

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**4. GOVERNMENT LEGISLATION, POLICIES AND INCENTIVES****Government Regulations**

- Apart from the normal manufacturing licence, there are no material government laws, regulations and policies that may impede on the performance and growth of operators within a free enterprise environment.

**Government Incentives**

- There are Government incentives for the manufacture of Plastic Films and Sheets, however these are for specialised applications only.
- This is in line with the Government's intention to nurture the development of this industry.
- Some of the incentives that are available for the manufacturing of Specialised Plastic Films and Sheets include:
  - Pioneer Status
  - Investment Tax Allowance
 (Source: *Malaysian Industrial Development Authority*)
- Eligibility for either the Pioneer Status or Investment Tax Allowance will be determined according to the priorities termed as "promoted activities" or "promoted products". In addition, the level of value-added, technology and industrial linkages will also be taken into consideration.

**Environmental Regulations**

- Some of the environmental issues faced by companies involved in the manufacture of Plastic products include smoke emission resulting from the heating of the resin and the additives through its thermal oil heater and boiler during the manufacturing process.
- The prescribed permissible limits of concentration of air impurities or smoke emission, resulting from manufacturing activities, is regulated under the Environmental Quality Act 1974 and Environmental Quality (Clean Air) Regulations 1978 (Source: *Environmental Quality Act and Regulations*).

**5. SUPPLY****Local Production**

- According to the Department of Statistics Malaysia, the manufacturing of Calendered Plastic Products is classified under the umbrella of Plastic Products. As there is no specific data on the Plastic Calendering Industry, the performance of the Plastic Products industry is used to provide a representation.
- In 2003, the turnover of the Plastics industry increased by 6.8% amounting to RM9.4 billion. The industry is forecasted to record a growth of 7.4% in 2004 (Source: *Malaysian Plastics Manufacturers Association*).

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- Between 1999 and 2003, turnover of the Plastics Industry grew at an average annual rate of 6.9% (Source: *Malaysian Plastics Manufacturers Association*).
- In 2003, sales value of the manufacture of Plastic Products, not elsewhere classified, turnaround and increased by 9.5% amounting to RM8.8 billion (based on 362 establishments with more than 50 employees) (Source: *Monthly Manufacturing Statistics April 2004, Department of Statistics*).
- Between 1999 and 2003, sales value of manufacture of Plastic Products, not elsewhere classified, grew at an average annual rate of 11.3% (Source: *Monthly Manufacturing Statistics April 2004, Department of Statistics*).
- In 2003, sales value of the manufacture of laminated Plastic sheets increased by 25.5% amounting to RM232.3 million (Source: *Department of Statistics*).
- Between 2000 and 2003, sales value of the manufacture of laminated plastic sheets grew at an average annual rate of 15.6%. (Source: *Department of Statistics*).
- In 2003, production quantity of the manufacture of laminated Plastic sheets increased by 33.5% to reach 29,661 tonnes (Source: *Department of Statistics*).
- Between 2000 and 2003, production quantity of the manufacture of laminated Plastic sheets registered an average annual growth rate of 35.1% (Source: *Department of Statistics*).

**Imports**

- In 2003, the import value of Plastics in non-primary forms registered a growth of 7.0% amounting to RM1.6 billion (Source: *Monthly External Trade Statistics December 2003, Department of Statistics Malaysia*).
- Between 1999 and 2003, import value of Plastics in non-primary forms grew at an average annual rate of 4.5% (Source: *Monthly External Trade Statistics December 2003 and 2000, Department of Statistics Malaysia*).

**Floor Covering**

- In 2003, import value of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) floor covering) increased by 9.7% amounting to RM21.7 million (Source: *Department of Statistics*).
- Between 1999 and 2003, import value of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) floor covering) continued to achieve an average annual growth rate of 6.3% (Source: *Department of Statistics*).
- In 2003, import quantity of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) floor covering) increased by 9.6% amounting to 5,953 tonnes (Source: *Department of Statistics*).
- Between 1999 and 2003, import quantity of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) floor covering) increased at an average annual rate of 13.6% (Source: *Department of Statistics*).

