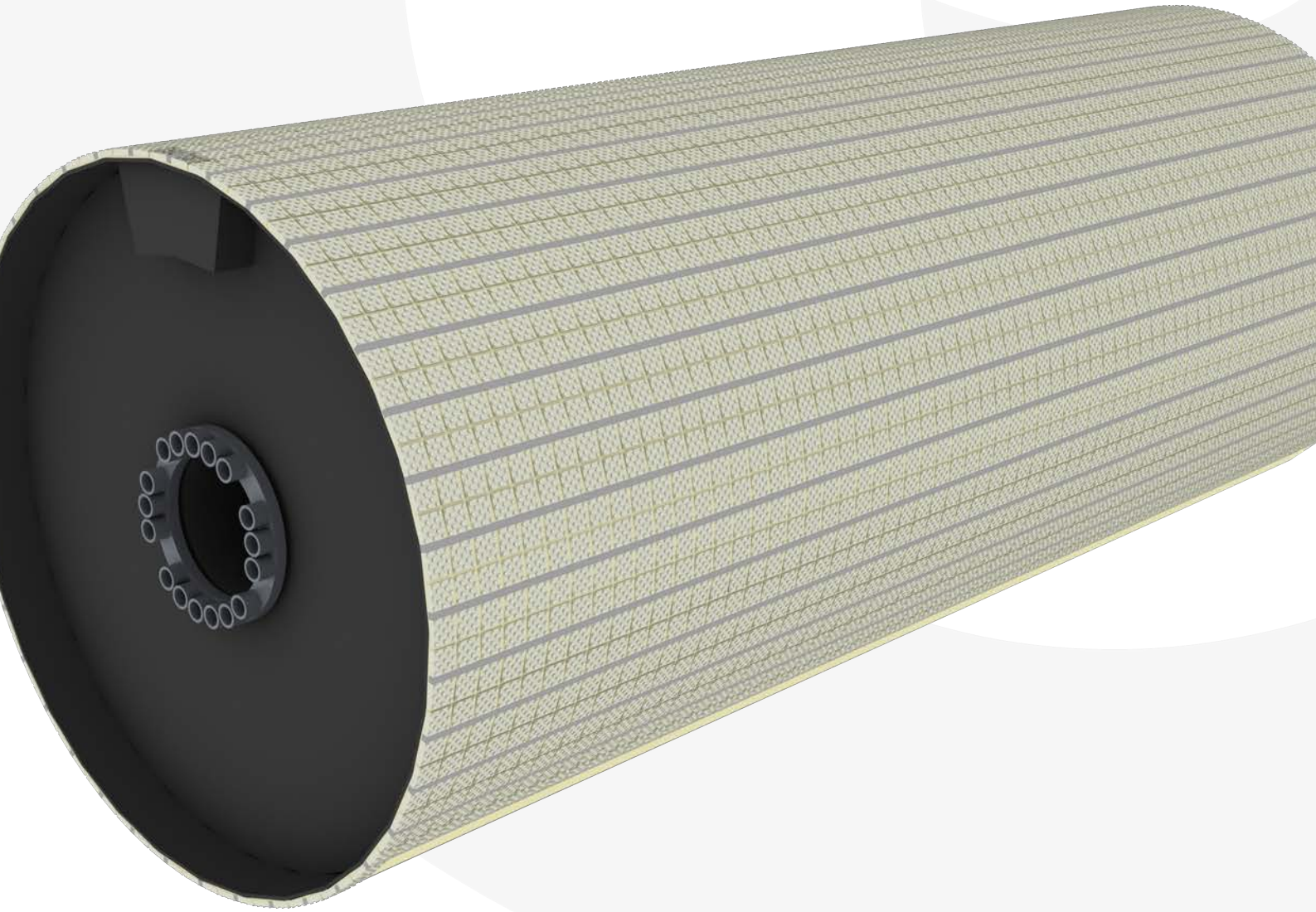
DIRECT BOND LAGGING

elastotec

ENGINEERED TO PERFORM



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DIRECT BOND CERAMIC LAGGING

DESCRIPTION

As a specialist pulley lagging manufacturer Elastotec has Direct Bond Ceramic Lagging and its method of application.

