| VDA | Disposable Small Load Carrier (EW-KLT) System | 4530 |
|---|---|---|

This non-binding recommendation defines a small carrier system for bulk and placeable goods suitable for mechanized or manual handling for use in the automotive industry in goods traffic between the supply industry and vehicle manufacturers. The recommendation is the project result of the VDA Center of Competence (CoC) Packaging.

This recommendation defines terms and a quality test and provides information on marking.

**1st Edition dated 01/01/2013**

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**CONTENT**

# 1 Introduction / Objective

In order to optimise the logistics chain in the automotive manufacturing and supply industry, VDA CoC Packaging has developed a standardized small load carrier system suitable for mechanised or manual handling (known as KLT, the abbreviation of the German name KleinLadungsTräger) that is coordinated in modular fashion with the Euro modulus 1200 x 800 and the ISO modulus 1200 x 1000 and represents a universally applicable disposable system.

When used in areas with different forming storage systems and observing their explicit production systems and cleanliness demands, particularly in the electronics sector, the EW-KLT takes on the character of a special load carrier, limiting its suitability. Bilateral solutions outside the scope of this recommendation have to be agreed here.

The objectives pursued with this disposable system are as follows:

- Resource conservation
- Rationalisation of the transport, storage and handling technology using standardised design features
- Humanisation of the work through an ergonomic design of the EW-KLT
- Self-securing combination of containers by form-fitting interlocked stacking of EW-KLT with the same design (for each group of numbers)
- Suitability for automatic filling and emptying (smooth base/inside walls)
- Quality assurance of the transported load
- Reduction in the number of variants
- Specification of identical system features for EW-KLT for special applications
- Compatibility between manufacturers with EW-KLT with the same design (for each group of numbers)
- Assurance of material recycling through a take-back obligation for the EW-KLT manufacturers
- Alternative packaging for the returnable KLT described in VDA 4500

# 2 System Structure

## 2.1 Terms / Abbreviations

Short designations

| | | |
|---|---|---|
| EW – KLT Carrier) | = | **E**in **W**eg - **K**lein – **L**adungs –**T**räger (Disposable Small Load |
| AKL | = | **A**utomatisches **K**LT **L**ager (Automatic KTL Store) |
| Shooter principle | = | The shooter principle simplifies the quick loading of a rack through the automatic exchange of empty and full containers between a transport vehicle and a flow rack. |

Design of the EW-KLT

Rigid construction, at least two recessed grips on the short sides, carrier bottom suitable for use on roller conveyors (smooth and closed), closed interior, total weight up to max. 15 kg.
All the EW-KLT types described in this recommendation are classified by specific type numbers.

Carrier pallet

Rigid, low-profile horizontal platform that can be handled with forklifts, lift trucks, or other suitable equipment and that serves as a basis for combining goods and loads for stacking, storage, handling or transport.

Loading unit (LU) / trade unit

A load consisting of objects or packages combined using auxiliary means so that it can be handled, transported, stacked and stored as a unit
(e.g. a carrier pallet, bottom plate, several KLTs and a cover plate).

EW-KLT lids

EW-KLT system elements with virtually neutral height for protection of the cargo.

Bottom plate / cover plate / bottom layer

System elements with virtually neutral height for securing an EW-KLT load unit on 1200mm x 800mm or 1200mm x 1000mm standardised wooden pallets. In systems with stackable base, we recommend the use of a die cut panel (bottom layer) as shown in the photo instead of the bottom plate. This prevents the bottom of the stack being pressed into the bottom layer.

Figure 1: Bottom plate / cover plate

Figure 2: Bottom layer

## 2.2 VDA EW-KLT system depictions, nominal dimensions, measures and weights

### 2.2.1 System description

The VDA EW-KLT system consists of the VDA EW-KLT on carrier pallets with ISO modulus 1200mm x 1000mm or on carrier pallets with Euro modulus 1200mm x 800mm and a cover plate and matching bottom plate. The packages must be stretch-film covered (also as protection against the weather) or banded. An edge guard is required when banding. A separate functional check is recommended if non-system package units are used.

### 2.2.2 Specific designs

The EW-KLR systems described in this VDA Recommendation differ in their different designs. Deviations within the specified tolerances are permitted in the dimensions and specifications. Each EW-KLT system is fundamentally stackable. Compatibility between the systems cannot be guaranteed in all cases due to the different designs.

EW-KLT system with stackable base

A special feature of the EW-KLT system with stackable base is the stackable base that makes it compatible with the corresponding VDA returnable KLT. The EW-KLTs in this system are classified with the number group 1518.

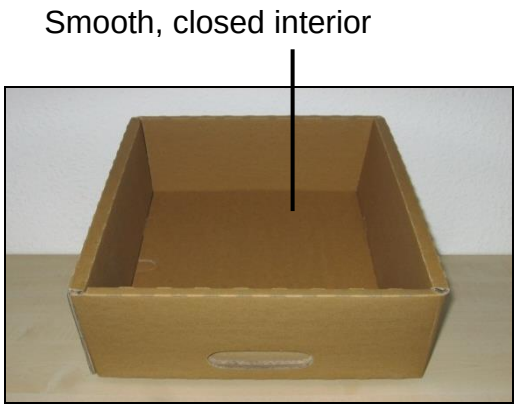



Figure 3: EW-KLT with stackable base


Figure 4: EW-KLT with stackable base

EW-KLT system with stacking lugs

A special feature of the EW-KLT system with stacking lugs are the "stacking lugs" as stacking aid and a completely smooth base which allows banding of the individual KLT in the package unit. The EW-KLTs in this system are classified with the number group 1517.

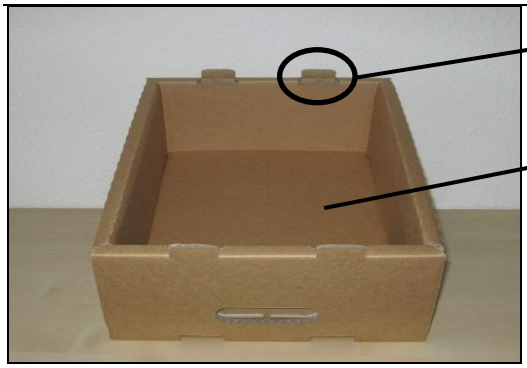



Figure 5: EW-KLT with stacking lugs

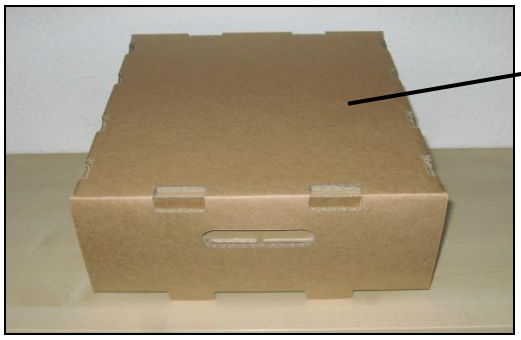



Figure 6: EW-KLT with stacking lugs

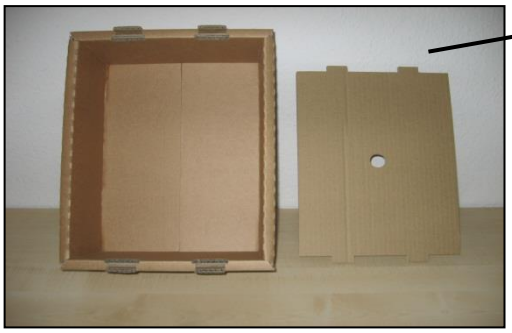



Figure 7: EW-KLT with stacking lugs

### 2.2.3 Dimensions, colours and weights

| Des. EW-KLT | Dimensions L x B x H (mm) | | | Colour/ logo | Max. total weight (kg) |
|---|---|---|---|---|---|
| | Outside Tolerance* 0/ - 3mm (height incl. stacking lugs) | Insertion depth in mm | Inside (Tolerance in mm) Useful height without lid | | |
| 151740<br>151840 | **296x196x140** (153)<br>**296x196x150** -------- | ----------<br>**10** (+5/0) | **243** (+20/0) **x162** (0/-4) **x126** (+4/0)<br>**243** (+20/0) **x162** (0/-4) **x126** (+4/0) | brown; brown/ black | 15 |
| 151741<br>151841 | **395x296x140** (153)<br>**395x296x150** -------- | ----------<br>**10** (+5/0) | **345** (+16/0) **x260** (0/-2) **x126** (+4/0)<br>**345** (+16/0) **x260** (0/-2) **x126** (+4/0) | brown; brown/ black | 15 |
| 151742<br>151842 | **395x296x279** (292)<br>**395x296x285** -------- | ----------<br>**10** (+5/0) | **345** (+16/0) **x260** (0/-2) **x261** (+6/0)<br>**345** (+16/0) **x260** (0/-2) **x261** (+6/0) | brown; brown/ black | 15 |
| 151743<br>151843 | **593x395x279** (292)<br>**593x395x285** -------- | ----------<br>**10** (+5/0) | **544** (+13/0) x**359** (0/-3) **x261** (+6/0)<br>**544** (+13/0) x**359** (0/-3) **x261** (+6/0) | brown; brown/ black | 15 |
| 151744<br>151844 | **593x296x140** (153)<br>**593x296x150** -------- | ----------<br>**10** (+5/0) | **544** (+13/0) x**359** (0/-3) **x126** (+4/0)<br>**544** (+13/0) x**359** (0/-3) **x126** (+4/0) | brown; brown/ black | 15 |
| Cover/bottom plate | 1200 x 800 x140 | | | brown; brown | |
| Cover/bottom plate | 1200 x 1000 x 140 | | | brown; brown | |

Table 1: EW-KLT System (designation, dimension, tolerances, colour, weight)

* The height of the stacking lugs may only deviate parallel to the tolerance of the overall height

Minimum wall thickness

In order to be able to build a stable and form-fitting package, minimum wall thickness must be observed for the EW-KLT of 18mm for the system with stacking lugs (1517…) and 13mm for the system with stackable base.

