Plywood production and consumption
Plywood production and consumption
(million m³)

Year | Production | Consumption
--- | --- | ---
2000 | 58.4 | 59.6
2005 | 73.3 | 72.5
2010 | 81.5 | 79.4
2015 | 100.4 | 97.5
2016 | 105.6 | 100.3

CAGR 2000–2016: 3.8%

Plywood consumption by end-use category 2016
Total 100.3 million m³

- Construction 38%
- Furniture 26%
- Flooring 5%
- Packaging 9%
- Transport vehicles 7%
- Other 15%

Source: Indufor

Plywood production by market area
2000, 2005, 2010, 2015 and 2016 (1 000 m³)

- NAM
- EMEA
- Russia
- LAM
- China
- Rest of APAC
- Total

Graphical representation of production and consumption trends from 2000 to 2016.
Plywood production and consumption 2012–2016

Plywood production and consumption 2012–2016 (million m\(^3\))

CAGR 2012–2016 2.7%

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>92.5</td>
<td>89.5</td>
</tr>
<tr>
<td>2013</td>
<td>93.8</td>
<td>92.5</td>
</tr>
<tr>
<td>2014</td>
<td>98.9</td>
<td>94.1</td>
</tr>
<tr>
<td>2015</td>
<td>100.4</td>
<td>97.5</td>
</tr>
<tr>
<td>2016</td>
<td>105.6</td>
<td>100.3</td>
</tr>
</tbody>
</table>

Source: Indufor

Plywood consumption by end-use category 2016
Total 100.3 million m\(^3\)

- Furniture 26%
- Construction 38%
- Packaging 9%
- Flooring 5%
- Transport vehicles 7%
- Other 15%

Plywood production by market area 2012–2016 (1 000 m\(^3\))

- NAM
- EMEA
- Russia
- LAM
- China
- Rest of APAC
- Total
North America
- Replacement investments and modernizations
11%

Europe
- Developing current capacity
3%

Russia
- Upgrading production technology
- Exploiting forest resources
- Export products
4%

South America
- Plantation forest resources
5%

Africa
- Local further processing of wood
2%

Asia‒Pacific area
- Plantation forest resources
- In China, increased quality requirements and industrialization
75%

Market area’s share of Raute’s order intake in 2014-2016
Plywood production by market area in 2016
Focus on emerging markets

North America
The world's largest LVL producing area and the world's second largest plywood manufacturing area. Economy is growing. Construction remains at a low level.
Investments focus on modernization projects to boost efficiency and replacement investments.

Europe and Africa
Developed market with a generally high level of production technology.
The biggest technology supplier. The objective is to maintain the leading position and to deepen cooperation with customers in order to boost their production processes in the long term.
Production efficiency and quality improvements, service business

South America
One of the biggest and most potential growth areas in plywood production
Strong position in Chile and deliveries to Brazil.
Structure of local forest industry, abundant plantation wood resources and investments in products with a high value added.

China
The world's largest producer of plywood.
Production mostly based on manual labor, simple technology and local machine suppliers.
To become a significant operator.
Higher quality requirements.

Rest of the Asia-Pacific area
Strong shift from natural forests to plantations
The strength: Processing of raw material from small-diameter plantation trees.
New growth of plywood production enabled by plantation forests.

Russia
Large raw material reserves and developing economy in the long term.
Excellent competitiveness in the export markets.
The market leader
Extensive forest resources and developing economy. Technology services.