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- In 2003, import value of PVC Floor Covering other than in the form of tiles increased by 4.1% amounting to RM16.4 million (Source: Department of Statistics).
- Between 1999 and 2003, import value of PVC Floor Covering other than in the form of tiles grew at an average annual rate of 6.4% (Source: Department of Statistics).
- In 2003, import quantity of PVC Floor Covering other than in the form of tiles increased by 3.0% amounting to 5,096 tonnes (Source: Department of Statistics).
- Between 1999 and 2003, import quantity of PVC Floor Covering other than in the form of tiles grew at an average annual rate of 13.3% (Source: Department of Statistics).
- In 2003, import value of other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 22.6% to RM740.5 million (Source: Department of Statistics).
- Between 1999 and 2003, import value of other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) continued to register an average annual growth rate of 4.6% (Source: Department of Statistics).
- In 2003, import quantity of other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 149.2% to 169,374 tonnes (Source: Department of Statistics).
- Between 1999 and 2003, import quantity of other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased at an average annual rate of 22.4% (Source: Department of Statistics).

**Rigid Films and Sheets**

- Rigid PVC plates, sheets, films, foils and strips are categorised under other Plastic plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials).
- In 2003, import value of rigid PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) decreased by 12.6% to RM62.5 million.
- Between 1999 and 2003, import value of rigid PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) declined at an average annual rate of 7.7% (Source: Department of Statistics).

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- In 2003, import quantity of rigid PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) decreased by 36.2% to 16,273 tonnes (Source: Department of Statistics).
- Between 1999 and 2003, import quantity of rigid PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) grew at an average annual rate of 5.4% (Source: Department of Statistics).

**Flexible Films and Sheets**

- Flexible PVC plates, sheets, films, foils and strips are categorised under other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials).
- In 2003, import value of flexible PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 22.3% to RM64.4 million (Source: Department of Statistics).
- Between 1999 and 2003, import value of flexible PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) declined at an average annual rate of 3.9% (Source: Department of Statistics).
- In 2003, import quantity of flexible PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 59.2% to 12,236 tonnes (Source: Department of Statistics).
- Between 1999 and 2003, import quantity of flexible PVC plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) declined at an average annual rate of 6.2% (Source: Department of Statistics).

**6. SUPPLY DEPENDENCIES – RAW MATERIALS**

- The main supply dependencies for the Plastic Calendering Industry is resin. These include commodity and engineered resins depending on the requirements and grade of performance of the Calendered Plastic Products including PVC Floor Covering, and PVC Films and Sheets.
- Most of the resins are available from local producers with the exception of engineered resin. These are primarily imported from a number of source countries overseas.
- Some of the main types of resin used in typical Plastic Calendering include:
  - Polyvinyl Chloride
  - Polyethylene
  - Polypropylene.



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- In 2003, the annual production capacity for all types of Plastic resins was estimated at approximately 1.9 million tonnes (*Source: Malaysian Plastics Manufacturers Association*).
- In 2003, production capacity for some of the Plastic resins were as follows:

PLASTIC RESINS	CAPACITY
Polypropylene (PP)	360,000 tonnes
Polyethylene (PE)	1,040,000 tonnes
Polystyrene (PS)	140,000 tonnes
Polyvinyl Chloride (PVC)	160,000 tonnes
Acrylonitrile Butadiene Styrene (ABS)	160,000 tonnes
Polyethylene Terephthalate (PET)	20,000 tonnes

*Source: Malaysian Plastics Manufacturers Association*

**7. DEMAND AND DEMAND DEPENDENCIES**

- Demand for Calendered Plastic Products will be dependent on the following:
  - Local demand
  - Export markets demand
- Within the local market, demand for Calendered Plastic products will come primarily from the following:
  - user-industries of semi-finished Plastic Films and Sheets including, among others inner Plastic linings for products, Plastic films for furniture applications, synthetic leather for automotive industry, and packaging materials;
  - final end-consumers of Calendered Plastic products including, among others, Plastic Floor Covering, Plastic raincoats and tablecloths, vinyl wallpaper, car mats, synthetic leather garment, footwear and fashion accessories, and Plastic Shopping Bags.
- The following section will focus mainly on factors that will impact on end-user demand and expenditure on Calendered Plastic Products. This includes
  - General population growth;
  - Higher disposable income;
  - Increasing household expenditure
  - Increasing household expenditure on Calendered Plastic Products.
- Demand for Calendered Plastic Products is primarily dependent on the following factors:



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### Population Growth

- Malaysia's population is forecasted to continue to grow by 2.0% in 2004 (Source: Annual Report 2003, Bank Negara Malaysia).
- The population is forecasted to grow at an average growth rate of 2.2% between 2000 and 2005 (Source: Mid-Term Review of the Eighth Malaysian Plan 2001-2005, Economic Planning Unit, Ministry of Finance).

