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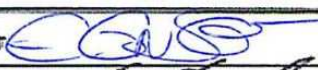
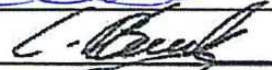

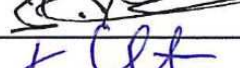

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Logistics Guidelines for Suppliers

Diehl Aerospace GmbH

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II List of abbreviations

CAD	Computer-Aided Design
CoC	Certificate of Conformity
DAs	Short form for Diehl Aerospace
EASA	European Aviation Safety Agency
EDI	Electronic Data Interchange
EPAL	European Pallet Association e.V.
ERP	Enterprise Resource Planning
ESD	Electrostatic discharges
IPPC	International Plant Protection Convention
KLT	Small load carriers
QSF	Quality Assurance Requirements for suppliers
RP	Recovery plan
SLT	Specialized load carriers
VDA	Association of the automotive industry
VMI	Vendor-Managed Inventory

1. Preface

The success of Diehl Aerospace GmbH (following shortened with DAs) significantly depends on the satisfaction of the customers. Our ambition is to fulfill customer requirements by supplying, developing and supporting avionics systems and cabin lighting elements. In order to meet the high requirements of the aviation industry, we rely on high-performance suppliers.

In particularly with regard to global competition and a cross-industry increase in share of purchased services, procurement and logistics play a central role in entrepreneur activities. At its core is the protection, coordination and optimization of the material, financial and information flows. The aim of DAs is a long-term partnership with the supplier. The synergy effects resulting from the close cooperation form a solid foundation for future challenges.

This guide is intended to ensure the logistics guidelines and logistical framework conditions for securing lean logistics processes along the entire value chain.

The aim of the guideline is to ensure the basic logistical principles:

- (1) Provide the right material, at the right time, in the right way, with the right information, at the right place, in optimum quality, at optimum costs.
- (2) Optimum selection of packaging and containers with regard to their protection, storage, handling, transport, manipulation and information function.

The present logistics guidelines apply in addition to our valid Conditions of Purchase and the Quality Assurance Requirements for suppliers (QSF).

In addition to the general delivery conditions, the respective site specifications apply:

- [13.8 Specification at the site in Nuremberg](#)

2. Scope

These logistics guidelines define the basic logistical requirements for the delivery of DAs. These guidelines apply in addition to the Diehl Aerospace Conditions of Purchase and the Quality Assurance Requirements for suppliers.

In case of possible contradictions between the generally applicable logistics guidelines and individual contract provisions, the individual contractual provisions should take priority.

The fundamental requirements of this manual apply until revocation or revision for the following branches of the DAs:

Diehl Aerospace GmbH
Donaustr. 120
90451 Nuremberg
Germany
Phone: +49 911 9494-0
Fax: +49 911 9494-209

Diehl Aerospace GmbH
An der Sandelmuehle 13
60439 Frankfurt am Main
Germany
Phone: +49 69 5805-0
Fax: +49 69 5805-1399

Diehl Aerospace GmbH
Alte Nußdorfer Straße 23
88662 Ueberlingen
Germany
Phone: +49 7551 891-0
Fax: +49 7551 891-4001

3. Company organization

The DAs company structure is made up of factories, storage locations and storage areas. On the first level the locations are classified by factories. These factories have different storage locations which are divided into storage areas. Control and administration is carried out via the ERP system (SAP-R/3).

3.1. Factories

The first level of the company organization consists of plants, which are composed of the DAs locations.

SAP plant	Factories	Application
0011	Frankfurt am Main	Production
0012	Ueberlingen	Production
0013	Hamburg	Customer service
0014	Nuremberg	Production
0015	Seattle	External warehouse
0019	Service warehouse	Customer service
0021	Toulouse	Customer service
0080	Singapore	Customer service

4. Basis of communication

A successful collaboration between DAs and the supplier is based on a smooth and structured exchange of information. The requirements and expectations include the logistical support of the supply chain which is explained in the following chapter. The logistic support includes the area of responsibility for maintaining and constantly optimizing the supply process of the DAs.

4.1. Information behavior

DAs expects availability of the supplier from Monday – Friday between 08:30AM and 16:00PM. Deviations of the deliveries outside the defined tolerances (under and over delivery tolerances) and any expected supply bottleneck shall be communicated immediately by the supplier to the responsible DAs contact person ([see 4.4. Contact persons](#)). Furthermore, the supplier is obligated to provide the DAs with the best possible alternative proposal with regard to quantitative and / or time deviation.

4.2. Company holidays of the supplier / subcontractor

In case of resting operation, the supplier (and his subcontractor) must ensure that the delivery capability of the DAs is maintained.

4.3. Technical requirements

In addition to the customary requirements (telephone, E-mail), the usual Microsoft Office formats are required for communication. Furthermore, it has to be ensured that DAs specific formats for the technical documentation can be applied (e.g. CAD data, 3D models or transmitter data).

4.4. Contact persons

In order to avoid unnecessary delays, competent contacts must be known for all relevant business areas. Any changes need to be communicated immediately.

The respective contact persons are defined in a communications matrix and are kept up to date.



Kommunikationsmatr
ix_Template_neu_eng

Annex 1: Communications matrix

5. Planning and disposition

The planning and procurement parameters are defined in such a way that delivery on time and the ordered quantity is always guaranteed.

The basis of the capacity and demand planning are the transferred requirements, the so-called essential users, including:

- Customer orders (serial, replacement, and repair)
- Independent requirements (primary requirements)
- Internal DAs orders
- Stock orders

5.1. Basis for planning

The annual purchase quantities are transmitted to the supplier as a non-binding forecast. Based on these data, the supplier must ensure the delivery reliability, even in the event of fluctuations in demand. It is within the responsibility of the supplier to secure the supply of material by its subcontractors.

