



# PACKING GUIDE

RIGHT PACKING WITH THE RIGHT PACKAGING  
FOR LARGE & PALLETISED GOODS

DHL Express – Excellence. Simply delivered.

Valid from  
1st June 2018



# 300KG PIECE MAX 300CM PIECE MAX PROPER PACKAGING

## CONTENTS

Know Your Piece & Shipment Limits	3
The Essentials of Good Packaging	4
Using Pallets	5
Stacking Your Pallet	6
Protecting Your Goods	7
Securing Your Goods	8
Commodity Specific Guidance	9

DHL's door-to-door Express network provides the world's leading time-definite international delivery service. The network is designed for envelopes, parcels and a limited range of palletised or non-conveyable pieces.

**Strict weight and dimensional restrictions apply to pieces carried through the DHL Express network to ensure that all goods are handled safely and securely through our facilities, and by our standardised fleets of vehicles and planes.**

Heavy, bulky or palletised goods need to be packed in a manner suitable for Express transportation. This guide outlines our minimum packing requirements for shippers, and provides commodity specific packing guidance for large and outsize pieces.

DHL Express encourages its customers to use this guide. Its purpose is to enhance the general quality of packing by illustrating the Do's and Don'ts for transportation. It does not replace any packing norms created by and for each industry, but clarifies instead the minimum standards that are required in the Express industry to eliminate damage to other pieces, equipment, and injury to personnel.

**Failure to follow these minimum standards will result in DHL being unable to accept your goods for transportation.**

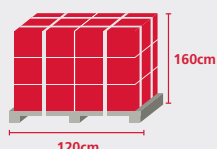
## QUICK TIPS

If you are short on time here are the basics of good packing and our size and weight limitations.



### WEIGHT

- A surcharge will apply for pieces weighing >70kg.
- Maximum piece scale weight must not exceed 300kg\*.
- The maximum combined weight of all pieces must not exceed the 1000kg shipment limitation.



### PALLET DIMENSIONS

- Use standard-sized pallets for shipments with WxL below 120cm.
- Pallet height should not exceed 160cm.



### LARGE DIMENSIONS

- DHL does not accept pieces with lengths above 300cm\*.
- Note:  
Width 120cm x  
Height 160cm



### SECURE & STACKABLE

- Your goods should be packed securely in a box, crate or on a pallet.
- Ensure that your pieces can be safely stacked.
- Odd-shaped and non-stackable items will incur a surcharge.

\*As of September 1st 2018, DHL Express will no longer accept pieces above 300kg in weight and/or 300cm in length.

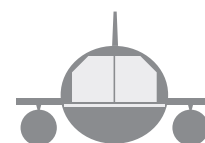


# KNOW YOUR PIECE & SHIPMENT LIMITS

The weight and size limits in use at DHL reflect the common weight and size limitations of our aircraft, trucks and facilities. Larger, heavier items require special booking arrangements as they may not fit inside a standard courier vehicle. A surcharge will be applied to your shipment wherever DHL has to use specialist vehicles or handling.

The weight and size limitations in use at DHL are outlined in the table below. If you need assistance, please contact your [local customer service team](#).

**Note:** Our sister company, DHL Global Forwarding, is available for shipping large, heavy items that are unsuitable for the DHL Express network. Please visit [dhl.com](https://www.dhl.com)



## PIECE LIMITATIONS

Piece Scale Weight	Surcharge	Special Booking Required	Piece Dimensions	Surcharge	Special Booking Required
Up to 70kg			All sides <120cm		
70kg - 300kg	✓		Any single side >120cm	✓	✓
>300kg*	Not accepted for carriage		Any single side >300cm*	Not accepted for carriage	

\*The above piece size & weight limitations will be strictly enforced by DHL Express as of September 1st 2018.

## SHIPMENT LIMITATIONS

Total Weight of Shipment	Surcharge	Special Booking Required	Shipment Piece Count	Surcharge	Special Booking Required
<1000kg			<99 parcels (<30kg each)		
>1000kg	Not accepted for carriage		>99 parcel pieces	Not accepted for carriage	

# THE ESSENTIALS OF GOOD PACKAGING

Your large or palletised pieces need to be suitable for Express transportation where goods are handled through a uniform network of trucks, planes and automated handling facilities. Listed below are the four key handling requirements that you should consider when packing your items. This is to ensure DHL is able to move your shipment without incurring special handling surcharges.



