

Regional Logistic & Packaging Guideline

MAHLE Behr North America

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1 Requirements

All specifications and information from the MAHLE Behr Global Logistics Guideline are valid and the specifications from this guideline are supplementary to the Global Logistic Guideline.

All requirements are strictly enforced, non – conformance might result in debit charges of the actual occurred cost/ effort in addition to a \$500 USD administration cost.

1.1 Standard Dimensions

Standard Pallet footprint sizes are 48x45 or 48x40. Pallets must be able to stack for warehousing. The height of the pallet incl. load cannot exceed 52 inches (within United States). Exceptions must be agreed to in writing.

In the event of non-compliant packaging, MAHLE Behr reserves the right to invoice the supplier for any additional costs.

1.2 Ergonomics

- **Weight restrictions**

Maximum manual lifting weight is 30 Lbs for a single handheld container including parts.

- **Load carrier / transport packaging**

As per current laws and regulations - supplier is responsible for not exceeding load weight in trailer.

1.3 Product Protection

If the product requires ESD, corrosion, or moisture protection (even if not explicitly stated in specification and drawings), special protective packaging is required (including but not limited to ESD Tote/Bag, VCI Bag, desiccant in a sealed bag, protective inserts and handling labels/ instructions). It is the supplier's responsibility to make sure the packaging is protected against shipping damages according to the defined shipping method.

All product protection and packaging needs to be approved in writing by the MAHLE Behr Packaging Specialist. See Global Guidelines

1.4 Load Securing, Closure

Suppliers are responsible for the proper loading of trailers, considering quality preservation and safety. MAHLE Behr's expectations are to receive components correctly packaged and stacked appropriately in the trailer to prevent damage and ease of unloading. Freight must be loaded with the labels and bar codes facing the rear of the trailer. Materials that arrive in a MAHLE Behr plant that are damaged will be assessed for root cause. If the supplier's packaging or loading appears to be an issue, a non conformance report and debit will be issued. If approved, slip sheets may be used in some cases and the supplier must have the proper equipment to move material on slip sheets per the directive of MAHLE Behr.

All packaging needs to be secured to the pallet.

1.5 Labeling

All product labels should comply with the ANSI / AIAG standards. MAHLE Behr's minimum requirement is the AIAG specification of 4" x 6", AIAG ISO size 6. B-10 Version 1.00, 5/95. The label must contain at a minimum the MAHLE Behr part number, quantity, production date, supplier code, MAHLE Behr PO number and part description. Supplier should be prepared to have a capability of printing the location, revision number, serial number and barcodes on the label (See Section 1.6).

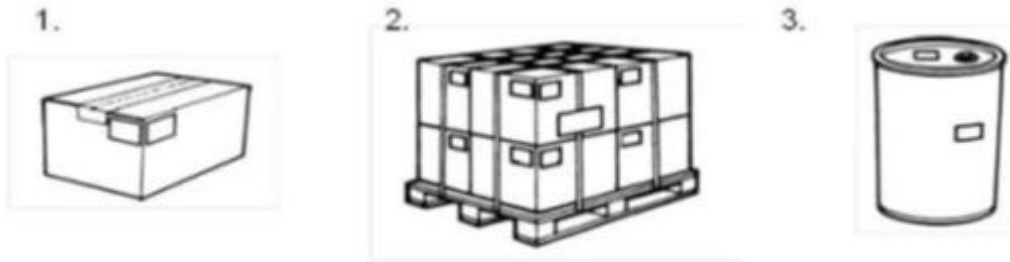
MAHLE Behr requires packing slips and ASNs with all shipments clearly showing the materials by MAHLE Behr part number, including container identification number, bill of lading number, packing slip number, #SID, MAHLE Behr PO number and quantity. All packing slips must be attached to the product or skid in a clearly visible location (Not on top of pallet). The last skid loaded on a full truck load shipment should contain the packing slip in a clearly visible location. The receiving packing list is to contain a master bar code label containing the entire load's content. This will be reviewed upon receipt, labels printed and affixed to freight for proper storage, payment and traceability.