Colour

All cardboard EW-KLT variants and system elements described in the VDA Recommendation must be produced in brown/brown with black logo.
For special applications, boxes with the colour black/black and white logo (ESD) and white/white with black logo (explicit cleanliness demands) are permissible.

### 2.2.4 VDA EW–KLT as alternative packaging to the VDA plastic KLT

The EW-KLT are practically identical in dimensions to the returnable KLT described in VDA Recommendation 4500. The suitability for AKL and Shooter is therefore assured.
On individual and economic consideration, the VDA EW-KLT and their system elements are a technical alternative to the plastic KLT described in VDA 4500. Particular points of note for the package structure and their loads are described in the following chapters or in the Annex.

Figure 8: VDA-KLT in flow rack

| VDA plastic KLT to VDA 4500 | Corresponding EW-KLT to VDA 4530 |
|---|---|
| R KLT 3215<br>RL KLT 3147 | 151740; 151840 |
| R KLT 4315<br>RL KLT 4147 | 151741; 151841 |
| R KLT 4329<br>RL KLT 4280 | 151742; 151842 |
| R KLT 6429<br>RL KLT 6280 | 151743; 151843 |
| R KLT 6415<br>RL KLT 6147 | 151744; 151844 |

Table 2: VDA-KLT Comparison of number groups

## 2.3 Identification and marking

Marking of the EW-KLT should always be in accordance with DIN EN ISO 780. The following data are printed on the carrier during production of the EW-KLT.
Pictograms:
The EW-KLT must each be marked with pictogram No. 3 "Top", pictogram No. 6 "Protect from moisture" as per template.


Figure 9: Pictograms

In addition to the pictograms, the following data must be printed according to the template

- Max. total weight (15 kg for all KLT)
- Tare weight
- Manufacturer
- LT type number
- Space for VDA goods tag

### 2.3.1 Cargo identification

The cargo identification should use the VDA goods tags as per VDA Recommendation 4902 (latest version) for supplier traffic and as far as possible for in-house transport.

General view of the label position

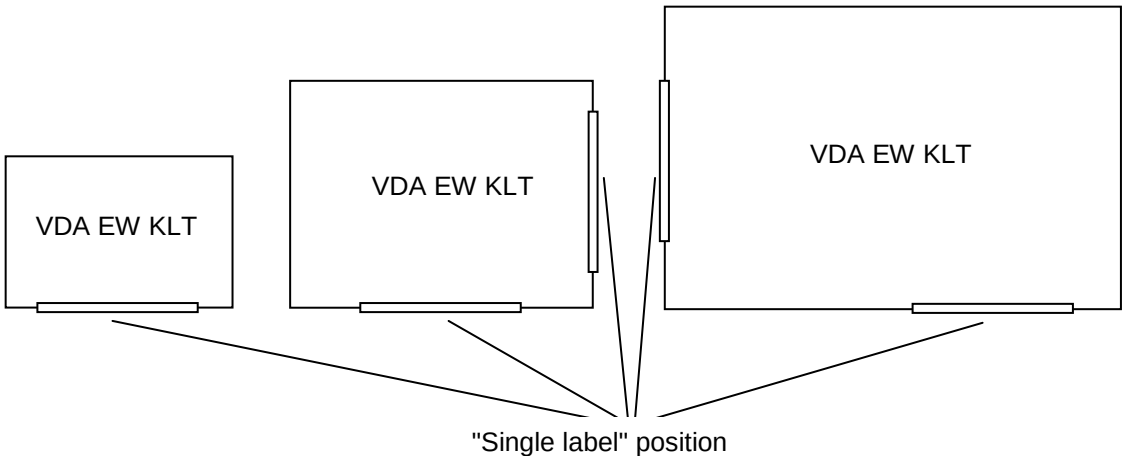



Figure 10: Position of the goods tag

The goods tag must be glued over its whole surface or with adhesive tabs (see Figure 10 and Figure 11). The adhesion points must not obscure important information; dimensions and location are suitable for automatic document scanning.


Figure 11: Position of goods tag


Figure 12: Position of goods tag

## 2.4 Material

Raw material test conditions are not covered by this recommendation. Materials from sustainably managed sources should preferably be used (e.g. materials certified by the Forest Stewardship Council (FSC)).

## 2.5 Modular structure

### 2.5.1 Height grid

The following requirements were taken into account in setting the EW-KLT heights. The height of the individual load units consisting of carrier pallet, bottom and cover plate and the EW-KLT is max. 1000mm.

### 2.5.2 VDA EW-KLT column stacking on carrier pallets

The VDA recommends securing of the load unit for in-house and external transport of VDA EW-KLT on carrier pallets. Figures 12 and 13 show two examples of variable stacking. Both types of packaging serve to group individual EW-KLT on a pallet into a load unit.
Due to the susceptibility to moisture of the EW-KLT, appropriate safety factors have to be applied when producing a suitable load unit, depending on the application. A safety factor (SF) of ≥ 3.5 is recommended here. This is applied to the breaking load of the load unit determined in the standard climate (23°C; 50%).
The safety factor expresses the quotient of the load-bearing strength of the packaging and the demanded payload.

$$\textbf{Safety factor} = \frac{\textbf{Load-bearing strength (determined from the breaking load in the standard climate)}}{\textbf{Demanded, admissible payload}}$$

It must be considered here that the moisture susceptibility of cardboard is higher than that e.g. of wood materials. Minimum demands on the breaking load of the load units are listed in the Annex.

Example 1:
Push double-wall cover and bottom plate with reinforced corners over ready filled pallet and wrap stretch film around the whole load package.
During stretch wrapping, one or more layers of flat film are tensioned and wrapped spirally around the package.
The film end is sealed or coated. Observe VDI Guideline 3968 Sheet 5.

Figure 13: Example of stacking

Example 2:

Push double-wall cover and bottom plate with reinforced corners over ready filled pallet and secure the whole load with four straps in longitudinal and transverse direction. Broad plastic straps of PET or PP must be used (VDI Guideline 3968 Sheet 3). A plastic strap with a tearing strength of min. 4200N and an elongation at break of max. 12% has proved to be suitable. The highest possible working tension should be applied (the cardboard settles), but cutting of the straps into the cardboard must be avoided! Edge guard systems must be used to prevent cutting and thus loosening of the straps.


Figure 14: Example of stacking

## 2.6 Changes

Proposals for modifications to VDA EW-KLT system elements and VDA Recommendation 4530 should be submitted to VDA CoC Packaging for processing and approval

# 3 Quality conditions and tests

## 3.1 Test conditions

The following quality tests are conducted on new VDA EW-KLT system elements which must have been stored for approx. 24 hours at room temperature 23°C and 50% relative humidity until the time of testing.

## 3.2 Dimensional inspection

The dimensions specified in the checklist are measured and documented (see Annex).

## 3.3 Inspection of markings and identifiers

Inspection of the external markings and identifiers by comparison with the template shown in the Annex.

## 3.4 Application-specific tests

The application-specific tests represent practical use conditions. The objective of these tests is to obtain quick, reproducible results from quality tests.

### 3.4.1 Box Compression Test (BCT)

The box compression resistance (BCT) indicates the force that a package can absorb and dissipate without buckling. In practice, the BCT value is determined using a stack compression press.

Figure 15: Box Compression Test (BCT)

Type of test

In order to determine the BCT value, the empty VDA EW-KLT is placed between the plates of a stack compression press and subjected to a pressure by moving the plates together.
The VDA EW-KLT are loaded up to failure or until a significant drop in force in the measuring curve and the maximum compression force is measured.
The tests to be performed must be performed with a test speed of 12.5 mm per minute.

Conditions

The measurement of the BCT value at 23°C and 50% relative humidity simulates the load on the individual VDA EW-KLT. The test is performed three times on three new test specimens and then the mean value is calculated. The values for the minimum breaking load to be achieved for the respective EW-KLT types are listed in the Annex.

### 3.4.2 Inspection of the wall bending of VDA EW-KLT

Type of test

The EW-KLT is set up according to the instructions and the outside and inside dimensions are immediately measured in accordance with the attached Annex.

### 3.4.3 Inspection of colour

The colour is inspected in accordance with the colours specified under 2.2.3.