58% 17%
EMEA

- Strong plywood industry in Finland
- Strong investment boom in recent years; however, in long-term low level of new capacity building
- Focus on projects targeting at improving production efficiency and quality
- Africa surprisingly large, future potential

Raute and EMEA

- Raute is the biggest player in Europe
- Service business in growth
- Customer base expanded to smaller and potential new players and to Africa

EMEA Plywood production and consumption in Europe (million m³)

<table>
<thead>
<tr>
<th>Plywood production 1 000 m³</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROPE TOTAL</td>
<td>2.562</td>
<td>2.623</td>
<td>2.927</td>
<td>2.819</td>
<td>2.888</td>
</tr>
<tr>
<td>% world total</td>
<td>3 %</td>
<td>3 %</td>
<td>3 %</td>
<td>3 %</td>
<td>3 %</td>
</tr>
<tr>
<td>Finland</td>
<td>1,024</td>
<td>1,090</td>
<td>1,188</td>
<td>1,160</td>
<td>1,140</td>
</tr>
<tr>
<td>Baltic states</td>
<td>317</td>
<td>336</td>
<td>373</td>
<td>338</td>
<td>335</td>
</tr>
<tr>
<td>Estonia, Latvia, Lithuania</td>
<td>295</td>
<td>284</td>
<td>340</td>
<td>284</td>
<td>329</td>
</tr>
<tr>
<td>Spain</td>
<td>245</td>
<td>225</td>
<td>234</td>
<td>266</td>
<td>280</td>
</tr>
<tr>
<td>Italy</td>
<td>210</td>
<td>214</td>
<td>226</td>
<td>254</td>
<td>280</td>
</tr>
<tr>
<td>France</td>
<td>198</td>
<td>210</td>
<td>252</td>
<td>226</td>
<td>231</td>
</tr>
<tr>
<td>Sweden</td>
<td>83</td>
<td>82</td>
<td>98</td>
<td>82</td>
<td>81</td>
</tr>
<tr>
<td>Romania</td>
<td>65</td>
<td>66</td>
<td>79</td>
<td>74</td>
<td>69</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>40</td>
<td>35</td>
<td>42</td>
<td>39</td>
<td>36</td>
</tr>
<tr>
<td>Portugal</td>
<td>20</td>
<td>15</td>
<td>22</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>20</td>
<td>19</td>
<td>21</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
<td>47</td>
<td>52</td>
<td>52</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: Indufor
Russia

- Large raw material resources and developing economy in the long term.
- Strong market area where plywood production has more than doubled in the recent years.
- Growth in economy slow at the moment, which reduces and postpones investments.
- Weak currency creates competitive edge for export. Domestic demand at a low level.

Raute and Russia

- Raute is the market leader in Russia.
- Large forest resources and developing economy create good growth potential in the future.
- Raute has growth potential also in technology services thanks to the large installed machine base.
China

- World biggest and growing plywood manufacturer
- Manual production and simple technology; local manufacturers are strong
- Increased quality requirements

Rest of the APAC area

- Plantation forests enable new growth for plywood production

Raute and the APAC area

- Raute’s strength is in handling small-diameter plantation wood
- In China, requirements concerning the end product’s quality, ergonomy and environmental issues

Market area’s share of Raute’s order intake 2014-2016

Plywood production and consumption in the Asia-Pacific area (million m³)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>APAC TOTAL</td>
<td>68 152</td>
<td>69 001</td>
<td>73 245</td>
<td>75 104</td>
<td>79 591</td>
</tr>
<tr>
<td>% world total</td>
<td>74 %</td>
<td>74 %</td>
<td>74 %</td>
<td>75 %</td>
<td>76 %</td>
</tr>
<tr>
<td>China</td>
<td>50 979</td>
<td>53 273</td>
<td>55 137</td>
<td>58 170</td>
<td>61 951</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5 268</td>
<td>5 268</td>
<td>5 768</td>
<td>5 341</td>
<td>5 752</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4 450</td>
<td>3 322</td>
<td>4 154</td>
<td>3 520</td>
<td>3 544</td>
</tr>
<tr>
<td>Japan</td>
<td>2 583</td>
<td>2 459</td>
<td>2 902</td>
<td>2 813</td>
<td>3 064</td>
</tr>
<tr>
<td>India</td>
<td>2 521</td>
<td>2 521</td>
<td>2 521</td>
<td>2 521</td>
<td>2 634</td>
</tr>
<tr>
<td>New Zealand</td>
<td>550</td>
<td>360</td>
<td>345</td>
<td>353</td>
<td>399</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>455</td>
<td>434</td>
<td>482</td>
<td>478</td>
<td>474</td>
</tr>
<tr>
<td>Philippines</td>
<td>300</td>
<td>317</td>
<td>317</td>
<td>317</td>
<td>166</td>
</tr>
<tr>
<td>Other</td>
<td>1 046</td>
<td>1 047</td>
<td>1 619</td>
<td>1 591</td>
<td>1 607</td>
</tr>
</tbody>
</table>