5.2. Phase-out / phase-in

In the case of product launches and / or product eliminations, an increased flexibility of the supplier is expected with regard to the quantities taken out and the delivery time. The customers' requirements must not be negatively affected by the phase-out or phase-in.

6. Transmission of demand and procurement

6.1. Transmission of demand

The commissioning of supplier may happen by means of the following types:

- E-Mail
- EDI
- Supplier portal

The ability to transmit data or to receive data is a prerequisite for the cooperation of the DAs.

Electronic Data Interchange (EDI): The Electronic Data Interchange defines the exchange of business documents (invoice, credit note, etc.) in electronic form. The data or document transfer is carried out without manual administrative intervention and is transferred directly to the ERP system of the business partner.

Supplier portal: Online portal (extranet) for the connection of DAs suppliers by transmission of delivery schedules, orders and forecasts.

6.2. Types of procurement

The choice of the procurement procedure is based on the quantities required and the requirement period as well as the continuity of the requirements:

- Order
- Quantity contract
- Delivery schedule

Order: Single procurement process.

Quantity contract („static“): Agreement that a certain quantity of a product will be purchased in a given period. The contract contains quantities and price information, but no specification of the delivery dates and delivery quantities. The retrievals are made by means of individual orders which call up a certain amount of the agreement.

Delivery schedule („dynamic“): Framework agreement that a certain quantity of a product will be purchased in a given period. Therefore, a delivery schedule defines the individual delivery call-off with regard to date and quantity. The retrieval is made by delivery scheduling agreements that

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retrieve a certain quantity of the agreements. The maximum term of a delivery schedule is 24 months.

7. Basic principles of warehousing

7.1. Inventory management

The inventory management ensures the production and delivery capability of DAs. The inventory consists of the following categories:

- Safety stock
- Consignment stocks
- Vendor managed inventory (VMI)
- Consumption-based inventory (e.g. Kanban)
- „Last-time-buy“ inventory

7.2. Long-term protection of the supply chain

The supplier is responsible for taking precautions to ensure long-term hedge of the supply chain. In particular this applies to the phases of product elimination. Being able to guarantee the service for terminated products even beyond the product life cycle, so-called "last-time-buy" inventories are provided. The product elimination must be communicated timely by the supplier to DAs, indicating an appropriate "last-time-buy" period. During this period, DAs decides on the possibility of a final stockpiling, ensuring the spare parts supply up to the end. This method is particularly common used with electronic components.

8. Delivery process

Immediately upon delivery, the inspection of the delivery address and the examination of the packaging for damage are carried out. In case of slight damages, the goods are accepted under reserve. The goods' receiving is confirmed by signature.

In the case of incorrect delivery address or severely damages of the packaging, the acceptance of the goods will be refused

8.1. Basics

The supplier delivers the parts within the supplementary delivery specifications, specific packing regulations as well as compliant to the present logistics guidelines, Diehl Aerospace GmbH Conditions of Purchase and Quality Assurance Requirements for Suppliers (QSF). In case of delivery of a damaged or incorrectly used good as well as an incorrect transportation system, DAs reserves the right to invoice the supplier for the additional transport costs (re-packaging, repair, etc.). For additional measures concerning a delivery date variance, please refer to the Diehl Aerospace GmbH Conditions of Purchasing.

8.2. Permitted transportation vehicles

In Nuremberg the delivery must always take place with vehicles able to be unloaded at a loading ramp.

However, in Frankfurt and Ueberlingen the delivery with small vehicles (not able to be unloaded from a loading ramp) is intended.

8.3. Delivery times

Deliveries outside the fixed times are only permitted in exceptional cases upon consultation with the responsible DAs dispatcher. If there is no agreement, DAs reserves the right to decline acceptance and to invoice the supplier for any additional costs incurred.

Delivery times:

Mon – Thu:	07:00 to 12:00	12:45 to 16:00
Fri:	07:00 to 12:00	12:45 to 14:00

In addition, the following break time must be observed for the Nuremberg location. During this time, no goods are accepted.

Daily: 08:45- 09:05.

8.4. Special trips and returns

Returns and special trips which are attributed to a fault of the supplier are to be borne by the supplier.

8.5. Return of declared goods

When returning goods to third countries DAs is responsible for handling the customs formalities within Germany and the supplier for the handling of customs formalities in their country. Differing terms are specified in the respective supplier contracts.

9. Relevant documents for delivery

Basically, DAs expects complete and correct delivery documents. In addition, the conditions of the Quality Assurance Requirements (QSF) for suppliers of the DAs must be complied. The respective valid version is available on the websites of DAs. Amendments and additions require the consent of the customer and must be documented in a Quality Assurance Agreement (QSV).

The delivery-relevant documents include the following:

- Delivery note
- Shipping order
- If necessary EASA form 1, test certificate, protocol, certificate of compliance with the order, CoC

The delivery documents must be submitted to the DAs incoming goods upon delivery. The supplier has to ensure that the delivery documents are properly completed. In doing so, the delivery papers must be placed on the load carrier, packed in delivery pockets and clearly visible, on the outsides.

Figure 1: Attachment of delivery papers to the load carrier



In the case of deliveries of several load carriers, the delivery papers must be attached to the first load carrier (with the serial No. 1). If an attachment to the load carrier is not possible,

the delivery papers must be placed in the load carrier as a top layer. Deliveries without the required documents are not accepted and returned at the supplier's expense.

EASA form 1: Certificate of approval of use in the aviation industry.

Certificate of Conformity (CoC): The document confirms the fulfillment of the internationally recognized standards of products.