## 3.5 Ongoing quality assurance

The VDA EW-KLT system element manufacturers ensure compliance with the quality criteria stated in Section 4 during regular series production by carrying out internal quality assurance

## 3.6 Changes

These quality and test provisions may be supplemented and modified in line with technical progress.
Changes, including those of an editorial nature, are not effective without the agreement of VDA CoC Packaging. They enter into force at a reasonable time after being published by VDA.

# 4 Fire protection

When using cardboard, the relevant standards and country-specific regulations on fire protection must be observed.
When planning production or storage concepts, it is recommended that safe fire protection concepts be devised together with property insurers, taking into account aspects such as sprinklers, shelving system, containers and products stored.

# 5 Checklist

The EW-KLT system elements may only be produced within the given specifications, dimensions and tolerances. The user is responsible for the test, documentation and archiving of the tests on the initial specimen produced with the original tool. All details of the tests are given in this recommendation.
We recommend the use of the following checklist for documentation of the values achieved. The dimensions must be in accordance with Table 1 of VDA Recommendation 4530 (chapter 2.2.3).

# Checklist

## VDA disposable KLT system

Verband der Automobilindustrie

| Designation | 151740 | OK ✓ | 151741 | OK ✓ | 151742 | OK ✓ | 151743 | OK ✓ | 151744 | OK ✓ |
|---|---|---|---|---|---|---|---|---|---|---|
| Inside dimensions in mm | | | | | | | | | | |
| Outside dimensions in mm | | | | | | | | | | |
| min. BCT | 4303 N | | 6032 N | | 6615 N | | 6672 N | | 9291 N | |
| Achieved BCT | | | | | | | | | | |
| Wall thickness min. 18mm | | | | | | | | | | |
| Identification and marking | | | | | | | | | | |
| Specimen acceptance by | | | | | | | | | | |

| Designation | 151840 | OK ✓ | 151841 | OK ✓ | 151842 | OK ✓ | 151843 | OK ✓ | 151844 | OK ✓ |
|---|---|---|---|---|---|---|---|---|---|---|
| Inside dimensions in mm | | | | | | | | | | |
| Outside dimensions in mm | | | | | | | | | | |
| min. BCT | 4303 N | | 6032N | | 6615N | | 6672N | | 9291N | |
| Achieved BCT | | | | | | | | | | |
| Wall thickness min. 15mm | | | | | | | | | | |
| Insertion depth min. 10mm | | | | | | | | | | |
| Identification and marking | | | | | | | | | | |
| Specimen acceptance by | | | | | | | | | | |

Manufacturer (VDA-EW-KLT-System):

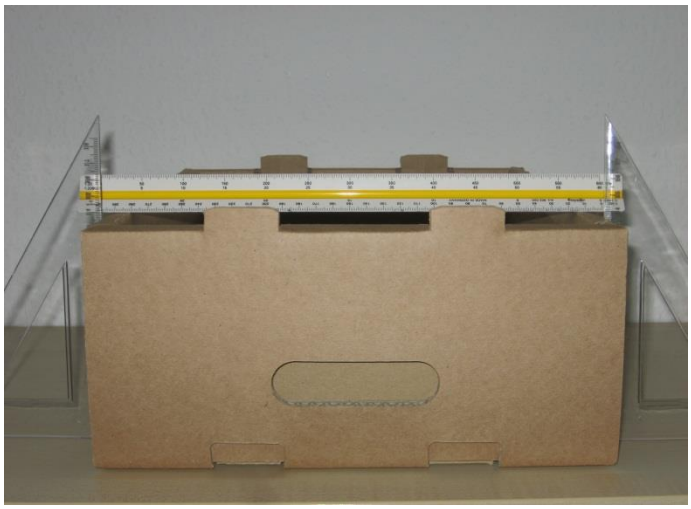
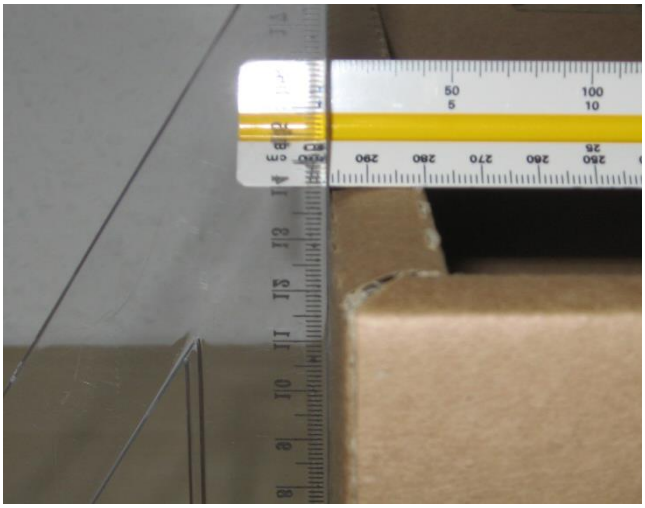
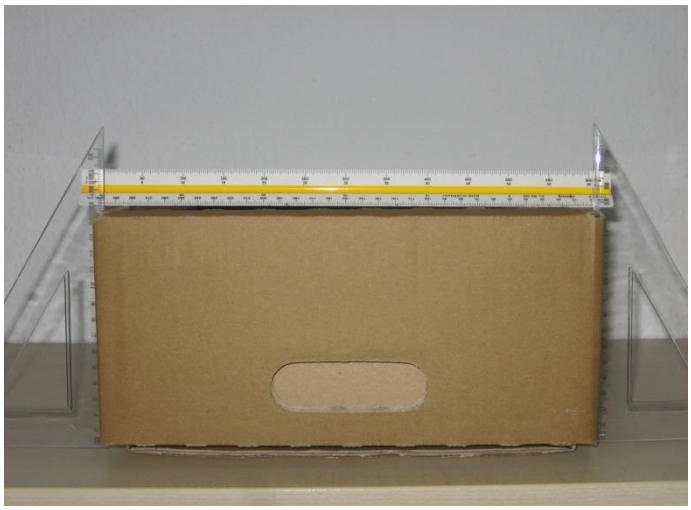
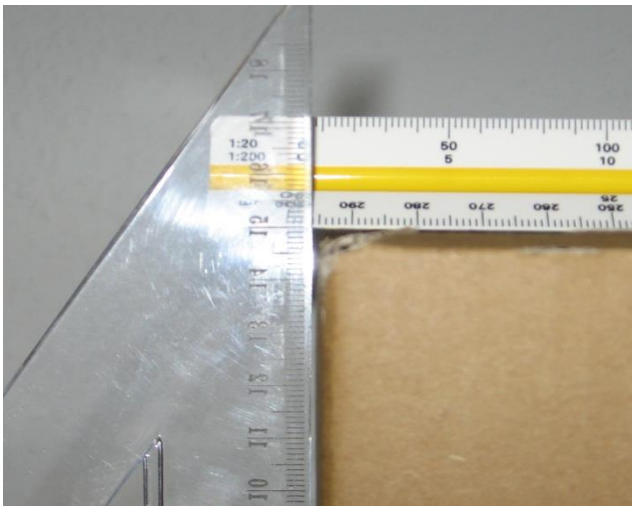
……..

The test was performed:

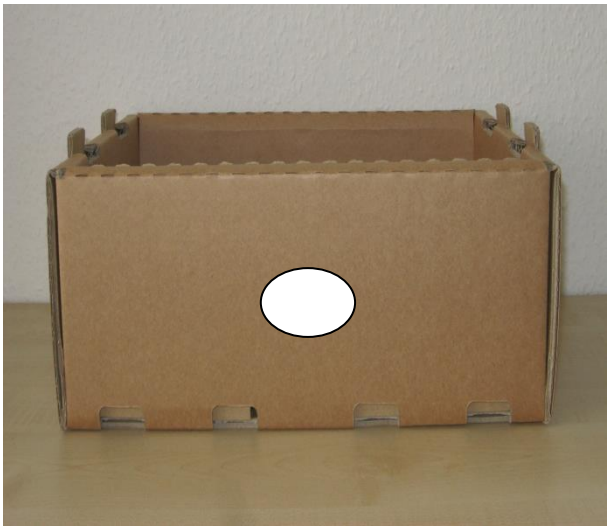
- Company: ……..
- Responsible; …….. ……
  Date / signature

# 6 Dimension checks

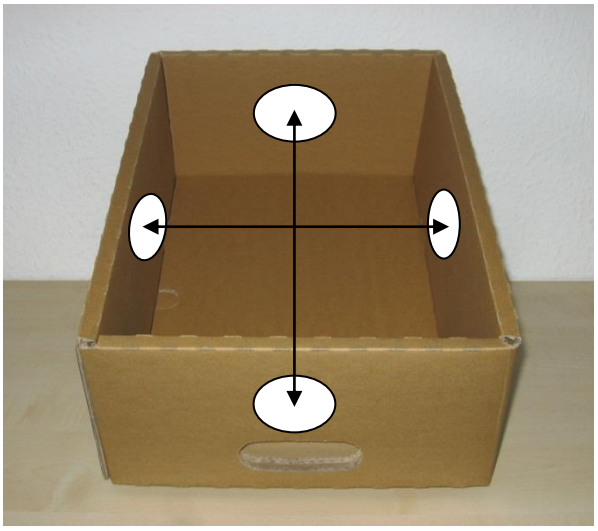
## 6.1 Outside dimensions

| | |
|---|---|
|  |  |
| Place the box on a level surface and place an angle in the middle of both sides. | Measure the heights, lengths and widths. |
|  |  |
| Place the box on a level surface and place an angle in the middle of both sides. | Measure the heights, lengths and widths. |

## 6.2 Inside lengths, inside width and wall thickness



Bore through the box in the side walls with a sharp knife or similar tool.