MAHLE Behr North America sends EDI requirements as Delivery Dates (at MAHLE Receiving Plant), not Ship Dates.

MAHLE Behr requests that the supplier avoids "mixed loads", however, if the need arises to ship a mixed lot, the skid must contain the label/paper "mixed load" as well as receiving written approval from the receiving plant. The mixed load label must be affixed on two adjacent sides of the package. One packing slip may be attached for the "mixed load" that is placed in an easily accessible area of the packaging.

Parts with different engineering change levels must not be mixed in the same package or pallet.

Self adhesive labels must be applied to returnables only in pre - defined areas on two adjacent sides. For expendable, labels must always be placed on the adjacent sides of the box in a clearly visible location. Labels cannot be placed over any BT#s on returnable totes.



1. Box or Carton or Pallet Box: Identical labels should be located on two adjacent sides (wrap around label acceptable). The upper edges of the labels should be as high as possible up to 20 inches from the bottom of the carton.

2. Cartons on Pallet: Each carton should be individually labeled as described above. In addition, one Master label may be used as described above or one mixed load label.

3. Drums, Barrels, or Cylindrical Containers: Identical labels should be located on the top and near the center of the side

1.6 Sample Label

| | |
|------------------------------------|---|
| PART# (P) GN436002 | |
| QTY (Q) 1 | DESCRIPTION / VENDOR AREA PC TANK |
| VENDOR# (V) 1234567 | SHIP FROM VENDOR XYZ STREET ADDRESS CITY, STATE ZIP COUNTRY |
| SERIAL# (S) 12345678 | DATE MFG 02/19/2018 |
| | SHIP TO: MAHLE BEHR CHARLESTON 4500 LEEDS AVENUE DOCK 72 CHARLESTON, SC 29405 USA |
| | EDI SHIP-TO CODE CH01 |

2 Returnable Packaging Systems

MAHLE Behr will conduct regular container inventory count. The supplier is required to support this inventory upon request. Supplier is also required to actively support MAHLE Behr Packaging Tracking Systems at no additional cost. MAHLE Behr will charge supplier for lost and damaged packaging based on route cause principle.

2.1 Large Container

MAHLE Behr-owned containers are not to be used for (but not limited to) any other customers, bank builds, WIP material, or trash cans. Unused MAHLE Behr containers must be identified and returned to MAHLE Behr.