9.1. Specifications delivery note

All suppliers must provide the following information on the delivery note:

- Delivery address
- Invoice address
- Delivery note number as barcode and text
- Delivery note date
- Invoice number
- Accounts payable number of the supplier
- Reference for the order
- Order item
- Number of packages
- Filling quantity per packages
- Delivery quantity
- DAs Material number as barcode and text
- Material description
- If available serial number
- Sender
- Production batch

For deliveries to DAs Nuremberg, the following information must also be included on the delivery note with regard to the DA's own load carriers and DAs transport packages:

- Load carrier number / number transport conveyer as barcode and text
- Load carrier name / insert
- Quantity as barcode and text

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The delivery notes are not allowed to be modified by hand. The delivery address of the freight accompanying documents must correspond to the delivery address of the delivery note.

10. Empty packaging management

10.1. Types of empties

In the empties-system of DAs, the following container categories are managed as standard:

(1) Inner packaging (container inserts / inlays / blister)

Container inserts, inlays and blister protect transported materials from damage. DAs ensures an ergonomic provision on the assembly line and enables an efficient handling.

(2) Charge carrier

Carriers are the smallest packaging unit in the empties-system of DAs and represent the direct packaging of the materials. As a consequence, the first level of optimum protection, storage, handling, transport, manipulation and information functions is ensured.

(3) Loading equipment

Loading equipment enables charge carriers to be combined into compact and efficiently handled charge units, so-called "handling units". Analogous to the charge carriers, optimum protection, storage, handling, transport, manipulation and information functions are ensured.

(4) Special packaging

This category covers all packaging / containers which have been developed specifically for the product and are therefore not covered by the container standard. Special packaging has to be tested and approved by DAs.

DAs expects that all deliveries are made in clean and undamaged containers with appropriate storage aids.

Transport systems managed and provided by DAs are taken into inventory account. Any occurring damages to DAs containers have to be communicated immediately in written form. DAs reserves the right to process any damage resulting from suppliers mishandling at its expense.

10.2. Operative Management of the DAs charge carrier

DAs transport systems are exclusively intended for the storage of finished goods of the supplier and for the transportation to DAs plants. The supplier is responsible for the continuous availability of DAs inventories, to provide the supply of components for DAs at any time.

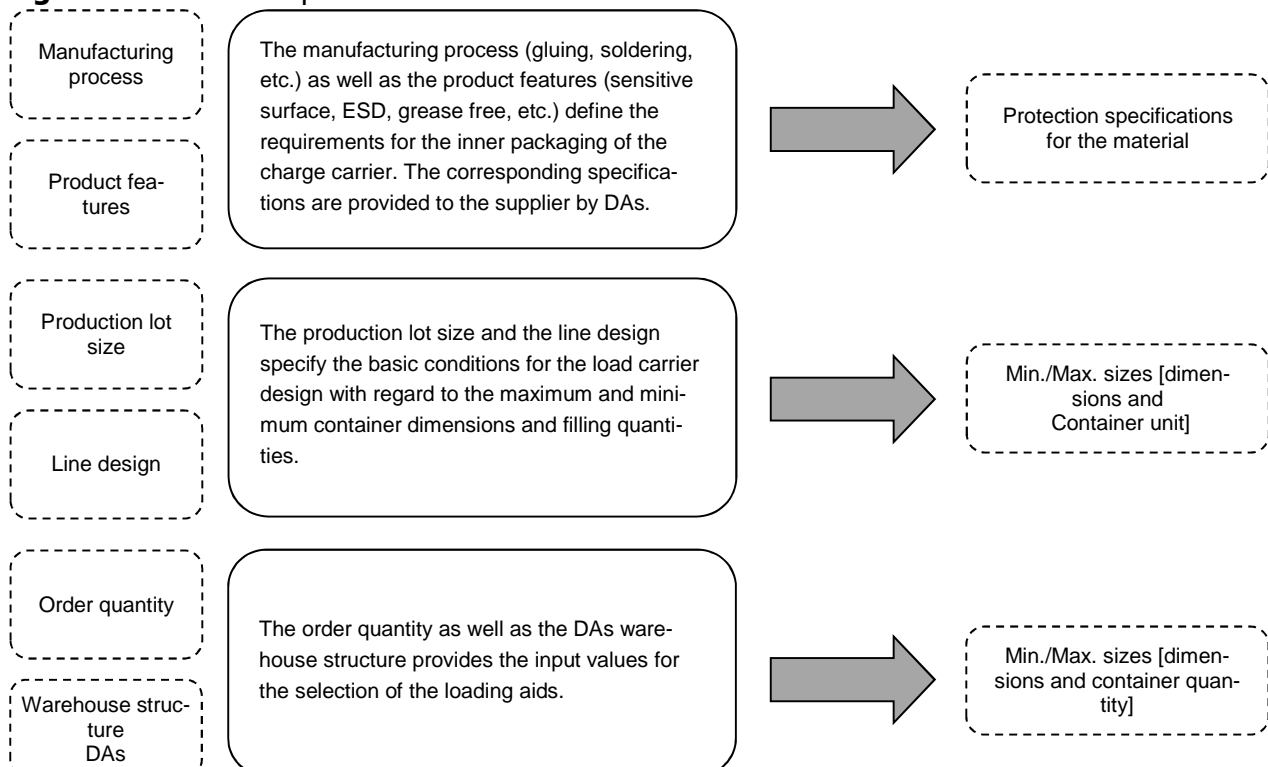
Basically, a change in the circulation quantity of DAs has to be approved in written form. The development of the container stocks is pursued by DAs. If the Supplier provides its subcontractors with DAs containers, it has to be approved by DAs. The supplier assumes responsibility for the entire supply chain.

Additional delivery specifications, which specify the present logistics guideline, will be provided for the supplier as an additional document at the time of the initial order.

