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General information

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2.0.1    Introduction / history

The Chemical Industry mainly depends on the export of its products. Because of that, since the sixties, instead of pool pallets more and more cheap one way pallets are being used for the export of the products.

Due to alignment of the products and pallets in the different companies over time a lot of different pallet types were created (in Europe over 2500 different types).

As a result of the packaging legislation a strategy had to be found which did not increase the costs of export and at the same time solved the local waste problem.

The solution was a reduction of the variety of pallet types and the coupling of the advantages of one-way and multiple trip systems.

Included in the price of the products was the price of the standardized CP pallets within the Chemical-Pallet-System. The customer had the possibility to either reuse the pallets or to return through a CP-registered Pallet producer/reconditioner for general reuse (see also CP-Spezifikationen: part C. „Collection of used CP’s“.)
2.0.2 Application

The CP-system covers 9 standard pallets. The following remarks about the individual pallets should help in selecting the right type.

The constructions of the CP 1 to 5 pallets are the so called stringer type pallets. These pallets are used by the majority of chemical companies.

<table>
<thead>
<tr>
<th>Pallet type</th>
<th>Area of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP 1 (1000 x 1200 mm)</td>
<td>Preferred pallet (50% of the total CP-usage). Usable for shipment of all chemical products.</td>
</tr>
<tr>
<td>CP 2 (800 x 1200 mm)</td>
<td>In consumer industry, trade, alternative to Euro-Pool-Pallet</td>
</tr>
<tr>
<td>CP 3 und 9 (1140 x 1140 mm)</td>
<td>Container pallet, suitable for FIBC, carton octabin, drums with diameter of 585mm</td>
</tr>
<tr>
<td>CP 4 und 7 (1100 x 1300 mm)</td>
<td>Shipping of bulk products in bags, especially plastic granules and fertilizers</td>
</tr>
<tr>
<td>CP 5 (1140 x 760 mm)</td>
<td>Semi container pallet</td>
</tr>
<tr>
<td>CP 6 (1200 x 1000 mm)</td>
<td>Shipment of bulk products in bags</td>
</tr>
<tr>
<td>CP 8 (1140 x 1140 mm)</td>
<td>Special container pallet, suitable for containers with bottom discharge (FIBC/carton octabin)</td>
</tr>
</tbody>
</table>

Reasons for selecting the stringer type pallet are:

- Costs
- Simpler to repair
- Enough stability
- Easy to be handled with hand-pallet-trucks and non-free carrying lifting-trucks.
CP 6 till 9 are so called double deck pallets or peripheral pallets, which because of their construction are more stable.
2.0.3 Maximum working load

Experience has demonstrated that not only the type of pallet but also the type of load strongly influences the permissible safe working load of the pallet. The effect of different type of loads can be caused by e.g. centrally placed loads, interlocked or non-interlocked units, flexible packaging such as sacks or rigid packaging such as containers. Security and wrapping can additionally take influence.

Therefore the test standard for pallets differentiates between nominal and working load. The relevant test standards are DIN EN ISO 8611 part 1-3.

The use of pallets in high-bay racking is considered the most severe form. For chemical pallets CP1 to CP9, latest issue 6, April 2004 in chapter G “Safe working load” a testing method for high-bay racking has been implemented which allows to define the safe working load in case of high-bay racking depending on every single use. The resulting safe working load of this test process is also applicable for less severe forms of usage such as block stacking.
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2.0.4 Treatment of wood pallets for the protection against carryover and spreading of wood and tree pest through the trade route in consideration of the export- and import regulations

A chemical treatment of pallets against insect attacks or fungal decay is not approved within the CP-system because chemically treated wood is not allowed to be recycled e.g. in the chipboard industry. If necessary it needs to be recycled as hazardous waste.

In the context of the worldwide traffic of goods phytosanitary regulations (ISPM 15) for the international trade with wood packaging were issued by IPPC (International Plant Protection Convention). According to ISPM 15 (International Measures for Phytosanitary Measures), heat treatment is accepted at a core temperature of at least 56°C for a minimum of 30 minutes or alternatively fumigation with Methyl Bromide (MB), whereas the latter is rejected in accordance with the above mentioned explanation. In the meantime the gassing with MB is no longer permitted in Germany. Imported pallets with MB marking can be, however, furthermore used in Germany (except in the pharmaceutical industry). According to ISPM 15 heat-treated CP-pallets have to be additionally marked at two opposite sides (for example at the block) analogy to the following example:

IPPC-symbol: according to ISPM 15 standard
DE: 2-digit ISO-country code (e.g. Germany)
BY: regional code (e.g. Bavaria)
49XXXX: registration number of manufacturer is assigned (by the regional phytosanitary department)
HT: heat treated
DB: debarked

The National plant protection organization, producers or suppliers can add inspection numbers or other information in their discretion for the identification of certain parties. If decortication is requested the letters DB must be supplemented to the abbreviation HT or MB. Further information can be taken up, if they do not confuse, mislead or be deceptive. For this reason the colours red and orange should not be used.

The complete marking should be provided with a frame, whereas the IPPC-symbol should be separated by a vertical line from the other information. A lot of countries have organized its import regulations already according to ISPM 15-standard. A lot of countries have organized its import regulations already according to ISPM 15-standard.
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2.0.5 Treatment of wood pallets for the protection against carryover and spreading of wood and tree pest through the trade route in consideration of the export- and import regulations

The requirements of ISPM 15 are valid only for the import and export into countries outside of the EU (exception: Switzerland). The ISPM 15, however, does not apply to the trade within Germany and to the import and export of wood for packaging among EU member states. In practice it reflects, that more and more companies within the EU-member states demand the supply of heat treated (HT) pallets due to the possibility of general recycling of pallets. Information about the current export regulations can be found via the regionally responsible authorities of official plant public health authorities. More information can also be taken from the homepage of the Julius Kühn-Institute, Federal Research Centre for Cultivated Plants (JKI) www.jki.bund.de.
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2.1.0  CP - CHEMICAL INDUSTRY PALLETS

See separate: “CP-Specification, April 2004”
2.2.1 Plastic pallets

Plastic pallets have only a limited use in the Chemical Industry and if, they are only applied in specific areas. The value to the user and the sizes and designs of plastic pallets available on the market vary greatly. These pallets are also available in the measurements of the CP series. Predominantly materials such as polyethylene and polypropylene are found, mostly with recyclate. Likewise lightweight versions from EPS foam with reinforcement on the inside e.g. steel inserts, are available.

Plastic pallets can bring advantages for in-plant storage pallets and for pallets which handle cargo e.g. in damp locations, open air storage facilities and for wood sensitive goods and as regular transportation pallet for hygiene-sensitive industries (e.g. pharmaceutical industry). In each case it is recommended to test whether the skid resistance of the pallets is sufficient for hazardous free handling for the intended load and the existing transportation devices, e.g. fork lift.
2.2.2 Metal pallets

Metal pallets are used in the chemical industry for very demanding areas. Metal pallets find application in the pharmaceutical-, cosmetics- and food industry.

Aluminium and stainless steel are the most used materials.

The pallets find use mainly as internal storage- and transportation means in areas with very high requirements for cleanliness, hygiene, also in the sense of GMP-and HACCP-regulations. Further advantages are the favourable physical characteristics like high mechanical stability and the temperature stability of the used materials. Due to conductive characteristics they are also highly suitable for the application in explosive areas.

In each case it is recommended to test whether the skid resistance of the pallets is sufficient for hazardous free handling for the intended load and the existing transportation devices, e.g. fork lift.