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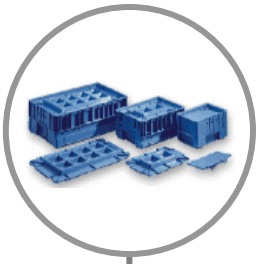


Supplier Packaging Manual

-Tenneco Europe-

P06_40
Revision status 7
ISC- Corporate Logistics
Supply Chain Planning and Costing

Release Date: 01.07.2019

Content

List of Abbreviations and Glossary

BOM	**B**ill **o**f **M**aterial
Tenneco Corporate Logistics	Tenneco central organization that designs and reconfigures existing and/or new projects in close collaboration with all other business functions to ensure Tenneco has the most balanced and cost efficient supply chain.
EC	Tenneco **E**mission **C**ontrol
GSCM	**G**lobal **S**upply **C**hain **M**anagement
Handling Unit	A handling unit consist of several packaging units bundled on one pallet (e.g. n KLT + Lid + Pallet). With bulk goods, a single container can also act as handling unit. Tenneco distinguishes between two types of handling units (Pallet or Mixed Unit).
Inbound Material and Logistics Protocol:	Tenneco standard document – Generic operational agreement on supply-chain's local plant level. Required as part of supplier nomination process to be completed before Production Part Approval Process.
IPPC	**I**nternational **P**lant **P**rotection **C**onvention
ISC	**I**ntegrated **S**upply **C**hain
ISPM 15	**I**nternational **S**tandards for **P**hytosanitary **M**easures - Guidelines for Regulating Wood Packaging Material in International Trade.
KLT	"**K**lein**l**adungs**t**räger" – VDA Standard Container type. Size, weight and basic material fixed in VDA standards.
ODETTE	**O**rganization for **D**ata **E**xchange by **T**ele **T**ransmission in **E**urope - Nonprofit organization of the automotive industry with headquarter in Great Britain. Objective: standards in the area of the logistics, EDI and construction data exchange.

Packaging	Container or wrapper for a product that serves a number of purposes including protection and description of the contents, theft deterrence, and transportation safety. The packaging is the content. The ready packed product is the Packaging Unit. Several Packaging Units form a Handling Unit.
Packaging Instruction	Tenneco standard document wherein the Tenneco part number is related to the Packaging Bill of Material.
Packaging Proposal Form	Tenneco standard form that is used for the packaging planning and reengineering process.
Packaging Unit	A Packaging unit is the smallest possible order quantity. It consists of either returnable packaging (e.g. KLT, steel box…) or one-way packaging.
Packing	To pack the components into the packaging material and prepare the packaging units for transport.
RFQ	**R**equest **f**or **Q**uotation
SBU	**S**trategic **B**usiness **U**nit
SCIRP®	"**S**upply **C**hain **I**mpact **R**equest **P**rocess" Tenneco standardized Process, which formally manages any requested changes of "Current" or "Future" Supply Chains and logistical parameters with the goal to understand the business- and cost impacts incurred.
SNC	**S**upplier **N**etwork **C**ollaboration
SPI	**S**ociety of **P**lastics **I**ndustry
VDA	"**V**erband **d**er **A**utomobilindustrie e.V."

1 General Guidelines

1.1 Preface

This Manual is effective for all production related parts that suppliers and inter-company plants deliver to Tenneco plants in Europe. It is valid starting with the release date and sets forth-uniform standards and common processes for the planning and review of packaging materials used. These standards are necessary to ensure general accountability for quality and maintain consistently high quality performance and continuous cost reduction. The contents are guidelines to be used by all parties involved in the packaging process and describe Tenneco's packaging requirements concerning quality, safety, handling and labeling.

These general requirements may be modified by additional requirements of the receiving Tenneco facility, to be published individually, or by specific Tenneco inter-company policies.
Available additional requirements:
Germany: Plant Edenkoben (please look at chapter B.5.0 Logistics)

Any deviations or alterations from this manual must be approved by Tenneco Corporate Logistics separately (Contact details see: 1.5 Tenneco Central Contact)

1.2 Supplier Responsibility

- It is the suppliers' responsibility to ensure that the goods are packed in such a way that they arrive in good condition. Supplier is responsible for product quality from the manufacturing source to the point of use (linefeed at the assembly line).
- Suppliers must quote all business in compliance with these guidelines, and include a breakdown of packaging cost elements identified by Tenneco.
- To ensure worker safety and loss prevention, packaging design shall consider all human interaction. For parts considered for a small container manageable by one person, 15 kg (35lbs) is the recommended limit. For parts packed in larger containers that require material handling equipment, drop doors may be required. Drop door height shall be approximately 50% wall height.
- Packaging design must protect the product, be ergonomic for users, and meet lowest total cost requirements particularly with regard to efficient

transport utilization and lean management demands (e.g. Line side feeding, batch sizes).

- The supplier is responsible for ensuring that correct labeling is provided for all packaging in line with this manual and the herein mentioned automotive standards.
- The supplier is obliged to complete all the packaging shipping documents in accordance with this manual and the automotive standards referenced herein.
- As part of the Tenneco process of continuous improvement, alterations to the approved packaging may be requested by Tenneco. Suppliers shall respond quickly to such requests and manage packaging changes immediately.
- The supplier shall ensure that full contact details of one “Packaging Contact” are provided in all correspondence with Tenneco, including contact name, supplier Code, e-mail address, telephone and fax numbers.
- Though returnable packaging is preferred, some instances may require one-way packaging. In these cases, all expendable packaging must be readily recyclable or economically and legally disposed of in accordance with local legislation. Tenneco also encourages the use of recycled content in its packaging materials.

Supplier responsibility especially in the case of Tenneco provided returnable packaging:

- The supplier will be informed from Tenneco about the standard pool size they are allowed to have (see: 6.1.1.Pool Size Calculation).
- The supplier is responsible for bookkeeping records of the packaging in and outbound movements. The supplier should provide the bookkeeping information to all Tenneco plants it is shipping to, on a monthly basis. In case of discrepancy the supplier will be informed of wrong movements from Tenneco with packaging delivery notes as an evidence (see: 6.1.2. Operational Management).
- The supplier shall count the physical inventory on Tenneco Corporate request and report the results afterwards. In case of lost or damaged packaging in the supplier stock, Tenneco will charge the supplier for the packaging replacement cost (See: 1.4 Supplier Performance / 6.1.2 Operational Management).
- Each supplier shall develop a contingency plan as alternative packaging solution. This alternative packaging will be documented in the same way as standard packaging in a packaging instruction. (See: 3 Standard Packaging Instruction)

1.3 Contractual and Pricing

1.3.1 RFQ Phase

While quoting for new or existing business the supplier shall comply with the requirements of the Tenneco Quote Sheet that are provided to the supplier during the RFQ Process. To quote, the supplier shall choose one of the specified standard packaging sizes. The supplier acknowledges that a quote will be at a disadvantage if the requirements of the Tenneco Quote Sheet are not followed. In such a case Tenneco will add packaging related costs (e.g. Repacking) to the quote to make all quotes comparable.

The returnable packaging costs in each quote shall be amortized in two years.

The supplier's quote in each case shall **include Packaging.** This means that the supplier shall provide prices for the standard packaging. Furthermore the supplier shall present the quantity of parts per box and the quantity of boxes per pallet/container, taking into account the given weight restrictions and environmental, health and safety requirements.

1.3.2 Launch Phase

The Launch Phase is the process of initial packaging development and agreement. (See: 2 Packaging development and reengineering process).

This Packaging Manual is part of the operational agreement between Tenneco and the supplier. The supplier is in charge of the packing itself. Packing means to pack the components into the packaging material (container/box, bag, layer and so on) and to prepare the packaging units for transport. The way of packing is fixed in the packaging instruction. (See: 3 Standard Packaging Instructions)

In case of supplier-provided packaging the packaging costs shall be identified and integrated as part of the piece price. The amortization of returnable packaging investment should be calculated based on two year's volume.

Generally this means that the investment of the returnable packaging will be also paid off in two years. After two years Tenneco will no longer pay the cost share of the packaging investment in the piece price. If the project lifetime is shorter than these two years the supplier shall adjust the pay off time to the lifetime of the concerned parts.

The final determination as to whether packaging will be purchased or rented by Tenneco or whether the packaging will be amortized as a part of the piece price will be made by Tenneco Corporate Logistics.

Costs for alternative packaging (in general purchasing costs) shall be agreed with receiving Tenneco plants and documented in the Inbound Material and Logistics Protocol.

The supplier shall ensure that all pricing of packaging is agreed with the responsible Tenneco buyer.

1.4 Supplier Performance

Supplier's compliance with the packaging manual and the packaging instructions will be taken into account in Tenneco's assessment of the supplier's performance. Also critical is whether the deliveries are delivered in the agreed and proper packaging, with the agreed filling degree and with the prescribed and accurate goods-accompanying information.

The measurement and monitoring of supplier's performance will be managed via the internet tool. The guidelines in this manual should be reviewed as stringent directives for that purpose.

1.5 Tenneco central contact

In addition to the responsible Tenneco Buyer your central contact for issues related to this Manual and Packaging Development and Reengineering will be:

