

版本 Revision: 01
日期 Date: 2024/07

供应商包装指南
Supplier packaging guidelines


采埃孚亚太汽车安全系统(上海)有限公司
ZF Asia Pacific Automotive Safety Systems
Co., Ltd.

供应商包装指南

Supplier packaging guidelines

DATE	REQUESTER	DESCRIPTION OF CHANGE
07/01/2024	Elsa Wu	首次发布 Initial Issue

采埃孚亚太汽车安全系统(上海)有限公司
ZF Asia Pacific Automotive Safety Systems Co., Ltd.

目的 Purpose

明确定义对采埃孚亚太汽车安全系统(上海)有限公司（以下简称 ZF LIFETEC）的零件供应商的包装和标识方面的要求，保证零件质量并满足 ZF LIFETEC 仓库转运以及生产的需要。手册内涉及到的包装标准适应于所有 ZF LIFETEC 直接物料供应商发运到工厂的所有生产性零件，包括 ZF LIFETEC 内部供应商。

Define ZF Asia Pacific Automotive Safety Systems Plant (hereafter referred to as ZF LIFETEC) requirements to supplier on inbound packaging and labeling, to ensure the quality of components and meet requirement of warehouse and production line operation for the material packaging. The packaging standard and requirement cover all the direct material supplier of ZF LIFETEC, including ZF LIFETEC internal supplier.

1. 供应商职责 Supplier Responsibility

1.1 包装设计改善 Packaging Design and Improvement

1.1.1 供应商负责其产品的包装设计，包装设计应考虑到产品的特性，以及交付时的正常运输和存储条件。

Supplier is responsible for the packaging design, all characteristic for component and logistic environment including transportation and storage should be considered in packaging development.

1.1.2 供应商负责包装设计满足 ZF LIFETEC 包装设计要求，并在量产前 3 个月提交包装方案并完成相关验证，ZF LIFETEC 在量产前批准供应商包装。供应商最晚在量产前一个月开始实施获得正式批准的量产包装方案。

Supplier is responsible for the packaging design to meet all requirements from ZF LIFETEC, Submit and complete relevant validation for the package concept at least 3 months in advance before SOP. Make sure to use the standard packaging at least 1 month in advance before SOP.

1.1.3 供应商负责对所涉及 2 个方面问题进行响应和改善（1. 当发生由包装引起的产品质量及包装本身质量风险 2. ZF LIFETEC 团队就日常操作过程中提出的合理化建议）

Supplier is responsible for the packaging improvement 1) when component quality issue or packaging issue occurred 2) Rational suggestion proposed by ZF LIFETEC team to optimize solution.

1.1.4 供应商负责周转器具（包装）设计、开发和投入，路试和确认，ZF LIFETEC 配合供应商完成器具的评审。

Supplier is responsible for the design, development and cost covering for returnable containers. ZF LIFETEC should cooperate with supplier to review road test and confirm.

1.2 保证零件及包装交付质量 Ensure component and packaging quality during delivery

1.2.1 供应商要对零件质量负全部责任，确保零件从出发地直至 ZF LIFETEC 指定交货地点无破损和不良（FCA 同 DDP 要求一致）。

Supplier is fully responsible for the parts quality and ensure no any damage and badness during the transportation to ZF LIFETEC plant. (Both FCA & DDP have the same requirement)

1.2.2 供应商需保证到货包装与已批准的方案完全一致。

Supplier must ensure the packaging is completely same with one approved by ZF LIFETEC.

1.3 包装变更 Packaging Change

1.3.1 任何的包装变更需提前和 ZF LIFETEC 包装工程师提出正式书面申请，未经允许的包装变更将不被认可，由此导致的一切后果由供应商承担。

For any packaging change, supplier should submit the official written packaging change application to ZF LIFETEC packaging engineer in advance; Otherwise, all consequences arising therefrom shall be borne by the supplier.

1.3.2 供应商负责包装变更申请，变更后的包装必须在得到确认后才能实施。

The supplier is responsible for the application of package change request to ZF LIFETEC packaging engineer and the packaging can't be implemented until it has been confirmed.

1.4 临时/备用包装 Temporary/Backup Packaging

1.4.1 针对使用循环器具的包装，供应商必须对其设计一次性包装作为其临时/备用包装方案，正常情况下不允许使用临时/备用包装；特殊情况下需要使用临时/备用包装方案的，必须提前至少 3 个工作日提出书面申请并得到 ZF LIFETEC 的批准才可以实施。

For the returnable packaging, supplier must consider the expendable packaging as the Temporary/Backup package concept; and supplier need to submit the official written application to ZF LIFETEC packaging engineer at least 3 working days in advance if necessary for the special case. Any expendable concept using without approval is forbidden.