10.3. Definition and choice of containers

In the first step, the supplier of DAs receives the protection requirements for the material, the minimum and maximum sizes with regard to the container dimensions and contents as well as the minimum and maximum specifications of the loading aid dimensions (see [Figure 2](#)). These framework parameters define the basis for an efficient and effective container definition.

Figure 2: Framework parameters for the container definition



Upon receiving of the database, the supplier is obliged to prepare and send a packaging proposal within 20 working days to DAs according to the following procedure. First and second point acc. to [Figure 3](#) must be communicated to DAs only in written form. No approval from DAs is necessary. However, the third and fourth point require a written approval.

Figure 3: Chronology of the container choice

Chronology of the container choice		Approval of DAs necessary
1	The defined container meets the requirements and is available in the standard container pool of DAs.	NO
2	The defined container meets the requirements and is from the dimensions equivalent to a container from the standard container pool of DAs.	NO
3	The defined container meets the requirements and is not equivalent to a container from the standard container pool of DAs.	YES
4	The defined container meets not the imposed requirement.	YES

10.3.1. Management of the rotating stock of DAs charge carriers

The circulating quantity of the supplier may only be increased if a larger number of DAs containers are required due to volume growth or expansion of the sub-range. A request of additional DAs containers must be reported to DAs with the statement of a reason. The increase of the rotating stock requires a written approval from DAs.

Calculation rotating stock:

$$3 * \frac{\text{throughput}}{\text{container unit}} \approx (\text{round up to whole values})$$

It is the responsibility of the supplier to supervise the empties which are in circulation. On the part of DAs there are no requirements for an empties-accounting-system. The list of the containers on the delivery note serves the empties management.

In addition, each supplier receives a monthly listing of movements of empties as an empties account abstract. This abstract has to be confirmed by the supplier in writing within 10 working days. If there is no feedback from the supplier during this period, the empties account abstract is deemed to be confirmed.

10.3.2. Management of bottlenecks

Supply bottlenecks have to be communicated immediately to DAs by the supplier. If this notification is not made in time, DAs reserves the right to charge the supplier the invoice amount for the replacement procurement. The delivery capability of the required materials should not be negatively affected by the container management in any case.

If replacement procurement cannot be organized in the short period, a temporary alternative packaging must be coordinated with DAs.

10.4. Audits management of empties

DAs reserves the right to perform regularly audits at the supplier in order to check the management of empties according to the above-mentioned criteria.

10.5. Procurement and financing

All standard and special reusable containers are procured by DAs at the expense of the supplier and brought into the container circulation. Unless otherwise agreed, the supplier provides the financing.

10.5.1. Empties inventory differences

Suppliers involved in the DAs empties-system have to participate in the empties inventory at a time defined by DAs.

In the event of any differences, it has to be proceed as follows:

Case 1: Book inventory > inventory counted stock

The differences must be compensated by the supplier. He is responsible for a financial compensation of the missing DAs own charge carriers. Within the burden of proof, the supplier is given the right to object to the equalization claim of DAs within a period of two weeks after its transmission. If the supplier does not object, the equalization claim is deemed accepted.

Case 2: Book inventory < inventory stock

The difference stocks on the suppliers empties account are corrected by the system of DAs.

11. Labeling of the loading aids and charge carriers

The transport label (see [Figure 4](#)) has to be filled completely and correctly according to VDA 4902 and has to be placed clearly visible and durable on every load carrier. In addition, a transport label must be placed on each small charge carrier (see [Figure 5](#)) and each individual package. Non-relevant or obsolete labels and tags should be removed. Divergent labels are subject to approval and must be released by DAs.

In addition, the introduction of an online platform is currently in progress to retrieve DAs labels. With the final implementation of this platform, the labeling is performed exclusively with these online labels.

The transport labels have to include the following information:

- (1) Consignee
- (2) Unloading point
- (3) Delivery note number as barcode and text
- (4) Name of the supplier
- (5) Net weight
- (6) Gross weight
- (7) Number of packages
- (8) DAs material number as barcode and text
- (9.1) Delivery quantity as barcode and text (only necessary if more than one package)
- (9.2) Filling quantity per package as barcode and text
- (10) Material description
- (11) Type of packaging as barcode and text
- (12) Accounts payable number of the supplier as barcode and text
- (13) Shipment date
- (14) State of revision of the construction documents
- (15) Serial number as matrix barcode
- (16) Order number


Figure 4: Label for loading aids, modification of VDA 4902 (210 x 148 mm)

(1) Consignee Diehl Aerospace GmbH Donaustraße 120 90451 Nürnberg		(2) Unloading point – storage location – point of use Diehl Aerospace	
(3) Delivery note no. (N) 12345678 		(4) Supplier address (short name, plant, ZIP code, city) Muster FA, 12345 Musterstadt	
		(5) Net weight (KG) 250	(6) Gross weight (KG) 270
		(7) Number of packages 5	
(8) Order no. customer (P) 1027089 		(9.1) Delivery quantity 50 ST 	
(9.2) Filling quantity per package (Q)  10 ST		(10) Delivery name Product XY	
(12) Supplier no. (V) 0100254 		(11) Type of packaging 00468 	
(15) Serial no. List of the individual serial numbers, see delivery note 		(13) Shipment date D 01.01.14	(14) State of revision construction D0123456_01
		(16) Order no. 20127210 	

Figure 5: Label for KLT, modification von VDA 4902 (210 x 74 mm)

(1) Consignee Diehl Aerospace GmbH Donaustraße 120 90451 Nürnberg		2) Unloading point – storage location – point of use Diehl Aerospace		(3) Delivery note no. (N) 	
(8) Order no. customer (P) 1027089 		(9.1) Delivery quantity 50 ST 		(7) Number of packages 5	
(9.2) Filling quantity per package (Q)  10 ST		(10) Delivery name Product XY			
(12) Supplier no. (V) 0100254 		(11) Type of packaging 00468 			
(15) Serial no. List of the individual serial numbers, see delivery note 		(13) Shipment date D 01.01.14		(14) State of revision construction D0123456_01	
		16) Order no. 20127210 			

11.1. Label zones

Type of container	Design of the label
<p>Label zone: EURO container G2</p> <p>Figure 6: Label attachment</p> 	<p>Zone for label attachment as shown in figure 6</p>

11.2. Label zones pallets

The cardboard packaging labels must be placed clearly visible at the outside.