### Higher Disposable Income

- The mean monthly household income grew by an average annual rate of 6.8% between 1999 and 2002. In 2002, the mean monthly household income reached RM3,011 (Source: Mid-Term Review of the Eighth Malaysia Plan 2001-2005, Economic Planning Unit).
- The continuing growth in monthly household income would contribute to a higher disposable income. This in turn will stimulate demand for consumer products including Calendered Plastic products.

### Increasing Household Expenditure

- Between 1993/94 and 1998/99, the average monthly expenditure per household increased at an average annual rate of 7.0% amounting to RM1,631 per household.
- In 1998/99, the average monthly expenditure per household of RM1,631 was 2.2 times that of 1980/82.

(Source: Report on Household Expenditure Survey 1993/94 and 1998/99 Malaysia, Department of Statistics)

### Local Consumption

- Between 1993/94 and 1998/999, household expenditure on Furniture, Furnishings and Household Equipment and Operations (including Floor Covering), grew at an average annual rate of 6.3% (Source: Report on Household Expenditure Survey 1993/94 and 1998/99 Malaysia, Department of Statistics)
- Between 1993/94 and 1998/99, household expenditure on Floor Covering alone grew at an average annual rate of 5.4% (Source: Report on Household Expenditure Survey 1993/94 and 1998/99 Malaysia, Department of Statistics) (Note: Figures for Floor Covering is classified under the term Fixtures and Floor Covering in 1993/94)
- For 1998/99, household expenditure on Floor Covering (classified under Furniture, Furnishings and Household Equipment and Operations in the Household Survey), amounted to an average monthly expenditure of RM2.45 (Source: Report on Household Expenditure Survey 1998/99 Malaysia, Department of Statistics)

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- The continuing growth rate of household expenditure on Floor Covering would help sustain and provide growth opportunities for organisations within the Flooring Materials industry including PVC Floor Covering.

**8. COMPETITIVE NATURE AND INTENSITY****Competitive Nature**

- All manufacturers of Calendered Plastic products including Floor Covering and Plastic Films and Sheets operate under **normal** competitive conditions.
- Competition exists in two areas:
  - Local market;
  - Global market.
- At the local level, manufacturers within the Calendered Plastic products including PVC Floor Covering and PVC Films and Sheets Industry compete with other Malaysian manufacturers as well as with imports.
- At the global level, Malaysian Calendered Plastic products including PVC Floor Covering and PVC Films and Sheets manufacturers compete against foreign manufacturers as well as other Malaysian export-oriented manufacturers.
- As with most free enterprise environments, competition is based on a number of factors, including:
  - Quality of products and services;
  - Manufacturing capabilities and capacities;
  - Prompt delivery schedules;
  - Established track record;
  - Cost competitiveness

**Competitive Intensity**

- Competition among Calendered Plastic manufacturers including those within the PVC Floor Covering and PVC Films and Sheets Industry in Malaysia is **moderate to high** based on the following observations:
  - **Substitute Products from other Plastics**

Calendered Plastic products compete with plastic products made through other processing methods particularly from film extrusion. Although there are some differences in product and applications, there are significant areas of overlap. Additionally, extrusion is a lower cost process primarily because of the lower capital set-up. In some situations, lower cost resins for extrusion could also be used to provide cost-competitive products that may substitute for Calendered Plastic products. As such, all these add competitive pressure to Calendered Plastic products.



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### - Substitute Products from other Materials

PVC Floor Covering competes with other non-plastic products including timber (eg parquet), fibre (eg carpet) and tiles (eg granite). All these provide choices to consumers and represent competition for Calendered PVC Floor Covering.

Plastic films and sheets in general also compete against other materials like paper, fabric, leather, rubber and other synthetic fibre. Again alternative materials create competitive pressure to Calendered PVC Films and Sheets in moderating demand across a wider option of materials.

### - Competition from Imports

Calendered Plastic Films and Sheets face significant competition from imports:

- In 2003, the import value of plastics in non-primary form amounted to RM1.6 billion (Plastic in non-primary forms includes Plastic tubes, pipes and hoses; Plastic plates, sheets, films, coils and strips; Plastic monofilament, rods, sticks and profile shapes)

- In 2003, import value of other Plastic plates, sheets, films, foils and strips (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) amounted to RM740.5 million.

