



NIBA—The Belting Association  
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# Tech Note

Technical Notes from the Technical Committee, NIBA – The Belting Association

## #13 Buffing/Cleaning

During the course of preparing conveyor belting to be spliced or repaired, it will become necessary to perform buffing and cleaning operations. This is intended to serve as a general guideline when performing those operations.

It is important to understand the reasons these procedures are necessary, and precautions that should be taken while being performed.

### 1. Rubber Belting

Areas that may be buffed include:

#### A. Cover Rubber

During splicing or repair, about an inch of the skived portion of the rubber covers will require buffing to roughen the surface and round off any sharp edges. This operation will normally be executed using a disc sander with relatively coarse grit paper such as #24, or possibly a wire wheel which is about 2 inches wide with about .010" - .012" gauge wire. It is desirable to use a low speed sander or drill, around 2,500-4,000 rpm, when buffing the covers. This is to insure that the rubber does not tend to revert, or soften. RMA Grade I covers, or other covers that are highly loaded with natural rubber, will be much more susceptible to reversion as compared to RMA Grade II or MSHA type underground service covers.

The rubber should not smoke while being buffed.

Roughening the vulcanized rubber surface by buffing allows for mechanical bonding to occur with the uncured rubber which will be placed in the splice or repair. It also tends to expose unreacted sites on the polymer molecules which permits cross-linking or chemical bonding to occur when the area is vulcanized to complete the splice or repair.

Rounding off sharp corners is necessary to prevent premature separation of the new rubber in the splice or repair from the old. It also increases the surface area for adhesion of new rubber to old.

Proper safety protection, such as wearing safety glasses, a dust mask, and other protective clothing, should be practiced while undertaking any of these operations.

Cleaning the rubber dust away from the belt should be done using a stiff brush or compressed air. In the event that extensive cleaning of the rubber is required due to heavy soiling or grease or other chemical contamination, it is possible to use some type of solvent. Those commonly used are



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- 1) Toluene, a hydrocarbon type solvent;
- 2) VM&P naphtha, a petroleum based solvent; and
- 3) Trichloroethylene, a chlorinated solvent.

Proper ventilation and adequate safety precautions, such as wearing chemical resistant gloves and eye protection, should be observed when dealing with these materials. It is advisable to consult the manufacturer for recommendation of the proper solvent and to review material safety data sheets that are associated with the chemical used.

In the event that cement has already been applied to the rubber, it is not recommended that solvents be used for cleaning as they will tend to soften and remove the cement. The only exception to this is the case of extreme dirt deposit on the cement coat. In most cases, if a cemented surface has a slight dirt deposit, apply another coat of cement.

In steel cable or steel carcass belting, it is possible to use these solvents to clean the cables or steel carcass.

These solvents should NEVER be used to clean the carcass of a textile belt as contact will tend to degrade the textile fabric and risk belt failure.

## **B. Skim Rubber / Carcass**

Occasionally it will be necessary to remove skim rubber from the carcass surface on splice steps to expose fabric. Whenever possible, this should be performed using a dull edged prodder, such as a screwdriver with the edges rounded. The sander or wire wheel buffers should not be used for buffing the carcass because the fabric can easily be damaged to the point where belt failure can occur. The carcass does require some amount of buffing to clean off loose particles and raise a slight fabric nap so cement can produce a stronger chemical bond. It also provides for some amount of mechanical adhesion.

Carcass buffing should always be done by hand using a very fine paper such as #50 grit emery cloth on a wood block. Buff off rubber remaining on the fabric plies until fabric just begins to show. Do not buff into the fabric or attempt to roughen the fabric itself to raise a fuzz. As the fabric just begins to show, a nap will have already been raised which is barely visible. Excessive buffing may damage the fabric enough to cause later failure so extreme caution should be used.

To clean dust from the carcass areas, use a brush or compressed air.



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## C. Splicing Fabrics

Certain splicing procedures require use of a splicing fabric which must be buffed. This should only be done by hand. Using light pressure, buff both sides of the splice fabric with #50 emery cloth on a wood block. The fabric surface will show a slight amount of fuzzing and lightening of color when buffing is completed. This buffing renews the surface of the fabric. The splice fabrics have a chemical treatment which reacts with the rubber under heat to form a chemical bond to the fabric.

As the splicing fabrics age, they lose their ability to chemically bond with rubber and give adequate adhesions. Therefore, an accelerator is introduced to take over where the fabric treatment leaves off.

Before any cement or accelerator is applied to the splicing fabric, it should be brushed or air blown clean. No solvent should ever be used on the splicing fabric.

## D. Completed Splice or Repair

A fine grit paper such as #50 emery cloth is recommended for buffing off the flashing of the completed splice or repair. This can be done either by hand or by using a disc sander. Certain types of thermoplastic belting will require some amount of buffing in similar situations as that of rubber belting.

A wire wheel buffer is the preferred tool to remove thermoplastic belt covers when the cover has a thickness of 1 mm or more. A slow speed buffer should be used here (2,000-2,500 rpm) to keep from causing the plastic to melt from heat build up. Buff the cover until the fabric just shows through but do not buff into the fabric.

Roughening the surface allows some mechanical adhesion to develop when the splice or repair is made.

Very thin cover or very thin overall gauge belts should be buffed by hand with a coarse grit paper such as #24 grit on a wood block.

Dust should be cleared away with a brush or compressed air.

The use of solvents for cleaning thermoplastic belting is not recommended without specific guidance given by the manufacturer.

Never use solvents to clean areas when fabric is exposed as it will tend to degrade the belt, risking failure.