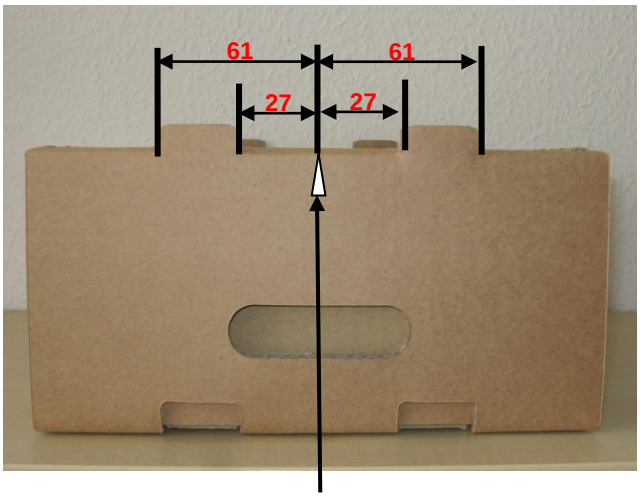
Inserting the measuring tool through both holes and measure the inside dimensions.

Check the wall thickness of all the side walls.

Check the wall thickness of all the side walls.

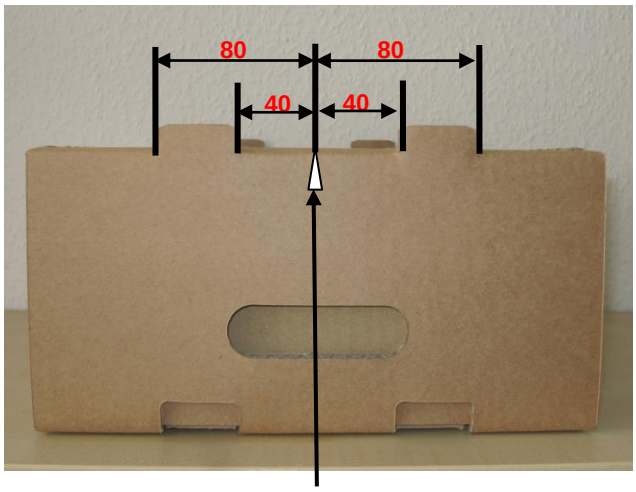
## 6.3 Position of the stacking lugs and corresponding recesses (Variant 1517…)

**Dimensions are for EW- KLT 151740**



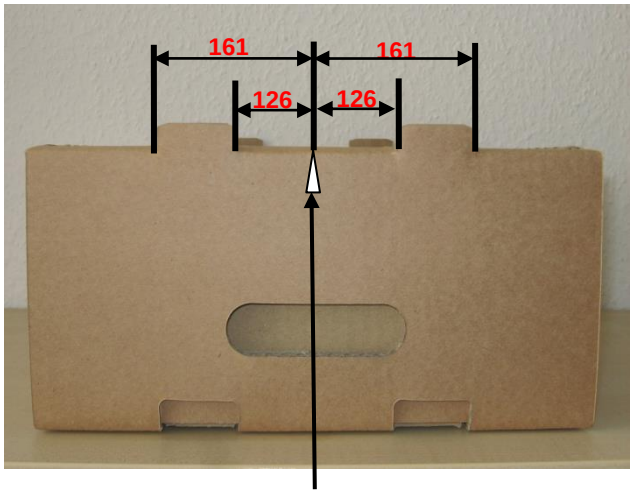

The measuring point must be on the carton!

**Dimensions are for EW- KLT 151741 and 151742**



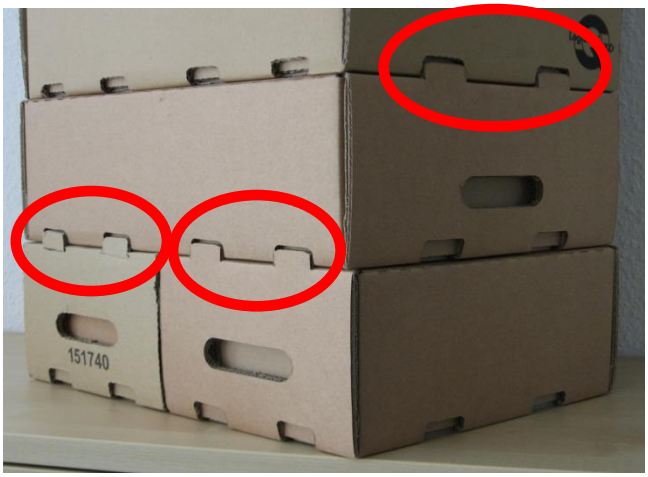

The measuring point must be on the carton!

**Dimensions are for EW- KLT 151743 and 151744**




The measuring point must be on the carton!

**Note for all EW - KLT**




In order to ensure a pedigree or mixed stacking of the KLT types, the recesses on all EW-KLT of Variant 1517… must be provided on both the short and long side according to the positions of the stacking lugs.

**The specified position of the stacking lugs and recesses for the respective EW-KLT type must be maintained in order to ensure compatibility between manufacturers.**

# 7 Load values

## 7.1 Box compressions test values (BCT) and package loads

The recommendations given here do not absolve anyone of responsibility for checking in individual cases whether the packaging is suitable for the respective application! Note in particular that the complete load unit has to be considered. The load application point, for example, has a crucial influence. It is therefore necessary to check the breaking load of the load units in each case with the pallet resting on the ground.

Case considered: Europallet 1200x800 (max. weight on bottom layer)

| KLT designation | 151740<br>151840 | 151741<br>151841 | 151742<br>151842 | 151744<br>151844 | 151743<br>151843 |
|---|---|---|---|---|---|
| Calculated (min.) BCT in N | 4303 | 6032 | 6615 | 9291 | 6672 |
| Max. weight per KLT | 15 | 15 | 15 | 15 | 15 |
| Number of KLT per layer | 16 | 8 | 8 | 4 | 4 |
| Max. number of layers per pallet | 6 | 6 | 3 | 6 | 3 |
| Max. weight per Europallet in kg (weight of pallet neglected) | 1440 | 720 | 360 | 360 | 180 |
| Max. load of the complete stack (kg), double stacking (1+1) | 2880 | 1440 | 720 | 720 | 360 |
| Max. number of layers in the stack | 12 | 12 | 6 | 12 | 6 |
| Max. weight of one layer | 240 | 120 | 120 | 60 | 60 |
| Max. load on bottom layer in kg | 2640 | 1320 | 600 | 660 | 300 |
| Max. load on bottom layer in N | 25898 | 12949.2 | 5886 | 6474.6 | 2943 |
| Calculated breaking load in N on complete load unit | 40896 | 36779 | 38371 | 21898 | 22173 |
| Achieved safety factor for breaking on the bottom layer | **1.58** | **2.84** | **6.52** | **3.38** | **7.53** |

Case considered: ISO pallet 1200x1000 (max. weight on bottom layer)

| KLT designation | 151740<br>151840 | 151741<br>151841 | 151742<br>151842 | 151744<br>151844 | 151743<br>151843 |
|---|---|---|---|---|---|
| Calculated (min.) BCT in N | 4303 | 6032 | 6615 | 9291 | 6672 |
| Max. weight per KLT | 15 | 15 | 15 | 15 | 15 |
| Number of KLT per layer | 20 | 10 | 10 | 5 | 5 |
| Max. number of layers per pallet | 6 | 6 | 3 | 6 | 3 |
| Max. weight per ISO pallet in kg (weight of pallet neglected) | 1800 | 900 | 450 | 450 | 225 |
| Max. load of the complete stack (kg), double stacking (1+1) | 3600 | 1800 | 900 | 900 | 450 |
| Max. number of layers in the stack | 12 | 12 | 6 | 12 | 6 |
| Max. weight of one layer | 300 | 150 | 150 | 75 | 75 |
| Max. load on bottom layer in kg | 3300 | 1650 | 750 | 825 | 375 |
| Max. load on bottom layer in N | 32373 | 16186.5 | 7357.5 | 8093.25 | 3678.75 |
| Calculated breaking load in N on complete load unit | 37188 | 33200 | 35000 | 22889 | 22714 |
| Achieved safety factor for breaking on the bottom layer | **1.15** | **2.05** | **4.76** | **2.83** | **6.17** |