1.5 周转器具的日常维修及管理 Daily maintenance and management of returnable packaging

1.5.1 供应商负责周转器具的清洁工作，使用前必须清理掉周转包装内外部的灰尘与水渍，清掉空周转包装外的标签和内部废弃物。料箱需确保内外部均清洁无脏污和水渍等并可以满足零件的各项质量要求及各个工厂的验收标准。

It's supplier's responsibility to clean the container and make sure there is no dust, water, label and other waste in and out of the container. Make sure the container can totally meet the quality requirement for each part & the acceptance standards from each plant.

1.5.2 供应商负责周转器具的日常维护及维修，维修范围包括焊点开裂、箱体严重变形、配件缺失或损坏（如帘布、叉车套、脚轮等），器具功能失效（锁紧装置、盖子开关）等，金属器具表面漆老化、掉落严重、表面生锈，供应商需对金属器具进行重新处理并喷漆。

Supplier is responsible for repairing returnable packaging with supplier own cost. The repairing scope includes open welding point, serious deformation, spare part of bin missing or damage (curtain, forklift hole, wheel), bin function missing (lock, switch of cover). The supplier should repaint the metal bin if the paint surface was aging, serious dropping, surface rusting.

1.5.3 供应商必须有日常管理程序，不满足使用要求的器具不允许交付至 ZF LIFETEC。

The supplier must have the internal bin management process. Any container can't meet the normal service requirement is forbidden to ship to ZF LIFETEC.

2. 包装设计要求 Packaging Design requirement

2.1 包装设计基本原则 Basic principle for Packaging Design

所有包装需要方便物料各环节的转运和存储要求:

All packaging should meet requirement for material transit and storage:

所有到货的包装需要使用 ZF LIFETEC 规定尺寸的托盘。

All inbound packaging should use the standard pallet that ZF required as below.

存储单元需要满足 4M 的静态堆码高度。

All packaging unit should satisfy 4M warehouse stacking.

人工搬运的单元重量不得超过 15kg。

All handle unit gross weight should be less than 15kg.

整托毛重不能超过 500 KG。

Gross weight for loading unit per pallet should be less than 500kg.

2.2 包装容器要求 --常规产品 Packaging Container Requirement

2.2.1 包装容器选择原则 Packaging Container choosing principle



a) 通用周转容器: 此类别是 ZF LIFETEC 首选的包装容器，供应商需要优先考虑选用此类容器。

General Returnable Container: It is the first choice for ZF LIFETEC inbound packaging container. Suppliers should consider it as the prior container.

b) 特殊尺寸塑料箱: 此类别是通用周转容器不能满足包装设计时的备选方案。

Special Returnable Container: It is back up solution as general returnable containers could not satisfy packaging design for components. The packaging container should be approved by ZF LIFETEC in advance.

c) 一次性包装: 此类别主要用于国外供应商并优先选择 ZF LIFETEC 规定的尺寸系列,因特殊情况需要使用特殊尺寸的一次性包装，必须事先经过 ZF LIFETEC 包装工程师的同意。

Expendable Packaging Container: It is mainly used for overseas suppliers and supplier must use the dimension as required from ZF LIFETEC. Any special situation need to use the special dimension expendable package

should get the approval in advance from ZF LIFETEC packaging engineer.

2.2.2 通用周转容器介绍 General Returnable Container introduction

a) 通用容器列表:

General returnable container list:

编号 P/N	容器类型 Type	外尺寸 Outer Dimension			参考内尺寸 Ref. Inner Dimension			承重 (kg) Loading limit(kg)	备注 Remark
		L(mm)	W(mm)	H(mm)	L(mm)	W(mm)	H(mm)		
1	塑料箱 plastic box	600	400	280	555	355	255	15	
2	塑料箱 plastic box	600	400	230	555	355	205	15	
3	塑料箱 plastic box	600	400	148	555	355	123	15	
4	塑料箱 plastic box	600	400	300	555	355	275	15	
5	塑料箱 plastic box	400	300	230	353	253	205	15	
6	塑料箱 plastic box	400	300	148	353	253	123	15	

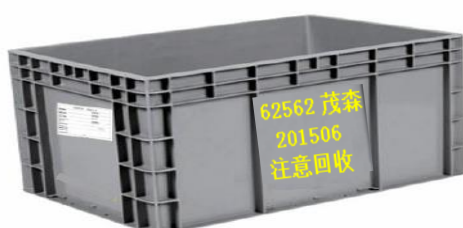
b) 所有供应商来料周转箱包装需使用色卡号为灰色 RAL 7046 的塑料周转容器, 不允许有明显色差。

All suppliers of ZF LIFETEC Plants need to use grey plastic box the color must be RAL 7046, No obvious color different allowed.



c) 塑料容器长边两侧丝网印刷或者烫金印字供应商代码及供应商名称, 如下图所示(若由于该印刷不满足要求, 导致周转器具无法回收, 供应商需自行解决)

Two short sides of the plastic box should be printed the name of supplier, as below instruction.