Figure 7: Example for the label zone of a pallet



12. Packaging requirements and definition

12.1. Responsibilities of the supplier

It is the responsibility of the supplier to ensure the quality and characteristics of the materials and components requested by DAs through appropriate packaging. The packaging suggestions of DAs shall be used as an orientation only.

The supplier has to present a packaging concept that is based on the specifications given in this document. If such a packaging concept is not possible, a special solution is necessary. In this case, the packaging must be agreed and approved with DAs in written form. The provisional release of the packaging has to be carried out by DAs before the delivery of the pilot series.

If not specified differently by DAs, all components must be offered including the packaging costs. All costs occurring specifically due to components of the reusable packaging shall also be borne by the supplier. The costs for standard containers and inserts (see [chapter 10.5](#)) are only accepted if it is contractually agreed. The Supplier shall also observe all legal requirements regarding the environmental effects and reusability of the proposed packaging.

12.2. General packaging requirements

The following functions represent the most basic characteristics of a packaging:

Protection	Protective function against mechanical and environmental influences as well as loss of content. In addition, the packaging specifications of DAs must be observed when designing the packaging proposal.
Assembly	Ensures easy removal of the components in the assembly process (ideally one-hand direct removal). Components should not be wrapped additionally in packaging material, such as plastic, paper or bubble wrap. Large charge carriers such as lattice boxes or wooden boxes should be avoided if possible.
Logistic	Maximum filling level at the smallest possible volume. Compliance with the weight limit according to chapter 13.6 Loading equipment . The requirements of 10.1 Types of empties regarding the optimum protec-

tion, storage, handling, transport, manipulation and information function must also be observed.

Environment If the application is economically viable, reusable packaging must be used. If disposable packaging is used, these must be made of one material. Various mated materials, such as foam on corrugated cardboard as well as additional packaging material, e.g. individual cartons per component and / or air cushion bags, have to be avoided.

Costs The packaging costs must be proportional to the packaging functions.

Further information regarding the reusable packaging is provided to the supplier always up to date in the document "Guidelines for reusable packaging".

12.3. Dry packaging

Moisture-sensitive material has to be tagged and packaged according to the IPC / JEDEC J-STD-033 standard.

12.4. ESD

The following specifications are valid for the measures documented in the QSF for the handling of ESD-sensitive materials.

The packaging of electronic components must be carried out according to DIN EN 61340-5-2. The outer packaging is to be marked with warnings which indicate the risk of damage by electrostatic discharge. When handling ESD-sensitive components, the required measures according to DIN EN 61340-5-1 are to be used for electrostatic discharge. Even components which are not endangered by electrostatic discharges must be delivered in suitable ("low charging") packaging. If possible, dust-free materials should be provided for directly positioned and wrapping packaging (avoidance of cardboard).

12.5. Process for the packaging definition

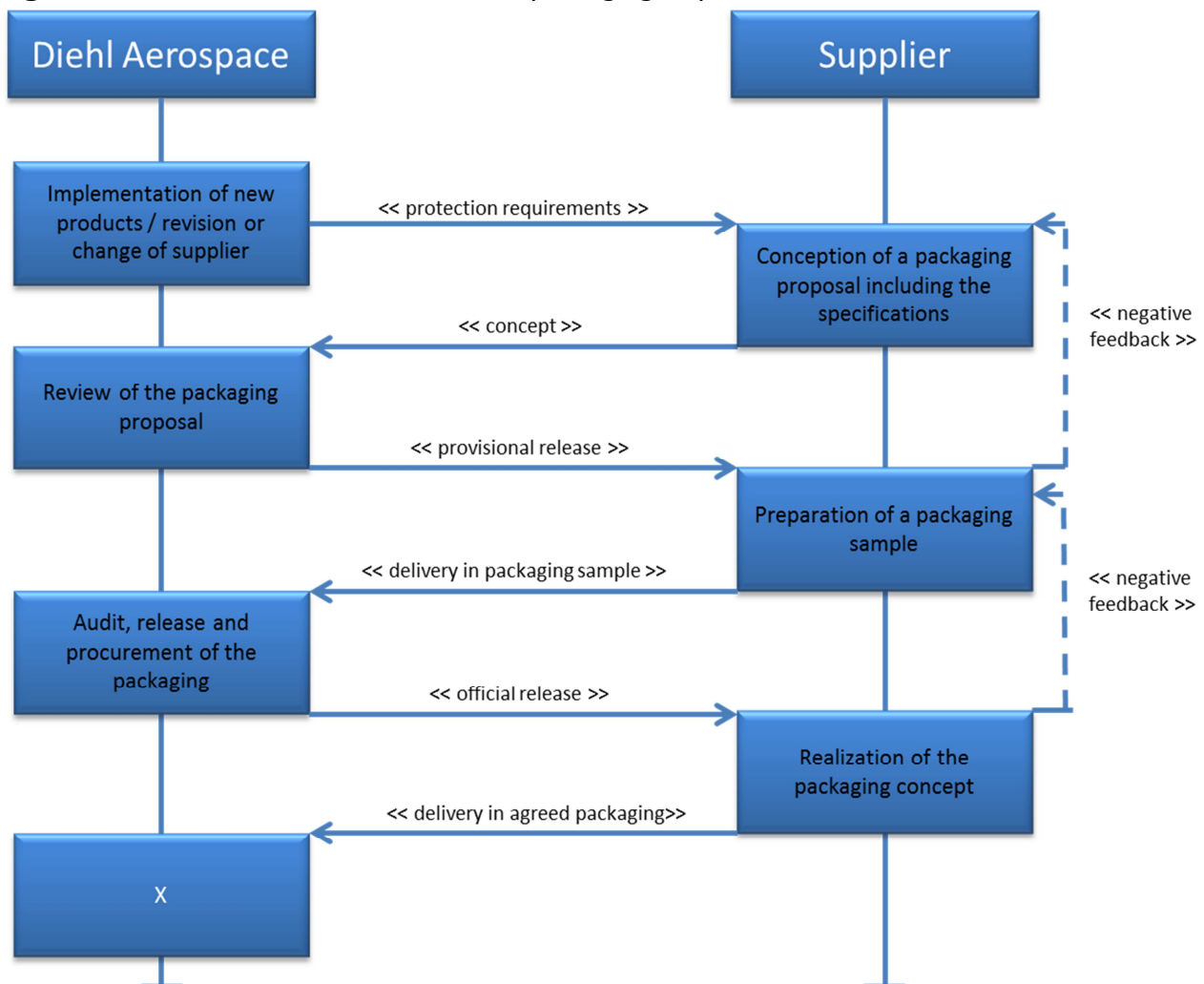
The definition of the corresponding packaging begins with the preparation of the offer. The supplier has to design the packaging concept according to DAs predefined packaging specifications for standard charge carriers and disposable packaging. The packaging costs have to be displayed separately from the material costs for each material number. The universal load