## STACKABLE

Ensure your piece is packaged to enable it to be stacked or have items stacked upon it.



## FORKABLE

Larger pieces will be handled by a forklift; the pieces must be loaded to a pallet or a fork-movable base to ensure safe and damage-free handling.



## TILTING

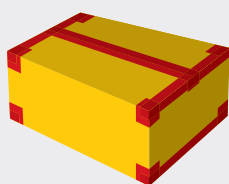
Ensure your item is secure and stable both on a pallet and within the packaging. Goods will tilt during flight.



## SHOCK & VIBRATION

Vibrations and minor shocks can occur while under mechanical handling. Ensure your items are sufficiently packaged.

## BOX IT, CRATE IT, PALLETISE IT



### Box It

Lighter goods (<30kg) can be boxed. Refer to the DHL Express General Packing guide for more information.

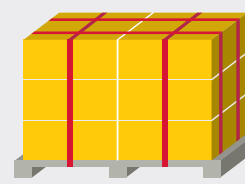
Caution should be taken for structurally weak, long, and narrow cardboard packaging (>120cm). Reinforce the packaging or opt for crating.



### Crate It

Heavier, larger items such as engines or industrial equipment should be crated.

Fully enclose your goods with quality hardwood and brace your crate diagonally to increase its strength. Ensure the wood is heat- or chemically-treated prior to use.



### Palletise It

For bulk shipping or heavily-boxed pieces, place the items on a pallet and secure using the methods outlined in this guide.

Ensure a level and even surface on top of the pallet, and do not allow boxes to overhang the pallet's edge.

**Note:** Individual pieces weighing more than 70kg\* must be packaged in a fork-movable crate or securely loaded to a pallet. For pieces from 30-70kg we recommend using a pallet or crate, but if using a box it must be capable of supporting the full weight of the goods. Due to the weight, special handling equipment that includes forklifts will be required to move the item and if packed incorrectly your piece may be refused collection.

\*Country variances may exist, please contact your local DHL office for more information.

# USING PALLETS

The following section will outline the DHL Express recommended standards for palletised shipments such as what pallet to use, how to stack your pallet, and how to protect and secure your goods.

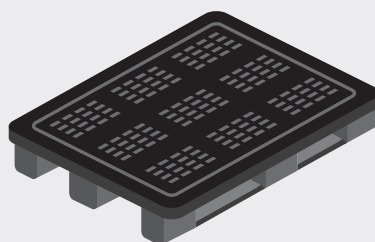
DHL recommends the use of standard-sized pallets to avoid incurring oversized piece surcharges. If in doubt about whether your pallet is considered standard-sized, please note that all standard pallet types have length and width measurements of less than 120cm.

## SELECTING THE RIGHT PALLET



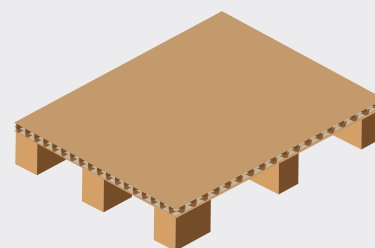
### Wooden

- Strong and suitable for heavy items
- Reusable
- Widely available & less expensive than plastic
- If shipping internationally, be sure the wood meets international treatment standards for the markets where it will be used
- Ensure the pallet has bottom bracing to increase stability



### Plastic

- High loading capacity and anti-slip surface
- Low weight
- Resistant against humidity and corrosion
- More expensive compared to wooden pallets



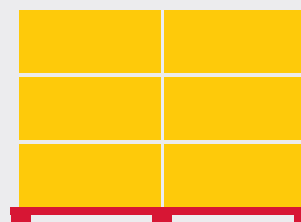
### Cardboard

- Light weight
- 100% recyclable
- Single use only
- Not suitable for heavy items and in humid environments
- Low cost

## STACKING YOUR PALLET

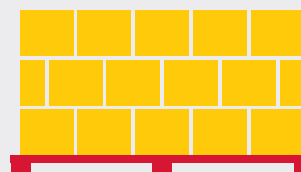
### Column Stack

- Column stacking boxes to a pallet is the best way to maintain their strength during transport and protect goods against compression.
- Stack boxes in columns, corner-to-corner and edge-to-edge, for the greatest stacking strength. The pallet can then be stabilised and secured with banding or stretch-wrap.