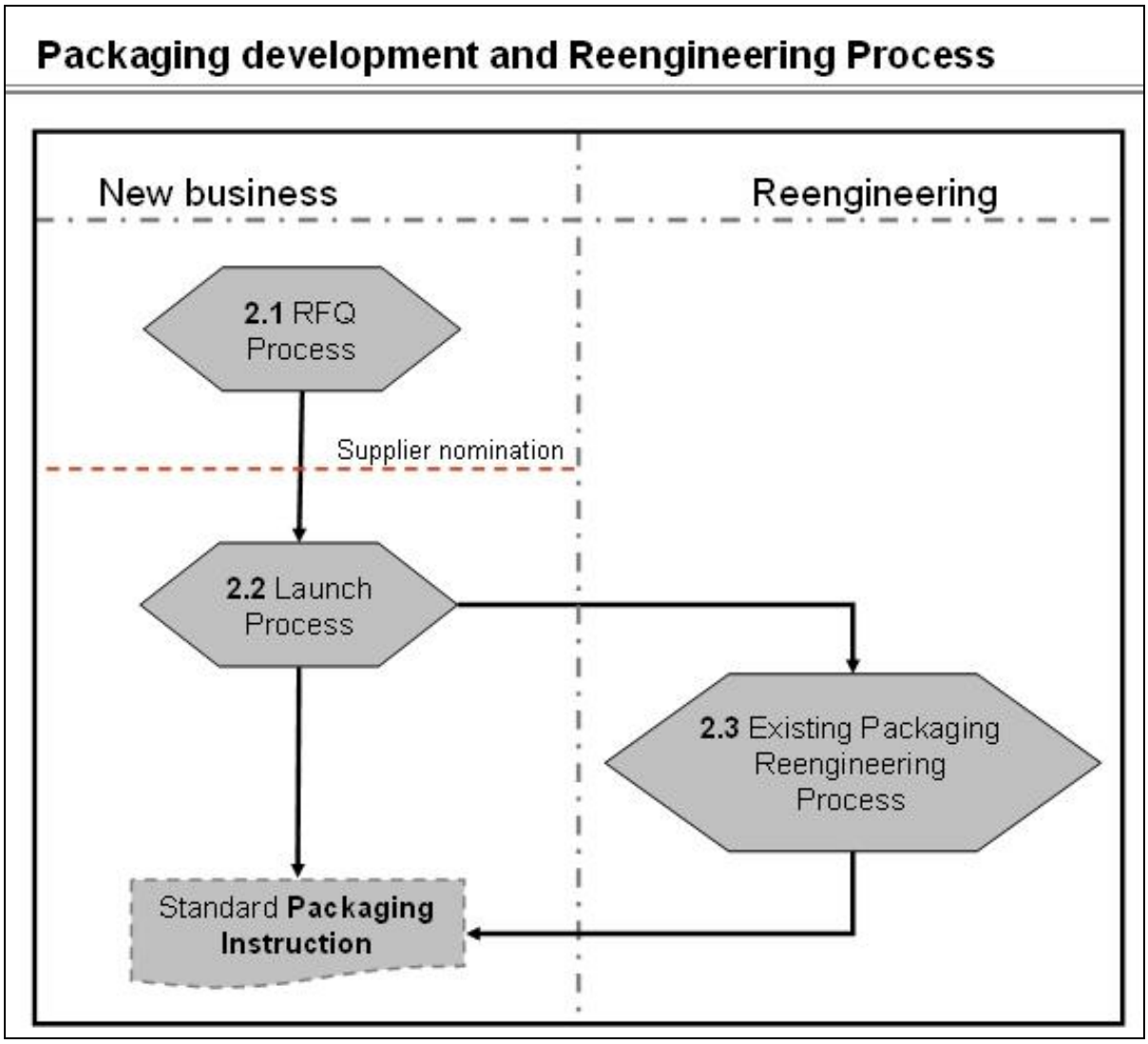
Email: **packaging@tenneco.com**

2 Packaging development and reengineering process

The process described in this section provides a detailed statement of requirements on how the Packaging development and reengineering for new and existing business will be executed. This process is split in RFQ Process (prior to

supplier nomination), the Launch Process (initial Packaging development) and the Packaging Reengineering Process (applicable for existing packaging).

The target of this process is to assure uniform standards and common processes for the planning and reengineering of packaging at optimal cost. Unique Packaging Instructions (see: 3.2 Content of standard Packaging Instructions) that are stipulated between Tenneco and the supplier are the basic means to guarantee this.



2.1 RFQ Process

When Tenneco publishes a Request for Quotation the Tenneco Quote Sheet is made available to the supplier. All fields contained in this template are mandatory with respect to packaging.

For the purpose of the quotation the supplier shall choose one of the therein mentioned standard packaging sizes to calculate and offer its quote. This should happen in particular with regard to efficient transport utilization and lean management strategies (e.g. Line side feeding, batch size). The supplier acknowledges that a quote will be at a disadvantage if he does not stick to the requirements of the Tenneco Quote Sheet and the referenced standard packaging sizes are not followed. In such a case Tenneco will add packaging related costs (e.g. Repacking) to the quote to make all quotes comparable.

2.2 Launch Process

After supplier nomination, the responsible Tenneco buyer will issue a Tenneco internal **S**upply **C**hain **I**mpact **R**equest **P**rocess (SCIRP) to ensure Tenneco has the most balanced and cost efficient supply chain. By doing so, the buyer provides all project related data to Tenneco Corporate Logistics (e.g. name and contact of supplier, concerned part numbers with dimensions and weights, annual volume, etc.). With the help of this information, Tenneco Corporate Logistics validates the project through a business case analysis. Tenneco Corporate logistics coordinates between the involved parties (Tenneco plant, Tenneco buyer and supplier).

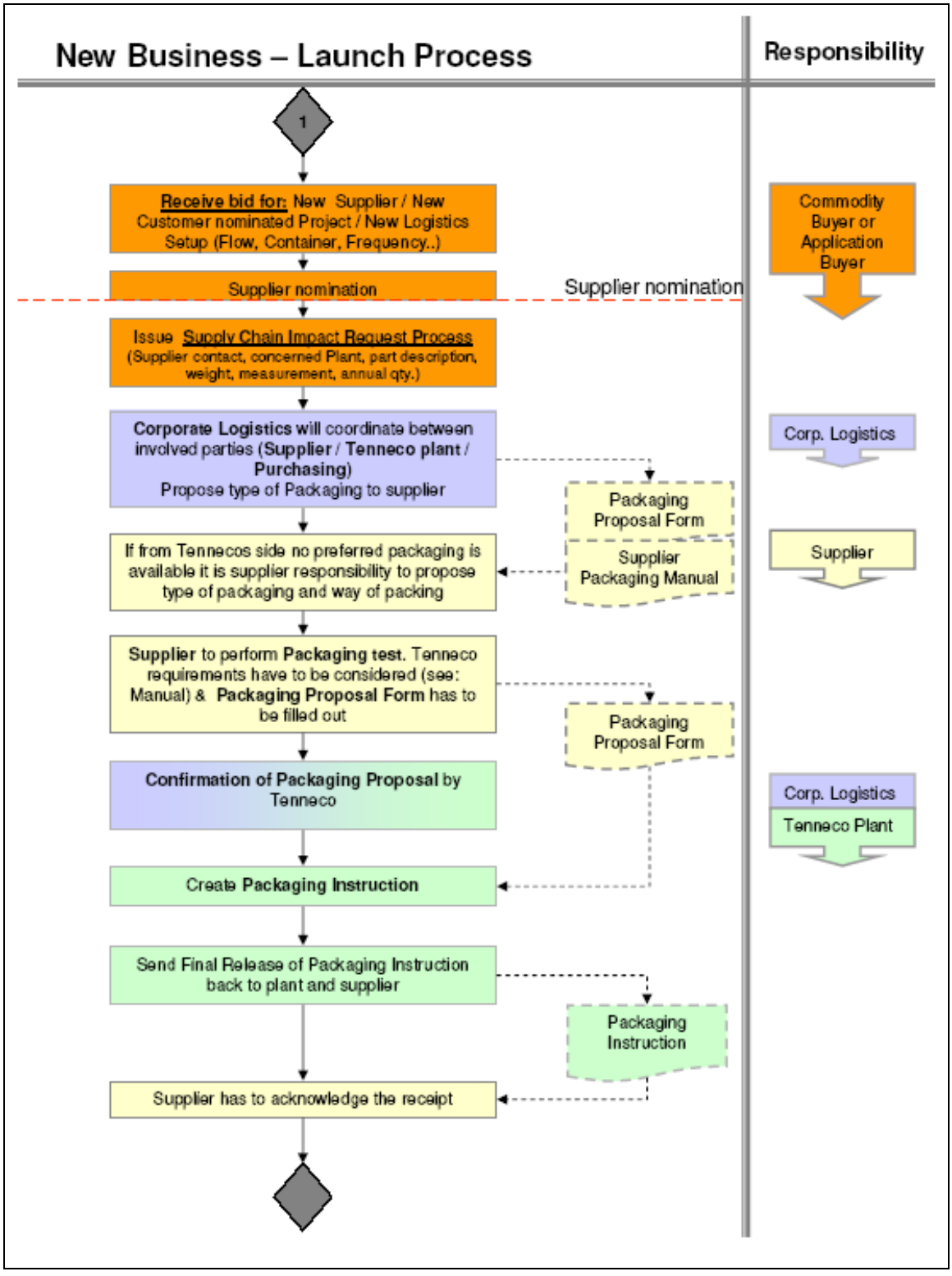
If a Tenneco preferred Packaging is available, it will be communicated to the supplier by means of the **Packaging Proposal Form (Attachment 1)**. If no Tenneco preferred Packaging is offered in this Form, the supplier may choose a packaging type out of the Tenneco Packaging Catalogue.

Subsequently, it is suppliers´ responsibility to perform a packing test, fill out the Packaging Proposal Form and send this to Tenneco Corporate Logistics. The final decision which packaging to be used (standard and alternative) and the manner of packing is Tenneco’s.

When all needed info is finally fixed, Tenneco creates a Packaging Instruction in a central database. This Packaging Instruction will be sent to the supplier and the process is completed when the supplier acknowledges the receipt and the acceptance of the Packaging Instruction.

Alternative Packaging will be determined in the same way and will also be fixed in a Packaging Instruction. The alternative Packaging should be of a like kind and similar in size to the standard packaging

The Packaging Launch Process will be kicked off during the Production Part Approval Process (PPAP).



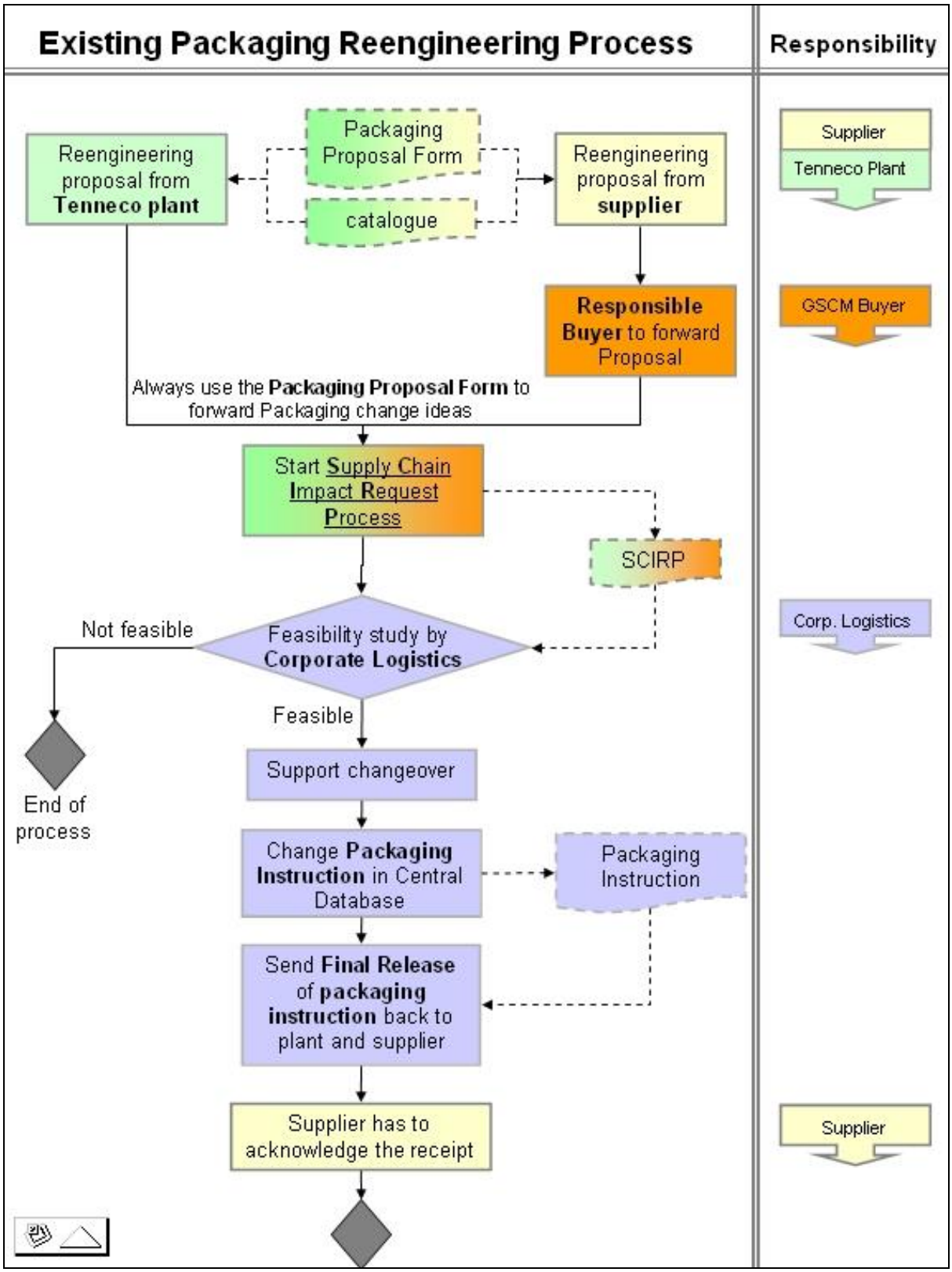
2.3 Existing Packaging Reengineering Process

Packaging change ideas or reengineering proposals may be initiated by the supplier, by Tenneco Plant or by Tenneco Corporate Logistics.