Case considered: Europallet 1200x800 max. number of layers with SF3.5 (max. weight on bottom layer)

| KLT designation | 151740<br>151840 | 151741<br>151841 | 151742<br>151842 | 151744<br>151844 | 151743<br>151843 |
|---|---|---|---|---|---|
| Calculated (min.) BCT in N | 4303 | 6032 | 6615 | 9291 | 6672 |
| Max. weight per KLT | 15 | 15 | 15 | 15 | 15 |
| Number of KLT per layer | 16 | 8 | 8 | 4 | 4 |
| Max. number of layers per pallet (limited by the height) | 6 | 6 | 3 | 6 | 3 |
| Max. weight per Europallet in kg (weight of pallet neglected) | 1440 | 720 | 360 | 360 | 180 |
| Max. load of the complete stack (kg) | 1440 | 1200 | 720 | 660 | 360 |
| Max. number of layers in the stack (limited by payload) | 6 | 10 | 6 | 11 | 6 |
| Max. weight of one layer | 240 | 120 | 120 | 60 | 60 |
| Max. load on bottom layer in kg | 1200 | 1080 | 600 | 600 | 300 |
| Max. load on bottom layer in N | 11772 | 10594.8 | 5886 | 5886 | 2943 |
| Calculated breaking load in **N** on complete load unit | 40896 | 36779 | 38371 | 21898 | 22173 |
| Achieved safety factor for breaking on the bottom layer | **3.47** | **3.47** | **6.52** | **3.72** | **7.53** |

Case considered: ISO pallet 1200x1800 max. number of layers with SF3 (max. weight on bottom layer)

| KLT designation | 151740<br>151840 | 151741<br>151841 | 151742<br>151842 | 151744<br>151844 | 151743<br>151843 |
|---|---|---|---|---|---|
| Calculated (min.) BCT in N | 4303 | 6032 | 6615 | 9291 | 6672 |
| Max. weight per KLT | 15 | 15 | 15 | 15 | 15 |
| Number of KLT per layer | 20 | 10 | 10 | 5 | 5 |
| Max. number of layers per pallet (limited by the height) | 6 | 6 | 3 | 6 | 3 |
| Max. weight per **ISO pallet** in **kg** (weight of pallet neglected) | 1800 | 900 | 450 | 450 | 225 |
| Max. load of the complete stack (kg) | 1200 | 1050 | 900 | 750 | 450 |
| Max. number of layers in the stack (limited by payload) | 4 | 7 | 6 | 10 | 6 |
| Max. weight of one layer | 300 | 150 | 150 | 75 | 75 |
| Max. load on bottom layer in kg | 900 | 900 | 750 | 675 | 375 |
| Max. load on bottom layer in N | 8829 | 8829 | 7357.5 | 6621.75 | 3678.75 |
| Calculated breaking load in **N** on complete load unit | 37188 | 33200 | 35000 | 22889 | 22714 |
| Achieved safety factor for breaking on the bottom layer | **4.21** | **3.76** | **4.76** | **3.46** | **6.17** |

BCT values indicated above. The breaking load shown was always determined with complete load units (max. number of layers with bottom and cover plate).
The calculation is performed on the basis of the load on the bottom layer. Under the assumption that a single-layer load unit would have a higher breaking load, additional safety is necessary.
If the calculated SF is < 3.5, we recommend that the weight or number of layers is reduced until SF 3.5 (dynamic) is achieved! Statically (for storage) at least SF 2 must be achieved.
Specifications, e.g. BGR, national legislation, etc. must be observed! The tests were performed for EW-KLT with stacking lugs. These must be performed analogously for KLT with stackable base. When stacking the packages, pay attention that "light is always stacked on heavy".

## 7.2 Package / breaking load test

Cover plate + KLT box (with demanded min. BCT values) + bottom plate + DIN pallet

| Test with Europallet 1200mm x 800mm | |
|---|---|
| EW-KLT designation | Average value |
| 151740 | 40895 N |
| 151741 | 36778 N |
| 151742 | 38370 N |
| 151744 | 21172 N |
| 151743 | 22172 N |

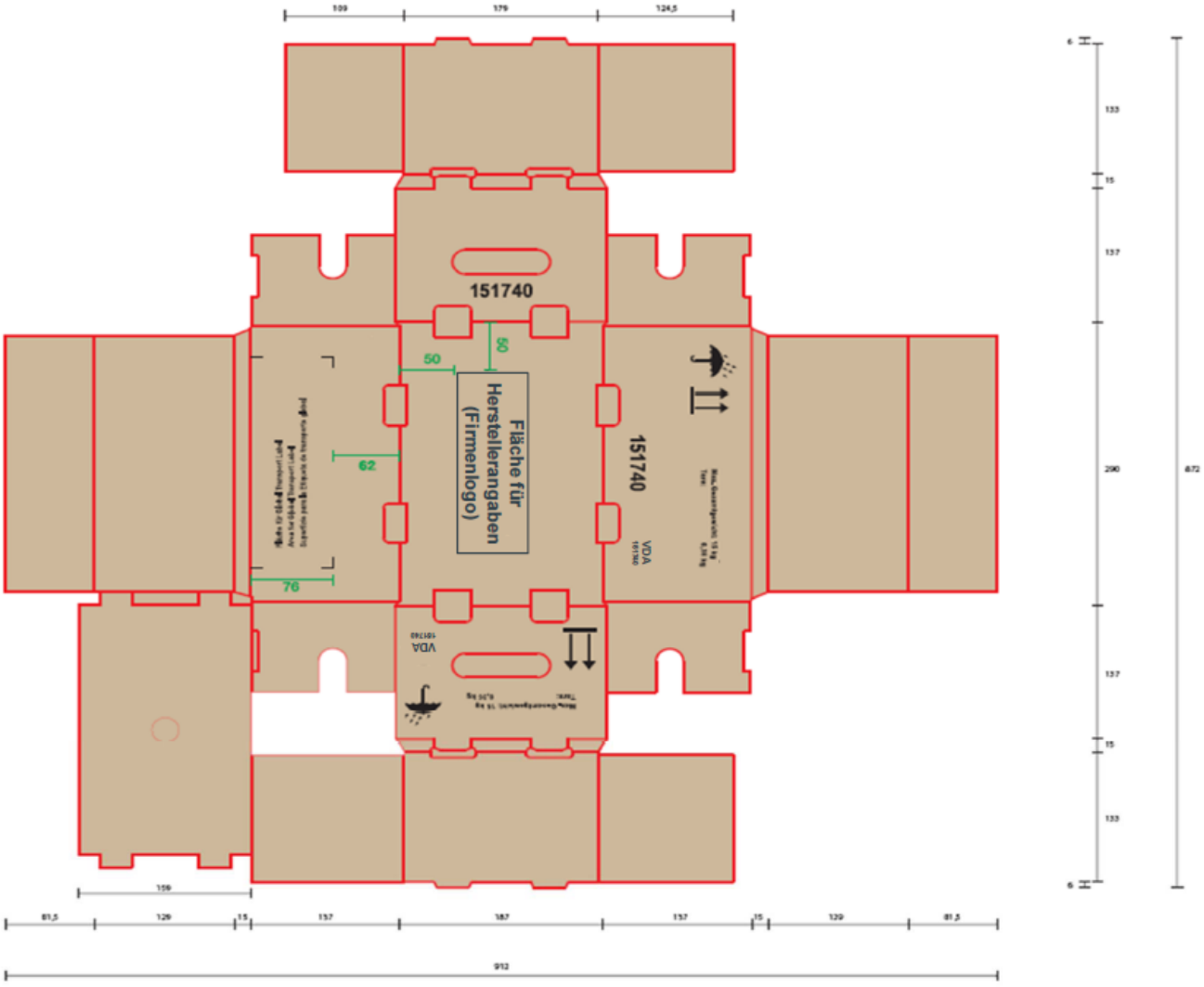
| Test with ISO pallet 1200mm x 1000mm | |
|---|---|
| EW-KLT designation | Average value* |
| 151740 | 37187 N |
| 151741 | 33200 N |
| 151742 | 34999 N |
| 151744 | 22889 N |
| 151743 | 22714 N |

The tests were performed for EW-KLT with stacking lugs( 1517…)
Average values determined from 3 test results per package.