PVC Floor Covering also faces competition from imports, although not as much as PVC Films and Sheets:

- In 2003, import value of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) floor covering) amounted to RM21.7 million. The top two sources of imports are Thailand and United Kingdom.

- In 2003, import value of PVC Floor Covering other than in the form of tiles amounted to RM16.4 million. The top two sources of imports were Thailand and United Kingdom.

*(Source: Department of Statistics)*

- However, there are some moderating factors that reduces some of the competitive intensity as follows:

### - Specialised Applications

Many of the Calendered Plastic Films and Sheets are customised to meet customers' requirements. In many situations, Calendering is the only viable process to create specialised Films and Sheets. As such, under such situations, competitive pressure is less.

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**- Relatively Few Operators**

In 2003, Malaysia has an estimated 10 Calendered Plastic manufacturers. (Source: Primary Market Research undertaken by Vital Factor Consulting) The relatively few number of manufacturers reduces significantly the competitive intensity.

**- Barriers to Entry**

One of the major barriers to entry is the relatively high capital set-up cost. This will moderate competitive pressure, as the industry would not see too many new entrants.

**- Different Areas of Specialisation**

Each of the operators has different areas of specialisation. For example, some operators would focus mainly on the production of PVC leather for the automotive industry or the footwear industry whilst others concentrate on PVC Floor Covering and household products and semi-finished PVC Sheets and Films.

**- Diversity of Applications**

As there is a diverse range of applications for Calendered Plastic products, the level of competitive intensity would also be dependent on the type of products and the application areas.

Competition increases for some applications such as packaging as other manufacturers of Plastic Sheets and Films using competing processes for example film extrusion can also manufacture similar products. In 2003, film extrusion constituted 30% of the total processing of Plastics Products in Malaysia (Source: Malaysian Plastics Manufacturers Association). However the bulk of the film extrusion manufacturers will be focused on packaging, therefore intense competition is found in certain sectors.

**- Differentiation through Designs**

PVC Floor Covering has significant value-adding in the form of designs. Manufacturers that are able to create appealing designs are better able to compete against other less desirable design PVC Floor Covering.

**- New Materials and Applications**

Calendered Plastic manufacturers that undertake research and development to produce new materials or applications would be in a monopolistic-type position, at least in the short term until such time alternatives come on to the market.

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**9. KEY PLAYERS IN THE INDUSTRY**

- There are approximately 10 operators within the Plastic Calendering Industry in Malaysia (*Source: Primary Market Research undertaken by Vital Factor Consulting Sdn Bhd*)
- Some of these operators include:
  - Nylex (Malaysia) Berhad
  - Scientex Polymer Sdn Bhd
  - Tek Seng Holdings Berhad
  - PP Products Sdn Bhd
  - Perlis Consolidated Sdn Bhd
  - Macro Plastic Sdn Bhd
  - LGP Industries Sdn Bhd
  - Arita Plastics Industries (M) Sdn Bhd.

**10. BARRIERS TO ENTRY****Government Policies**

- Apart from the normal manufacturing licence, there are no other Government regulations that restrict the entry of operators into the Plastic Calendering Industry.
- Application for manufacturing licences are mandatory for companies with 75 or more full time workers or having shareholders' funds of RM2.5 million and above (*Source: Malaysian Industrial Development Authority*).

**Capital and Set-up Costs**

- The barriers to entry based on capital requirements excluding land and building are **high**.
- This is substantiated by the fact that in 2003, there are approximately 10 operators in the Plastic Calendering Industry (*Source: Primary Market Research undertaken by Vital Factor Consulting Sdn Bhd*).
- The capital cost of setting-up a small-sized manufacturing plant would amount to approximately RM17 million (excluding land and building). This would incorporate the following:
  - 1 calendering machine;
  - 1 laminating machine;
  - 1 printing machine;
 (*Source: Tek Seng Group*)

At this level of entry, production output would be approximately 20,000 rolls of PVC Calendered Films and Sheets per month and will generate revenue of approximately RM20 million per year.

- The relatively high set-up cost is the main barrier to entry for the Plastic Calendering Industry.