carriers, small charge carriers, transport inserts and other packing aids approved by DAs can be viewed in the appendix.

If a component cannot be adequately protected with the listed packaging requirements, special solutions are required. In this case coordination with DAs is necessary.

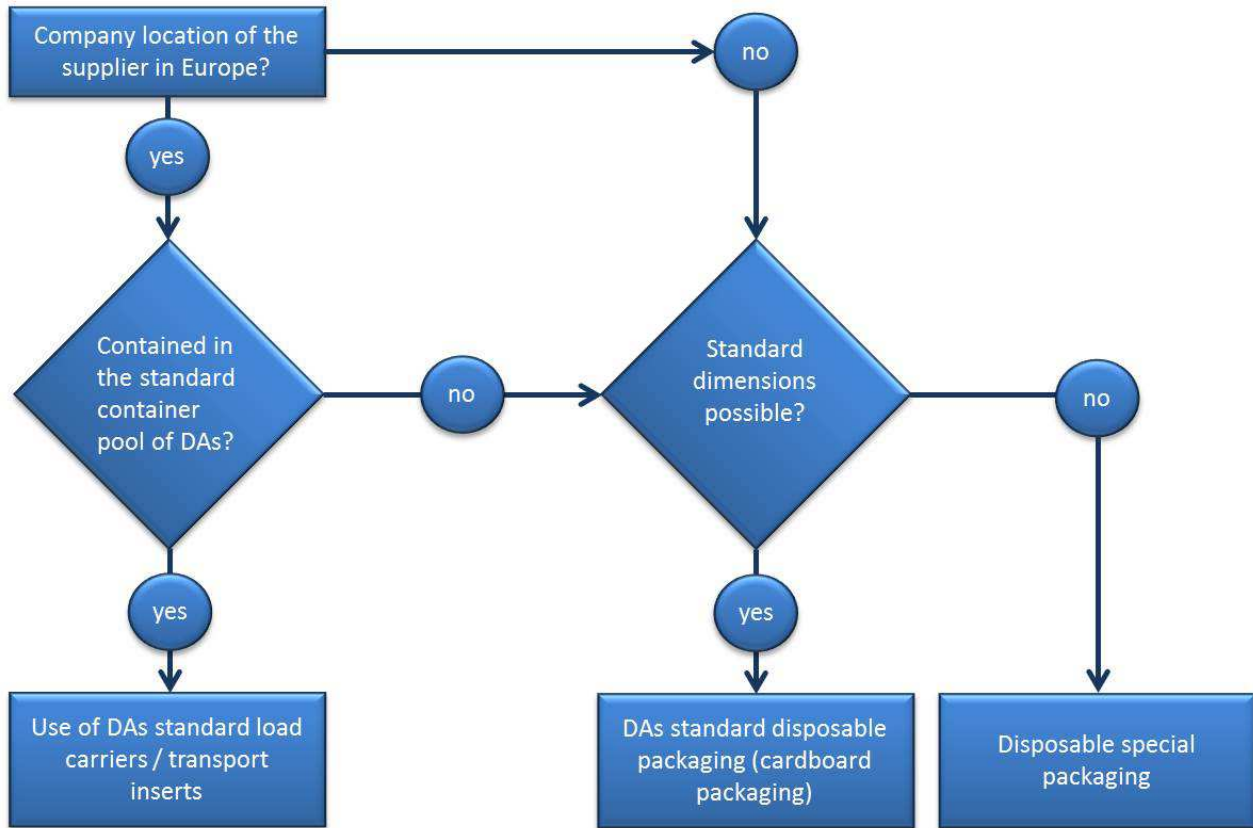
Packaging is thus part of the qualification process (see [Figure 8](#)). The supplier sends the initial samples including the predefined packaging and all related reports to DAs. After approval by DAs, the resulting packaging concept functions as a binding agreement between DAs and the supplier.