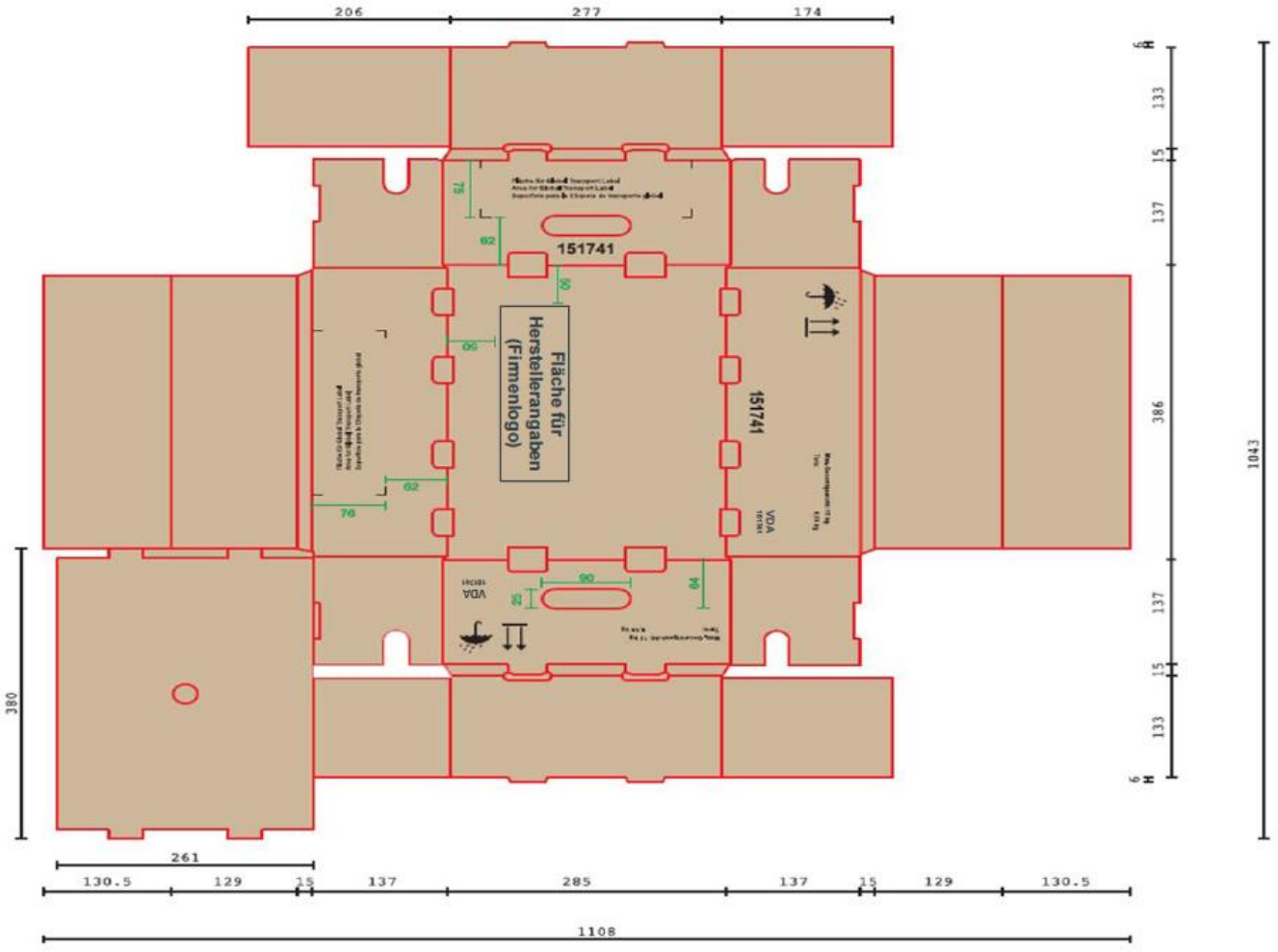
The compression force tests are performed reproducibly as an accelerated breaking load determination using a
compression resistance press with a spherically mounted upper pressure plate in accordance with DIN EN ISO 12048.
The load units are positioned in the middle of the lower test plate. The test load is applied to the test specimens with the load carrier in full contact with the ground.