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**Technical Skills and Knowledge**

- There is a certain level of technical expertise and experience required in the manufacturing of Plastic Calendered Products particularly in obtaining the desired product properties. This is to meet the customers' requirements and specifications.
- These requirements would form some barriers to entry for new entrants. Some of the areas where technical skills and experience are required include:
  - Formulation of the different types of commodity and engineered Plastic resins to achieve the desired film and sheet properties including rigidity, hardness, flexibility, durability and strengths.
  - Printing processes including creating appealing designs and to achieve effects such as colour, gloss, matt, shiny and other types of appearances.
  - Increasing efficiency and productivity while maintaining high standards of quality by continually improving on manufacturing processes.
  - Ability to meet the needs and specifications of a wide range of customers.

**Research and Development**

- Research and development activities are an important component in the Plastic Calendering Industry. To gain and sustain competitive advantages, operators are required to monitor new and emerging trends and undertake research and development in the following areas:
  - changing customer preferences
  - new materials
  - new formulations
  - new technologies
  - new product designs
  - best practices in manufacturing processes.

**Track Record**

- Track record is one of the critical success factors for operators in this industry. A new entrant would find it difficult to gain a foothold in the industry.
- For Floor Covering, track record in creating desirable designs and ability to quickly react to customer preferences and trends is critical to ensure brisk sales.
- Plastic Calendered Films and Sheets are purchased for their desired characteristics and properties. For manufacturers without track record, potential customers would have to carry out a series of testings to ensure products perform as claimed. This causes significant inconvenience and expense. Most customers would rather not seek alternative suppliers that are new to the market, unless there are compelling reasons.

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- As such, all these would pose barriers to entry for new entrants.

**11. BARRIERS TO EXIT**

- Barriers to exit for manufacturers within the Plastic Calendering Industry are **high**.
- This is because Calendering machines are highly specialised and expensive. As such, the only ways to recover investments from plant and machineries are to sell to existing manufacturers or new entrant to the Plastic Calendering Industry.
- As there are only approximately ten Calendering manufacturers in Malaysia, there are not many opportunities to divest Calendering machines.
- In addition, as the machines are relatively expensive, there will not be many new entrants.

**12. INDUSTRY OUTLOOK AND GROWTH FORECAST**

- The outlook for the Plastic Calendering Industry is **favourable**.
- The Plastic Calendering Industry including PVC Floor Covering and PVC Films and Sheets is forecasted to grow at approximately **5%** per annum for the next five years.

**Supporting Factors for Positive Growth**

- The following factors and observations in local production and consumption and exports provide support for the growth forecast:

**Local Production**

- Between 1999 and 2003, sales value of the manufacture of Plastic products not elsewhere classified, grew at an average annual rate of 11.3% (Based on 362 establishments with more than 50 employees) (Source: *Monthly Manufacturing Statistics April 2004, Department of Statistics Malaysia*);
- In 2003, the turnover of Plastic Industry increased by an estimated growth of 6.8% amounting to RM9.4 billion and is forecasted to record a growth of 7.4% in 2004 (Source: *Malaysian Plastics Manufacturers Association*);
- In 2003, sales value of the manufacture of Laminated Plastic Sheets increased by 25.5% amounting to RM232.3 million. Between 2000 and 2003, sales value of the manufacture of Laminated Plastic Sheets registered an average annual growth rate of 15.6%. (Source: *Department of Statistics*).



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**Local Consumption of Floor Covering in General**

- Between 1993/94 and 1998/99, household expenditure on Furniture, Furnishings and Household Equipment and Operations (including Floor Covering), grew at an average annual rate of 6.3% (Source: Report on Household Expenditure Survey 1993/94 and 1998/99 Malaysia, Department of Statistics)
- Between 1993/94 and 1998/99, household expenditure on Floor Covering grew at an average annual rate of 5.4% (Source: Report on Household Expenditure Survey 1993/94 and 1998/99 Malaysia, Department of Statistics) (Note: Figures for floor covering is classified as fixtures and floor covering in 1993/94)
- For 1998/99, household expenditure on Floor Covering (classified under Furniture, Furnishings and Household Equipment and Operation in the Household Surveys), amounted to an average monthly expenditure of RM2.45 (Source: Report on Household Expenditure Survey 1998/99 Malaysia, Department of Statistics)
- The continuing growth in household expenditure on Floor Covering including PVC Floor Covering would augur well for organisations within the Plastic Calendering Industry, particularly operators that focus on PVC Floor Covering and, PVC Sheets and Films.