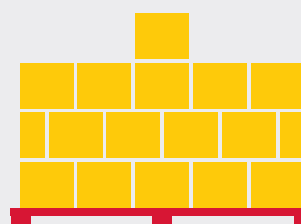
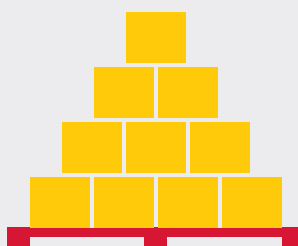
### Interlocking Stack

- If the goods inside a box are rigid, interlocking stacks will result in increased pallet stability.
- If the goods inside a box are not rigid, interlocking stacks can actually reduce compression strength by as much as 50%, leaving goods susceptible to damage.
- Stack boxes corner-to-corner and edge-to-edge, for better stacking strength.



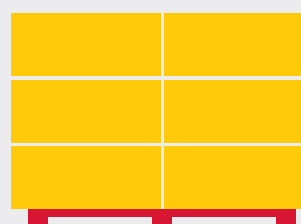
### Pyramid Stack

- Pyramid-shaped pallet loads do not provide a level top surface and expose goods to damage, risk of delay & additional surcharges.
- To create a level top surface with an odd number of boxes, consider how the boxes are stacked, using empty boxes to create a level top layer, or shipping the excess boxes as loose pieces.



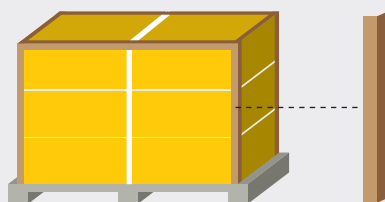
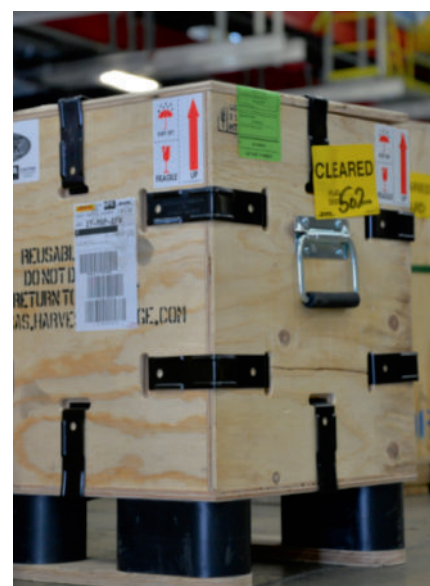
### Overhang Stack

- Boxes must not overhang the pallet edge as it unduly exposes the goods to damage during normal handling.
- Using an overhang pallet stacking method can also reduce individual box strength by more than 30%.



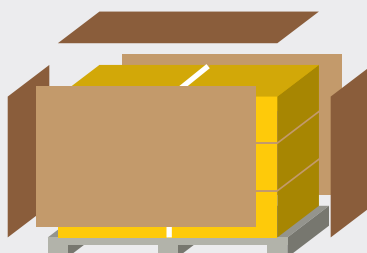
# PROTECTING YOUR GOODS

You can help prevent damage to your goods during transit using a variety of measures which are outlined below. These methods are not exhaustive and other forms of protection may be employed, for example, foam cushioning and wooden crating.



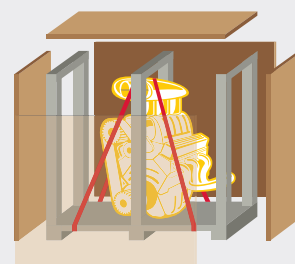
## Edge Protectors

Vertical edge protectors not only reduce damage to box edges during transport but also help to stabilise the load. Horizontal as well as vertical edge protection is advised.



## Paperboards

Paperboards positioned on the top, base and sides provide a protective barrier. They help to spread the weight of shipments placed on top of and against the base slats of the pallet.

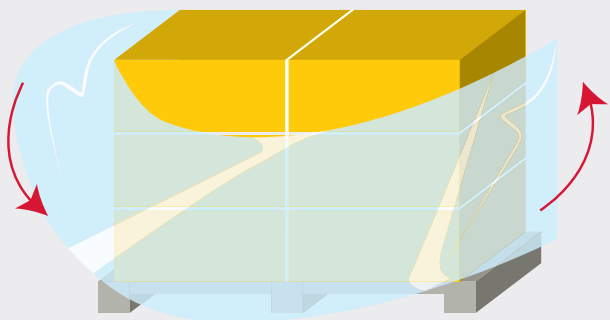


## Bracing

When shipping outsize pieces such as cable reels or engines, ensure that the items are braced against the pallet with wood or metal. The bracing should prevent sideways movement that may occur during transportation.