供应商代码+供应商简称
周转箱投入年月
“注意回收”

d) 建议周转箱采用以下的防尘方式：固定式防尘帘。

Dust-proof method for plastic box: Fixed dust-proof curtain.



e) 塑料箱底部结构要求:

Bottom structure requirement for the plastic container



f) 根据零件特性及表面质量要求选择内衬包装材料，尽量选择可回收的塑料类内衬材料如 PP 中空板、EVA 材料、EPE、EPP 材料等，确保对零件能够进行有效防护，需要防锈的零部件采用防锈保护措施。

Supplier should use returnable inner dunnage according to the parts parameter and quality requirements. It's better to use some recycle material such as PP board / EVA / EPE / EPP and...so on. Ensure the good protection for the components. VCI protection is necessary for the parts is easily rusty.



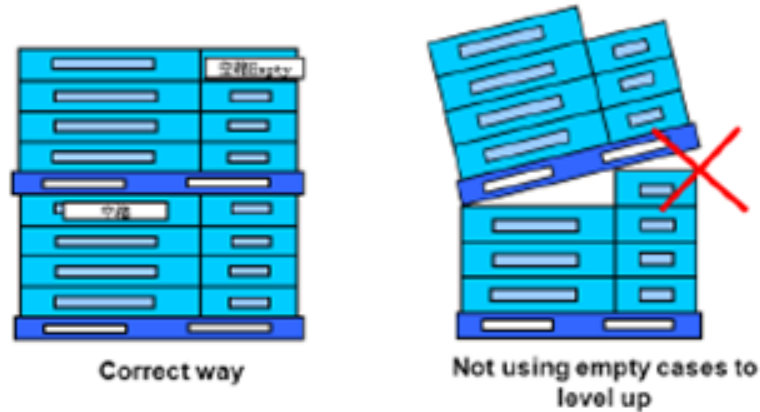
g) 无论使用木托盘或胶合板托盘或塑料托盘, 托盘尺寸必须为: 1200*800mm。

No matter wooden, plywood pallet or returnable pallet. The pallet dimension must be 1200*800 mm.

1) 托盘基本运输单元为满托，部品不足用空周转箱填平该层，每个基本单元尺寸为: 1200(长)*800(宽)*H (堆垛高度) ≤1100 毫米。

The requirement of transportation unit arrival couldn't use empty cases to level up. The height of the transportation unit should less than 1100 mm.

- 2) 运输中货物必须用打包带“井”字打包固定并加缠绕膜缠绕, 禁止使用金属带固定。
Supplier should use stretch film and edge board to fasten during pallet packing(Metal belt is not allowed).



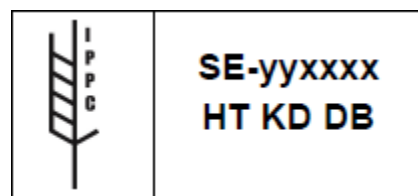
2.2.3 特殊周转容器介绍 Special Returnable Container

- a) 在零件尺寸不适合通用周转容器的情况下, 供应商在 ZF LIFETEC 的批准下使用特殊周转容器。
If dimension of components can't fit general returnable container, supplier can choose special returnable container with ZF LIFETEC approval.
- b) 可以接受的循环包装包括: 其他尺寸的塑料周转箱 (颜色, 印刷等要求与通用容器相同); 中空板箱; 仓储笼; 专用周转铁箱等。
Acceptable returnable container includes: Plastic box (Same color/print/label requirement with general container); PP board box; General or special steel box, etc.

2.2.4 一次性包装介绍 Expendable Packaging introduction

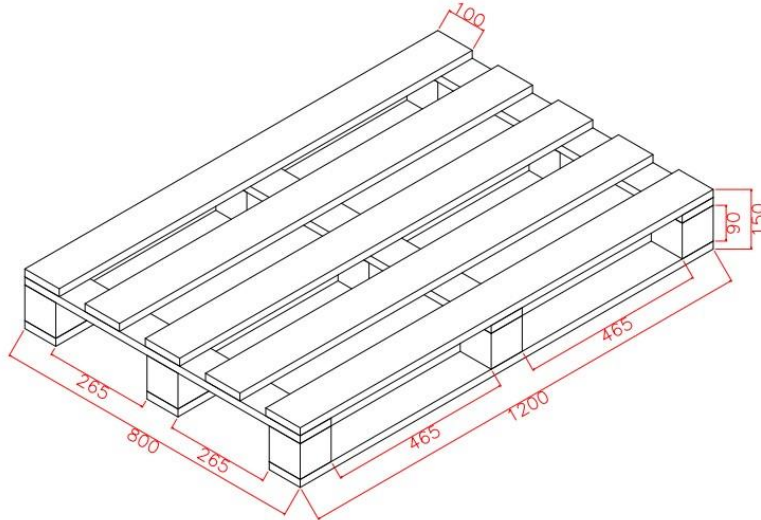
托盘介绍 Pallet introduction:

