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Strapping tape - an innovative use for hot melts

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Converting comes in all shapes and forms – an innovative use of hot melt adhesives is to bind the strands of polyester in the manufacture of corded polyester strapping tape.

As an alternative to steel bands, hot melt bonded polyester strand tape is resistant to most chemicals, acids and water – so does not rust or corrode. It is as strong as steel but more flexible, safer and cleaner to handle, can be coloured and is weather resistant. It is used for baling processes, securing a wide variety of products to each other and bundling them on to pallets.

For lightweight applications, simple clips are used to secure the tape, while in heavy duty uses, buckles and specialised tightening tools ensure that the correct tension is applied to the tape.

The tapes are made from multi-filament polyester yarn, typically between 3,000 and 5,000 denier thick and manufactured in widths from 7 to 32 mm, the wider tape giving extra breaking strength.

The process coats and encapsulates the polyester yarns with hot melt adhesive to create the tapes.



Cord strap 1 - CUT OUT - CMYK.jpg
A typical polyester strap tape encapsulated in a Beardow Adams hot melt adhesive. The hot melt is invisible - but as you can see, the residual tack does a good job of stopping the tape from unwinding.

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They are manufactured using special hot melt application techniques on machines which many strap manufacturers design and commission specifically for their own needs – this can make hot melt recommendation challenging and is where a hot melt manufacturer's market experience comes to the fore, often resulting in a hot melt being specially formulated. The hot melt performs four key roles:

- Binds the individual yarns together – creating a strong 'web'.
- Improves breaking strength.
- Creates friction between the tape layers and buckle – once tightened, the tape will not move.
- Has enough residual tack to ensure:
 - During use, strapping can be accurately positioned prior to tensioning.
 - Integrity of a reel – tape flows freely from the reel, but the reel doesn't unwind.

Tape appearance is also important – and for some manufacturers a selling point. As with most converting applications, the end user is buying product performance – a poor looking product raises doubts about its ultimate suitability. In this case, with the coating being a function of design, materials and manufacturing technique, the hot melt gives a very consistent finish to the tape.

It could be said that working with a company expert in hot melt adhesive formulation is the, er, strap-line...

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