Source: Indufor
South America

Plywood production and consumption in South America (million m³)

Source: Indufor

<table>
<thead>
<tr>
<th>Plywood production 1 000 m³</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAM Total</td>
<td>4 703</td>
<td>4 680</td>
<td>4 836</td>
<td>4 791</td>
<td>4 781</td>
</tr>
<tr>
<td>% world total</td>
<td>5 %</td>
<td>5 %</td>
<td>5 %</td>
<td>5 %</td>
<td>5 %</td>
</tr>
<tr>
<td>Chile</td>
<td>1 292</td>
<td>942</td>
<td>860</td>
<td>1 100</td>
<td>1 355</td>
</tr>
</tbody>
</table>

South America

- Significant growth potential for plywood production
- Chile has high-quality raw material
- Very high-quality plywood produced in Chile
- In the end of 2013 and during 2014, some 600 000 m³ of new capacity on line
- Slow development of economy in the recent years

Raute and South America

- The structure of local forest industry, abundant plantations wood resources and investments in high-value-adding products provide growth potential
- Raute has a strong position in Chile and promising deliveries to Brazil
- Growth potential exists further
North America

**Plywood production and consumption in North America (million m³)**

- Plywood production and consumption in North America (million m³)
  - 2000: NAM Plywood production: 17, NAM Plywood consumption: 18
  - 2005: NAM Plywood production: 19, NAM Plywood consumption: 19
  - 2010: NAM Plywood production: 15, NAM Plywood consumption: 15
  - 2016: NAM Plywood production: 10, NAM Plywood consumption: 10

<table>
<thead>
<tr>
<th>Plywood production 1 000 m³</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>% world total</td>
<td>12%</td>
<td>12%</td>
<td>11%</td>
<td>11%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Indufor

North America

- Second largest plywood producer in the world and world largest LVL producer
- End-uses in construction have an exceptionally high share
- Recovery from recession going on, however, takes time
- Investments mostly in modernization-type projects and LVL

Raute and North America

- Local machinery manufacturers have a strong position
- Raute has growth potential in comprehensive strategic investments of customer industries and in technology services
- Raute aims at strengthening its position as an automation expert
LVL Production and consumption
LVL Production and consumption 2005, 2010, 2015 and 2016 (1,000 m³)

CAGR 2005–2016 -0.5%

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>2,975</td>
<td>2,687</td>
</tr>
<tr>
<td>2010</td>
<td>1,605</td>
<td>1,534</td>
</tr>
<tr>
<td>2015</td>
<td>2,593</td>
<td>2,611</td>
</tr>
<tr>
<td>2016</td>
<td>2,802</td>
<td>2,846</td>
</tr>
</tbody>
</table>

LVL Production by areas 2005, 2010, 2015 and 2016 (1,000 m³)

Source: Raute
LVL Production and consumption 2012–2016

LVL Production and consumption 2012–2016 (1,000 m³)

CAGR 2012–2016 6.7%

Year | Production | Consumption |
--- | --- | --- |
2012 | 2,027 | 2,079 |
2013 | 2,283 | 2,327 |
2014 | 2,519 | 2,525 |
2015 | 2,593 | 2,611 |
2016 | 2,802 | 2,846 |

LVL Production by areas 2012–2016 (1,000 m³)

Source: Raute