# 8 Template drawings

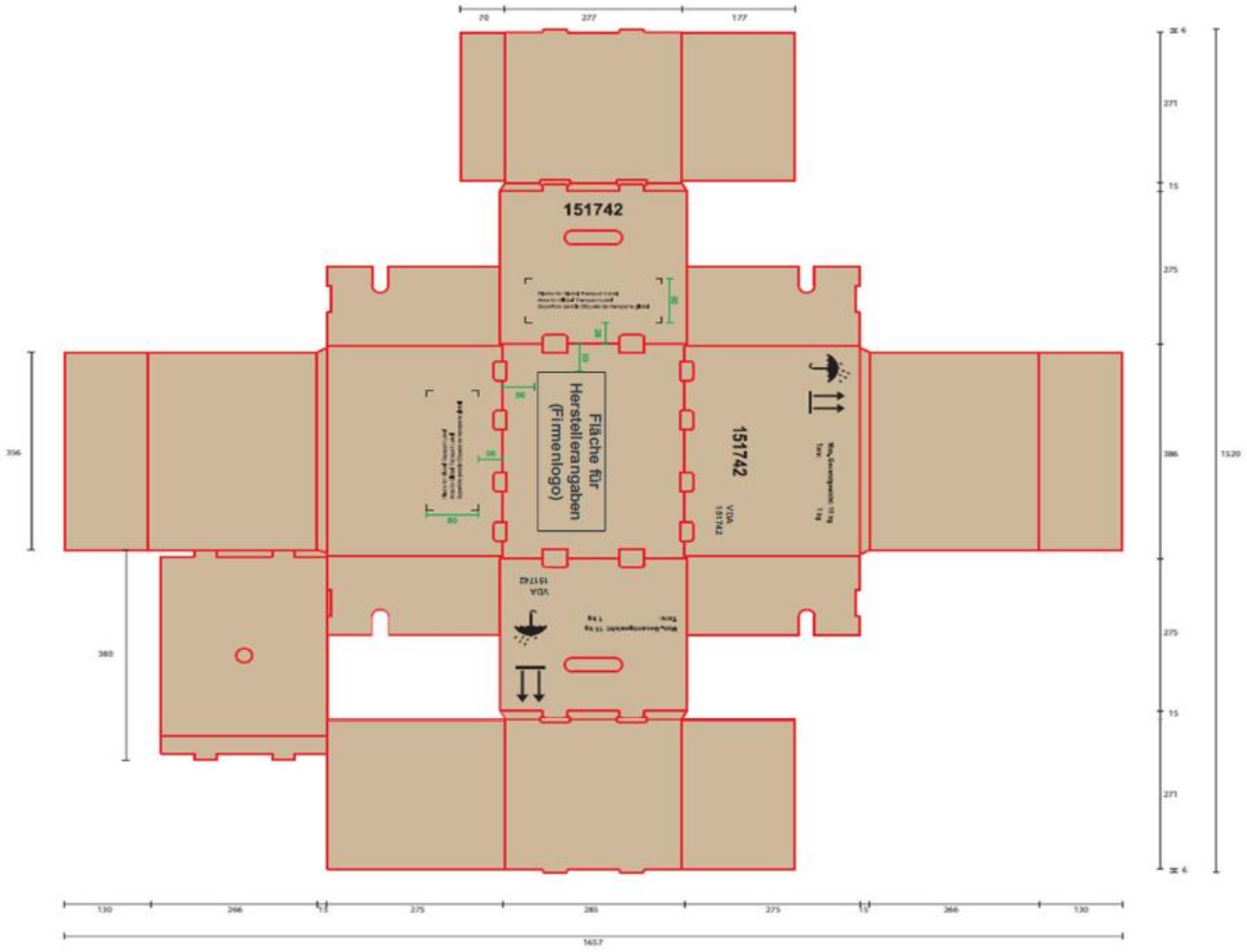
## 8.1 151740



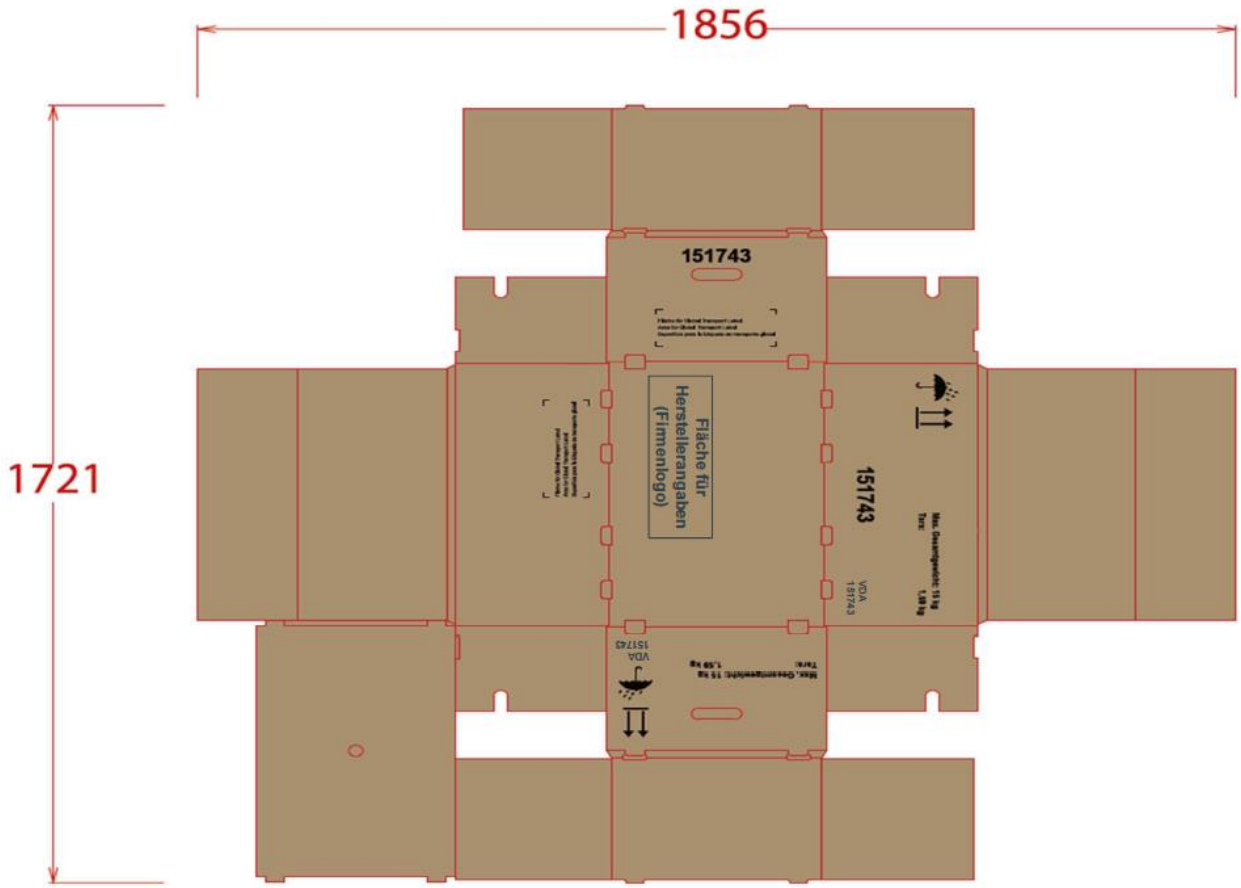
## 8.2 151741


206
277
174
151741
Fläche für Herstellerangaben (Firmenlogo)
151741
133
15
137
386
137
15
133
1043
380
261
130.5
129
15
137
285
137
15
129
130.5
1108

