How to Ensure Active Worker Participation

Workshop on the European Action Guide on Formaldehyde Perspectives and Challenges of the Woodworking Industries in Europe

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Berufgenossenschaft Holz und Metall (BGHM)

- statutory accident insurance for the German wood- and metalworking industry
- corporation under public law
- assumes the employer’s liability of about 223,000 companies
- accident insurance for more than 4.9 million employees
- DGUV - umbrella association of the German accident insurances
Basic „operating figures“ of the BGHM

<table>
<thead>
<tr>
<th>Category</th>
<th>at the end of 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprises</td>
<td>223,143</td>
</tr>
<tr>
<td>Employees</td>
<td>4,875,105</td>
</tr>
<tr>
<td>Expenditure</td>
<td></td>
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<tr>
<td>Pensions to employees and surviving dependants</td>
<td>1,168.33 million EUR</td>
</tr>
<tr>
<td>Restoration of health (rehabilitation) and payments</td>
<td>696.72 million EUR</td>
</tr>
<tr>
<td>Prevention</td>
<td>196.71 million EUR</td>
</tr>
<tr>
<td>Staff of the BGHM</td>
<td>3,202</td>
</tr>
</tbody>
</table>
# Accident risk in the wood-based panel industry

<table>
<thead>
<tr>
<th></th>
<th>Reportable* occupational accidents per 1 million working hours</th>
<th>1000-man quota (reportable* occupational accidents per 1000 full-time employees)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood-based panel industry (approx. 80 companies)</td>
<td>32.3</td>
<td>50.7</td>
</tr>
<tr>
<td>BGHM total (approx. 223,000 companies)</td>
<td>22.2</td>
<td>34.6</td>
</tr>
<tr>
<td>DGUV (industrial economy)</td>
<td>13.9</td>
<td>21.3</td>
</tr>
</tbody>
</table>

* reportable, i.e. more than 3 lost days

Data source: DGUV / BGHM
Scheme of particle board production
Relative accident risk* by division in particle board production

Data source: BGHM

*relative risk of an accident at work in a work area, compared to all accidents at work in the company
Relative accident risk* by activity in particle board production

Data source: BGHM

*relative risk of an accident at work during an activity, compared with accidents at the workplace when a ladder is involved.
Occupational diseases in the wood-based panel industry (2013-2018)

Data source: BGHM

No increased risk of an occupational disease caused by cancer can be observed in wood-based panel production plants.
Formaldehyde - characteristics and effects

- Colourless, pungent smelling gas
- Toxic by inhalation, ingestion and contact with skin

- Odour threshold: 0.05 - 1 ppm
- Threshold concentration for nasal and pharyngeal irritations: approx. 1 ppm
Occupational health and safety, average shift value

Occupational Exposure Limit (OEL): 0.3 ppm (0.37 mg/m³)
• first OEL for a carcinogenic hazardous substance!!!
• indicates the concentration of a substance at which acute or chronic adverse health effects are not expected to occur in general (§ 2 Abs. 7 GefStoffV)
• Time Weighted Average (TWA) values for usually daily eight-hour shift

• Short Term Exposure Limit (STEL) peak limitation for one shift
  peak limit value 2:
  → per shift 4 x 15 minutes max. 0.6 ppm (0.74 mg/m³)

• Important: the TWA value must always be observed!
Formaldehyde in particle board production

production areas with formaldehyde contamination
Strategy for compliance with the new limit values

Determination and marking of the working area

- **green**
  - < 0.3 ppm - OEL (Occupational Exposure Limit Value) is safely observed
  - free access without time limit
  - no protective measures required

- **green/red**
  - ≥ 0.3 ppm ≤ 0.6 ppm - Short-Term Value
  - stay restrictions
  - protective masks must be carried with you

- **red**
  - > 0.6 ppm - AGW OEL is exceeded
  - obligatory wear of protective masks when entering

→ Employees are enabled to identify critical areas and protect themselves.
Classification of the production areas in “exposure zones“

Example: expositions on the form line and press

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Action Guide for formaldehyde

- visualization of zones with formaldehyde ≥ limit value
- employees can identify critical areas themselves and protect themselves in a targeted manner
- own control measurements possible
- assessment for different process states possible (product, pressing speed, ...)
- basis for further measures:
  - technical investments (extraction, delimitation of areas, ...)
  - organizational measures
  - continuous enhancement
- safe assessment for supervisory authorities
How to ensure active worker participation?

1. Communication and training on the Action Guide
2. Organization and execution of measurements
3. Division and visualization of zones with formaldehyde ≥ Limit value
4. Selection of the necessary protective measures (PPE)
5. Regular updating
Thank you for your attention!

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