**Exports**

- Between 1999 and 2003, export value of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) Floor Covering) increased at an average annual rate of 23.8%.
- In 2003, export value of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) Floor Covering) decreased by 5.7% amounting to RM37.0 million.
- Between 1999 and 2003, export quantity of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) Floor Covering), increased at an average annual rate of 37.2%.
- In 2003, export quantity of Floor Covering other than in the forms of tiles, of polymers of vinyl (including polyvinyl chloride (PVC) Floor Covering) increased by 22.8% amounting to 17,112 tonnes.
- Between 1999 and 2003, export value of PVC Floor Covering other than in the form of tiles, grew at an average annual rate of 40.0%.
- In 2003, export value of PVC Floor Covering other than in the form of tiles increased by 19.6%, amounting to RM33.0 million.
- Between 1999 and 2003, export quantity of PVC Floor Covering other than in the form of tiles, grew at an average annual rate of 51.2%.
- In 2003, export quantity of PVC Floor Covering other than in the form of tiles increased by 22.2%, amounting to 16,012 tonnes.

**12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)****VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- Between 1999 and 2003, export value of other Plastic plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased at an average annual rate of 15.9%.
- In 2003, export value of other Plastic plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 19.3% to RM973.3 million.
- Between 1999 and 2003, export quantity of other Plastic plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased at an average annual rate of 25.2%.
- In 2003, export quantity of other Plastic plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 28.1% to 248,586 tonnes.
- Between 1999 and 2003, export value of rigid PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) declined at an average annual rate of 39.0%.
- In 2003, export value of rigid PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 52.9% to RM27.8 million.
- Between 1999 and 2003, export quantity of rigid PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) grew at an average annual rate of 41.3%.
- In 2003, export quantity of rigid PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) increased by 74.5% to 5,553 tonnes.
- Between 1999 and 2003, export value of flexible PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) declined at an average annual rate of 4.1%.
- In 2003, export value of flexible PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) decreased by 12.1% to RM16.4 million.
- Between 1999 and 2003, export quantity of flexible PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) grew at an average annual rate of 6.4%.
- In 2003, export quantity of flexible PVC plates, sheets, film, foil and strip (non-cellular and not reinforced, laminated, supported or similarly combined with other materials) decreased by 3.6% to 2,833 tonnes.

## 12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)



## VITAL FACTOR CONSULTING

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- Between 1999 and 2003, export value of other Plastic plates, sheets, film, foil and strip (cellular) grew at an average annual rate of 13.2%.
- In 2003, export value of other Plastic plates, sheets, film, foil and strip (cellular) increased by 38.9% to RM407.7 million.
- Between 1999 and 2003, export quantity of other plastic plates, sheets, film, foil and strip (cellular) grew at an average annual rate of 21.9%.
- In 2003, export quantity of other plastic plates, sheets, film, foil and strip (cellular) increased by 49.2% amounting to 87,801 tonnes.
- Between 1999 and 2003, export value of other PVC plates, sheets, film, foil and strip (cellular) decreased at an average annual rate of 25.9%.
- In 2003, export value of other PVC plates, sheets, film, foil and strip (cellular) decreased by 63.8% to RM1.1 million.
- Between 1999 and 2003, export quantity of other PVC plates, sheets, film, foil and strip (cellular) grew at an average annual rate of 5.4%.
- In 2003, export quantity of other PVC plates, sheets, film, foil and strip (cellular) increased by 98.6% to reach 723 tonnes.

(Source: Department of Statistics)

## 13. DRIVERS OF GROWTH

- Some of the drivers of growth for the Plastic Calendering Industry are as follows:
  - **Socio-economic growth** such as Gross Domestic Product growth and population growth will increase demand for industrial, commercial and consumer products requiring Plastic Calendering. This is because of the numerous applications of Plastic Calendering particularly in producing a wide range of consumer products.
  - **Increasing affluence of consumers** as reflected in the increase in Gross National Product per capita and disposable income, will increase affordability and movement of consumer goods. Hence this will further contribute to growth and demand for Plastic Calendered products.
  - **Growth in end-user industry**, including manufacturing, building and construction, automotive, household furnishing, packaging, stationery, furniture and consumer products will inadvertently generate demand for Plastic Calendered products.
  - **Growth in export demand** will be driven by the performance of the global economy. Continuing growth and affluence in overseas economies will contribute to increase in demand for Plastic Calendered products such as Plastic Sheets and Films.