The supplier shall make proposals or disclose them where reasonable. In this case, the supplier shall address each proposal for existing packaging reengineering to the responsible GSCM buyer. The buyer will then forward the proposal via SCIRP to Tenneco Corporate Logistics. If a Tenneco plant proposes a packaging change a SCIRP has to be issued.

All reengineering proposals shall be completed using the Packaging Proposal Form. The actual packaging shall be entered in the first column of the Form. The new proposal shall be entered in the second column. The proposed packaging must comply with the provisions of this packaging manual.

The Packaging Instruction shall be amended according to the physical changes. The adjusted Packaging Instruction will be sent out to the supplier and the process is completed when the supplier acknowledges the receipt and the acceptance of the Packaging Instruction.


Existing Packaging Reengineering Process
Responsibility
Packaging Proposal Form
catalogue
Reengineering proposal from Tenneco plant
Reengineering proposal from supplier
Supplier
Tenneco Plant
Responsible Buyer to forward Proposal
GSCM Buyer
Always use the Packaging Proposal Form to forward Packaging change ideas
Start Supply Chain Impact Request Process
SCIRP
Not feasible
Feasibility study by Corporate Logistics
Corp. Logistics
Feasible
End of process
Support changeover
Change Packaging Instruction in Central Database
Packaging Instruction
Send Final Release of packaging instruction back to plant and supplier
Supplier has to acknowledge the receipt
Supplier

3 Standard Packaging Instructions

3.1 Process description

Once the packaging type and the manner of packing are agreed the supplier shall enter all relevant information into the Packaging Proposal Form. Tenneco will generate a Packaging Instruction (See: 3.3 Content of standard Packaging Instructions). Subsequently, Tenneco will send the completed Packaging Instruction to the plant and the affected supplier. The supplier shall acknowledge the receipt of the Packaging Instruction. The Packaging Instruction, in line with this Packaging Manual, will be effective starting with the release date. Alternative Packaging shall be determined in the same way and will also be fixed in a Packaging Instruction.

For changes of existing Packaging Instructions see: **2.3 Existing Packaging Reengineering Process.**

3.2 Content of standard Packaging Instructions

The Tenneco standardised Packaging Instructions contain the following information:

- Tenneco part number
- Customer part number
- Supplier part number
- Supplier name and number
- Receiving Tenneco plant
- Part description
- Picture of the Packaging Unit and/or Handling Unit
- Allocation of the Packaging (Tenneco, Customer, Supplier)
- Way of packing (bulk goods, Parts sorted, single component packed, special packing)
- Type of Packaging (One-way, returnable, combined packaging)
- Type of instruction (Standard, Alternative Packaging 1, Alternative Packaging 2)
- Weights (per component, per Packaging Unit, per empty Packaging Unit, per Handling Unit)
- Bill of Material of Handling Unit
- Labelling
- Closing
- Remarks
- Date of writing, Name of originator
- Revision date

Responsible:

Packaging Instructions

TENNECO

Tenneco part no.	**Supplier**
Customer part no.	**Receiving plant**
Supplier part no.	**Part description**

R-KLT 6415

600 x 400 x 147 mm

Packaging Instructions

valid from:

Allocation of the packaging

- [X] Supplier
- [ ] Tenneco
- [ ] Customer

Way of the packaging

- [ ] Bulk goods
- [X] Parts sorted
- [ ] Single components packed
- [ ] Special packing

Type of packaging

- [X] Returnable packaging
- [ ] One-Way packaging
- [ ] Combined packaging

Type of packaging instructions

- [X] *Standard*

Weights	Component	Packaging unit	Empty packaging unit	Handling unit
in kg			2,10	

Bill of material of Handling Unit

Pos.	no. of packaging units	Name of the packaging	L (mm)	W (mm)	H (mm)	Tenneco packaging code / Chep Code	Capacity per packaging unit
1.	1	Chep KLT 6415	600	400	147	5002731 / 865	
2.	1	Chep Blue Wooden Pallete	1200	800	140	5003258 / 62	
3.	1	Chep Plastic Cover	1200	800	100	5003259 / 63	
4.							
5.							

Labeling	see: Tenneco Supplier Packaging Manual
Closing	see: Tenneco Supplier Packaging Manual
Remarks	**Cross Weight per KLT should not exceed 15 KG**

Account clearing empty: Chep Portfolio Help: customerservice.ac@chep.com

Print date		Revision date	
Name of originator	Armin Hans	Name	

4 European standard packaging types and handling requirements

Tenneco standard packaging types are defined in the **Packaging Catalogue (attachment 3)**. The catalogue is split into returnable packaging standards and one-way packaging standards. The specified containers will be assigned for circulation between the supplier and Tenneco.

The containers may not be diverted from their intended use without prior written authorization from Tenneco e.g. for:

- the supplier plant internal circulation within manufacturing, if it exceeds the agreed turnover time (See: 6.1.1 Pool Size calculation),
- the temporary storage of semi-finished goods,
- an overrun of the agreed usual storage days of empty packaging material,
- the delivery of or to third parties.

The choice of packaging must take into consideration all demands of this packaging manual, the packaging instruction and supplemental local Tenneco requirements. Tenneco reserves the right to make the final decision concerning the type of packaging on the basis of internal cost calculation.

4.1 General Definitions

4.1.1 Returnable Packaging

Wherever possible and reasonable from an economic point of view, returnable packaging is preferred. Returnable packaging must be capable of being used for multiple return trips. Its design requires:

- Ability to be stacked,
- preferably being collapsible into smaller volume for easy storage when not in use,
- durability and washability, lightweight and strong,
- Ability to be easily filled, emptied, assembled and disassembled,
- ability to be attached to pallets for easy lifting and handling

Returnable packaging reduces the production of waste materials and protects the environment. A Tenneco nominated third party provider can be used for returnable packaging management. (See: 6.3 Third party provided packaging)

4.1.2 One-Way Packaging

When application of returnable packaging is not possible or reasonable one –way packaging shall be selected. It is foreseen that this kind of packaging will be used for only one delivery.

Therefore, it is required that one-way packaging is:

- environmentally friendly disposable,
- preferably stackable,
- easy and safe access to the parts has to be ensured,
- able to provide protection against corrosion and all types of damages.

4.1.3 Packaging Unit

A Packaging unit is the smallest possible order quantity. It consists of either returnable packaging (e.g. KLT, steel box…) or one-way packaging.

4.1.4 Handling Unit

A handling unit consist of several packaging units bundled on one pallet (e.g. x KLT + Lid + Pallet). The way of packing a handling unit shall be specified in the packaging instruction. In case of bulk goods, a single container can also act as a handling unit. Tenneco distinguishes between two types of handling units.

4.1.4.1 Pallet

A normal pallet contains only one part number of production material.

4.1.4.2 Mixed Unit

A mixed Unit contains several Tenneco part numbers of production material on one pallet. (See also chapter: 5.4 Mixed Unit labeling)

4.2 Dimension and Weight

In general, Tenneco requires EUR pallet basic size (1200 mm x 800 mm) as standard basic size for complete Handling Units that are shipped on continental transport modes. For intercontinental transports (e.g. Sea freight) special basic sizes need to be chosen that ensure best transport utilization.

15 kg is the recommended limit for parts considered for a small container manageable by one person. For parts packed in larger containers that require material handling equipment, drop doors may be required. Drop door height shall be approximately 50% of the total wall height.

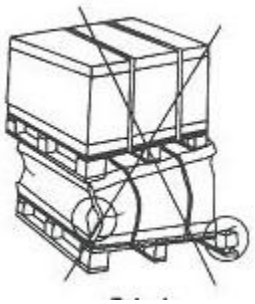
The complete load height per handling unit may not exceed 1 m unless otherwise agreed with the receiving Tenneco facility.

Steel Coils shall be secured during transport in such manner that no damage is done to the product. Tubes shall be packed in bundles and secured by min 3 straps. During transport span sets shall secure the load, the number of span sets required are to be specified by the receiving plant.

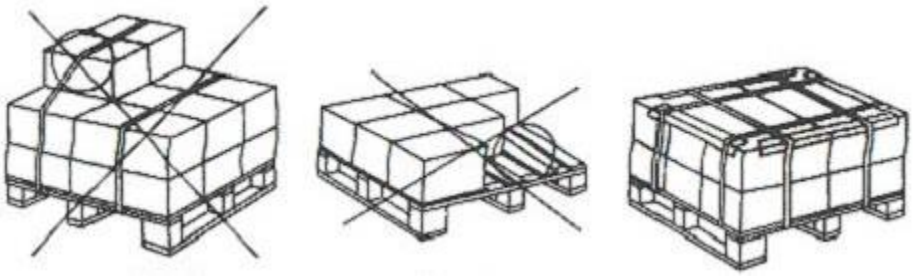
All maximal weight and dimension requirements for returnable packaging can be found in the Packaging Catalogue.

4.3 Stacking and Strapping Requirements

Supplier will guarantee the stability and stackability of the packaging and handling units. Incomplete layers shall be avoided. Edge protection and strapping shall be used if it is required by the security of the handling unit or fixed in the packaging instruction.



When using KLT, the total weight of 15 kg may not be exceeded. KLT shall be shipped only in complete layers. (If the order quantity is less then a layer each layer has to be filled with an empty KLT).



4.4 Packaging Shipping Documents

The packaging shipping documents provided by suppliers shall contain the type and quantity of packaging material and the Tenneco part numbers per container delivered to Tenneco. All packaging data and production material data shall be listed on the same delivery note. The Tenneco packaging number must be in the delivery notes. Separate delivery notes for packaging and for production material are prohibited. ASN (Advanced Shipping Notification) sent electronically , via EDI or the Tenneco SNC Platform, should also include the packaging information unless advise differently by the Tenneco plant the supplier ships to.

Some of the Tenneco plants (especially for inter-company shipments and aftermarket deliveries) use special packaging shipping documents (Packaging lists). If instructed to do so suppliers must follow these local requirements.

