Wooden pallets and packaging

Gunilla Beyer 2016-10-18
Swedish Forest Industries Federation

The Swedish Forest Industries Federation (SFIF) is the trade organization for the pulp, paper and saw milling industry. The Federation represents

- some 50 pulp and paper mills in 23 groups/ companies
- about 120 sawmills in about 60 groups/ companies,
- and a number of companies with close ties to the pulp, paper and sawn timber.
- The Swedish Packaging Association is a separate organization under the umbrella, representing around 40 companies

The forest industry employs close to 60 000 people and exports to 127 billion SEK (2015). Directly and indirectly responsible industry for about 200 000 jobs.
Sweden = forest

73 %

forest

80 %
cultivated forest
Sweden’s Share of the World’s:

- Forest Area
- Pulp Productions
- Pulp Exports
- Paper Production
- Paper Exports
- Sawn Timber Productions
- Sawn Timber Exports

Source: Swedish Forest Industries Federation, Swedish Forest Agency, PPI, FAO
Wooden packaging include

- Pallets
- Pallet collars
- Boxes
- Crates
- Cable drums
- Tailor made packaging
- Light packaging
- Barrels
Pallets
Industrial packaging - crates and boxes
Pallet collars
Light weight packaging
Pallets - the major product
Pallets move the world - NWPCA slogan
EUR 4 way block pallets
Europe - pallet production

- **FEFPEB statistics (15 countries)**
  - 2006 339 million pallets
  - 2010 371 million pallets
  - 2013 401 million pallets

- **Austria, Belgium, France, Germany, Italy, Lithuania, the Netherlands, Portugal, Spain, Sweden, Switzerland, Turkey, UK and Ireland**
EUR pallet sizes mm

- EUR 1 800 x 1200
- EUR 2 1200 x 1000
- EUR 3 1000 x 1200
- EUR 4 800 x 600 (halfpallet)
- EUR 5 600 x 400 (quarterpallet)
# Pallet production in USA 1995-2011

<table>
<thead>
<tr>
<th>Year</th>
<th>1995</th>
<th>1999</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New</strong></td>
<td>411</td>
<td>429</td>
<td>441</td>
<td>416</td>
</tr>
<tr>
<td><strong>Recovered/repaired/remanufactured</strong></td>
<td>143</td>
<td>223</td>
<td>321</td>
<td>326</td>
</tr>
</tbody>
</table>

**Million of pallets**
Pallet sizes USA

- 800X1200 (mm), 1%
- 48X36, 1%
- 36X36, 2%
- 44X44, 3%
- 40X48, 3%
- 48X48, 4%
- 42X42, 5%
- Other sizes, 57%
- 48X40, 24%
Pallet use by industry USA

- Food and Beverage, 21%
- Chemical and Pharma, 19%
- Agriculture, 15%
- Metal and Machinery, 13%
- Wholesalers, 12%
- Other, 9%
- Exports, 5%
- Construction, 5%
Pallet production - some areas

- **Russian Federation**
  - Growth in demand 2010 – 2014: from 9,8 million to 17,8 million units

- **China**
  - 900 million pallets (total all types)
  - recycled 150 million pallets
  - Pooled pallets 10 million – growth rate 18%

- **Australia**
  - Wooden Pallet Market share – >90%
  - Pallets Manufactured p.a. – circa 15-20 million
  - Hire Pallets - 18-20 million
### Pallet sizes

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Regions most used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000x1200</td>
<td>Southern Asia and China</td>
</tr>
<tr>
<td>1200x1000</td>
<td>New Zealand</td>
</tr>
<tr>
<td>1100x1100</td>
<td>Japan and South Korea</td>
</tr>
<tr>
<td>1165x1165</td>
<td>Australia</td>
</tr>
<tr>
<td>Dimensions (W × L) millimetres</td>
<td>Dimensions (W × L) inches</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>1016 × 1219</td>
<td>40.00 × 48.00</td>
</tr>
<tr>
<td>1000 × 1200</td>
<td>39.37 × 47.24</td>
</tr>
<tr>
<td>1165 × 1165</td>
<td>45.9 × 45.9</td>
</tr>
<tr>
<td>1067 × 1067</td>
<td>42.00 × 42.00</td>
</tr>
<tr>
<td>1100 × 1100</td>
<td>43.30 × 43.30</td>
</tr>
<tr>
<td>800 × 1200</td>
<td>31.50 × 47.24</td>
</tr>
</tbody>
</table>

ISO pallets[edit]
The International Organization for Standardization (ISO) sanctions six pallet dimensions, detailed in ISO Standard 6780: Flat pallets for intercontinental materials handling—Principal dimensions and tolerances.
The FEFPEB pallet timber price index is shown in the graph. The index tracks the price trends for pallet timber in different countries such as UK, Germany, Netherlands, Italy, and Sweden. The data is presented from Q1 2009 to Q4 2015. The index values are not absolute prices per m³, but rather reflect changes in timber prices from the base year of 2009. The trend indicates a general increase in pallet timber prices in Europe during this period.

Pallet Timber Price Indices
These are not the absolute prices per m³, but from the national timber price indices of the UK, Germany, Italy, Sweden and The Netherlands, comparable pallet wood sizes are taken and the same base year determined (2009) to make them comparable. The FEFPEB pallet timber price index indicates a trend in the development of the wood prices for pallets in Europe.
Cases, boxes, crates etc (thousand tonnes)
Light weight packaging production

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>550</td>
<td>600</td>
</tr>
<tr>
<td>France</td>
<td>400</td>
<td>550</td>
</tr>
<tr>
<td>Italy</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>Germany</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Portugal</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>
## Light weight packaging

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Million units</td>
<td>1,095</td>
<td>1,171</td>
</tr>
<tr>
<td>m3</td>
<td>1,232,891</td>
<td>1,243,000</td>
</tr>
</tbody>
</table>
Production value of wooden packaging, EU28
US $ billions

- Flat pallets
- Cases, boxes
- Casks, barrels
- Box pallets
- Cable drums

2012, 2013, 2014
Trends

• Pallet pools are growing
• More rental pallets
• More automation and robots
• Lighter alternatives

Threats

• ISPM 15 phytosanitary aspects
• Circular economy package (Europe)

Possibilities

• Tools for designing pallets
• Pallet carbon footprints
• Wood and food see www.fefpeb.eu
• Circular economy package (Europe)
Pallet carbon footprint

EUR pallet (800 x 1,200)

-35
-30
-25
-20
-15
-10
-5
0
5

kg CO₂/pallet

Pallet Transportation
Energy during Pallet Manufacture
Material Lifecycle - Steel
Timber Harvesting and Transportation
Carbon stored in timber