The application method has been designed to ensure consistent and reliable results under various application conditions. In addition, a network of Approved Applicators has been trained to use the Elastotec Direct Bond Ceramic Lagging application method. This ensures that only trained operators using OEM materials apply the Elastotec Direct Bond Ceramic Lagging. The result:

- Consistent application to OEM specifications.
- Reliable result.
- Long-life trouble-free lagging performance.

APPLICATION

Elastotec Direct Bond Ceramic Lagging is designed for use on drive and non-drive conveyor pulleys. This lagging provides a maintenance free wear resistant surface that will provide increased traction for drive pulleys and a smooth surface for bend and tail pulleys.

DIRECT BOND CERAMIC LAGGING

KEY FEATURES AND BENEFITS

- ✓ High friction coefficient on drive pulleys.
- ✓ Grouted tiles decrease the risk of ingress and corrosion and have longer service life and superior bonding strength.
- ✓ Maintenance-free, wear-resistant cover applied to pulley shells that contribute to reduced downtime and lower operating costs by improving traction in drive pulleys and providing a hard-wearing surface on non-drive pulleys.
- ✓ Drive Pulleys have dewatering grooves that dissipate water and can be hosed down without losing traction. And studs with rounded edges that present a less severe interface with the belt bottom cover.
- ✓ Smooth ceramic on Non-Drive Pulleys provides a low maintenance surface with proven long service life under a variety of conditions.
- ✓ Innovative application method reduces application time and ensures tile alignment.

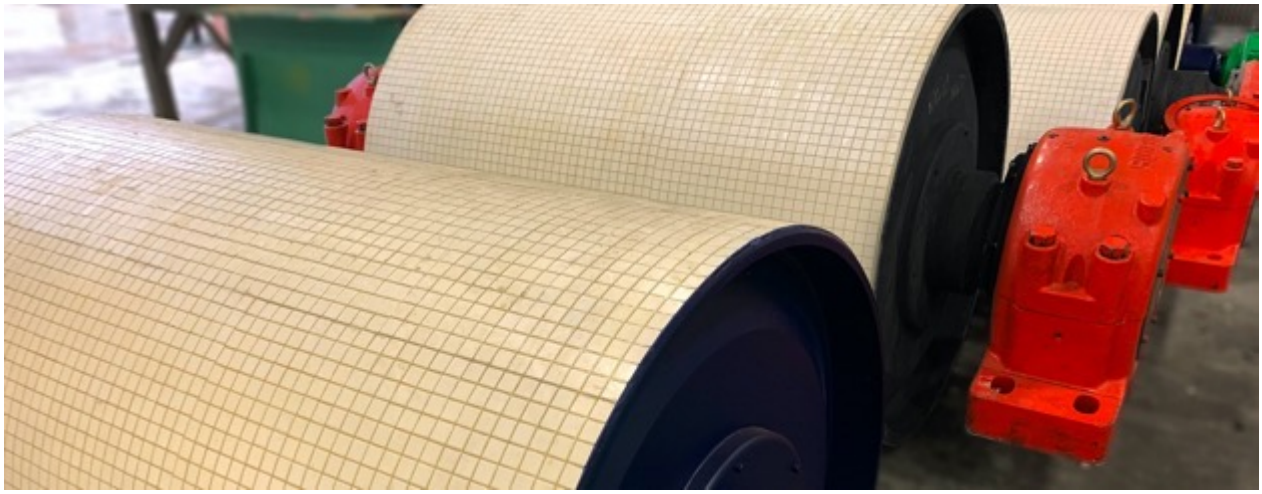
IMPORTANT CONSIDERATIONS FOR DIRECT BOND CERAMIC LAGGING

Direct Bond Ceramic Lagging is selected as a lagging solution due to its high adhesion strength of ceramic tiles to the pulley shell through the epoxy adhesive (>20MPa). In the right application, the direct bond provides a maintenance-free surface.

Direct Bond behaves differently to rubber-based laggings and needs to be carefully assessed before being selected. Direct bond is a rigid pulley lagging and does not have the flexibility that rubber-based laggings have.