4.5 Import regulations for packaging containers made from solid wood - IPPC standard

Many countries have put quarantine regulations in place to protect their native forests from the introduction of wood pests. In order to prevent the proliferation of differing import regulations, the International Plant Protection Convention (IPPC) Secretariat, part of the Food and Agriculture Organization (FAO) of the United Nations, has issued ISPM 15 (International Standards for Phytosanitary Measures) "Guidelines for Regulating Wood Packaging Material in International Trade".

The key features of IPSM 15:

- IPSM 15 applies only to solid wood, with derived timber products and solid wood thinner than 6 mm (according to the EU Harmonized System) being exempt.

- Treatment of the packaging by approved measures, which include heat treatment (HT) to a core temperature of 56°C for at least 30 minutes, for example by kiln drying (KD), provided that the above-stated specifications are achieved. Chemical pressure impregnation (CPI) is approved only if the required HT specifications are achieved, which is not generally the case. Another measure is fumigation with methyl bromide (MB) depending on concentration, duration and temperature.

- Permanent and legible marking of the packaging must be provided on two opposite sides of the package. The mark is composed of the ISO 3166 two letter country code (e.g. DE for Germany), the regional identifier (e.g. NW for North Rhine-Westphalia) and a registration number issued by the regional phytosanitary authority to the packaging container manufacturer, the packer or the consignor (unique number beginning with 49). The treatment method is denoted by the abbreviation HT for heat treatment or MB for fumigation with methyl bromide. The letters DB may also be included where debarking is required.

Example of **IPPC**

- IPPC symbol
- Country code to ISO 3166, e.g. DE for Germany
- Regional identifier, e.g. NW for North Rhine-Westphalia
- Registration number, unique number beginning with 49.
- Treatment method, e.g. HT (heat treatment), MB (methyl bromide), if applicable, DB (debarked)

In order to meet the requirements of the IPPC, the importing supplier must comply with the latest revision of the **ISPM 15**. Every packaging design for Tenneco shall be made in accordance with this directive.

4.6 Recycling and environmental requirements

Packaging shall be planned taking into account basic economic and ecological concerns. Environmental legislation concerning waste focuses on the following principles, which reflect ecological priorities:

- **Avoidance** to be limited to the absolute minimum.
- **Reduction** of diversity. The supplier should use as few as possible different types of one-way packaging material in order to reduce the recycle handling.
- **Recycling** - Environmental recycling must be possible for both returnable and one-way packaging.

The European Union is seeking to harmonize national measures concerning the management of packaging and packaging waste to provide a high level of environmental protection and ensure the functioning of the internal market.

In order to meet the requirements of environmental protection, the supplier must comply with the latest revision of **European Communities Directive 94/62/EC**[1]. Every packaging design for Tenneco shall be made in accordance with this directive. To avoid unnecessary environmental pollution, only environmentally compatible materials are permitted.

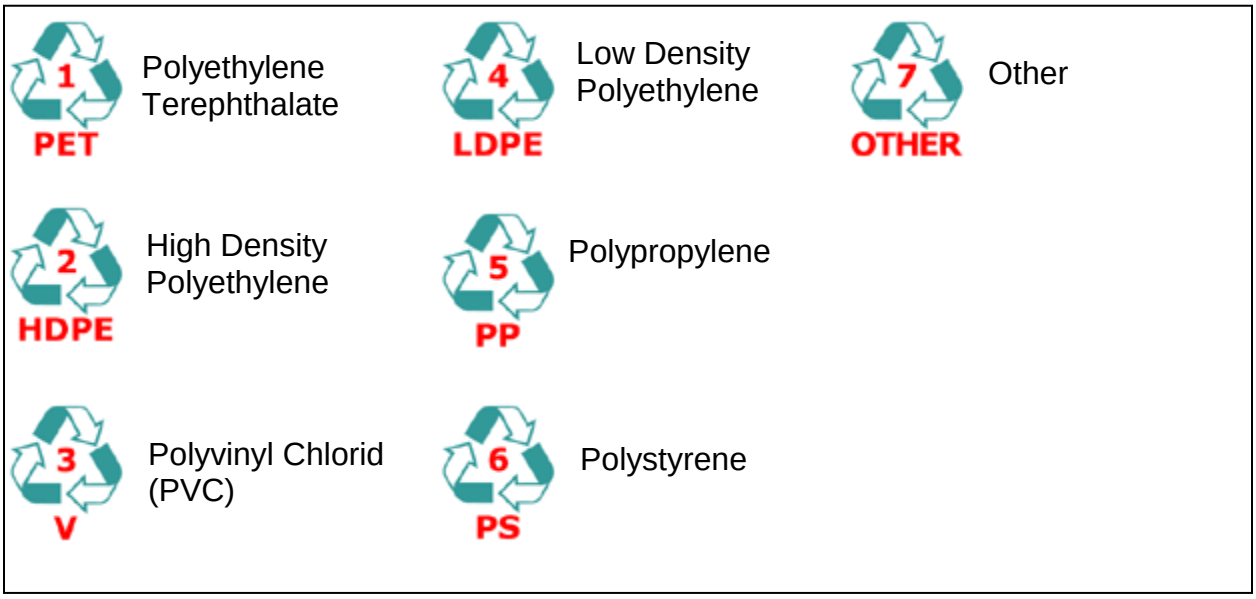
Environmental responsibility especially in the case of plastic packaging:

To facilitate the recycling of a product, its identification must be known. Therefore, all plastics (expendable & one-way) shall be marked with the material identification symbol. There are numerous types of plastics used for automotive packaging, which require a simple method of identification. Tenneco requires the SPI (Society of Plastics Industry) coding. The SPI code chart is shown below.

Existing Packaging without coding does not need to be coded afterwards. This rule is applicable for new packaging development only.

[1] http://europa.eu/scadplus/leg/en/lvb/l21207.htm

Plastics Identification codes devised by the Society of Plastics Industry (SPI):



5 Labelling Requirements

5.1 Label

The label serves for the identification of packaging units in the plant-internal material flow and on the route of transport between supplier - forwarding agent - goods receiver. Therefore, the supplier shall ensure that all packaging units are marked with a barcode label. In particular the supplier will guarantee that the information on the label matches with the content of the packaging unit.

To avoid misunderstandings, labels that are out of date shall be removed from the packaging units by the supplier before the delivery to Tenneco.

Tenneco Label requirements based on the ODETTE Transport Label guideline or VDA guideline 4902 can be found in Attachment 4.

Tenneco requires the following labels to be attached:

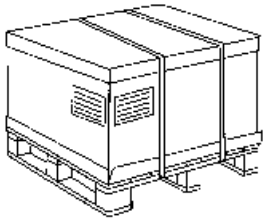
- ***Handling Unit Master Label:***
  Applied to each transportation pallet / handling unit.

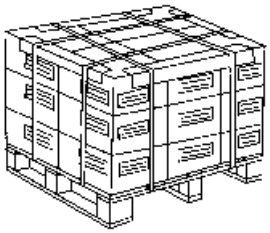
- ***Packaging Unit Label:***
  Applied to each Small-Part-Container (e.g. VDA KLT), to each small cardboard box or to each Packaging Unit. The Packaging Unit Label serves to identify the parts in the manufacturing process and/or in storage.

Tenneco recommends using paper of at least 130 – 150 g for the labeling of each handling unit, this is to avoid labels dropping off or disintegrating through humidity.

5.2 Position and Fixing of the Label

If the box is equipped with a Label holder the label shall fit into this pouch. If no label holder is available the label may be fastened with four adhesive dots at each corner in such a way that the dots do not cover up the bar code or any information on the label. The used adhesive dots shall be easily removed and shall leave no residues. Self-adhesive labels shall not be used for returnable packaging.





With standard containers (EUR size 1200 mm X 800 mm) the label is to be fastened to the sharp side on the top right.

5.3 Mixed Unit labeling

A mixed unit contains several part numbers within one pallet for a Tenneco location. The supplier shall ensure that packaging units contain preferably the same material number on one pallet. Rest batches can be packed on a mixed unit. Each box of such a mixed unit shall be marked with a separate ODETTE or VDA label. Additionally every mixed pallet shall be marked with a label "mixed pallet". This sheet shall have the size of at least 295 X 210 mm (DIN A4 sheet). The writing shall be in block letters.

For more information the suppliers can also contact their Tenneco plant contact.

6 Management of returnable packaging

The returnable packaging can be provided by four different parties:

- Tenneco provided (see: 6.1, 6.2)
- Supplier provided (see: 6.3)
- Third party provided (see: 6.4):
  - Rental pool
  - Sell and buy system
- Customer provided

6.1 Tenneco provided packaging

6.1.1 Pool Size calculation

6.1.1.1 Process

The calculation of the pool size represents a fundamental element to manage returnable packaging flows. Therefore, Tenneco will book all packaging movements into separate accounts for each supplier. For that reason, the starting balance per packaging type must be calculated consistently. The below mentioned formula is the Tenneco standard for calculating packaging pool sizes.

In line with the operational management process (see 6.1.2 Operational Management), the pool size calculation will enable the management of the pool of Tenneco owned packaging. The process of ordering, returnable pool size calculation and days-of-holding allowance shall be agreed and clearly documented on the inbound logistics and material protocol. If the pool size is not agreed between the supplier and Tenneco plant, Tenneco is allowed to set a size limit based on the experience made with this packaging flow.

6.1.1.2 Formula and Parameters

$$P = \frac{\frac{AyP}{wd} * t}{q}$$

P **Pool size** – Number of Packaging Units needed to ensure sufficient box supply throughout the whole supply chain. It is the base quantity of the administration of the returnable packaging.

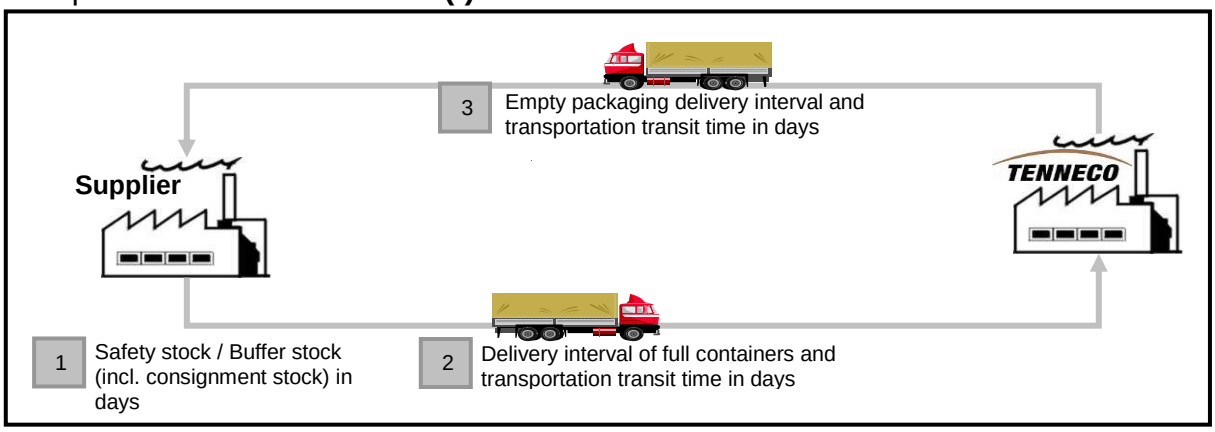
AyP Average yearly production – Has to be calculated for project lifetime and adjusted if the annual production underlies strong volatility.

wd Working days – In general, Tenneco calculates 240 working days per year. This may be adjusted if there are differences between different countries.

q Parts per container – Defined in the packaging instruction

t Turnover time - Number of days one container needs to circulate one loop between supplier and Tenneco. The turnover time consists of four elements shown in the graphic below and is calculated in working days.