- a) 供应商必须使用 ZF LIFETEC 要求使用的托盘尺寸: 1200*800mm。若有特殊情况需要使用其他尺寸的托盘, 必须得到 ZF LIFETEC 包装工程师的批准, 否则将不被允许。
Supplier must use the pallet which is 1200*800 mm. Any other dimension is forbidden except get the approval in advance from ZF LIFETEC packaging engineer.
- b) 托盘必须是全新的实木或胶合板托盘, 如果是进口的实木托盘, 需要符合ISPM NO.15标准并加盖IPPC标识。
Pallet should be the new wooden or plywood material. Any wood pallet from oversea suppliers should meet ISPM NO.15 standard and print IPPC logo on the pallet.



c) 所有托盘均需满足四向进叉，插孔高度不低于90mm，如下图。

All pallets must to be 4-way pallet. The height of hole for forks lifter should be no less than 90mm.



d) 托盘强度需要满足供应商和ZF LIFETEC的配送和仓储堆码4m的物流条件，保证到货托盘无破损，变形，托盘载重要求如下：

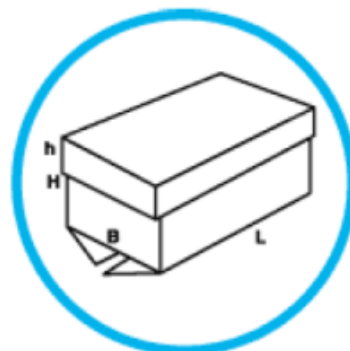
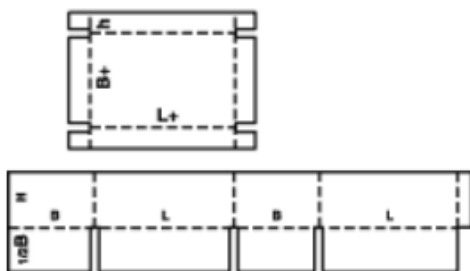
Pallet should be strong enough to meet Supplier & ZF LIFETEC transportation and 4m warehouse stacking environment. Any distortion or damage will be not acceptable. Load requirement for pallet is as follows.

规格 (mm)			载重量 (Kg)		
长 (L)	宽 (W)	高 (H)	静载	动载	货架载荷
1200	800	150	≥4000	≥1000	≥800

纸箱介绍 Carton introduction:

a) 优先使用FEFCO 0312 型号的天地盖纸箱
FEFCO 0310/0312 box are highly recommended.

Description : 0312 Montage : M/A



b) 天地盖纸箱请选用推荐尺寸的纸箱, 清单如下:

Supplier must use the recommended box dimensions as below:

Item	Type	Dimension			
		Out Size(mm)	L(mm)	W(mm)	H(mm)
1	Handle box	600*400*300	600	400	300
2	Handle box	600*400*265	600	400	265
3	Handle box	600*400*148	600	400	148
4	Handle box	400*300*265	600	400	300
5	Handle box	400*300*200	400	300	200
6	Handle box	400*300*148	400	300	148

c) 纸箱强度需要满足运输单元动态堆码高度2.35m和静态堆码高度4m的要求, 推荐纸箱设计安全系数为5。

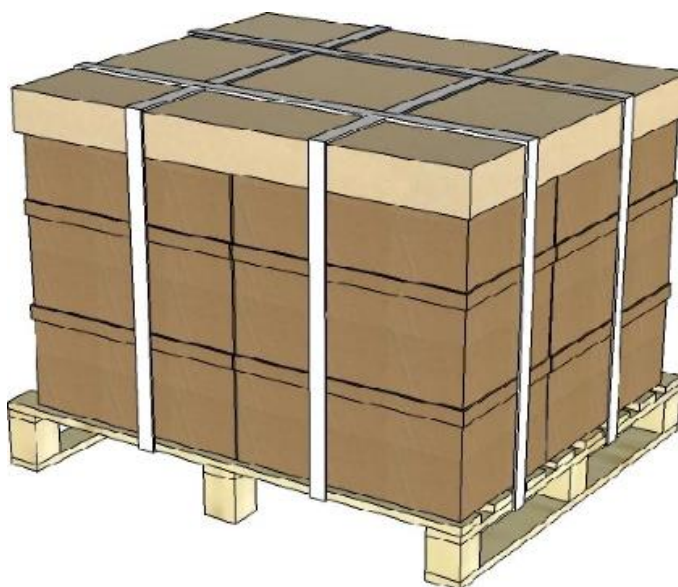
Transportation stacking height 2.35m and warehouse stacking height 4m should be considered in corrugated paper choosing. Recommended safety factor is 5.

