
bergertextiles
a Spandex Group Company
Printing on textiles

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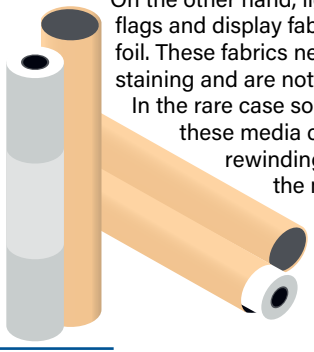
Print media made from textiles are used more often on **Large Format Printers (LFP)** in the last decade in the printing industry.
The product's design must follow the application demand. Knowing how difficult it is to iron a bed sheet coming straight from the washing machine and handling it without creating further wrinkles and creases, you can imagine how difficult it is to create a 5m x 50m sheet. It must stay crease-free and flawless from the time it is manufactured to the time it is printed, and beyond that, it should also stay flexible and creaseless until it arrives at its final application destination. Unfortunately, the focus of the printer design was not always on handling such delicate substrates.
Knowing this and knowing the lack of ability of some of the printing machines to handle textiles properly, the textile manufacturers need toover-compensate for this in terms of very tight tolerances which are not typically the DNA of textiles.
Knowing the above, one understands that some extra care is needed when handling textile media although the design of many of these media should already help to use them easily.

The Packaging

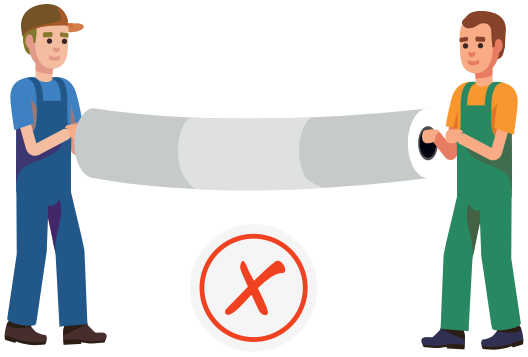
To ensure that the substrate arrives at the printer in perfect condition, the design of the packaging is well thought-out. One might find it annoying to open a heavy cardboard tube in order unpack his media, but it is really the best way to prevent wrinkles and impressions which could potentially lead to problems during the printing process.
These tubes are mainly used on media with a knife coating since these can get impression marks which will not be removeable when unrolling or stretching the textiles.



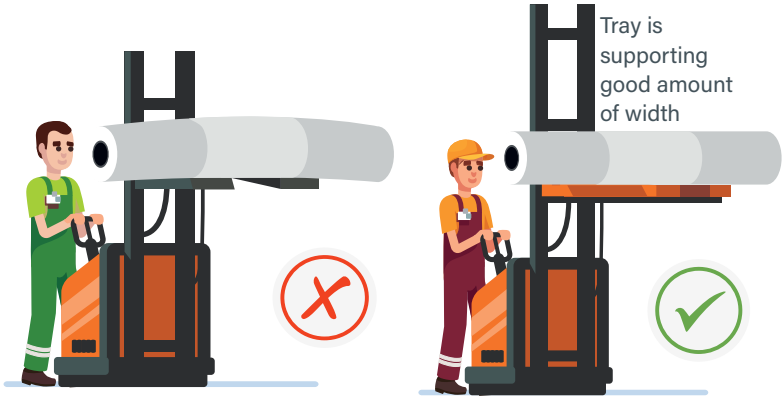
On the other hand, light weighted dip-coated materials like flags and display fabrics are generally packed in wrapping foil. These fabrics need more protection against dust or staining and are not so sensitive for mechanical impacts.
In the rare case something happens to them during transit, these media can easily be saved for use by simply rewinding them to a new roll, or maybe utilizing the mild heat of a calendar.

Inhouse handling

Manufacturers also think about the handling once the media is out of the protective tube.
Some media, especially 5m wide materials, are wound on an extra strong and heavy core in order to minimize bowing of the roll when lifting it to the printer or when carrying it around in the print shop.



Although measures are already taken to avoid bending, it is good to carry heavy and long media not at the ends but with a media roll lifter.
The selected media lifter should have a wide enough supporting tray to avoid bowing of the media roll. These lifters can lift rolls from the middle without creating distortions in the layer of the wrapped fabrics.
These lifting tools can be a good investment because a 5m x 50m roll can easily weight 100 + kg; this also helps avoiding injuries to the worker and damages on the media.
For good media handling it is also important to keep the working area clear and clean.

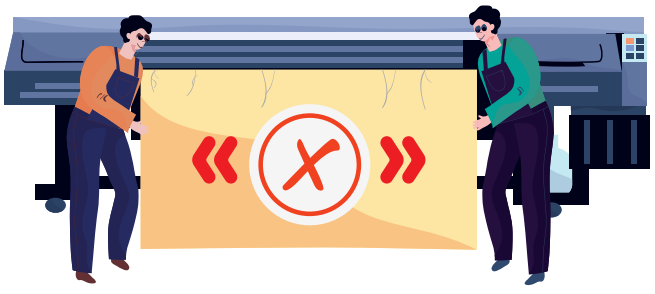


Storing the media

To avoid getting dirty, rolls should never be stored on the floor. Whenever a partly used roll is unloaded from the printer and stored away it must lay fully supported on a flat and clean surface like a cardboard box covered pallet to avoid impressions or damages caused by distortion.
This helps prevent the media from getting dirty, keeping dirt and debris away from your printing machine and print heads.