Components of **turnover time (t)**



Example of a **pool size calculation** for containers and trays

Turnover time (t):	1	Safety stock/Buffer stock	10	days
	2	Delivery interval of full containers and transportation transit time	7	days
	3	Empty packaging delivery interval transportation transit time	5	days
		SUM	22	days
		AvP = Avg. Annual Prod. Volume =	87500	Pcs
		wd= Working Days per Year =	240	Days
		q = Capacity per Container =	70	Pcs/Container
Pool size (P):				
n Container = Required Quantity of Packaging in Pieces = (Ayp / wd) + t / q				
= 115				

6.1.2 Operational management

The process in this Section describes the operational process between Tenneco plants (being customers) and their external suppliers. The process is a pool based system, consisting of:

- Order process of Tenneco provided Packaging,
- Claim Management Process when production parts are delivered in packaging which does not correspond to this Packaging Manual or the relevant Packaging Instruction,
- Monthly Reconciliation of packaging accounts,
- On-request reconciliation of the packaging inventory balance (stock take).

All operational issues shall be addressed directly to the respective Packaging Contact in the Tenneco plant.
The supplier is responsible to optimize the stock of Tenneco packaging in his plant to the lowest possible level.

6.1.2.1 Ordering Process

Process currently valid for **Standard Pool Boxes (EUR Gitterbox)** orders only.

- The supplier orders in the last week of the month for the following month (requirement for the full month) at Tenneco Corporate Team in weekly bulks. The order will be compared with the forecast and in case of any discrepancy- supplier will be contacted for explanation.
- Supplier is allowed to keep the monthly stock only.
- Tenneco decides which quality level of boxes will be delivered, for example, new or used boxes.
- Referring to the upfront agreed Pool Size (see 6.1.1 Pool Size Calculation) Tenneco provides the agreed amount of containers free of charge (Safety stock / Buffer stock (incl. consignment stock)), if not otherwise agreed in the contract. If the supplier exceeds this amount, a rental & administration fee will be issued for the additional needs. If the supplier is not able to send the boxes back, a new one at market price will be charged.

6.1.2.2 Release Process

Process currently valid for **Standard Pool Boxes (EUR Gitterbox)** releases only.

- The supplier releases at the Tenneco Customer Plant.
- Minimum release quantity for Gitterbox is 16 (if not otherwise agreed)

6.1.2.3 Packaging goods receipt claim management

At incoming goods inspection, Tenneco checks whether the shipment is in compliance with this packaging manual and the specified packaging instruction. Tenneco reserves the right to charge to the supplier all costs and losses arising from supplier's failure to comply with the procedures stated in this handbook, including, but not limited to repacking, waste disposal, repairing and administration cost. The supplier's performance rating may also be affected.
A claim management is implemented for all European plants. Find a table with logistic nonconformity reasons and their cost in **Attachment 5**.

6.1.2.4 Packaging movements & monthly reconciliation

The Tenneco receiving plant books every packaging movement in a supplier nominated packaging account. This inventory balance shall be reconciled between the supplier and the Tenneco locations by the end of every month for the shipment made the previous month. In order to do so, the supplier should send, to each Tenneco facility they ship to, a monthly account statement including a list of all delivery note numbers shipped to the facility with their date and packaging quantities.
This report should be sent before the 10th of the month and follow the Excel format provide in Attachment 2. After two weeks any disputes from a supplier site will no longer be accepted. The supplier shall send the copy of each packaging delivery note as evidence for wrong movements.

6.1.2.5 Packaging inventory count

In addition to the monthly account reconciliation, Tenneco requires an on-demand check of physical inventory. Suppliers will be required to perform a packaging stock take on a specific weekend date and to report to Tenneco in a written form their count by noon the next following working day.
Any deviations between the supplier's balance and the Tenneco accounts will be notified to both the suppliers and the Tenneco facilities they deliver to. The supplier must provide the necessary information for his accounts to be quickly reconciled so an agreement on the stock figures can be made in the following 4 weeks after the stock take. If the information are not received, or not received on a timely manner to allow the reconciliation to be made, the supplier will be charged for an administration fee in addition to the potential loss of boxes.

6.1.2.6 Packaging cleaning, maintenance and repairing

It is shipper's responsibility to deliver goods in intact and clean containers. The supplier has to check the quality of the boxes at delivery if there is nothing to complain. The supplier is in charge of repairing and maintenance for boxes where the damage is being caused by the supplier.

Supplier must check the quality of the empty boxes delivered immediately. If there is no complain, the supplier confirms that the boxes were not damaged at the inbound in the supplier's plant.
POD must be signed and stamped with the information on the number of good accepted boxes, and the number of rejected boxes if any.

In the event that the cleaning of returnable packaging takes more than one day, the excess time will be added to the turnover time calculation.

6.2 Loop Size calculation

6.2.1 Process

The calculation of the loop size **(for project specific packaging/ not pooled packaging)** represents a fundamental element to manage returnable packaging flows. Therefore, Tenneco will book all packaging movements into separate accounts for each supplier. For that reason, the starting balance per packaging type must be calculated consistently. The below mentioned formula is the Tenneco standard for calculating packaging loop sizes.

In line with the operational management process (see 6.1.2 Operational Management), the loop size calculation will enable the management of the pool of Tenneco owned packaging. The process of ordering, returnable loop size calculation and days-of-holding allowance shall be agreed and clearly documented on the inbound logistics and material protocol.

6.2.2 Formula and Parameters

$$L = \frac{\frac{AyP}{wd} * t}{q}$$

L **Loop size** – Number of Packaging Units needed to ensure sufficient box supply throughout the whole supply chain. It is the base quantity of the administration of the returnable packaging.

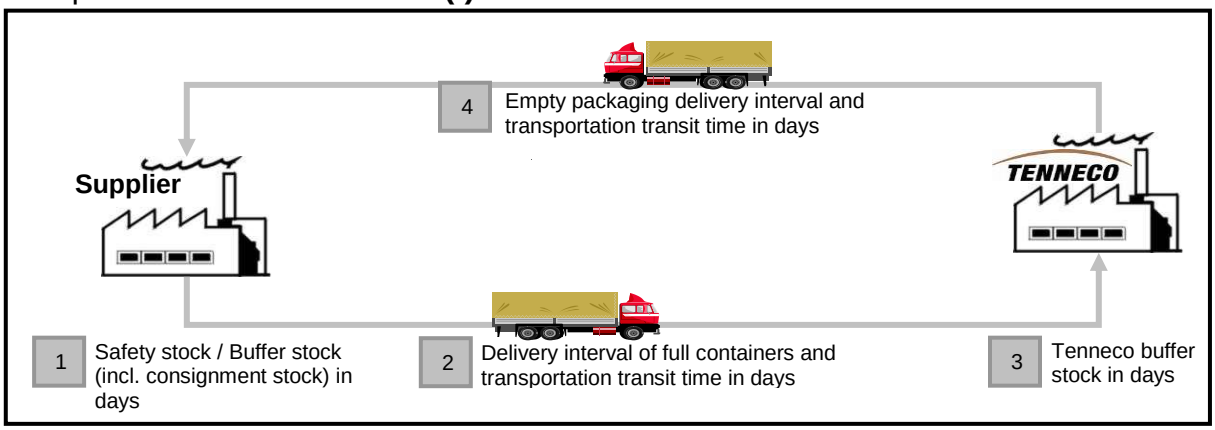
AyP Average yearly production – Has to be calculated for project lifetime and adjusted if the annual production underlies strong volatility.

wd Working days – In general, Tenneco calculates 240 working days per year. This may be adjusted if there are differences between different countries.

q Parts per container – Defined in the packaging instruction

t Turnover time - Number of days one container needs to circulate one loop between supplier and Tenneco. The turnover time consists of four elements shown in the graphic below and is calculated in working days.

Components of **turnover time (t)**



Example of a **loop size calculation** for containers and trays

Turnover time (t):	1	Safety stock/Buffer stock	10	days
	2	Delivery interval of full containers and transportation transit time	7	days
	3	Tenneco buffer stock	5	days
	4	Empty packaging delivery interval transportation transit time	5	days
		SUM	27	days
		AvP = Avg. Annual Prod. Volume =	87500	Pcs
		wd= Working Days per Year =	240	Days
		q = Capacity per Container =	70	Pcs/Container
Pool size (P):				
n Container = Required Quantity of Packaging in Pieces = (Ayp / wd) + t / q				
= 141				

6.3 Supplier provided packaging

Supplier-provided packaging is not preferred, but may be allowed in specific circumstances. The release for such packaging is up to Tenneco.

6.4 Third party provided packaging

Tenneco manages the returnable packaging through bookkeeping and inventory balancing. Depending on the project, Tenneco reserves the right to nominate a third party or pool operator to manage the returnable packaging. This third party will be nominated separately. Contact details and process description of this third party will be announced to the involved parties through Tenneco Corporate Logistics as and when required.

6.5 PAKI

PAKI is the Tenneco nominated pooling partner for Gitterboxes. Gitterboxes are provided to Tenneco's suppliers if the supplier strictly follows the Tenneco processes as defined in this manual**.**

6.5.1 CHEP

CHEP is the Tenneco nominated pooling partner for KLT . KLT equipment being part of the contract can be found in the attached documentation – all others will not be accepted.
Each Tenneco's suppliers will be contacted by CHEP in order to sign a contract for those KLT equipment (Tenneco provide them 5 days for Free) and are required to follow the CHEP's terms and conditions as well as processes for ordering, booking and reconciling accounts

CHEP Products FOR TENNECO.pptx

Attachments

Attachment 1: *Packaging Proposal Form*

Packaging Proposal Form

TENNECO Corporate Logistics

Supplier:	Commodity	Targeted Tenneco SBU
SUPPLIER RESPONSIBLE PERSON:		Related project:
Contact :	Sub-commodity	
Phone n° :		
e-mail :		

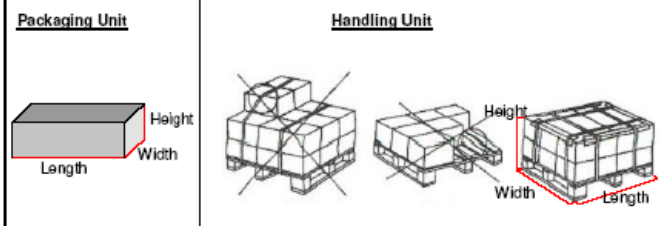
Date of proposal:	Latest Update:		Date Approved		
TEN Document n°	P04_40_7.1	Revision	1	Revision date:	01 April 2007