| Container ID | Container Description | Outer Length | Outer Width | Outer Height | Inner (Bot) Length | Inner (Bot) Width | Inner (Bot) Height | Total # of Container per Pallet | Total # of Container per 53' Trailer | Total # of Pallets per 53' Trailer [Assembled] | Total # of Pallets per 53' Trailer [Collapsed] | Container Weight (lbs) | Container Weight (kg) |
|--------------|-----------------------|--------------|-------------|--------------|--------------------|-------------------|--------------------|---------------------------------|--------------------------------------|--|--|------------------------|-----------------------|
| BT50544 | Behr Ret. Bulk Cont. | 32.00 | 30.00 | 34.00 | 29.20 | 27.30 | 27.30 | 1 | 189 | 189 | 504 | 85.00 | 38.55 |
| N/A | Behr Ret. Bulk Cont. | 48.00 | 40.00 | 29.00 | 43.60 | 36.00 | 23.10 | 1 | 90 | 90 | 210 | 142.00 | 64.40 |
| N/A | Behr Ret. Bulk Cont. | 48.00 | 40.00 | 34.00 | 43.60 | 36.00 | 27.60 | 1 | 90 | 90 | 210 | 159.00 | 72.11 |
| BT58415 | Behr Ret. Bulk Cont. | 48.00 | 40.00 | 50.00 | 43.60 | 36.00 | 43.40 | 1 | 60 | 60 | 150 | 203.00 | 92.06 |
| BT09300 | Behr Ret. Bulk Cont. | 48.00 | 45.00 | 19.30 | 44.30 | 41.30 | 12.70 | 1 | 130 | 130 | - | 102.00 | 46.26 |
| BT09301 | Behr Ret. Bulk Cont. | 48.00 | 45.00 | 25.00 | 44.20 | 41.20 | 18.50 | 1 | 104 | 104 | 128 | 122.00 | 55.33 |
| BT06204 | Behr Ret. Bulk Cont. | 48.00 | 45.00 | 34.00 | 44.20 | 41.20 | 27.50 | 1 | 78 | 78 | 208 | 145.00 | 65.76 |
| BT06605 | Behr Ret. Bulk Cont. | 48.00 | 45.00 | 42.00 | 44.20 | 41.20 | 35.40 | 1 | 52 | 52 | 130 | 180.00 | 81.63 |
| BT57926 | Behr Ret. Bulk Cont. | 48.00 | 45.00 | 50.00 | 44.20 | 41.20 | 43.30 | 1 | 52 | 52 | 78 | 199.00 | 90.25 |
| BT09188 | Behr Ret. Bulk Cont. | 56.50 | 48.00 | 25.60 | 53.30 | 44.80 | 18.00 | 1 | 88 | 88 | 154 | 159.00 | 72.11 |
| BT09135 | Behr Ret. Bulk Cont. | 56.50 | 48.00 | 34.60 | 53.30 | 44.80 | 26.90 | 1 | 66 | 66 | 154 | 189.00 | 85.71 |
| BT50562 | Behr Ret. Bulk Cont. | 56.50 | 48.00 | 42.00 | 53.30 | 44.80 | 34.90 | 1 | 44 | 44 | 88 | 220.00 | 99.77 |
| BT50541 | Behr Ret. Bulk Cont. | 64.50 | 48.00 | 34.60 | 61.30 | 44.80 | 26.80 | 1 | 54 | 54 | 144 | 207.00 | 93.88 |

2.2 Small Container

Nestable Containers are strongly preferred for mid and long-distance supply chains. MAHLE Behr-owned packaging is not to be used for (but not limited to) any other customers, bank builds, WIP material, or trash cans. Unused MAHLE Behr packaging must be identified and returned to MAHLE Behr.