**12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)****VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- **Innovations and developments of new applications** of Plastic Calendering Industry are some of the key drivers in expanding usage and increasing demand for improved product solutions. Towards this end, the Malaysian Plastic Design Centre was established in 1998, with the objective of assisting manufacturers to develop new designs and a wide range of high value-added products.

**14. THREATS AND RISK ANALYSIS****Increased Competition from Film Extrusion**

- Plastic Sheets and Films can also be produced using extrusion as a process. As the capital set-up cost is lower using extrusion, the sheer number of operators in the industry presents significant competition for operators in the Plastic Calendering industry.

**Mitigating Factors**

- Both processes have their own advantages and are effective in manufacturing certain range of Plastic products. Extrusion is mainly used for Packaging applications such as Plastic Bags with the capabilities of producing very thin Films.
- However Calendering process can achieve a much higher output with consistency in thickness and is much more effective in producing certain types of Plastic Sheets and Films for example among others, Plastic Floor Covering, Plastic Films for thermoforming and a range of other consumer products.
- Thus each of the processes has their own niche in the industry and can co-exist effectively.

**Implementation of Asean Free Trade Area (AFTA)**

- The reduction of import duties between 0% and 5% with the implementation of AFTA through Common Effective Preferential Tariff (CEPT) would make imports very competitive against locally manufactured products.
- CEPT is the mechanism by which tariffs on goods traded within the Asean region, which meet a 40% Asean content requirement, will be subjected to a reduction of the above-mentioned range of tariff by 2003 (2006 for Vietnam, 2008 for Laos and Myanmar).

**Mitigating Factors**

- New players resulting from the implementation of AFTA would need to invest significant effort and time to develop and market their products to gain acceptance from local consumers. This would provide some advantages to existing local players at least in the short to medium term. During this period, local players can learn to adapt to the new competitive environment to sustain business growth and success.

**12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)****VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- Local players with good and established track record, established distribution network would be in a better position to face the increased competitive pressure from the potential new players in the market.
- In addition, AFTA also provides opportunities for local manufacturers to address new export markets within AFTA.

**Local Economic Downturn**

- As Plastic Calendering Industry mainly services the local market, any downturn in the local economy will impact directly on demand for Plastic Calendered products.
- A prolonged slowdown in the local economy will have a negative impact on manufacturers within the Plastic Calendering Industry as consumers trim their spending, thus reducing demand for consumer goods.

**Mitigating Factors**

- In 2001, the Malaysian Government has responded to the slowdown in the local economy by adopting aggressive monetary and fiscal measures to stimulate domestic demand. This will help mitigate some of the impact of the economic slowdown until such a time when economic conditions improve.
- Manufacturers that are financially strong, have extensive and established distribution network and established track record would be better able to survive the impact of a local economic slowdown.

**Fluctuations in Prices of Raw Materials**

- As Plastic resins are commodities, the cost of these commodities is subjected to fluctuations in world prices. In some situations, increases in the price of raw materials are not easily passed onto users. This could impact on margins or alternatively, if the increase in cost is passed onto users, the manufacturer may not be price competitive.

**Mitigating Factors**

- Manufacturers with strong financial strengths are able to hold stocks of these raw materials to cushion against fluctuations in prices.
- As these raw materials are commodities and therefore subjected to world prices, all manufacturers that use these materials are equally affected.

**15. AREAS OF GROWTH AND OPPORTUNITIES****Exports Opportunities**

- Opportunities exist for Malaysian manufacturers to service overseas based customers. This will open up a significantly larger market and reduce the dependencies on the local market.

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**12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)**


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- With the implementation of AFTA and WTO, competition has become global. As such, manufacturers that are able to address export markets are in a significantly better position to sustain business growth and success.

**Plastic Calendered Films for Thermoforming**

- Plastic Calendered Sheets and Films are significantly used in thermoforming applications.
- One of the areas of growth in thermoforming is in Plastic Decorative Films using Plastic Calendering process. These films have a number of applications in the furniture, and building and construction industry. Plastic Decorative Films that are printed with wood grains or other decorative patterns are used as overlays for a wide range of products including wall panelling, ceiling and furniture products such as kitchen cabinets and tables.
- This can either come in single ply or two-ply and may be embossed for enhanced effects.
- As Malaysia is a major exporter of furniture products, there are opportunities for manufacturers in the Plastic Calendering Industry to service the furniture industry requirements.
- Other thermoforming applications such as blister packaging for pharmaceutical industry and consumer products also require the use of Plastic Calendered Films.