PACKAGING PROPOSAL CHECKLIST

	unit	Tenneco's proposal or existing Packaging	Please Complete Proposal Below	Tenneco Acceptance
1. Packaging/Part information				
☐ **1.1 Supplier**				
Part Description				
Tenneco Part Number				
Final Tenneco Plant Destination				
Annual Quantity				
☐ **1.2 Part Weight**				
Part Weight each	kg			
☐ **1.3 Packaging weight, material, integrity**				
Packaging group				
Type / Name				
Tenneco Packaging Code				
Packaging Unit weight (empty Box)	kg			
Packaging Unit material				
Internal Dunnage weight	kg			
Internal Dunnage material				
Internal Corrosion Protection	if required			
Weight (empty Pallet)	kg			
Pallet material				
Number of parts per Packaging Unit				
Number of Handling Units per Layer				
Number of Packaging Units per Handling Unit				
Complete Handling Unit weight	kg			
How are Packaging Units secured to pallet?				
Is packaging assumed to be returnable?				
2. Packaging Volumes				
☐ **2.1 Box**				
Length	mm			
Width	mm			
Height	mm			
Volume	m³	0		
☐ **2.2 Pallet**				
Length	mm			
Width	mm			
Height	mm			
Volume	m³	0		
☐ **2.3 Overall Handling Unit (see Fig.1)**				
Length	mm			
Width	mm			
Height	mm			
Volume	m³	0		
☐ **2.4 Labeling**				
see Requirements in: ***Supplier Packaging Manual***				
☐ **2.5 Supplier Shipping Location Information**				
Zip or Postal Code & City:				
Country:				

Figure 1: Packaging Unit & Handling Unit dimensions

2.6 Foto of Packaging Proposal:



for additional info concerning Handling & Packaging Requirements see: ***Supplier Packaging Manual*** at www.tasupplier.com

☐

Supplier Submittal Authorization:	
Date:	
Tenneco Approval:	
Date:	

Attachment 2: *Returnable Packaging Reconciliation Form*

Reconciliation file_ENG.xlsx

container type:				name of customer/supplier:			
Gitterbox							
Tenneco			**Year - 2016**	initial balance		**0**	Attention! Please fill in ONLY white areas
			sum [in-outbound]	5	15	-10	
NR	**data [Y-M-D]**	**Inbound/ outbound [in/ out]**	**delivery note**	**inbound**	**outbound**	**balance**	**remarks**
1	2016-02-02	**in**	4354356	4		4	
2	2016-02-03	**out**	4523464		6	-2	
3	2016-02-04	**in**	4523465	1		-1	
4	2016-02-05	**out**	4523466		9	-10	
5		**out**					
6		**out**					
7		**out**					
8		**out**					
9		**out**					
10		**out**					
11		**out**					
12		**out**					
13		**out**					
14		**out**					
15		**out**					

Attachment 3: *Returnable Packaging Catalogue Emission Control*

TENNECO

Packaging Catalogue

-Emission Control Europe-

CORPORATE LOGISTICS
Supply Chain Planning Costing

Revision Status 1
Release Date: dd.MM.YYYY

Type / Name		**KLT 4314**
SAP No. / Tenneco Packaging Code:		**5000456 / G03**
Overall dimensions (mm):	lenght:	400 mm
	widht:	300 mm
	height:	147 mm
Internal dimensions (mm):	lenght:	334 mm
	widht:	247 mm
	height:	90 mm
Tare weight (kg):		2,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	6
Owner:		TEN

Picture of ***Packaging Unit:***

Picture of ***handling unit*** *or* ***collapsed packaging unit:***

8 boxes per layer
6 layers

Type / Name		**KLT 4328**
Tenneco Packaging Code:		**5000457 / G04**
Overall dimensions (mm):	lenght:	400 mm
	widht:	300 mm
	height:	280 mm
Internal dimensions (mm):	lenght:	334 mm
	widht:	347 mm
	height:	233 mm
Tare weight (kg):		3,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		TEN

Picture of ***Packaging Unit:***

Picture of ***handling unit*** *or* ***collapsed packaging unit:***

8 boxes per layer
3 layers

Type / Name		**KLT 6414**
Tenneco Packaging Code:		**5000458 / G05**
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	147 mm
Internal dimensions (mm):	lenght:	532 mm
	widht:	346 mm
	height:	133 mm
Tare weight (kg):		4,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	6
Owner:		TEN

Picture of ***Packaging Unit:***

Picture of ***handling unit*** *or* ***collapsed packaging unit:***

4 boxes per layer
6 layers

Type / Name		**KLT 6147**
Tenneco Packaging Code:		**5000570 / A10**
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	147 mm
Internal dimensions (mm):	lenght:	532 mm
	widht:	346 mm
	height:	133 mm
Tare weight (kg):		2,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	6
Owner:		TEN

Picture of ***Packaging Unit:***

Picture of ***handling unit*** *or* ***collapsed packaging unit:***

4 boxes per layer
6 layers

Type / Name		**KLT 6428**
Tenneco Packaging Code:		5000459 / G06
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	280 mm
Internal dimensions (mm):	lenght:	532 mm
	widht:	346 mm
	height:	231 mm
Tare weight (kg):		4,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		TEN

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

4 boxes per layer
3 layers

Type / Name		**KLT 6421**
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	213 mm
Internal dimensions (mm):	lenght:	532 mm
	widht:	346 mm
	height:	185 mm
Tare weight (kg):		4,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	
Owner:		

Picture of Packaging Unit:

Runout - do not use for future-business

4 boxes per layer
4 Layers

Type / Name		**KLT 4321**
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	400 mm
	widht:	300 mm
	height:	213 mm
Internal dimensions (mm):	lenght:	335 mm
	widht:	245 mm
	height:	185 mm
Tare weight (kg):		2,07 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	
Owner:		

Picture of Packaging Unit:

Runout - do not use for future-business

8 boxes per layer
4 layers

Type / Name		**GALIA 6422**
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	214 mm
Internal dimensions (mm):	lenght:	560 mm
	widht:	362 mm
	height:	194 mm
Tare weight (kg):		2,38 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

only for french market

5 boxes per layer
3 Layers

Type / Name		GALIA 6432
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	600 mm
	widht:	400 mm
	height:	314 mm
Internal dimensions (mm):	lenght:	560 mm
	widht:	362 mm
	height:	294 mm
Tare weight (kg):		2,96 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	2
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

only for french market

5 boxes per layer
2 Layers

Type / Name		GALIA 4322
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	400 mm
	widht:	300 mm
	height:	214 mm
Internal dimensions (mm):	lenght:	362 mm
	widht:	263 mm
	height:	194 mm
Tare weight (kg):		1,44 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

only for french market

10 boxes per layer
3 layers

Type / Name		ES643105
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	590 mm
	widht:	390 mm
	height:	325 mm
Internal dimensions (mm):	lenght:	550 mm
	widht:	350 mm
	height:	320 mm
Tare weight (kg):		3,00 kg
Max gross capacity (kg):		15,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	5
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Runout - do not use for future business

XX boxes per layer
X layers

Type / Name		EUR Gitterbox
Tenneco Packaging Code:		5000403 / GB1
Overall dimensions (mm):	lenght:	1.240 mm
	widht:	835 mm
	height:	966 mm
Internal dimensions (mm):	lenght:	1.210 mm
	widht:	810 mm
	height:	789 mm
Tare weight (kg):		85,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	5
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		EUR Gitterbox collapsible
Tenneco Packaging Code:		5000387 / AR1
Overall dimensions (mm):	lenght:	1.240 mm
	widht:	835 mm
	height:	966 mm
Internal dimensions (mm):	lenght:	1.210 mm
	widht:	810 mm
	height:	789 mm
Tare weight (kg):		85,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.240 mm
	widht:	835 mm
	height:	300 mm
Stacking factor:	collapsed:	
	build-up:	5
Owner:		TEN Arendal

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		EUR Gitterbox half
Tenneco Packaging Code:		5000461 / GB2
Overall dimensions (mm):	lenght:	1.240 mm
	widht:	835 mm
	height:	500 mm
Internal dimensions (mm):	lenght:	1.210 mm
	widht:	810 mm
	height:	320 mm
Tare weight (kg):		52,00 kg
Max gross capacity (kg):		700,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		EUR Gitterbox quarter
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.240 mm
	widht:	835 mm
	height:	235 mm
Internal dimensions (mm):	lenght:	1.210 mm
	widht:	810 mm
	height:	225 mm
Tare weight (kg):		43,50 kg
Max gross capacity (kg):		700,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Box WF
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.000 mm
	widht:	1.000 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	950 mm
	widht:	950 mm
	height:	800 mm
Tare weight (kg):		80,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Fonos Stillage
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.900 mm
	widht:	1.050 mm
	height:	1.150 mm
Internal dimensions (mm):	lenght:	
	widht:	
	height:	
Tare weight (kg):		120,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Runout - do not use for future business

Type / Name		Gillet Rack
Tenneco Packaging Code:		5000404 / G08
Overall dimensions (mm):	lenght:	2.180 mm
	widht:	1.030 mm
	height:	1.050 mm
Internal dimensions (mm):	lenght:	2.000 mm
	widht:	950 mm
	height:	970 mm
Tare weight (kg):		155,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

only for Inter-Company

Type / Name		Gillet Rack 2038
Tenneco Packaging Code:		5000906 / G16
Overall dimensions (mm):	lenght:	2.400 mm
	widht:	1.200 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	2.350 mm
	widht:	1.150 mm
	height:	950 mm
Tare weight (kg):		225,00 kg
Max gross capacity (kg):		2.000,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.400 mm
	widht:	1.100 mm
	height:	400 mm
Stacking factor:	collapsed:	6
	build-up:	3
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Standard for this lenght

Type / Name		RSE01A
Tenneco Packaging Code:		5000405 / G09
Overall dimensions (mm):	lenght:	2.200 mm
	widht:	1.200 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	2.050 mm
	widht:	1.120 mm
	height:	700 mm
Tare weight (kg):		224,00 kg
Max gross capacity (kg):		2.000,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		RSE Rack
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.400 mm
	widht:	1.200 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	2.370 mm
	widht:	1.180 mm
	height:	855 mm
Tare weight (kg):		160,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	
	widht:	
	height:	
Stacking factor:	collapsed:	*8*
	build-up:	4
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack WIM
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.100 mm
	widht:	1.050 mm
	height:	990 mm
Internal dimensions (mm):	lenght:	2.020 mm
	widht:	960 mm
	height:	740 mm
Tare weight (kg):		145,00 kg
Max gross capacity (kg):		600,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.100 mm
	widht:	1.050 mm
	height:	410 mm
Stacking factor:	collapsed:	6
	build-up:	2
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack SLS
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.900 mm
	widht:	1.200 mm
	height:	1.020 mm
Internal dimensions (mm):	lenght:	2.820 mm
	widht:	1.140 mm
	height:	800 mm
Tare weight (kg):		207,00 kg
Max gross capacity (kg):		500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.900 mm
	widht:	1.200 mm
	height:	350 mm
Stacking factor:	collapsed:	*6*
	build-up:	2
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Euro Stillage
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	980 mm
Internal dimensions (mm):	lenght:	2.050 mm
	widht:	910 mm
	height:	700 mm
Tare weight (kg):		145,00 kg
Max gross capacity (kg):		800,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	4
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Euro Stillage collapsible
Tenneco Packaging Code:		5000506 / WA2
Overall dimensions (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	980 mm
Internal dimensions (mm):	lenght:	2.050 mm
	widht:	910 mm
	height:	700 mm
Tare weight (kg):		145,00 kg
Max gross capacity (kg):		800,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	410 mm
Stacking factor:	collapsed:	6
	build-up:	3
Owner:		Tenneco