Aspects to consider when selecting direct bond lagging:

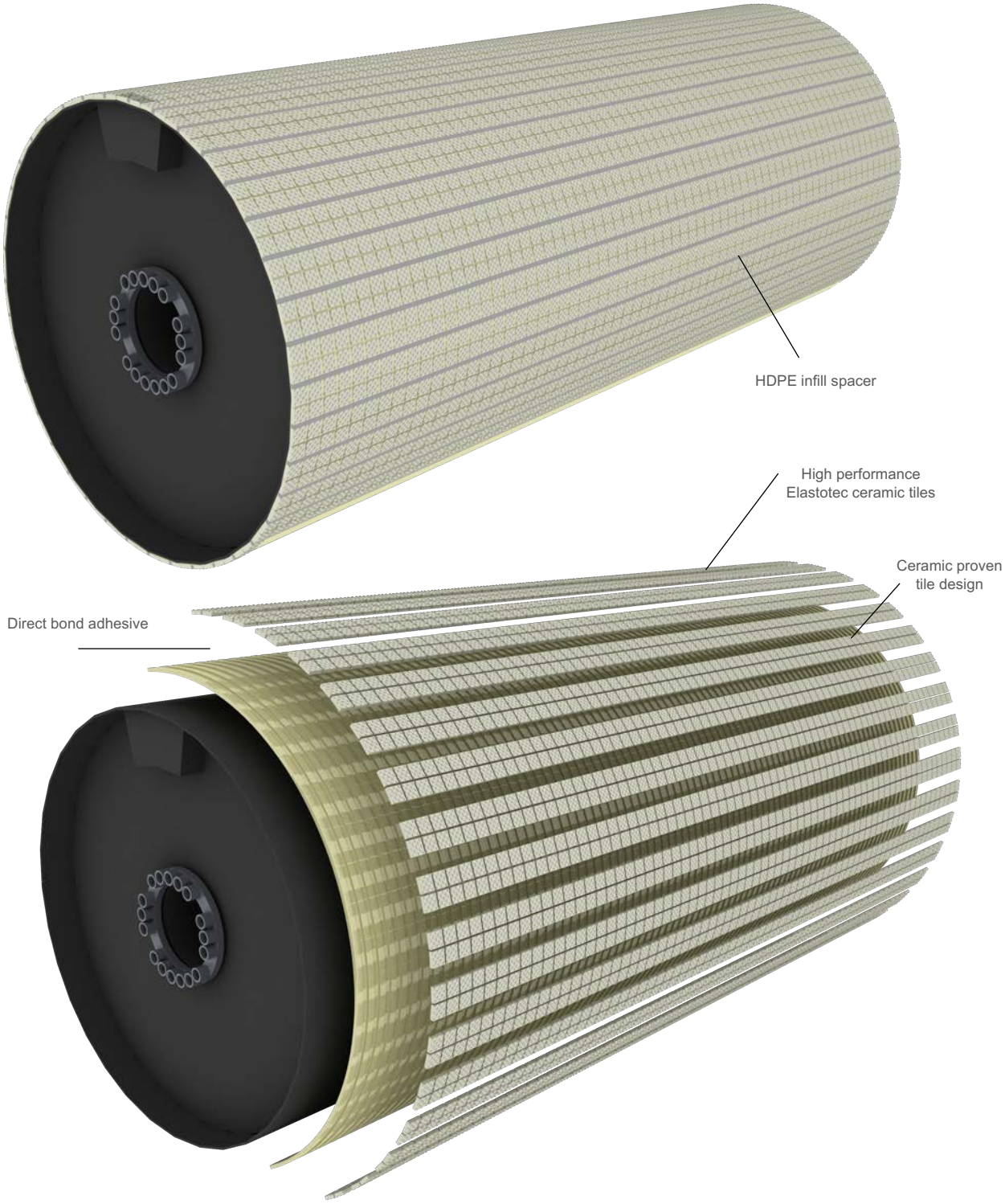
- Maximum allowable pulley shell flexing in centre 0.5mm. Cyclic flexing of the pulley shell can cause tile debonding.
- Rubber-based laggings expand and contract when moving from the belt contact area to the non-belt contact area. This cyclic exercise helps prevent the build-up of material. Direct Bond Lagging is rigid and does not have the ability to expand and contract.
- Lagging and belt surfaces in contact are affected by cyclic stresses. On a drive pulley, belt tension goes from high T1 at the entry to lower T2 at the exit. The belt tries to retract from exit to entry. The belt retraction can cause localised slippage if lagging is not flexible enough to keep engagement. Direct Bond Ceramic Lagging needs to be evaluated for localised slippage before installation.



DIRECT BOND CERAMIC LAGGING

DESIGN

Elastotec's unique Direct Bond Ceramic Lagging system was developed to provide a lagging for use on both drive and non-drive pulleys that provide exceptional levels of service life.