d) 所有纸箱包装方案在提交时, 需要提供纸材质明细, 同时在供货时保证纸箱质量。

All cardboard packaging solution should include cardboard material detail. Supplier should ensure the quality of carton have no change in daily delivery.

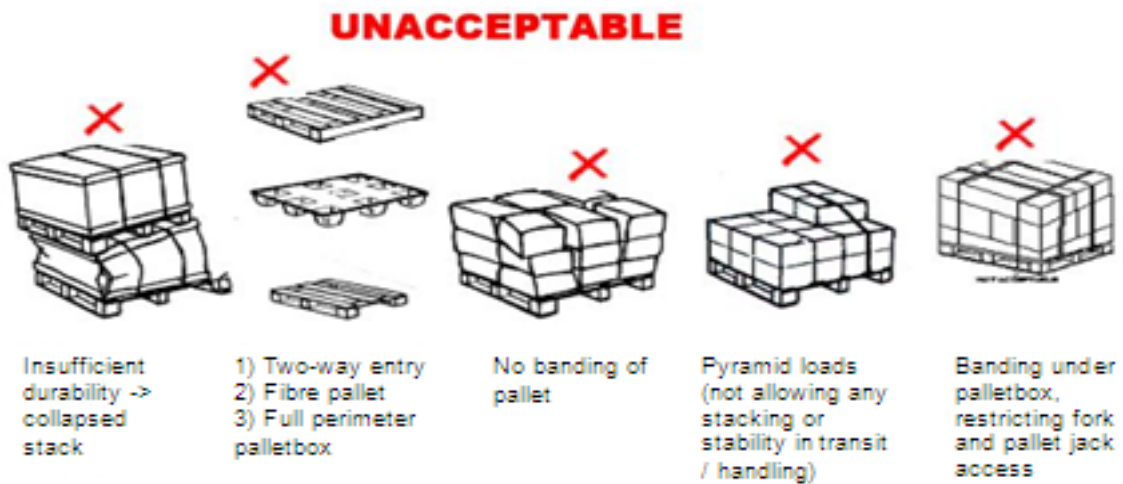
e) 整托产品的堆码使用缠绕膜并采用“井”字型打包, 必要时使用纸护角加固。

Supplier should use stretch film and edge board during pallet packing. Use paper conners if necessary.



f) 常见的货物拒收情况如下:

Common Errors to avoid:



2.2.5 其他一次性包装 Other expendable packaging:

所有其他形式的一次性包装如木箱，胶合板箱等由供应商提供并确保符合当地和目的地的进出口和其他相关法律法规，在得到ZF LIFETEC包装工程师批准后方可实施。

All the other expendable packaging such as wooden box or plywood box should be applied by suppliers and ensure meet all the requirement for local and destination from import & export and other regulations; ZF LIFETEC, It's forbidden to use the package concept which is not approved by ZF LIFETEC in advance.



2.3 特定包装要求 -布料类 Specific Packaging Container Requirement-fabric

2.3.1 纸管两端需比布料两端长出至少2cm,以满足上线要求

Length of paper cone is supposed to be more than whole length of fabric at least 2cm

2.3.2 可根据布料尺寸选择托盘尺寸，托盘长边尺寸 \geq 布料整体尺寸（纸管+布料）；托盘底座需保持整体平衡，且保持底梁加固以满足承重要求（可参考如下图片）

Length of pallet is more than whole length of paper cone and fabric and strengthen loading parts as picture shows

2.3.3 来料不得破损, 坍塌; 以最大程度减少布料压痕 (如加泡沫垫板, 泡沫块等)