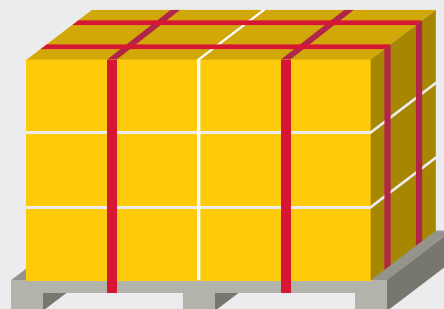
## SECURING YOUR GOODS

Banding and shrink-wrap are the two primary methods of securing goods to a pallet and must be employed for outsize or palletised shipments. The types of banding to be used can include steel, nylon, polyester (PET) and polypropylene. Metal is more suited to heavier solid items whereas nylon and PET are recommended for boxes and lighter items. If using plastic strapping, ensure that it is highly durable and will create an unbreakable seal.



### Shrink Film / Shrink-wrap

- To apply shrink-wrap, secure the leading edge of 70 gauge stretch or shrink-wrap to the pallet or forkable base.
- Apply the shrink-wrap by tightly rotating the film horizontally around the goods.
- Continue applying the film upwards whilst ensuring a 50% overlap on the previous layer of film.
- At the top, diagonally criss-cross the film from each corner until the top is fully covered.
- Finally, angle the film downwards and apply a tight overlap around the base of the pallet.



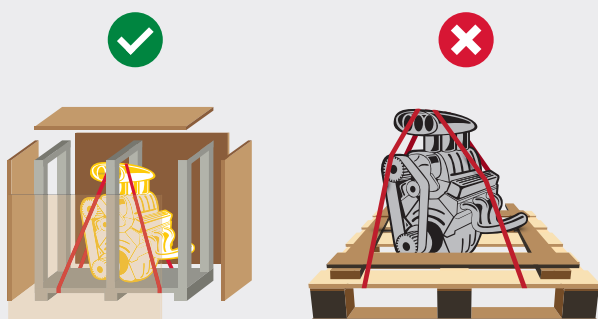
### Banding / Strapping

- When applied correctly, strapping is an ideal way to secure your shipment.
- If manually applying the strapping, loop the first piece underneath the pallet void and over the top of the goods to secure it vertically.
- Repeat the strapping in all directions so that at least four straps tightly secure the load.
- Use horizontal edge protectors to avoid bands cutting into edges of the top boxes.
- Use shrink-wrap to further protect the shipment from environmental damage during transportation.



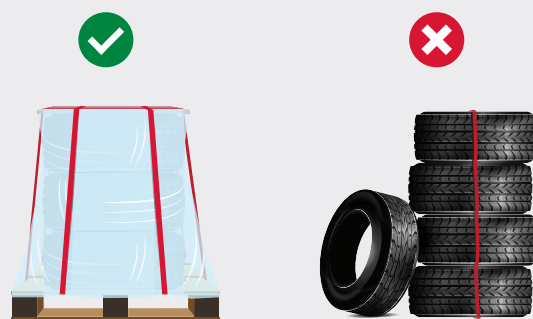
# COMMODITY SPECIFIC GUIDANCE

The following section provides commodity specific guidance for frequently shipped large and heavy items. This guidance will help ensure your item is safe, secure and ready for Express transportation. **If your goods are not packed correctly, DHL will not pick-up or process your shipment as it will pose a risk to other shipments, equipment and personnel.** If your goods are not packed optimally, DHL will apply surcharges to your shipment.



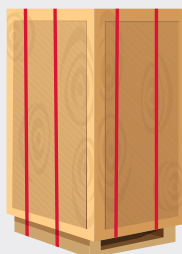
## Engines & Other Vehicle Parts

- Engines and other vehicle parts must be shipped in a crate or securely braced to a pallet and squarely covered with reinforced cardboard and edge protectors.
- All liquids/fuels must be drained from the engine or part prior to transportation.
- Parts must not overhang from the pallet itself, as this risks damage during handling. If parts do not squarely fit onto a pallet, they should be placed inside a crate or on an appropriately sized fork-movable base.