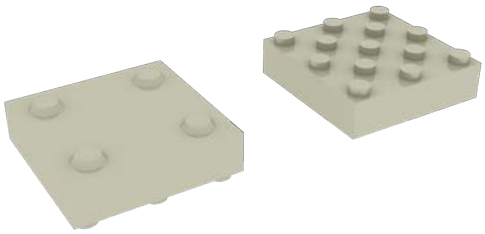
DIRECT BOND CERAMIC LAGGING

CERAMIC SPECIFICATIONS

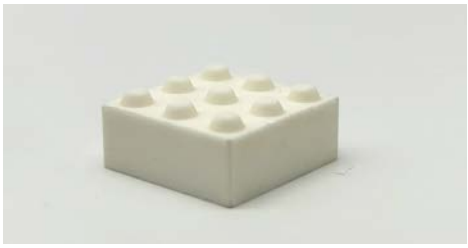
Direct bond Ceramic Lagging can be supplied in different ceramic tile thicknesses 6mm, 10.5mm and 13.5mm (tile body thickness) and in dimple and smooth surfaces.

Typical values

6mm Ceramic Tile		
	Drive	Non-Drive
Aluminium oxide	95%	92%
Specific gravity g/cm3	3.7	3.6
Vickers hardness (HV10)	1200	1000
Flexural strength (Mpa)	300	270



10.5mm Ceramic Tile	
	Drive & Non-Drive
Aluminium oxide	95%
Specific gravity g/cm3	3.7
Vickers hardness (HV10)	1200
Flexural strength (Mpa)	300



13.5mm Ceramic Tile	
	Drive & Non-Drive
Aluminium oxide	95%
Specific gravity g/cm3	3.7
Vickers hardness (HV10)	1200
Flexural strength (Mpa)	300

DIRECT BOND CERAMIC LAGGING

PRIMER AND ADHESIVE SPECIFICATIONS

Elastotec Direct Bond Ceramic Lagging had an epoxy-based adhesion system. High-strength bonding system to provide adhesion of the ceramic tiles to the pulley shell >20MPa. Metal primer for application to the steel pulley shell immediately after sandblasting to prevent oxidation and a 2-part epoxy adhesive that can be mixed manually or through a pneumatic mixing gun to reduce waste.

The Elastotec Direct Bond Adhesive has been formulated to combine excellent adhesion to the steel pulley shell and the aluminium oxide tiles with robust processing characteristics. This adhesive has proven performance for outdoor service exposed to UV, water, dust, dirt, etc.

DIRECT BOND METAL PRIMER

DIRECT BOND ADHESIVE

Operating temperatures

-20□C to +50□C

DIRECT BOND ADHESIVE HIGH-TEMPERATURE

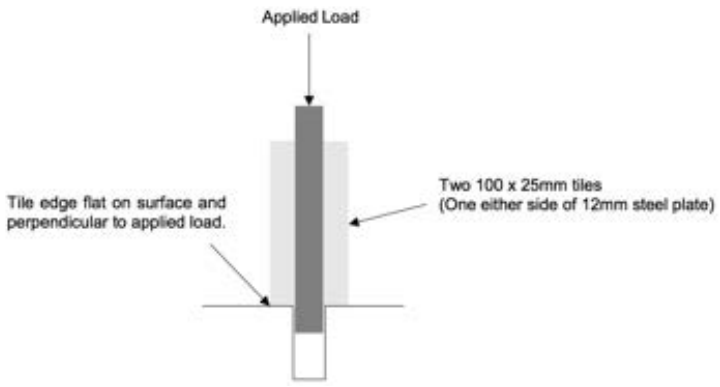
Operating temperatures

-20□C to +110□C

Typical adhesion values

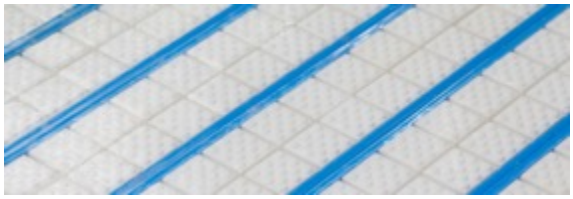
TEMP □C	RECOMMENDED ADHESIVE	
25□C - 50□C	Elastotec Direct Bond Adhesive	25MPa
70□C	Elastotec Direct Bond Adhesive High Temperature	20MPa
110□C	Elastotec Direct Bond Adhesive High Temperature	13MPa