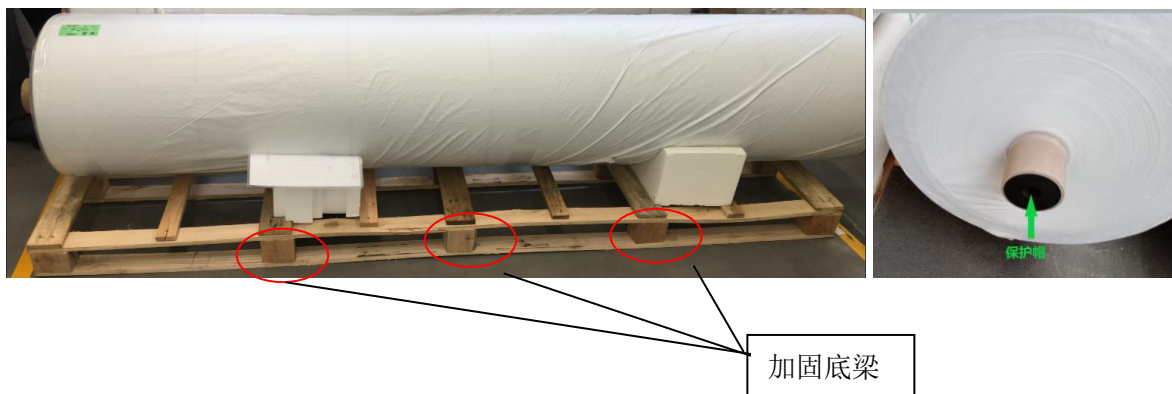
No damaged package when arrived in ZF LIFETEC warehouse. Adding foam bulk or foam panel will decrease pressure.

2.3.4 一块托盘不能超过2卷

No more than 2 rolls of fabric per pallet

2.3.4 卷芯侧需加保护套

Pls install projecting jacket on tow sides of coiling.



2.4 特殊包装要求 -皮子类 Specific Special Packaging Requirement-Leather

2.4.1 包装设计要求: Package design requirement

a) 表皮保持平整, 不可以出现叠压、折痕现象;

Keep the leather flat.no folding or creasing occur.

b) 方向盘的皮子切片, 要求整套放置在一个箱子内, 同形状的皮子切片叠放成跺; 一般50张皮子为1跺。

For SWS leather slices,the whold set is required to be placed in a box,and the slices of the same shape are stacked into a stack; 50 pcs leather for 1 stamp is in general.

c) 皮子跺需固定在箱子内, 防止运输、搬运过程中偏移, 堆积产生死折。

Make sure the leather stamp fixed well in the box to avoid any movement and accumulation during the transportation.

d) 皮子切片基本包装单元的数量为50套/箱, 最多不超过200套/箱。

Basic unit for one stamp should be 50 set and no more than 200pcs per box.

运输包装时需充分考虑皮子切片特性、各地区气候、外界温湿度等因素, 确保产品品质安全。

Need to fully consider the characteristics of skin slices, climate, external humiture... and so on, ensure the leather quality.

e) 为了保证极端天气时皮子的质量, 供应商可以采用其他临时方案, 由ZF LIFETEC评审批准后方可实施。

To ensure the leather slices' quality in extreme weather, supplier can use other specific temporary package concept which has been official reviewed & approved by packaging engineer in ZF LIFETEC

2.4.2 包装路试 Road testing

签署包装方案前，供应商须自行路试并填写路试报告提交给ZF LIFETEC包装工程师

Supplier should finish the road test and submit the report to ZF LIFETEC packaging engineer before the packaging concept approval.

路试要求 Road test requirements

所有原材料均要求进行路试，如路试失败则需与ZF LIFETEC包装工程师沟通并优化包装直至通过路试,路试完成后需提交路试报告给ZF LIFETEC

Road test is a mandatory requirement for all raw material parts. Supplier need to optimize the package concept after communicate with ZF LIFETEC packaging engineer to ensure the final concept can pass the road test. submit the road test report after the validation.

标签标识要求 Labeling requirement.

a) 所有内包装必须有单独的标签显示数量，料号，物料名称和其他一些必要的信息。

Individual label is mandatory required for inner packaging (not only including qty, P/N, description, but also other necessary information)



Acceptable



Acceptable

外箱必须黏贴标签并且确保标签朝向托盘外侧以确保仓库不用拆托即可收货，黏贴位置和图示如下：

It's a mandatory requirement to stick signal label for each container on the outside surface. The label must face out to ensure the label can be scanned without split the pallet when receiving goods by warehouse operator.

Adhesive position and example show as below pictures.

一次性纸箱标签要求黏贴在短边右上角位置，

For carton box: label should be stuck to the top right corner of the short side as below picture shows.

周转箱要求粘贴在短边中间位置

For Returnable: label should be stuck to up the middle of short side as below picture shows.