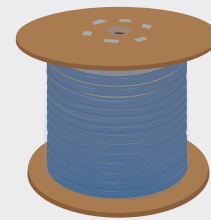
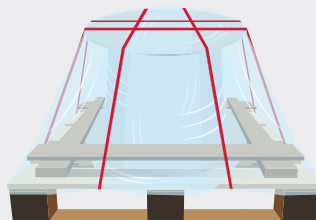
## Car & Other Vehicle Tyres

- Car and other vehicle tyres must be shrink-wrapped to a standard pallet and then secured using metal or unbreakable plastic banding.
- Cardboard, wooden or plastic protector boards must be placed on top of the tyre wall to prevent damage to the tyres and other shipments.
- If using customised car tyre boxes, they should be suitable for the weight of the tyre and have flat, non-rounded edges.
- Loose tyres will not be transported by DHL.



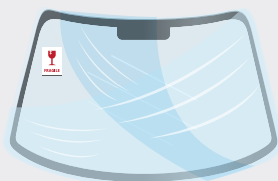
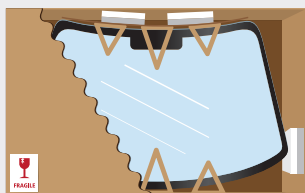
### Industrial Equipment

- Industrial equipment must be shipped in a crate or securely braced to a pallet and squarely covered with reinforced cardboard & edge protectors.
- All liquids/fuels must be completely drained from the equipment prior to transportation.
- Large top heavy items should be loaded on a wide base to help prevent instability during transportation.
- Surcharges apply for shipments that cannot be safely stacked upon.



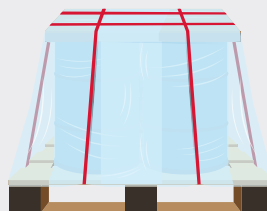
### Cable Reels & Spools

- Cable reels are not suitable for loose transportation and must be packed on a pallet.
- To avoid potential surcharges, load the cable reel sideways on an appropriately sized pallet so that items can be safely stacked on top.
- Heavy reels need to be braced to the pallet with wooden blocking (above 50kg).
- The reel and blocking must then be firmly secured to the pallet with 2 horizontal and 2 vertically placed metal or unbreakable plastic strapping.
- If cables wound to the reel are highly sensitive, we recommend crating the reel or covering the reel with a corrugated shell.



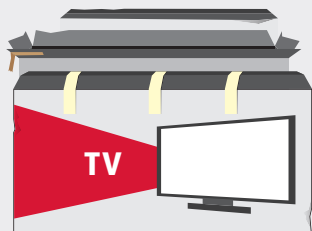
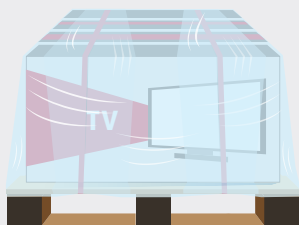
### Panel Glass / Windscreens

- Panel glass and vehicle panels must always be packaged inside a box or wooden crate to ensure protection from torsional forces, other boxes, and material-handling equipment used during normal handling.
- Surround the panel or glass edge with styrofoam piping and fully cover with bubble wrap.
- Specially-moulded styrofoam inserts suitable for the size of the outer box should be placed around all edges of the glass or panel.
- The panel and moulded inserts must then be placed inside a two-wall corrugated outer box.
- The styrofoam inserts should prevent any movement of the panel or glass within the box, and maintain a minimum separation distance of 6cm from the outer box wall.
- Affix 'GLASS' special handling labels on all sides of the box.



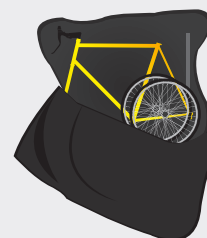
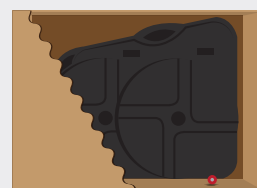
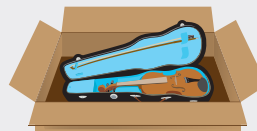
### Oil Drums