| Container ID | Handheld container and pallet description | Outer Length | Outer Width | Outer Height | Inner (Bot) Length | Inner (Bot) Width | Inner (Bot) Height | Total # of Container per Pallet | Total # of Container per 53' Trailer | Total # of Pallets per 53' Trailer [Assembled] | Total # of Pallets per 53' Trailer [Collapsed] | Container Weight (lbs) | Container Weight (kg) |
|--------------|---|--------------|-------------|--------------|--------------------|-------------------|--------------------|---------------------------------|--------------------------------------|--|--|------------------------|-----------------------|
| BT52033 | Behr Ret. Layer Pad | 44.00 | 41.00 | 0.16 | n/a | n/a | n/a | - | - | n/a | n/a | n/a | - |
| BT50542 | Behr Ret. Pallet Lid | 48.00 | 45.00 | 2.90 | n/a | n/a | n/a | - | - | n/a | n/a | n/a | 7.26 |
| BT50543 | Behr Ret. Pallet | 48.00 | 45.00 | 6.00 | n/a | n/a | n/a | - | - | n/a | n/a | n/a | 17.23 |
| BT05709 | Behr Blue Ret. Ctr | 12.00 | 7.40 | 5.00 | 9.40 | 5.50 | 4.50 | 216 | 11,232 | 52 | - | 2.00 | 0.91 |
| BT05710 | Behr Blue Ret. Ctr | 12.00 | 15.00 | 5.00 | 9.40 | 13.00 | 4.40 | 108 | 5,616 | 52 | - | 2.20 | 1.00 |
| BT05371 | Behr Blue Ret. Ctr | 12.00 | 15.00 | 7.50 | 9.40 | 13.00 | 6.80 | 72 | 3,744 | 52 | - | 2.60 | 1.18 |
| BT57781 | Behr Black Ret. Ctr | 12.00 | 15.00 | 7.50 | 21.40 | 9.30 | 8.70 | 216 | 11,232 | 52 | - | 2.00 | 0.91 |
| BT05372 | Behr Blue Ret. Ctr | 24.00 | 11.20 | 9.50 | 21.40 | 9.30 | 8.70 | 40 | 2,080 | 52 | - | 4.30 | 1.95 |
| BT50545 | Behr Blue Ret. Ctr | 24.00 | 15.00 | 5.00 | 21.40 | 13.00 | 4.40 | 54 | 2,808 | 52 | - | 3.60 | 1.63 |
| BT05373 | Behr Blue Ret. Ctr | 24.00 | 15.00 | 7.50 | 21.40 | 13.00 | 6.80 | 36 | 1,872 | 52 | - | 4.60 | 2.09 |
| BT05374 | Behr Blue Ret. Ctr | 24.00 | 15.00 | 9.50 | 21.40 | 13.00 | 8.80 | 30 | 1,560 | 52 | - | 5.20 | 2.36 |
| BT50546 | Behr Blue Ret. Ctr | 24.00 | 15.00 | 11.50 | 21.40 | 13.00 | 10.90 | 24 | 1,248 | 52 | - | 6.00 | 2.72 |
| BT05375 | Behr Blue Ret. Ctr | 24.00 | 15.00 | 14.50 | 21.40 | 13.00 | 13.80 | 18 | 936 | 52 | - | 8.30 | 3.76 |
| BT50547 | Behr Blue Ret. Ctr | 24.00 | 22.50 | 7.50 | 21.40 | 20.50 | 6.80 | 24 | 1,248 | 52 | - | 4.80 | 2.18 |
| BT05376 | Behr Blue Ret. Ctr | 24.00 | 22.50 | 8.70 | 21.40 | 20.50 | 8.10 | 20 | 1,040 | 52 | - | 6.20 | 2.81 |
| BT05377 | Behr Blue Ret. Ctr | 24.00 | 22.50 | 10.90 | 21.40 | 20.50 | 10.25 | 16 | 832 | 52 | - | 7.80 | 3.54 |
| BT58416 | Behr Blue Ret. Ctr | 24.00 | 22.50 | 14.50 | 21.40 | 20.50 | 13.80 | 12 | 624 | 52 | - | 8.20 | 3.72 |
| BT05378 | Behr Blue Ret. Ctr | 32.00 | 15.00 | 7.50 | 29.40 | 13.00 | 6.70 | 24 | 1,248 | 52 | - | 5.80 | 2.63 |
| BT05605 | Behr Blue Ret. Ctr | 48.00 | 15.00 | 7.50 | 45.40 | 13.00 | 6.30 | 18 | 936 | 52 | - | 8.30 | 3.76 |
| BT05379 | Behr Blue Ret. Ctr | 48.00 | 15.00 | 10.80 | 45.40 | 13.00 | 9.60 | 12 | 624 | 52 | - | 10.10 | 4.58 |
| BT09400 | Behr Blue Ret. Ctr | 48.00 | 22.50 | 7.30 | 45.40 | 20.50 | 6.30 | 12 | 624 | 52 | - | 9.80 | 4.44 |
| BT05380 | Behr Ret. Ctr Lid | 24.00 | 11.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 1.00 | 0.45 |
| BT05381 | Behr Ret. Ctr Lid | 24.00 | 15.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 2.10 | 0.95 |
| BT05382 | Behr Ret. Ctr Lid | 48.00 | 15.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 3.00 | 1.36 |
| BT05415 | Behr Ret. Ctr Lid | 12.00 | 15.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 1.00 | 0.45 |
| BT06484 | Behr Ret. Ctr Lid | 24.00 | 22.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 3.00 | 1.36 |
| BT06485 | Behr Ret. Ctr Lid | 32.00 | 15.00 | 0.16 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 2.50 | 1.13 |
| BT59465 | Behr Ret. Pallet Lid (Nesting) | 48.00 | 40.00 | 3.00 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 34.00 | 15.42 |
| BT59466 | Behr Ret. Pallet (Nesting) | 48.00 | 40.00 | 6.00 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 17.00 | 7.71 |
| BT59467 | Behr Blue Ret. Ctr (Nesting) | 23.60 | 15.80 | 7.10 | 19.30 | 13.40 | 6.20 | 30 | 1,800 | 60 | 120 | 3.40 | 1.54 |
| BT59468 | Behr Blue Ret. Ctr (Nesting) | 23.60 | 15.80 | 14.30 | 19.30 | 13.40 | 13.00 | 15 | 900 | 60 | 120 | 5.50 | 2.49 |