版本 Revision: 01
日期 Date: 07/2024

供应商包装指南
Supplier packaging guidelines

b) 所有标签必须满足ZF LIFETEC 标签的相关要求。

All label supplier used should meet the related label requirement from ZF LIFETEC

c) 托盘标签需要张贴至运输单元的长边和短边左上角位置。

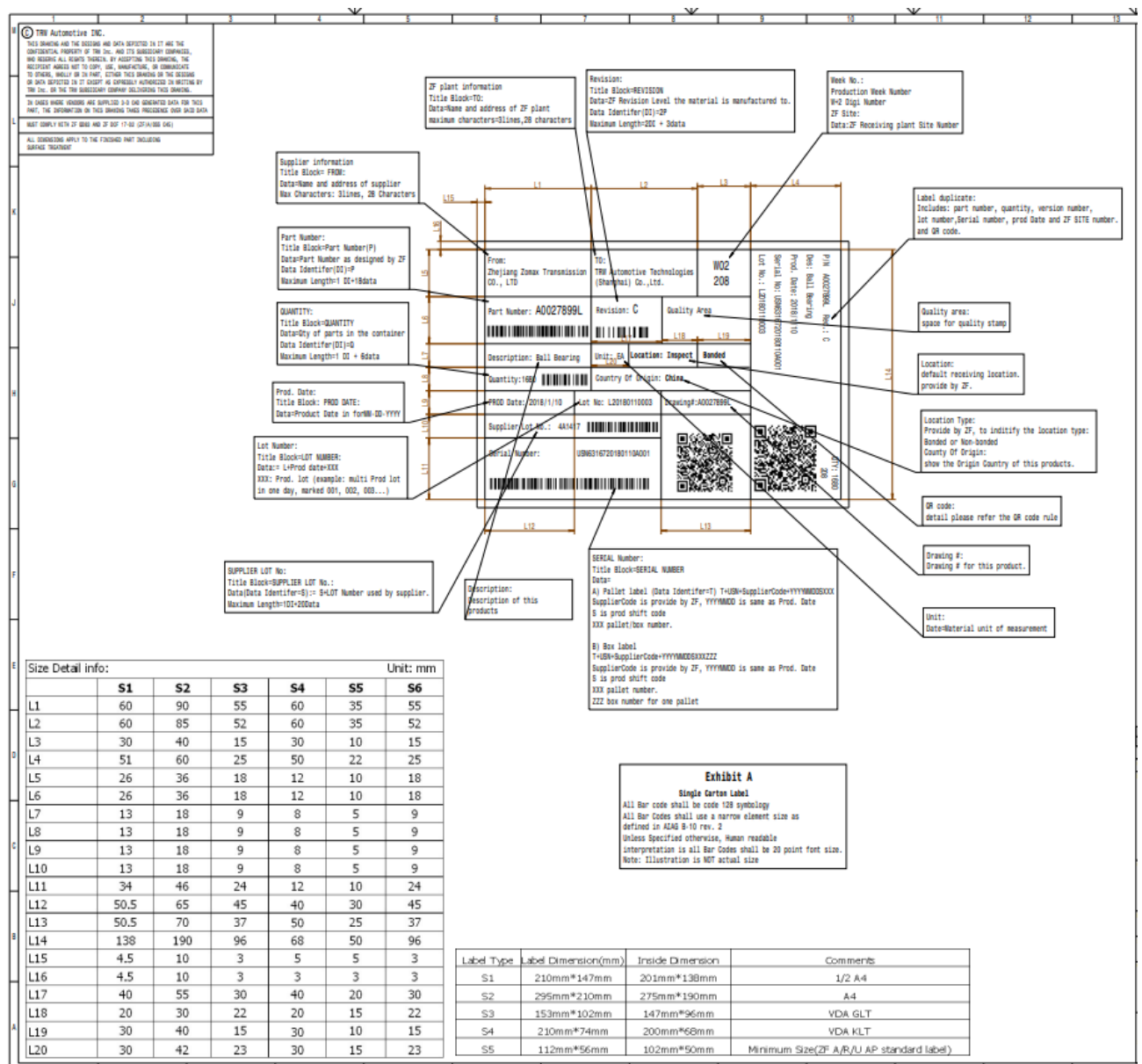
Master must be stucked on top left corner of both short side & long side.

d) 供应商需按照ZF LIFETEC要求打印外箱和运输单元标签。供应商需使用不干胶材质或易于撕下的材质打印并粘贴。

Supplier needs to print and paste labels based on the demand of ZF LIFETEC. Label material should be easy to tear off

供应商二维码标签格式要求如下:

2D label format requirement for supplier:



e) 一般情况下不允许混托，如有特殊情况需提前和包装工程师进行书面沟通，经同意后需加明显的混托标识同一个托盘上面，如果有不同零件号，或者同一零件号不同批次号，需要用颜色胶带在外箱上面区分清楚。

Normally, it's forbidden to mixed pallet. For special case, if there are two parts or more, or same part number different lot number on one pallet, please mark clearly from out box.

f) 为配合包装开发，未被批准的包装方式需要粘贴特殊标识。

For packaging development, packaging without approval should be marked with special label.