- Oil drums must be shipped on a plastic or hardwood pallet with plank gaps of less than 2cm.
- Fibreboards must be placed on top of and in between the oil drum(s) and pallet base to prevent movement and damage during transport.
- Secure drum to pallet using a minimum of two metal or unbreakable plastic straps. Use corner cleats/strap protectors between the drum and straps to prevent cosmetic strap damage during transit.
- When shipping multiple drums, band the drums together before securing to the pallet base.
- A maximum of three pallets can only be accepted and the combined weight of the shipment must not exceed one ton.
- If shipping smaller quantities of liquid, please refer to the DHL General Packing guide on [dhl.com](https://www.dhl.com)



### Large Electrical Items

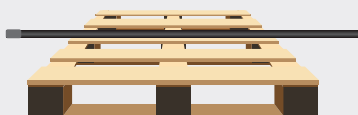
- Extra care should be taken when shipping large TVs. Manufacturers often design the packaging for bulk transit and do not consider Express transportation requirements.
- Shipping a single loose TV with a length greater than 120cm will incur an oversize surcharge.
- Ensure empty space within the box is filled with void filler when using the original manufacturer's packaging.
- If the manufacturer's packaging does not have double walls, overpack the TV in a suitable double-walled cardboard box.
- When shipping multiple TVs, place shipment on a pallet large enough to avoid overhang. Secure TVs to pallet using unbreakable plastic straps and then shrink-wrap. To allow safer top loading, place a cushioning material on top of the boxes with paperboards covering all sides.



### Luggage, Sports Equipment & Musical Instruments

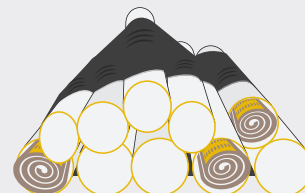
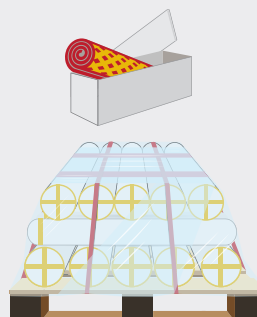
- Ship your luggage, sporting goods or musical instruments in hard cases. Soft cases are not suitable for Express transportation.
- For added protection against markings, place the hard case inside a cardboard outer box.
- If a hard case is not available, place the item in a double-walled cardboard box and cover with several layers of large cell bubble wrap. Fill up all void space to prevent the item from shifting during transit.
- Ensure that the item is completely encased in the packaging. If parts of the equipment protrude from a box, they are likely to become damaged.
- DHL is unable to supply specialist packaging for sporting goods or musical instruments.





### Long Tubes / Pipes / Binds

- Long tubes and pipes exceeding 300cm will not be accepted for transport. Those exceeding 120cm will incur a surcharge.
- Long rectangular cardboard is structurally very weak and easily susceptible to damage.
- When shipping longer items, opt for triangular packaging or, if necessary, spiral wound tubes inside a square outer box. The outer box will prevent the item from rolling during transit and becoming damaged.
- Non-stackable tubes, including those too weak to stack, will incur a surcharge.
- Ship long items weighing greater than 30kg inside a fork-movable crate.
- Do not let tubes overhang on top of a pallet. The pallet or crate must cover the full length of the item being shipped.
- Secure pipes to the pallet with metal or unbreakable plastic straps and use plastic or wooden blocking at the ends of the pallet to ensure that the items do not slide out during transit.



### Carpets & Textile Rolls

- Always roll carpets/fabrics along the shortest length.
- To prevent bending, the textile or carpet should be wrapped around a strong, spiral wound cardboard tube for support.
- It is critical to protect the end of the rolls from damage with heavy duty paperboard or hardboard.
- Place rolls inside a thick plastic bag, or wrap the roll multiple times with strong plastic sheeting, sealing ends and seams with polypropylene tape or cable ties.

#### For pieces <30kg and/or <120cm in length

- Place wrapped bag(s) inside a double-walled corrugated box suitable for stacking. Follow the h-tape sealing method outlined in the general packing guide.

#### For multiple pieces and/or pieces >30kg

- If the item is longer than 120cm or more than 30kg, consider packing it inside a crate, or on a fork-movable base.
- Do not bundle multiple carpet and fabric rolls together. Instead, place rolls inside a specialist crate or package individually in cardboard.
- Carpet and fabric rolls can be stacked on a pallet but should follow an alternating stacking pattern (refer to photo illustration above) and must be strapped and shrink-wrapped for stability.

DHL Express,  
Fritz-Erler-Strasse,  
53113, Bonn,  
Germany.  
**dhl.com**

Valid from 1st June 2018