2.3 Special Packaging

Special returnable packaging is to be developed and procured by the MAHLE Behr Packaging Engineer with the help of the Suppliers Packaging Contact, unless otherwise stated in the business contract with MAHLE Behr. Suppliers are encouraged to make recommendations in order to utilize the best packaging available for maximizing part protection and/or increasing pack density. Reusable internal packaging must be kept within the primary pack.

Special expendable packaging is to be developed and procured by the supplier unless otherwise stated in the business contract with MAHLE Behr. In the case that the supplier must develop and procure the packaging, all packaging must be approved by MAHLE Behr Packaging Engineer. A significant sample sizes must be available for Supplier Run @ Rate so the packaging can be reviewed and approved.

3 Disposable Packaging

Suppliers are not authorized to ship or invoice expendable containers within MAHLE Behr North America, unless authorized by the receiving MAHLE Behr plant. MAHLE Behr requires that the corrugated thickness selection be based upon the strength required to hold the product without damage to the parts or the carton. Cardboard must withstand the stacking (minimum 2 high) to truckload height without crushing the bottom layers (corner posts, angel boards, and/or other load strengthening material may be required to ensure parts and packaging is received undamaged).

Supplier is responsible to always have an approved expendable backup box available in case there is a shortage of MAHLE Behr returnable containers, and it should mimic the returnable dimensions and density. Suppliers must enter the expendable (back up) packaging information in Jaggaer using MAHLE's Unit Load Data Form (ULD). Once the expendable ULD is approved, the supplier can ship in expendable with proper authorization (one time authorization numbers). Suppliers must request this authorization number 48 hours prior to shipment.

The ULD cannot be changed or modified without submitting a new form to MAHLE and receiving a written approval from MAHLE. Shipping unapproved packaging to MAHLE plants can result in a \$500 USD debit + any associated fees.

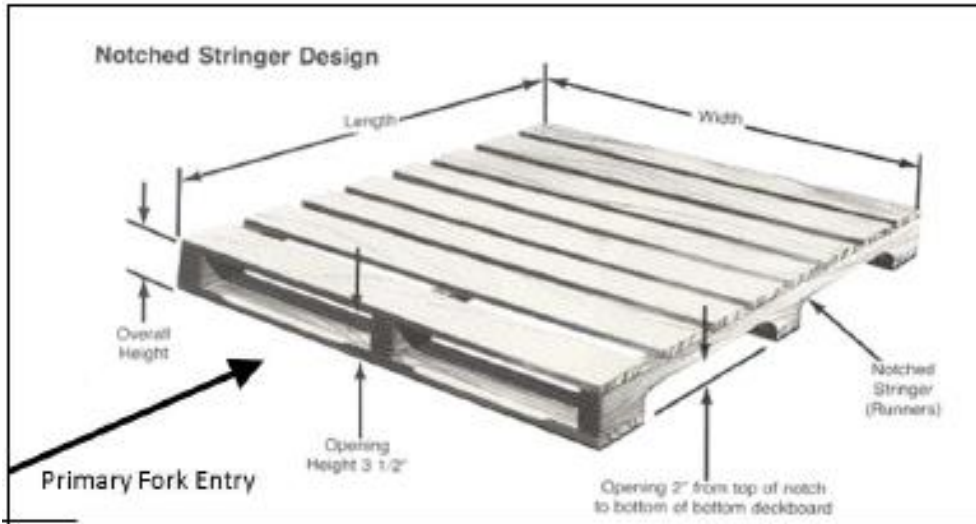
Boxes of materials on skids must be secured using polyester banding that can be heat sealed or with appropriate adhesives. Metal bands, PVC stretch wrap and other methods of securing materials to a skid are not acceptable unless they are approved in writing by the MAHLE Behr plant. Overall carton sizes must accommodate the full closure of the box with the product packaged. Cartons must not exceed the size of the skid that they are shipped on. Pallet cannot exceed box sizes by more than one inch on each side. Pallet Boxes must be secured to the pallet.