Picture of ***Packaging Unit:***

Picture of handling unit or collapsed packaging unit:

Standard for this lenght

Type / Name		Euro Stillage red
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	980 mm
Internal dimensions (mm):	lenght:	2.050 mm
	widht:	910 mm
	height:	700 mm
Tare weight (kg):		145,00 kg
Max gross capacity (kg):		800,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	410 mm
Stacking factor:	collapsed:	6
	build-up:	3
Owner:		Tenneco

Picture of ***Packaging Unit:***

Picture of handling unit or collapsed packaging unit:

For excess lenght: short side is collapsible on ist own

Type / Name		Orange Box
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.200 mm
	widht:	1.100 mm
	height:	980 mm
Internal dimensions (mm):	lenght:	2.050 mm
	widht:	980 mm
	height:	800 mm
Tare weight (kg):		
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		Tenneco Rybnik

Picture of ***Packaging Unit:***

Picture of handling unit or collapsed packaging unit:

Rumout - do not use for future business

Type / Name		Orange Box big
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	3.200 mm
	widht:	1.100 mm
	height:	980 mm
Internal dimensions (mm):	lenght:	3.050 mm
	widht:	980 mm
	height:	800 mm
Tare weight (kg):		
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		Tenneco Rybnik

Picture of ***Packaging Unit:***

Picture of handling unit or collapsed packaging unit:

Rumout - do not use for future business

Type / Name		SPC0121
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.310 mm
	widht:	1.110 mm
	height:	1.120 mm
Internal dimensions (mm):	lenght:	2.290 mm
	widht:	1.080 mm
	height:	960 mm
Tare weight (kg):		205,50 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	4
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed unit:

Type / Name		Scandinavian short
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.750 mm
	widht:	1.150 mm
	height:	1.150 mm
Internal dimensions (mm):	lenght:	1.700 mm
	widht:	1.100 mm
	height:	1.000 mm
Tare weight (kg):		110,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.750 mm
	widht:	1.150 mm
	height:	350 mm
Stacking factor:	collapsed:	8
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed unit:

Type / Name		Scandinavian blue
Tenneco Packaging Code:		5001276
Overall dimensions (mm):	lenght:	1.750 mm
	widht:	1.140 mm
	height:	1.200 mm
Internal dimensions (mm):	lenght:	1.680 mm
	widht:	1.060 mm
	height:	880 mm
Tare weight (kg):		130,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed unit:

Type / Name		Scandinavian long
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.400 mm
	widht:	1.150 mm
	height:	1.150 mm
Internal dimensions (mm):	lenght:	2.350 mm
	widht:	1.100 mm
	height:	1.000 mm
Tare weight (kg):		145,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.400 mm
	widht:	1.150 mm
	height:	350 mm
Stacking factor:	collapsed:	8
	build-up:	3
Owner:		Tenneco

Picture of Packaging Unit:

Picture of handling unit or collapsed unit:

Type / Name		Long Lydex
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	2.000 mm
	widht:	1.000 mm
	height:	1.170 mm
Internal dimensions (mm):	lenght:	1.950 mm
	widht:	950 mm
	height:	1.000 mm
Tare weight (kg):		???
Max gross capacity (kg):		1.000,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.000 mm
	widht:	1.000 mm
	height:	250 mm
Stacking factor:	collapsed:	5
	build-up:	2
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed

Type / Name		Euro Pallet
Tenneco Packaging Code:		5000460 / EU1
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	144 mm
Internal dimensions (mm):	lenght:	-
	widht:	-
	height:	-
Tare weight (kg):		25,00 kg
Max gross capacity (kg):		1.000,00 kg
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Wooden frame
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	200 mm
Internal dimensions (mm):	lenght:	1.180 mm
	widht:	780 mm
	height:	200 mm
Tare weight (kg):		
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	2.000 mm
	widht:	200 mm
	height:	50 mm
Stacking factor:	collapsed:	
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Stackable up to four frames (height of complete handling unit: 944 mm)

Type / Name		Green wooden box
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.210 mm
	widht:	1.020 mm
	height:	730 mm
Internal dimensions (mm):	lenght:	1.200 mm
	widht:	700 mm
	height:	790 mm
Tare weight (kg):		46,00 kg
Max gross capacity (kg):		1.500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	
	widht:	
	height:	
Stacking factor:	collapsed:	10
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed

Type / Name		Rack 00
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.065 mm
	widht:	860 mm
	height:	700 mm
Internal dimensions (mm):	lenght:	900 mm
	widht:	700 mm
	height:	600 mm
Tare weight (kg):		
Max gross capacity (kg):		500,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.065 mm
	widht:	860 mm
	height:	230 mm
Stacking factor:	collapsed:	10
	build-up:	4
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack P12
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	500 mm
Internal dimensions (mm):	lenght:	1.100 mm
	widht:	750 mm
	height:	400 mm
Tare weight (kg):		50,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	310 mm
Stacking factor:	collapsed:	10
	build-up:	6
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack PP
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	970 mm
Internal dimensions (mm):	lenght:	1.150 mm
	widht:	750 mm
	height:	900 mm
Tare weight (kg):		54,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.200 mm
	widht:	800 mm
	height:	300 mm
Stacking factor:	collapsed:	5
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack FG
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	1.200 mm
	height:	810 mm
Internal dimensions (mm):	lenght:	1.150 mm
	widht:	1.150 mm
	height:	790 mm
Tare weight (kg):		30,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.200 mm
	widht:	1.200 mm
	height:	340 mm
Stacking factor:	collapsed:	*6*
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		Rack WP
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	1.100 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	970 mm
	widht:	950 mm
	height:	750 mm
Tare weight (kg):		85,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.200 mm
	widht:	1.100 mm
	height:	400 mm
Stacking factor:	collapsed:	6
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		small support case
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	760 mm
	widht:	770 mm
	height:	450 mm
Internal dimensions (mm):	lenght:	590 mm
	widht:	560 mm
	height:	300 mm
Tare weight (kg):		16,50 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	790 mm
	widht:	710 mm
	height:	
Stacking factor:	collapsed:	
	build-up:	
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		big support case
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	790 mm
	widht:	710 mm
	height:	450 mm
Internal dimensions (mm):	lenght:	660 mm
	widht:	590 mm
	height:	300 mm
Tare weight (kg):		31,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	790 mm
	widht:	710 mm
	height:	
Stacking factor:	collapsed:	0
	build-up:	0
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		GAZ 1
Tenneco Packaging Code:		5000409 / GA1
Overall dimensions (mm):	lenght:	1.240 mm
	widht:	840 mm
	height:	670 mm
Internal dimensions (mm):	lenght:	
	widht:	
	height:	
Tare weight (kg):		81,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	3
Owner:		

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		FLO9720
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.200 mm
	widht:	1.000 mm
	height:	1.050 mm
Internal dimensions (mm):	lenght:	1.100 mm
	widht:	900 mm
	height:	860 mm
Tare weight (kg):		76,00 kg
Max gross capacity (kg):		750,00 kg
Collapsible (yes / no):		yes
Dimension of collapsed unit (mm):	lenght:	1.200 mm
	widht:	1.000 mm
	height:	360 mm
Stacking factor:	collapsed:	8
	build-up:	3
Owner:		Tenneco Rybnik

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		SPC0111
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.120 mm
	widht:	750 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	1.090 mm
	widht:	730 mm
	height:	870 mm
Tare weight (kg):		66,60 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	4
Owner:		Tenneco Togliatti

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		SPC0130
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.110 mm
	widht:	750 mm
	height:	1.000 mm
Internal dimensions (mm):	lenght:	1.090 mm
	widht:	730 mm
	height:	870 mm
Tare weight (kg):		66,60 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	4
Owner:		Tenneco Togliatti

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		SPC0140
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.110 mm
	widht:	920 mm
	height:	1.130 mm
Internal dimensions (mm):	lenght:	1.090 mm
	widht:	880 mm
	height:	1.000 mm
Tare weight (kg):		77,00 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	-
Owner:		Tenneco Togliatti

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Type / Name		SPC0150
Tenneco Packaging Code:		
Overall dimensions (mm):	lenght:	1.110 mm
	widht:	920 mm
	height:	1.030 mm
Internal dimensions (mm):	lenght:	1.090 mm
	widht:	880 mm
	height:	900 mm
Tare weight (kg):		77,50 kg
Max gross capacity (kg):		
Collapsible (yes / no):		no
Dimension of collapsed unit (mm):	lenght:	-
	widht:	-
	height:	-
Stacking factor:	collapsed:	-
	build-up:	4
Owner:		Tenneco Togliatti

Picture of Packaging Unit:

Picture of handling unit or collapsed packaging unit:

Data sheet European sea freight standard packaging

TENNECO

Export pallete		Stackability
Outer dim.(mm)	1140x955x140	
Weight/ kg	15,00	Cross weight is up to 15 Kg per carto
Guidelines	IPPC Standard	
Export carton small		8 carton per layer
Outer dim.(mm)	470x280x280	3 layers high
Inner dim.(mm)	460x270x270	
Weight/ kg	0,60	
Fefco-Code	711	
Quality /Thickness	EB-Strongness	
Material	Doublewall	

Loading unit	40 feet container:	48 units
	20 feet container:	24 units

If no other specific packaging was agreed you have to use our standard sea freight packaging

Quality and packaging specification:

To protect the parts against corrosion you have to line the carton with a VCI foil

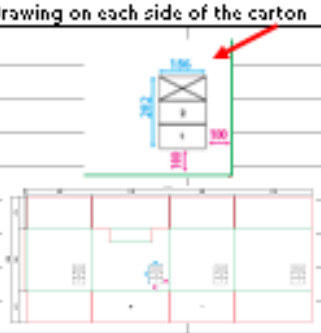
If neccesary protect the parts with a carton insert between the layers.

Dim.:
600x350x600
100 µ

Data sheet European sea freight standard packaging

TENNECO

Export pallete		Stackability
Outer dim.(mm)	1140x955x140	
Weight/ kg	15,00	max. weight is up to 500 Kg
Guidelines	IPPC Standard	
		Drawing on each side of the carton
Export carton		
Outer dim.(mm)	1125x955x960	
Inner dim.(mm)	1095x925x910	
Weight/ kg	12,80	
Fefco-Code	0201 Palb.	
Quality /Thickness	292 BAL	
kN/m)	16,3	
Burst ratio (in kPa)	3180	
Grammage (in g/m²)	1565	



Loading unit	40 feet container:	48 cartons
	20 feet container:	24 cartons

If no other specific packaging was agreed you have to use our standard sea freight packaging

Quality and packaging specification:

To protect the parts against corrosion you have to line the carton with a VCI foil

If neccesary protect the parts with a carton insert between the layers.