Figure 8: Process for the definition of the packaging requirements



In order to decide whether a reusable or disposable packaging should be used, the requirements of section [12.2 General packaging requirements](#) as well as the following [Figure 9](#) should be used as a basis for the decision.

Figure 9: Decision-making process for the packaging definition



In order to protect the components and the part protection DAs defines the following specifications:

Table 1: Inner packaging according to safety classes

Safety class	Type	Standard container	Special container
0	Bulk material	No inserts necessary	No inserts necessary
1	Mechanical processing; surface parts	Reusable inserts	Disposable inserts
2	ESD	Reusable inserts	Disposable inserts

13. Standard charge carriers and tools

The DAs standard charge carriers and inserts shall always be used if its use is economically justifiable. This applies particularly to suppliers that are located close to DAs production branches, are already connected to the DAs own container management or supply via transport service provider / milk run process.

13.1. Inner packaging

The inner packaging has to ensure the quality of the components according to chapter [12.2 General packaging requirements](#). Multiple layers per load carrier and fully plastic wrapped components, air cushion, fabric bags, paper or foam should be avoided.

Therefore, the components should be packaged in deep-drawn or corrugated inserts combined with a thin fabric to protect the surface. All exceptions to these requirements need to be coordinated with DAs.

13.2. Special disposable packaging / wooden boxes

In the case of bulky, highly sensitive or really heavy components which cannot be delivered in a standard packaging, a special design has to be approved by DAs.

The wooden packaging have to meet the IPPC requirements for wooden packaging materials for an EU import. When using special disposable packaging the maximum dimensions (length, width and height) specified by DAs must be observed during packaging.

13.3. Palletizing

The pallets must be evenly packaged, taking care that the base of the pallet is filled as much as possible. In addition, the carton labels must be placed clearly visible at the outside. The quality of the euro pallets used have to comply with the standards of EPAL (see <http://www.epal-pallets.org/de/produkte/tauschkriterien.php>).

Pallets are to be secured with stretch film or plastic straps, the use of metal strapping is prohibited.

Only pallets from the European pallet pool, which correspond to the dimensions, load-bearing capacity and condition of the EPAL, are exchanged.

13.4. External dimensions of the charging unit

The maximum basic dimensions of 1200 mm in length and 800 mm in width are binding, i.e. no projections are allowed over the pallet edge. Special sizes have to be agreed with DAs.

Packing materials with minimal overhang have to be delivered with undamaged chipboard above and below the load. The chipboards have to consist of one piece. If necessary, the corners should be reinforced with suitable edge protectors.

Furthermore, all goods / containers in the upper layer must be covered in order to avoid contamination and moisture damage to the container contents.

Table 2: Dimensions Euro and special pallets

Container Code	Designation	Basic measurements in mm			Maximum stacking height including pallet in mm	Maximum filling net weight per pallet in kg	Tara weight in kg
		L	W	H			
P1	Euro pallet	1200	800	144	1200	333	approx. 20
P2	Special pallet	1500	800	144	1200	333	

13.5. Inserts

Inserts, such as soft and serrated foam inserts, compartments, deep drawing inserts and downholder can be provided by the supplier as well as by DAs.

Reusable inserts may only contain one layer of components. Furthermore, the packaging method has to be designed in such a way that quick removal of components is ensured. Deviations from this have to be approved by DAs in written form.

Each insert has to be marked with the owning company name and the insert code on the insert bottom. DAs does not define any codes for inserts from suppliers, but the code is used to differentiate similar deposits used by DAs.

13.6. Loading equipment

13.6.1. DAs own small load carriers (KLT)

Standard small charge carriers are preferable. The modular system is based on EURO and ISO standards. [Table 3](#) below lists the small charge carriers used by DAs.

Table 3: Dimensions small load carriers

Container Code	Designation	Basic measurements in mm			Maximum stacking height including pallet in mm	Maximum filling net weight per pallet in kg	Tara weight in kg
		L	W	H			
G2	Euro container	300	200	120	1200	5	approx. 0.50
G4	Euro container	400	300	220	1200	10,5	approx. 1.30
G5	Euro container	600	400	220	1200	22	approx. 1.58
G8	Euro container	600	400	120	1200	22	approx. 1.13

13.6.2. DAs own special load carriers (SLT)

The DAs own special load carriers have to be used in addition to the standard load carriers for the deliveries coordinated with DAs. Table 4 below lists the special load carriers used by DAs.

Table 4: Dimensions special load carriers

Container Code	Designation	Basic measurements in mm			Maximum stacking height including pallet in mm	Maximum filling net weight per pallet in kg	Tara weight in kg
		L	W	H			
G6	Special container A	1200	400	220	1200		
G9	Special container B	1500	400	220	1200		

13.6.3. Stock formation with KLT / SLT

The charge carrier must be single-variety, i.e. mixture of cardboard and KLT is not permitted. Different types of DAs own KLT may be mixed on a pallet. The finishing face on the pallet must be even, if necessary a flat surface must be created with a corresponding empty container. How the stock formation has to look like is shown in [Table 5](#).

Table 5: Stock formation for Euro containers and special containers

Container Code	Designation	Outer dimensions in mm			Container per layer	Layers on pallet H 1200	Container per pallet H 1200
		L	W	H			
G2	Euro container	300	200	120	16	8	128
G4	Euro container	400	300	220	8	5	40
G5	Euro container	600	400	220	4	5	20
G6	Special container A	1200	400	220	2	5	10

G8	Euro container	600	400	120	4	8	32
G9	Special container B	1500	400	220	2	5	10

13.7. Disposable load carrier

Suppliers with long delivery times or locations outside Europe have to deliver their components in disposable packaging.