测试用包装，请联系验收

g) 紧急情况下使用特殊包装或者备用包装，需要在外包装上粘贴标识。

Using backup packaging or temporary special packaging in urgent case, need special label on packaging.

紧急运输包装，请联系验收

8) ZF 工厂技术变更标签 Technical Change Label

工程更改零件，包装箱外需粘贴绿三角标示。

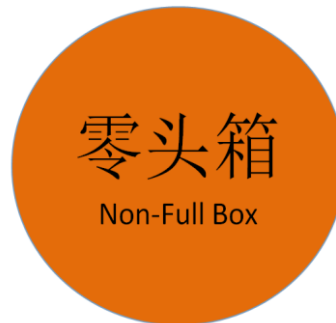
Technical change part should be pasted a green triangle label on the outside the shipping packaging.



9) 零头箱标签 Non-Full Label

部分的特殊零件，若计划员有零头箱订单，需在外箱粘贴零头箱标示。

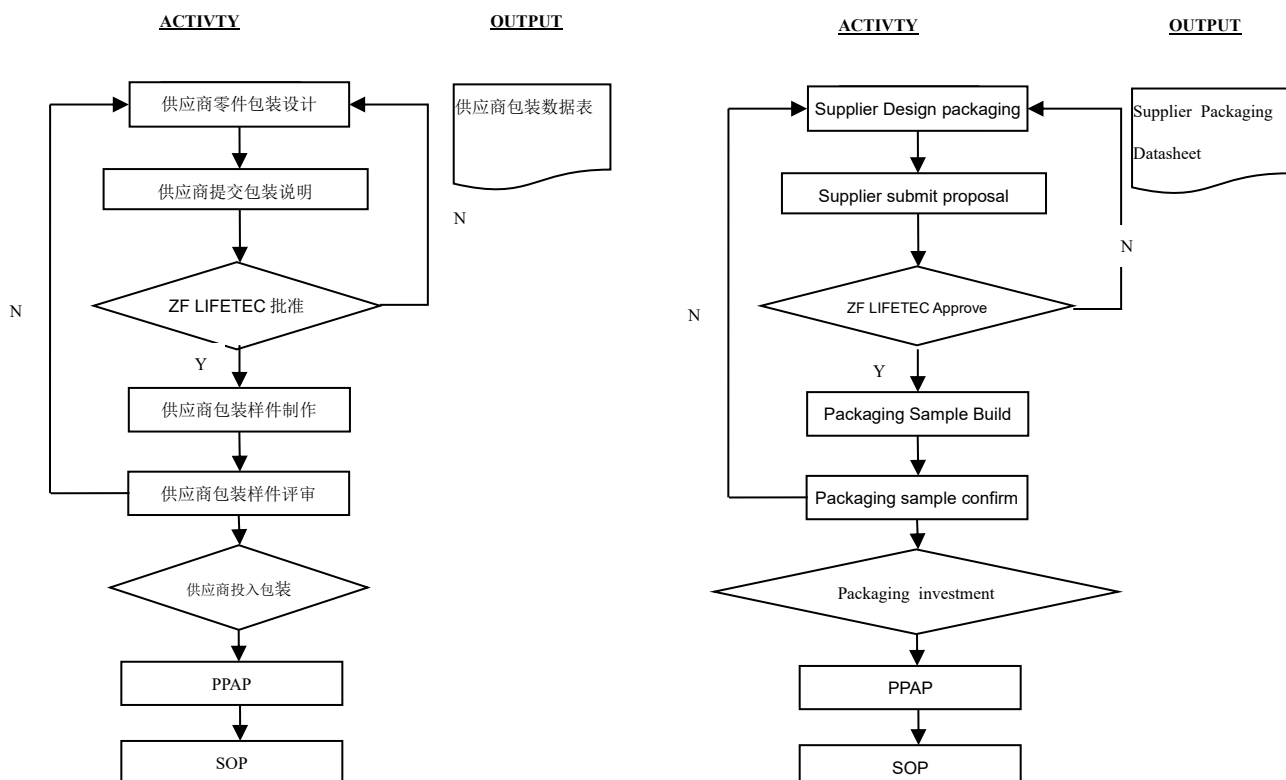
If box required, below label should be pasted outside of shipping packaging.



10) 供应商首次交货标签 First Delivery Label



包装审批流程 Process for packaging approval



5.附件 Attachment

本手册中如有中英文不一致之处，请以中文为准。

In the event of any discrepancy between the Chinese version and the English version, the Chinese version shall prevail.

供应商标准包装手册后续若有更新，请供应商及时配合。有任何问题请及时联系沟通。

Suppliers should cooperate with ZF PSS requirements in time if Supplier Standard Packing Manual has any updates. If you have any question, pls feel free to contact with us.