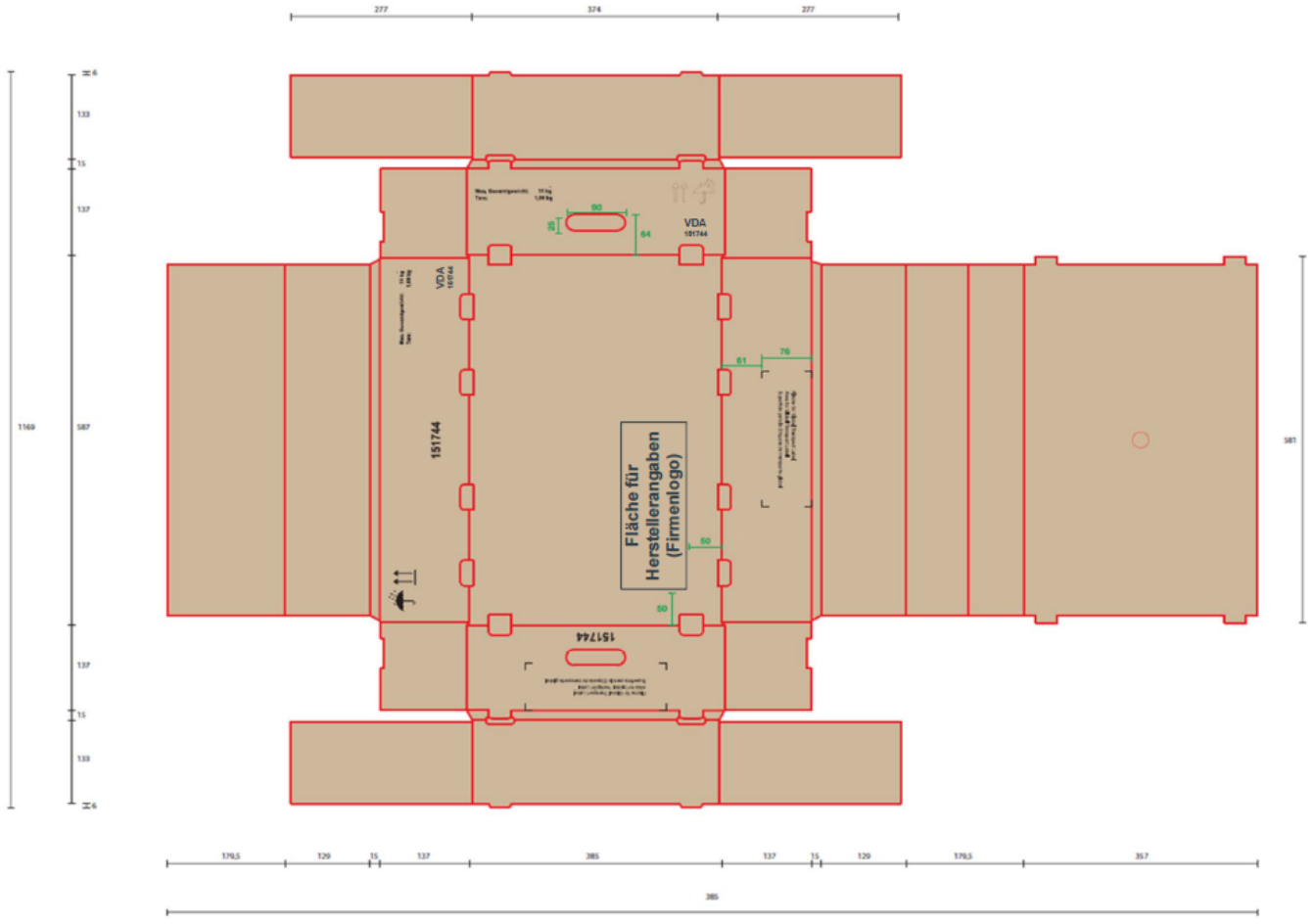
## 8.3 151742



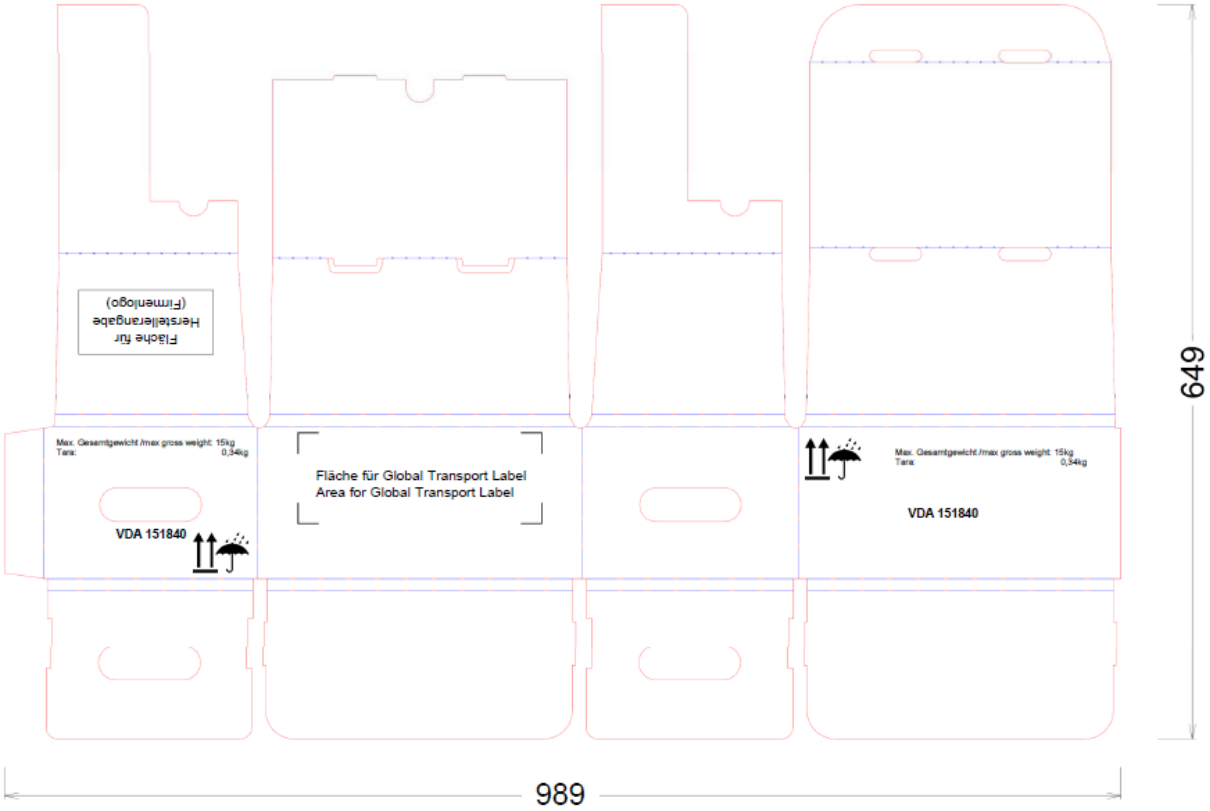
## 8.4 151743



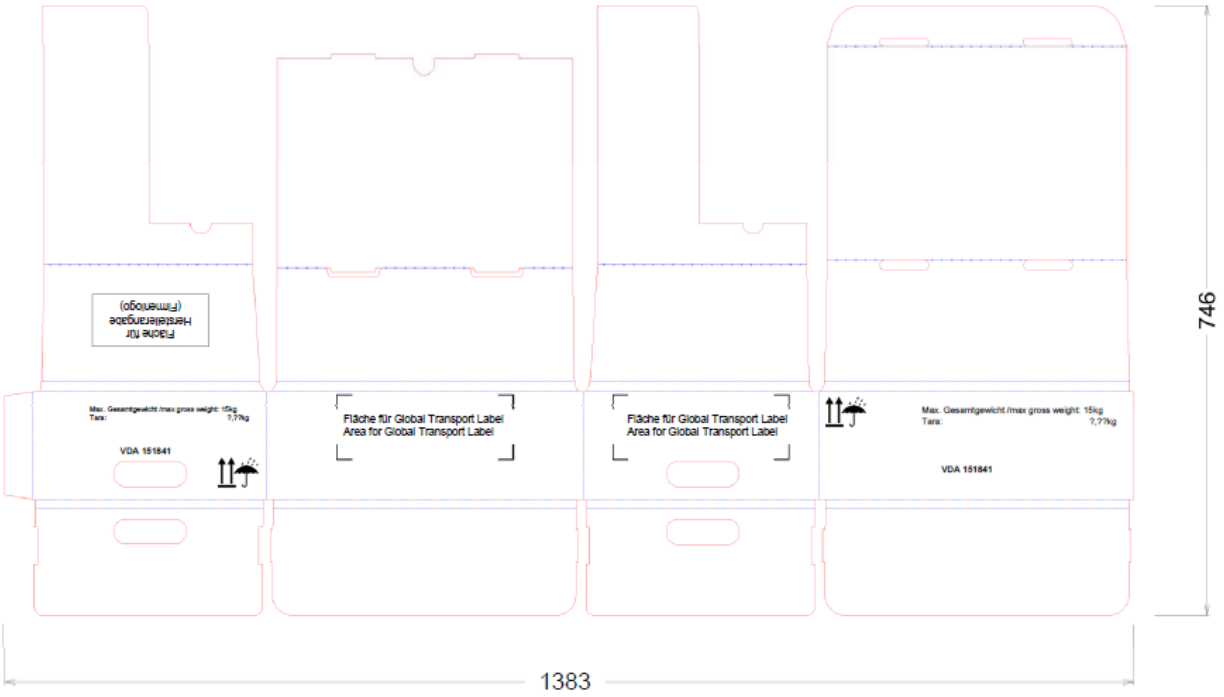
## 8.5 151744



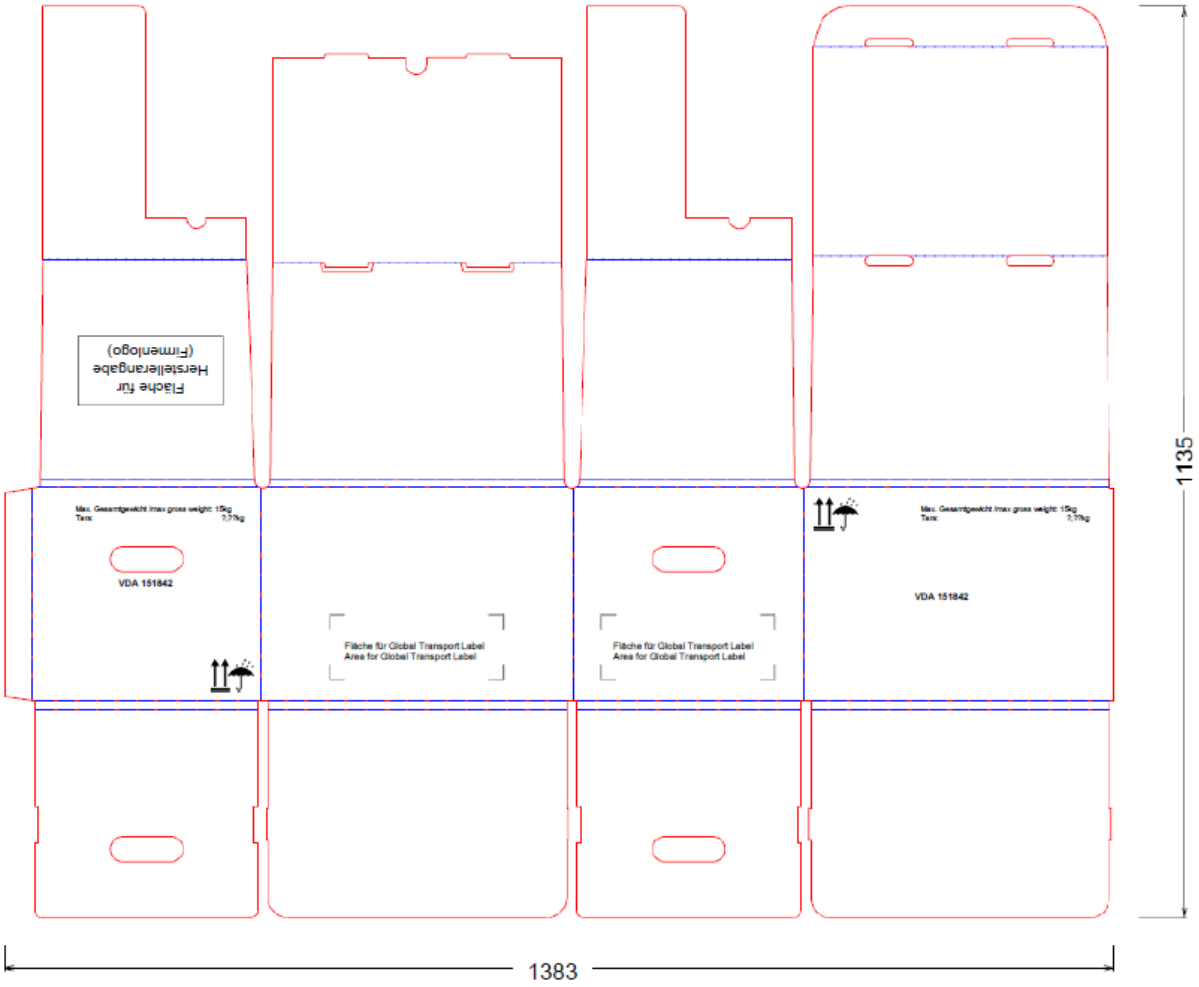
## 8.6 151840



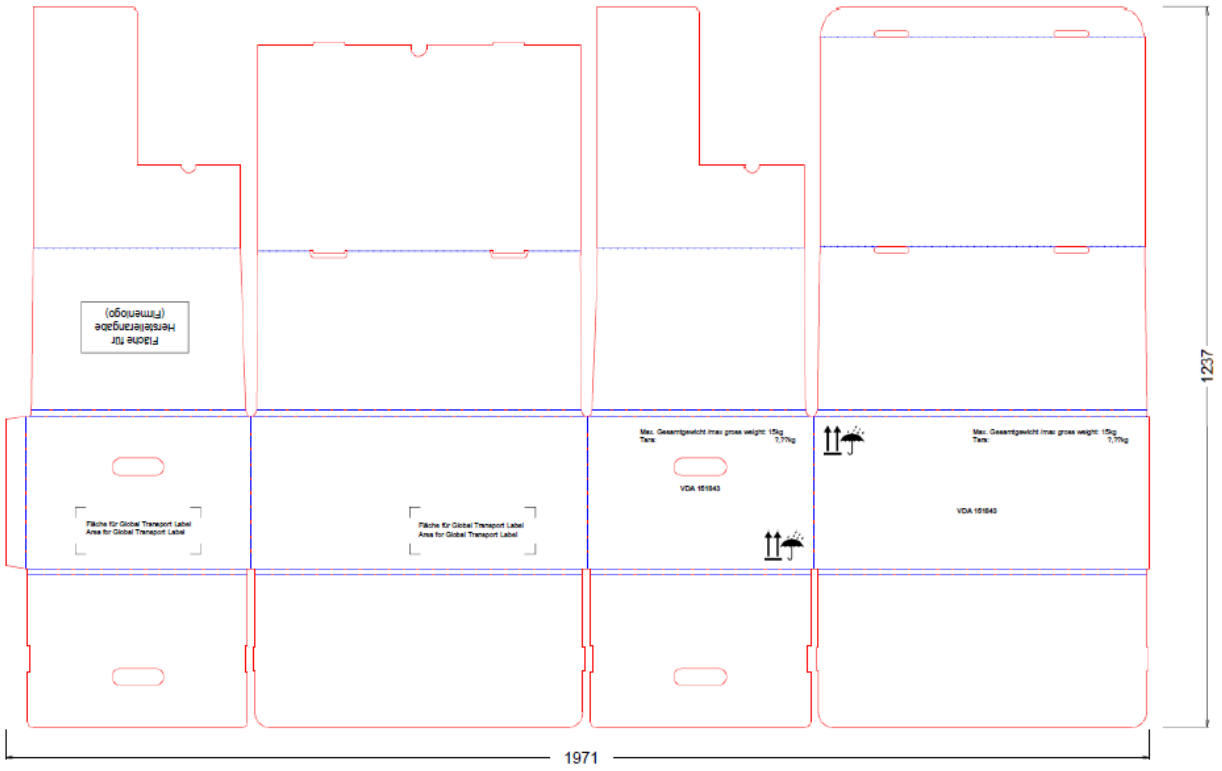
## 8.7 151841



## 8.8 151842



## 8.9 151843




## 8.10 151844