Please note that MAHLE Behr North America only accepts HSC boxes (boxes with removable lids) unless approved otherwise in writing.

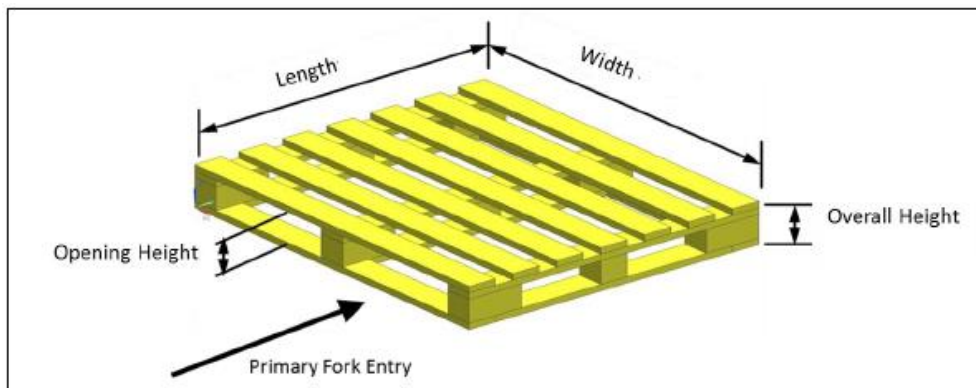
Shipments in RSC containers are only allowed with authorization issued in writing by MAHLE Behr Packaging Specialist (or approved ULD sheet).

Disposable plastic or wood pallets shipped to MAHLE Behr North America must be on a Stringer Style Four-Way Entry Pallet or Solid Wood 9-Block Full Perimeter Pallet. Pallet construction must be robust enough to protect the parts and not break down during shipment. Metal pallets are not allowed. Weight per pallet must stay under 3500 lbs unless approved otherwise in writing.

Stringer Style Four-Way Entry Pallet:



Solid Wood 9-Block Full Perimeter Pallet:



4 Overseas Packaging

4.1 Slip Sheets

MAHLE Behr North America does encourage the use of slip sheets for overseas pallet sized boxes. Every box must have its own slip sheet. Loading and unloading shall be conducted only with specialized handling equipment.

5 Management of Empties

Suppliers are responsible for the removal of the bar code labels and the cleanliness of the returnable containers in order to ensure there is no contamination of the contents.

The MAHLE Behr facility ship location will be responsible for providing suppliers with enough containers to support requirements during the lifetime of the program. MAHLE Behr plants are also responsible for general repairs and replacing broken containers. Suppliers must notify the plant in case of receiving damaged containers and must ship them back properly marked for repair. If a Supplier receives the wrong packaging from MAHLE, the Supplier must return back to MAHLE and never remove any returnable inserts. Unless stated otherwise in contract between MAHLE Behr and supplier.

Storage of MAHLE Behr empty containers outside the plants is prohibited; all suppliers must have a designated container storage area inside their plants.

6 Hazardous Material

Shipping and packaging of hazardous materials must comply with all laws and regulations. Proper identification and handling are absolutely required.

7 Environment / Recycling / Waste Prevention

See Global Guidelines

8 Abbreviations

| | |
|------|---------------------------------------|
| AIAG | Automotive industry Action Group |
| ANSI | American National Standards Institute |
| ESD | Electrostatic Discharge |
| HSC | Half Slotted Container |
| PVC | Polyvinyl Chloride |
| RSC | Regular Slotted Container |
| ULD | Unit Load Data |
| VCI | Volatile Corrosion Inhibitor |