

IMTECH

Wear & Abrasion Resistant Products

Application and Preparation Procedure Rubber Lining and Pulley Lagging Systems

The key to a successful bonding process is in the preparation of the surfaces to be covered. The following information details the steps to be taken to achieve the optimum results.

RUBBER to METAL SURFACE PREPARATION

- Remove all weld splatter, sharp edges or irregularities by surface grinding. Weld seams etc, should be 1/8" or less.
- De-grease the surface if contaminated with oil or grease by solvent washing.
- Blast cleaning of the surface to NACE 1. White metal blast class 2.5 is standard procedure. Grinding using a 16-grit disc grinder or a steel grinding disc at 5000 r.p.m. will achieve an acceptable surface texture. A crosshatch pattern surface grind is preferred.
- Remove all blast residues by brushing or vacuuming. Take care not to contaminate the surface after cleaning. If necessary, cover the prepared surface.
- When bonding rubber to metal, prime the surface with STR-2100 Metal Primer immediately after blasting and cleaning is complete. Apply a thin coat of primer evenly, using a brush or short nap roller, taking care to avoid runs or puddles.
- The primed surface must be allowed to dry thoroughly, about 30 to 60 minutes depending on the environmental conditions.

NOTE: Primed metal surfaces can be held for as long as 7 days when properly stored away from direct sunlight, and in a clean and dry environment. Surfaces primed with STR-2100 adhesive/hardener mixture should be processed within 24 hours.

ADHESIVE/HARDENER PREPARATION

- Mix the adhesive and hardener together. Mix one bottle of 30 gram hardener per 0.8-liter of adhesive.
- A thorough mix is required by stirring not shaking. STR-2100 is supplied in a wide mouth container for ease of mixing and application.

COATING

- Apply a uniform first coat of adhesive to the primed metal surface and allow it to dry.
- At the same time apply a coat of adhesive to the rubber surface using a stiff brush. With a circular motion, scrub or work the adhesive into the rubber applying a uniform coating and allow it to dry.
- NOTE: If the surface of the rubber has already been primed, as with the IMTECH Lagging systems, apply the adhesive coating with a brush or roller with a rolling or painting action. DO NOT SCRUB the adhesive into the primed surface.
- Once the primed surfaces are dry, apply a second tie coat to both surfaces. When the surfaces are dry to a tack; normally this takes about 8 to 12 minutes; the two surfaces can be bonded together.

BONDING

- Place the rubber onto the steel surface. Roll or stitch the rubber onto the steel, applying pressure to ensure maximum surface contact. Pay particular attention to joints and edges and avoid air bubbles.

- A 2" roller or rubber mallet can be used to assist in the bonding process however care should be taken to avoid creating excessive deformation of the rubber. If the coated surfaces become too dry, apply an additional coat as previously detailed.

JOINT SEALING – STR Sealant

- For the sealing of joints against moisture and material fines in rubber lining or pulley lagging, we recommend the use of IMTECH STR Sealant. This product has excellent adhesion to steel and rubber and outstanding wear resistance. It is ideally suited in the lagging of crown faced pulleys. Technical specifications are available upon request.

TYPICAL BONDING MISTAKES

Bonding when the adhesive is too DRY

- This is the most common cause of bond failure. The bond will be poor and spotty. If this occurs, re-coat the surfaces to be bonded as recommended in the application procedures.

Bonding when the adhesive is too WET

- Test the coated surface with the back of the finger. It should feel tacky, but not leave a residue on your finger. If the surfaces are placed together when the surfaces are too wet, the initial bonding strength will be poor; however, the adhesive/hardener mixture will cure as the solvent in the adhesive evaporates.

Bonding with inadequate pressure

- Sufficient pressure should be applied to ensure maximum surface contact. The ultimate strength of the bond is improved as surface contact pressure is increased. There are a number of ways to apply surface pressure. The addition of continuous weight or pressure is advantageous where insufficient pressure can be applied by hand. In such cases, items may be left to stand under pressure, if necessary, overnight.

APPLICATION LIMITATIONS USING CHEMICAL ADHESIVES

- Normally the use of cold vulcanizing or chemical adhesive systems is not recommended when the surface temperature of the substrate is below 40°F or above 110°F, or the relative humidity exceeds 85%. Where operating conditions exceed these norms contact your technical representative for consultation.
- When applying rubber to metal, the following conditions should be considered:
 - Dew point
 - Metal temperature
 - Ambient temperature
 - Relative humidity
- As part of a QA/QC program, the above conditions should be monitored and if needed, recorded. Generally, the surface temperature of the metal substrate should be a minimum of 5°F above the dew point.
- Drying times of the adhesives will vary considerably depending on the prevailing environmental conditions. Drying times, as stated in the application procedure section, are based on the results achieved at room temperature, 70°F.
- Adequate ventilation must be maintained when using primers and adhesives in a confined space. It is the responsibility of the applicator to ensure that the necessary safety precautions, confined entry certification and manufacturer's recommendations are followed at all times.