I. AIR FREIGHT PACKAGING

1. GENERAL REMARKS

Air freight has become ever more important during the last few years. This guideline makes a few suggestions on requirements for air freight packaging. The following recommendations are based on normal loads and stresses during air transport and delivery before and after. They are only meant as examples, other options may be better suited and different regulations may apply.

The regulations of IATA, the International Air Transport Association and of the German Luftfahrtbundesamt LBA (German equivalent authority) must be respected in all cases. Individual air hauliers often impose their own rules on delivery and packaging. The following remarks are therefore of an indicative nature only and details must be agreed with the air haulier beforehand.

Certain goods may not be transported by air freight or subject only to specific conditions. These are set out in the Technical Instructions of the International Civil Aviation Organisation (ICAO TI) and/or the IATA Dangerous Goods Regulations, IATA DGR.

2. PREPARATION AND PRECAUTIONARY MEASURES

Customer and packer must agree beforehand on the following aspects:

- Airline charged with the transport of the goods
- Type of aeroplane chosen for the transport
- Mass, dimensions and centre of gravity of the packaging good
- Route and sites chosen for storage and transhipment
- Sensitivity of the packaging goods
- Sensitivity of the goods against vibrations and temperature fluctuations
- Hygroscopic properties of the goods or to what extent they will effect the air humidity level inside the packaging
3. TRANSPORT STRESSES AND LOAD SECURING NEEDS

3.1 Transport stresses

Packaging must be designed to withstand vertical loads of 3 g and/or 1.5 g towards the front, rear and sides. This is the equivalent of 1.5 or 3 times the weight of the packaging goods.

Mass per linear metre and maximum stowage heights must be taken into account when designing the packaging. It makes sense to optimize the external shape of the packaging in view of the stowage area and profile available.

Vibrations can reach values of between 5 – 500 Hz during air transport. The customer needs to inform the packer if special packaging is required to protect the goods against them.

3.2 Securing loads during air transport

Special air freight pallets are used for packaging goods. They are directly secured to the pallets with nets and/or lashing straps. The pallets are then loaded and secured with individual on-board transport and fastening systems.

If pallets exceed certain haulier or aeroplane specific weights and/or dimensions, they cannot be secured by on-board fastening systems. The goods must therefore be secured directly to the bottom of the hold itself and lashing straps are the only means used for that purpose. In this case a sufficient number of fastening devices, i.e. 1 per ton must be provided, including length wise. This number must be achieved even with open packaging and without damaging any anti-corrosion protection. Special straps are used to lash the goods down. They must be spaced at least every 0.50 m in a given direction.
4. ATMOSPHERIC INFLUENCES

Many aeroplane types have temperature-controlled holds with pressure compensations. Nevertheless, temperature and pressure losses must be provided for. Opening the hold in the country of origin or during stopovers can also provoke sudden climate fluctuations. Precautionary measures to avoid corrosion must therefore be taken.

5. PACKAGING ADVICE

Individual authorizations by the air haulier may be needed for certain packaging goods or those above a given weight. Packaging goods above a certain mass may not be packed in closed packaging.

This HPE guideline applies generally to all aspects of the packaging itself.