**16. CRITICAL SUCCESS FACTORS**

- The critical success factors for manufacturers include:
  - **Commitment to High Quality of Products:** To ensure optimal performance and reliability of products, manufacturers must be committed to deliver quality products to customers consistently. Those who adopt stringent controls in their manufacturing processes reflect their commitment to excellence and are in a better position to meet customers' requirements.
  - **Established Track Record:** An established track record is an important reference site for operators in the Plastic Calendering Industry. In addition to possessing the manufacturing capabilities, a reputable track record is critical before securing contracts from existing or new customers.
  - **Cost Competitiveness:** As with any other industry, there is always competition and therefore cost competitiveness is important to ensure business sustainability and growth. However cost competitiveness cannot be viewed as a single factor without taking into consideration product quality, delivery and service.

12. INDEPENDENT MARKET RESEARCH REPORT (Cont'd)



**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- **Financial Stability:** Manufacturers in a healthy financial position are more likely to retain and attract new customers. Potential customers would emphasise financial stability as a key criterion in the evaluation of a prospective contract manufacturer as they would not want any disruption in the supply of products. In addition, a financially strong contract manufacturer would be in a better position to upgrade its manufacturing capabilities, if necessary, to keep abreast with technology changes in manufacturing or to meet future demand for increased capacity.

In addition, some level of financial strengths is required to enable sufficient capacity for contract manufacturers to achieve economies of scale to ensure cost effectiveness.

17. MARKET POSITIONING

- Based on a turnover of RM52.2 million for the financial year ended 31 December 2003, Tek Seng Group ranked **third** among operators within the Plastic Calendering Industry in Malaysia.

Vital Factor Consulting Sdn Bhd has prepared this report in an independent and objective manner and has taken all reasonable consideration and care to ensure the accuracy and completeness of the report. It is our opinion that the report represents a true and fair assessment of the industry within the limitations of, among others, secondary statistics and information, and primary market research. Our assessment is for the overall industry and may not necessarily reflect the individual performance of any company. We do not take any responsibilities for the decisions or actions of the readers of this document. This report should not be taken as a recommendation to buy or not to buy the shares of any companies.

Yours sincerely

Wooi Tan  
Managing Director  
Vital Factor Consulting Sdn Bhd

13. DIRECTORS' REPORT

*(Prepared for inclusion in the Prospectus)*



**TEK SENG HOLDINGS BERHAD** (579572-M)

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21 September 2004

The Shareholders of  
Tek Seng Holdings Berhad  
51-21-A, Menara BHL Bank  
Jalan Sultan Ahmad Shah  
10050 Penang

Dear Sir/Madam,

On behalf of the Board of Directors, I wish to report after due enquiry that between the period from 31 May 2004 (being the date to which the last audited financial statements of the Company and its subsidiaries ("Group") has been made up) to 21 September 2004 (being a date not earlier than 14 days before the issuance of this Prospectus), that:-

- (a) the business of the Group has, in the opinion of the Directors, been satisfactorily maintained;
- (b) in the opinion of the Directors, no circumstances have arisen since the last audited financial statements of the Group which have adversely affected the trading or the value of the assets of the Group;
- (c) the current assets of the Group appear in the books at values which are believed to be realisable in the ordinary course of business;
- (d) no contingent liabilities have arisen by reason of any guarantees or indemnities given by the Company or any of its subsidiaries;
- (e) in the opinion of the Directors, since the last audited financial statements of the Group, they are not aware of any default or any known event that could give rise to a default situation, in respect of payments of either interest and/or principal sums in relation to any borrowing; and
- (f) save as disclosed in the "Proforma Consolidated Balance Sheets" and the "Accountants' Report" of this Prospectus, there have been no changes in the published reserves or any unusual factor affecting the profits of the Group since the last audited financial statements of the Group.

Yours faithfully,  
For and on behalf of the Board of Directors  
**Tek Seng Holdings Berhad**

**Loh Kok Beng**  
Executive Chairman