Loading the media

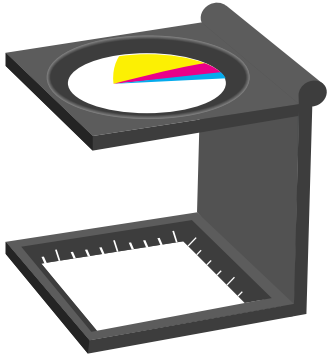
Even when printer manufacturers design machines to be used by one person this is not always true for loading or unloading media. When loading media and especially when it comes to webbing up a stretchy and - because of 5m, somewhat heavy media - 3 people are sometimes needed to do the job properly. The more stretch a media has, the more it is necessary to load it as straight as possible and make sure the media is not distorted before closing the pinch rollers. It is good practice to check the correct seating after wrapping of each roll in the media path in order to avoid offsets between rollers and skewing of the media. When the media is stretchy, a small offset on one roller can cause a not square in-feed into the print zone which will create wrinkles while advancing further during printing and can cause print abortion. On heavy but stretchy media it is a good practice, if possible, to load the media on a shaft, and avoid a loading position where the roll rests on a combination of 2 loading rollers such as most of the UV printers are equipped with. The reason is that while unrolling the soft but heavy roll, it can create a winding which becomes looser by every revolution, eventually causing crease marks.



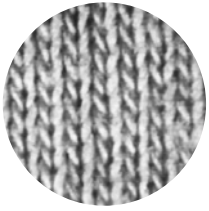
Printing side

Depending on the application, textile media are equipped with different coatings. For UV or Latex printing, the media is coated in order to lower ink consumption and maintain
similar printing results. Coatings may also help with ink adhesion. Blockout media have a knife coating on the back side in order to be opaque. This coating can have different colors but is usually black or white. The opposite side is then the print side. Normal display media doesn't have such a knife coating on the backside, so it may be difficult to determine which side is the print side.
All Bergertextile products are wound so that the inside is the print side. We do this to protect the printing surface from dirt and other contaminates. Although there is always an ideal print side,
on some sublimation media it is possible to print on the other side depending on the taste of the user. As each side has a different surface, it is important to have a profile for a specific side in
order to obtain correct color.

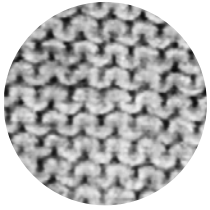
If you are unsure which side is the print side of your textile, you can usually tell by using a magnifier. Usually, the side with the more closely knit structure is the printing side on both woven and knitted textiles. We want to make sure that as much ink as possible stays visible and is not disappearing in valley of the textiles. Ink penetrating too deep into the fabric is mostly invisible, wasting ink, and in the case of UV and Latex prints can cause poor drying, smelling, and stiff prints. Below is an example of a front and a backside to understand the difference:



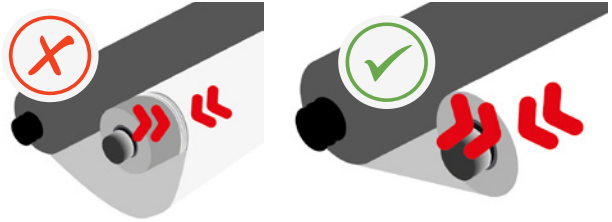
Right Side /Front Side



Left Side/Back Side



Actions to be taken



If a roll of material, despite our quality control, shows defects like uneven winding, wrinkles, or other obvious defects, we strongly recommend not to use this roll and to contact Bergertextiles to discuss further action or replacement.
If media starts wrinkling during printing, check where the wrinkles have originated.
If the media is equally tight on the roll and right after un-winding the tension is different on both sides, you can use a dancer bar or increase the tension of the dancer bar to compensate if this is an available option. **NEVER** increase the tension on the print Zone to for wrinkles, as it might create curling edges and the media may narrow in the area where the tension is applied.
This can cause a distorted print and increase the risk of the curled edge being caught by the carriage.
If the media is wound equally tight on the roll and shows diagonal wrinkles, the reason is usually an offset of the media. In this case, the corrective action would be to open the pinch rollers and reseat the material correctly.
If the media is wound equally tight on the roll, showing equal tension on the edges and is sagging in the middle and creating further wrinkles down the path across the web it is most likely a media advancing problem. Some machines are equipped with a “banana” roller to give the material a pre-tension in the middle in order to get the slack out in the middle. However, in most cases the reason is the missing grip in the middle of the transport roller.
Some machines can adjust the pinch pressure individually between the pressure on edges versus pressure in the middle.
This is sometimes necessary when very thin materials are printed and the level of grip in the middle is lacking. Depending on the direction of the fold, the pressure needs to be raised or lowered.
Very heavy but soft media like Black Back or other knife coated media should be unwound from a shaft if this option is available on the printer.

Rules of a thump are:

- Never load a roll with obvious defects into the printer.
- Check the offset and straightness of the media after every turn of a roll in the media pass.
- Use as many people as necessary when loading the media, in order to get equal tension across the web.
- Before closing the pinch roller, make a final check of the correct position of the media.
- To avoid stretching the material and curling up edges, keep the tension in the print zone as low as possible.
- Keep the vacuum on a minimum setting, especially when printing knife-coated media.

Let's PRINT

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