Dim.:
1550x1230x1800 mm
100 µ

Removable on one side for a better feeding.

For the carton protection you must strapping the carton 2 times with a plastic ban

A.Hanr,Corp. Logistics

Attachment 4: Tenneco Transport Label requirements

TRANSPORT LABEL DATA DESCRIPTION

Transport Labels are made of 2 sections: Shipping and Part identification section.

A- Shipping section

The shipping section is mandatory on all shipping units.

ODETTE

RECEIVER Tredegar Tredegar NP22 3AA UNITED KINGDOM		DOCK/GATE	
ADVICE NOTE No (N) 266		SUPPLIER ADDR Bovenden GERMANY	
		NET WEIGHT (KG) 10,45	GROSS WEIGHT (KG) 50,45	NO OF BOXES 1

VDA

(1) Warenempfänger Edenkoben 67480 Edenkoben GERMANY		(2) Abladest./Lagerort/Verwendungsschl.	
(3) Lieferschein-Nr. (N) 844		(4) Lieferanten-Adresse (Kurzname, PLZ, Ort) AK Steel BV Holland Oosterhout	
		(5) Gewicht Netto 99,4	(6) Gewicht Brutto 107,4	(7) Anzahl Packstücke 1

- **Receiver Area**

It is the Destination Name and address as designated by Tenneco
Use Human readable (HR) characters only.

- **Dock and Gate**

Final destination point: Name and place to which the goods are to be finally delivered. As indicated by Tenneco – if no specific indication, leave blank.
Use HR chars only.

- **Document Number**

This information is mandatory for all shipment made to Tenneco: it must be the Delivery Note / Advance shipping notification number.

This is the document number appearing on your shipping document – this number is also to be used when providing Tenneco with electronic ASN via EDI (EDIFACT DESADV) or WEB EDI (SNC).
This reference must be UNIQUE.

HR chars are printed ABOVE the bar code.

- **Supplier Address**

Name and shipping address of supplier, country of origin as designated by the supplier.
Use HR chars only.

- **Net Weight**

Weight of the goods in (kg) or (lb) EXCLUDING transport packaging.
IF VDA is used, only KG is allowed- the Unit of measurement is not printed.
IF ODETTE is used, the unit of measurement must be printed in the title of the field in brackets.

Ex: Net WT (KG)

- **Gross Weight**

Weight of goods in (kg) or (lb) INCLUDING transport .
Same rules than for the Net Weight.

- **Number of Boxes**

Number of boxes/packaging on the transport unit.

B- Part Identification section

The part identification section is made of 2 areas

ODETTE

PART NUMBER (P) 249532

QUANTITY (Q) 2200

DESCRIPTION
silmat die cutting

SUPPLIER PART NO (30S) 17930045

SUPPLIER (V) 271

DATE 110202

ENG CHANGE

SERIAL (M) TR10000025

BATCH NO (H)

VDA

(8) Sach-Nr. Kunde (P) 273206

(9) Füllmenge (Q) 100 KG

(10) Bezeichnung Lieferant, Leistung
COIL 0,5 x 490

(11) Packmittel-Nr. Kunde (B) 6 - Container (

(12) Lieferanten-Nr. (V) 845

(13) Vers.-Datum 01.02.2011

(14) Änderungsstand

BAR CODE AREA

Is Mandatory except for mixed load Label where part number and quantity are not used.
ALL FIELDS ARE TO BE BAR CODED.

- **Part Number**

Part number as designated by Tenneco for the product in the package.
HR char. must be printed ABOVE the bar code.

- **Quantity**

Quantity in the package.
HR chars must be printed ABOVE the bar code.

Caution: when unit of measure equal PC, no notation is required. If UOM is different from PC, it must be noted in HR form ONLY (ex: kg, pairs, meters…) When used, the UOM must be directly to the right of the HR. quantity. UOM must NOT be bar coded.

- **Supplier**

Supplier Number AT Tenneco.
HR chars must be printed ABOVE the bar code.

- **Serial Number**

Serial number must be unique: it is assigned by the supplier who must avoid repeating serial number **within at least two years**.
HR chars must be printed ABOVE the bar code.

SPECIAL DATA AREA

- **Description**

Mandatory plain language description of article or product as designated by Tenneco.

- **Logistic reference**

  ODETTE :
  On Tenneco facility request, specify the Tenneco order number (Purchase order /scheduling agreement number)
  If not specified, the standard supplier reference for the part is to be used.
  VDA :
  The PACKAGING reference number as specified by Tenneco.

  HR char. must be printed ABOVE the bar code.

- **Date**

  Date of dispatch. Format **YYMMDD.**

- **Engineering change**

  Tenneco to specify if engineering changes agreed with supplier is to be printed here. Otherwise, leave blank.
  Use HR chars only.

- **Batch Number**

  Tenneco to specify if engineering changes agreed with supplier is to be printed here. Otherwise, leave blank
  Bar code can be used but the use HR chars only is accepted.

- **Indicator-Optional**

  Where bar code length permits, area may be used for quality assured 'AQP' sign or VSP symbol (to be defined by buyer or according to national regulation)
  Mark may be printed or applied as stickers.

RULES SUMMARY

Tenneco requires the use of Bar coded labels for all inbound materials identifying part number/quantity etc…on all packaging unit. Supplier needs to understand this is NOT optional.

- **Fields**

The use of non-mandatory field/data items within the shipping section and special data area is to be agreed between Tenneco, the supplier and buyer.

No alternative data other than the one specified are permitted

Where data are not used they must be left BLANK

Non significant zero or blank must be suppressed when bar code are printed.

- **Printing**

Bar codes are left justified.

Exception when carried on holder, they can be centralized to provide the minimum quiet zone essential to successful scanning (assuming the number of characters is less than the maximum specified)

- **Paper**

The label paper must be white with black printing with a minimum print contrast 75 (PCS=75).
It can be printed on a A4.
The label must be durable enough to ensure readability at its destination : it is recommended that the label paper is 160-170g/m2 and weather resistant

- **Bar codes**

They must be of the 3-of-9 (code 39) type.

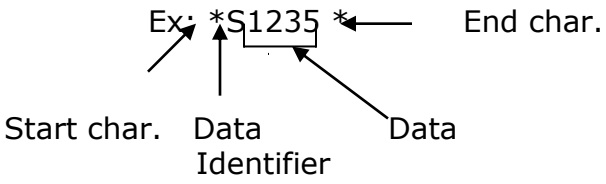
QUALITY INSURANCE REQUIREMENTS

It is the responsibility of the supplier to provide Bar coded labels that meet specifications.

DATA Identifier

Format of each element of a bar code is:

Starter character + Data Identifier + Data + End Character



Available Data Identifier:

P = Part number
Q = Quantity
V = Supplier
S/M/G = Unique Serial Number (letter depends on Label type-Detail (S), Master (M) or Mixed (G))
K = Buyer Order number
B = Packaging reference number
H = Batch number
N = Advice note number
30S = Supplier part reference number

LABELS EXAMPLE

ODETTE STANDARD LABEL

ODETTE MASTER LABEL

VDA

(1) Warenempfänger
Edenkoben
67480 Edenkoben
GERMANY

(2) Abladest./Lagerort/Verwendungsschl.

(3) Lieferschein-Nr. (N) 844

(4) Lieferanten-Adresse (Kurzname, PLZ, Ort)
AK Steel BV Holland Oosterhout

(5) Gewicht Netto 99,4

(6) Gewicht Brutto 107,4

(7) Anzahl Packstücke 1

(8) Sach-Nr. Kunde (P) 273206

(9) Füllmenge (Q) 100 KG

(10) Bezeichnung Lieferant, Leistung
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(15) Packstück-Nr. (S) EDE0000205

(16) Chargen-Nr. (H)

Warenanhänger VDA4902 Version 4

SUPPLIER "HOW TO"

HOW TO CREATE ASN WITH PACKAGING INFORMATION IN SNC

ASN including
packaging master d

Attachment 5: Tenneco Europe nonconformity reason and cost

Reason group 1: Labelling presentation	Code	Sum
Missing label (Master/Packaging Unit)	LAB01	13,86 €
Label incomplete	LAB02	10,50 €
Incorrect part number on label	LAB03	13,86 €
Bar code unreadable	LAB05	13,86 €
Label thickness	LAB06	10,50 €
Incorrectly located/incorrectly fixing	LAB07	10,50 €
Batch wrong	LAB08	10,50 €
Identification letter/date	LAB09	10,50 €
Others labeling	LAB99	21,00 €

Reason group 2: Packaging presentation	Code	Sum
Damaged box diverse	PAK01	91,50 €
Damaged pallet	PAK02	36,50 €
Dirty packaging	PAK03	21,00 €
Damaged packaging	PAK04	31,50 €
Incorrect quantity per box	PAK05	31,50 €
Faked or damaged standard EUR Gitterbox	PAK06	61,50 €
Strapping material wrong	PAK07	10,50 €
Excess dimension of loading unit/loading weight	PAK08	21,00 €
Different KLT on one pallet	PAK09	21,00 €
Missing empty KLT on the corner	PAK10	10,50 €
Missing pallet lid (KLT)	PAK11	10,50 €
Incorrect packing	PAK12	10,50 €
Marking mixed missing	PAK13	10,50 €
Others packaging	PAK99	21,00 €

Reason group 3: Delivery note presentation	Code	Sum
Missing delivery note	LIE01	21,00 €
Incomplete deliivery note	LIE02	13,86 €
Missing or wrong SAP number	LIE03	10,50 €
Delivery note not in english or receiving plants national language	LIE04	21,00 €
Others delivery note	LIE99	10,50 €

Reason group 4: Loading or unloading vehicle	Code	Sum
Load or unload timeslot not met	ENT01	42,00 €
Additional work for unloading to the side	ENT02	21,00 €
Loading space/vehicle not as ordered	ENT03	21,00 €
Driver don´t know what to load	ENT04	21,00 €
Vehicle/equipment not conform to regulations	ENT05	21,00 €
Other carrier than demanded	ENT06	42,00 €
Others load or unload	ENT99	10,50 €

Reason group 5: Goods	Code	Sum
Goods damaged	WAR01	42,00 €
Under shipment	WAR02	21,00 €
Overdelivery	WAR03	21,00 €
Wrong part	WAR04	21,00 €
Others goods	WAR99	21,00 €

Reason group 6: Premium freigt	Code	Sum
Premium freight cost	SON01	10,50 €
Additional handling	SON02	0,00 €
Administrative cost inbound process	SON03	10,50 €
Others premium freight	SON04	21,00 €

Reason group 7: Packaging account reconciliation	Code	Sum
Monthly Reconciliation file missing	PAR01	only ADMIN
Loss of Boxes	PAR02	Box market price + ADMIN
Supplier keeps more Tenneco boxes than allowed pool size for one month	PAR03	1,84 € /box/month +ADMIN
Supplier keeps more Tenneco boxes than allowed pool size for 2 months	PAR04	2,00 € /box/month +ADMIN
Supplier keeps more Tenneco boxes than allowed pool size for 3 months	PAR05	Box market price +ADMIN
Administration Fee (automatically added to all claims in this group)	ADMIN	84,00 €