Test method



LAGGING SPECIFICATIONS – DIRECT BOND CERAMIC LAGGING

DIRECT BOND CERAMIC LAGGING DRIVE 6mm



DIMENSIONS

Pads 500mmx500mm Tiles 20x20x6mm.
With spacers every second row of tile

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS/ CARTON	PADS SIZE	SQM/ CARTON	WEIGH T/sqm
Direct Bond Drive 6mm Tiles	ELA-DBCL-D-500-500-06	20x20x6mm +1mm dimples top +1mm dimples bottom	1.5mm	460	4	500x 500mm	1	21kg

DIRECT BOND CERAMIC LAGGING EXTREME DRIVE 10.5mm

DIMENSIONS

Pads 500mmx500mm Tiles 20x20x10.5mm.
With spacers every second row of tile

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS /CARTON	PADS SIZE	SQM/ CARTON	WEIGH T/sqm
Direct Bond Drive 10.5mm Tiles	ELA-DBCL-D-500-500-10.5	20x20x10.5mm +1.5mm dimple	2.5mm	440	4	500x 500mm	1	32kg

DIRECT BOND CERAMIC LAGGING EXTREME DRIVE 13.5mm

DIMENSIONS

Pads 500mmx500mm Tiles 20x20x13.5mm.
With spacers every fourth row of tile

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS /CARTON	PADS SIZE	SQM/ CARTON	WEIGH T/sqm
Direct Bond Drive 13.5mm Tiles	ELA-DBCL-D-500-500-13.5	20x20x13.5mm +1.5mm dimple	2.5mm	440	4	500x 500mm	1	40kg

DIRECT BOND CERAMIC LAGGING

DIRECT BOND CERAMIC LAGGING NON DRIVE 6mm

DIMENSIONS

Pads 500mmx500mm Tiles 20x20x6mm.

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS /CARTON	PADS SIZE	SQM/ CARTON	WEIGHT/sqm
Direct Bond Non Drive 6mm Tiles	ELA-DBCL-ND-500-500-06	20x20x 6mm	1.5mm	529	4	500x 500mm	1	21kg

DIRECT BOND CERAMIC LAGGING EXTREME NON DRIVE 10.5mm

DIMENSIONS

Pads 500mmx500mm Tiles 20x20x10.5mm.

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS /CARTON	PADS SIZE	SQM/ CARTON	WEIGHT/sqm
Direct Bond Non Drive 10.5mm Tiles	ELA-DBCL-ND-500-500-10.5	20x20x 10.5mm +1.5mm dimple on bottom	2.5mm	440	4	500x 500mm	1	32kg

DIRECT BOND CERAMIC LAGGING EXTREME NON DRIVE 13.5mm

DIMENSIONS

Pads 500mmx500mm Tiles 20x20x13.5mm.

PRODUCT	CODE	TILE SIZE	TILE SEPARATION	TILES /PAD	PADS /CARTON	PADS SIZE	SQM/ CARTON	WEIGHT/sqm
Direct Bond Non Drive 13.5mm Tiles	ELA-DBCL-ND-500-500-13.5	20x20x 13.5mm +1.5mm dimple on bottom	2.5mm	440	4	500x 500mm	1	40kg

STORAGE

STORAGE RECOMMENDATIONS

- Stock usage is based on a first-in first-out method (FIFO).
- The storage room for lagging must be cool, dry and dust-free.
- Avoid storage places near sources of ozone-generating equipment.
- Do not store outside.
- Avoid storage in direct sunlight and strong artificial light, as UV light can damage the products and may lead to premature ageing.
- Under no circumstances should fuels, lubricants, acids, disinfectants, solvents or other chemicals be stored in the same storage area.
- Keep the storage place clean. Protect the material from dust, water etc., with suitable coverings.

SHELF LIFE

DIRECT BONDING LAGGING AND WEAR PANELS

- Stored <25°C

ADHESIVES AND PRIMERS

- Store in a flammable goods cabinet
- Stored <25°C
- Shelf life:
  - Primers: 2 years
  - Direct bond adhesive: 2 years

Products stored under the above conditions for longer periods of time than recommended need to be re-tested for adhesion before being used.

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