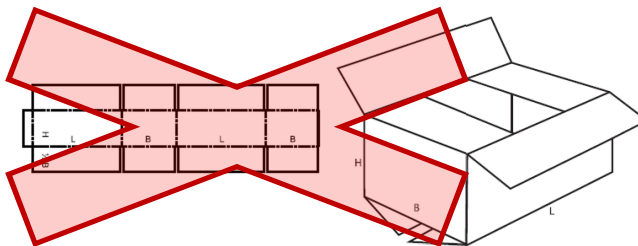
In the case of parcel shipment, a suitable packaging as well as an outer packaging has to be selected by the supplier, considering the general packaging requirements and the further outer dimensions.

The deliveries on pallets must be carried out in a packaging consisting of a container and a lid. Application of knives is not permitted in the assembly or logistic process, that is the reason why gluing (also with tapes) is strictly forbidden. Exceptions with regard to these specifications must be agreed with DAs.

Figure 10: Allowable packaging

0201

M/A

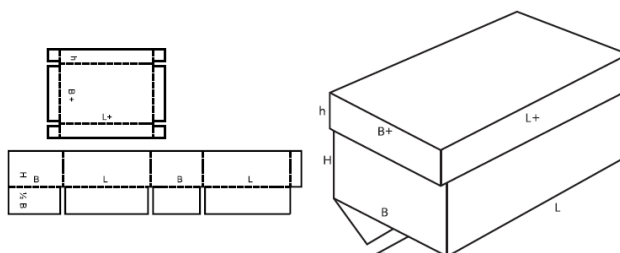


Not permitted!!!

Boxes which are sealed with tape (e.g. according to FEFCO 0201)

0312

M/A



Permitted!!!

Boxes with lid (e.g. according to FEFCO 0306 und 0312)

All deliveries of components in disposable packaging must be packaged in the DAs standard container-compliant cardboard boxes. The outer dimensions of the disposable packaging have to correspond to the inner dimensions of the containers less than 10 mm (see [Table 6](#)). Therefore, the cardboard box has to be designed in such a way that it can be relocated directly into a DAs container. The maximum utilization of the packaging volume and optimum protection of the components have to be ensured.

Table 6: Outer and inner dimensions of euro and special containers

Container Code	Designation	Outer dimensions in mm			Inner dimensions in mm		
		L	W	H	L	W	H
G2	Euro container	300	200	120	268	169	115
G4	Euro container	400	300	220	369	269	217
G5	Euro container	600	400	220	560	360	210
G6	Special container A	1200	400	220	1140	340	200
G8	Euro container	600	400	120	560	360	110
G9	Special container B	1500	400	220	1440	340	200

13.8. Specifications at the site in Nuremberg

13.8.1. Maximum stacking height of a charging unit

The maximum permissible height of a pallet is 600 mm or 1200 mm including pallet.

13.8.2. Custom goods

At the location in Nuremberg, only custom-free and pre-customs goods are accepted.

13.8.3. DAs own special charge carrier (SLT)

In addition to [13.6.1 DAs own special load carriers](#) allowable stacking height for the Nuremberg location can be found in the following [Table 7](#).

Table 7: Dimensions special charge carriers and permissible stacking height

Container Code	Designation	Outer dimensions in mm			Maximum stacking height including pallet in mm	Maximum filling net weight per SLT in kg	Tara weight in kg
		L	W	H			
G6	Special container A	1200	400	220	600 / 1200		
G9	Special container B	1500	400	220	600 / 1200		

13.8.4. Stack formation with KLT / SLT

In addition to [13.6.3 Stock formation with KLT / SLT](#) permitted stacking height for the Nuremberg location can be found in the following [Table 8](#).

Table 8: Stack Formation with KLT / SLT at the Nuremberg site

Container Code	Designation	Outer dimensions in mm			Container per layer	Layers on pallet		Container per pallet	
		L	W	H		H 600	H 1200	H 600	H 1200

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G2	Euro container	300	200	120	16	4	8	64	128
G4	Euro container	400	300	220	8	2	5	16	40
G5	Euro container	600	400	220	4	2	5	8	20
G6	Special container A	1200	400	220	2	2	5	4	10
G8	Euro container	600	400	120	4	4	8	16	32
G9	Special container B	1500	400	220	2	2	5	4	10

14. Crisis management

In the event of delivery delays DAs expects the supplier to have a solution-oriented concept of action. This concept has to satisfy the requirements of the preventive approach of the crisis prevention as well as the corrective approach of the crisis management.

An imminent supply bottleneck has to be communicated immediately to DAs. In addition, the supplier has to propose suitable problem solving concepts (e.g. special trips, partial deliveries, etc.). The availability of a competent contact person has to be ensured by the supplier.

In the case of persistent delivery problems, a recovery plan (RP) has to be created and agreed with DAs. It is the responsibility of the supplier to ensure that the RP measures are implemented in a timely manner.

DAs reserves the right to carry out regular audits in order to examine the crisis management of the suppliers according to the above criteria.

Recovery plan: The RP defines and documents measures in order to catch up with order backlogs. The goal is a 100% recovery of the delivery capacity.

15. Violations and consequences

In the case of additional efforts, due to noncompliance or violations of the logistics guidelines, DAs reserves the right to claim compensation from the supplier.

16. Outlook

DAs pursues the goal to establish a long-term partnership with the supplier. In this context, logistical processes are subject to continuous improvements, which include the following points:

- Implementation of a online platform for retrieving DAs own labels
- Extension of the EDI processes and the related infrastructure
- Connection of suppliers to an electronic supplier portal

For the implementation of these objectives an active participation of the supplier is required. The optimization of logistical processes is of mutual benefit.