

I-Instructions for the use of Termofen adhesives

Termofen adhesives are ideal for bonding friction materials linings to metallic supports for either brakes or clutches.

1.1 Preparation of the adhesive

Stir the adhesive well before use. Do not allow the container to remain open for too long, to prevent evaporation of the solvents. These operations should be carried out in a well ventilated area, free of all naked flames or points of ignition.

1.2 Preparation of the metallic parts

The metallic surfaces to be bonded must be free of all traces of grease, rust or any other impurity. Removal all grease using a solvent, for example trichloroethylene, followed by mechanical scouring by grit-blasting for a suitable period at adequate pressure will prepare the surface for application of the adhesive.

1.3 The friction material.

The linings must be ground on the glue side and free of all dust or other impurities. Once the material is prepared, together with the metallic parts, must be protected from dust.

1.4 Application of the adhesive

Once the above operations have been completed, apply a 0.5 to 0.6 mm coating of the Termofen adhesive to the friction material using a roller, spray or brush. In the event that the metallic support or the friction material is very porous, application of the adhesive to the metallic support is recommended.

1.5 Drying the adhesive.

When working with stocks, solvents should be eliminated by allowing the layer of adhesive to dry at room temperature for several days. When working without stock, or in emergencies, the adhesive may be dried in a oven or hot air current temperatures of about 70°C. The amount of dried adhesive should be between 0.015 and 0.030 g/cm². Treated parts should be stored away from airborne dust or other impurities.

1.6.-Bonding of the friction material to the metallic support.

Use clamping rings to ensure excellent contact between the surfaces during the curing cycle. The pressure may vary depending on the rigidity of the friction lining. Pressures of 5 – 7 Kg/cm² are recommended for cars and 6 – 7 Kg/cm² for light trucks.

1.7 Curing the adhesive

As the adhesive is heat curing, it should be hardened in a kiln using the correct curing cycle (time/temperature).

The oven should be fitted with a gas exhaust and forced ventilation is recommended to guarantee even temperature distribution. Large productions usually employ carousel type continuous ovens.

1.8 Curing cycle.

The following oven curing cycles are recommended:

Time	Temperature
5-10 minutes	180°C
10-20 minutes	165°C
30 minutes	150°C

These times may be varied depending on the characteristics of the oven, size of the parts, number etc. Temperature increase rates are not included in the times indicated. Allow the oven to cool (70-80°C) before removing the parts to prevent thermal contraction of the different materials.

The edges of the bond should show small burrs of cured adhesive in the form of hardened brown bubbles. This indicates correct curing. Their absence may be due to:

- 1) Insufficient clamp pressure (check pressure)
- 2) Insufficient adhesive (increase amount)
- 3) Insufficient temperature (check heater coils and thermocouples)
- 4) High material porosity (increase the amount of adhesive)

1.9 Verification of the bond

The mechanical resistance of the lining-metal bond of cured elements should be checked regularly. This will allow any process anomalies to be detected.

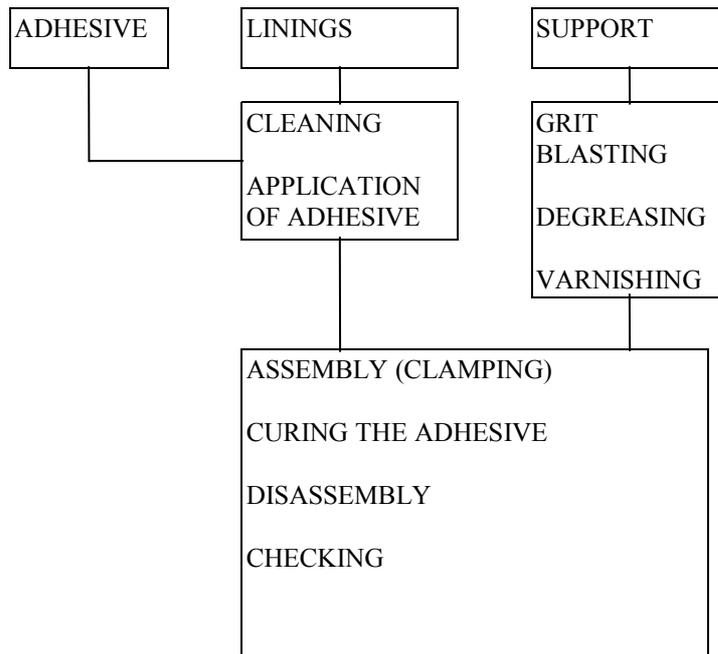
One rudimentary method is to attack one corner of the material with a hammer and chisel to check adherence to the metallic part.

Another method is to use a shearing machine to attack the edge of the lining-metal bond to check the pull-off pressure and any remains of the lining on the metallic surface. This operation is usually performed using a sampling system.

II-Termofen varnishes.

The coatings obtained using Termofen varnishes are specially designed for use on the metallic support. They have great tenacity and, depending on the type used, provide a particular external appearance, protecting the metallic parts from rust.

III- Flow diagram



The above information is based on our experience, no responsibility is accepted as the use application or acceptance of these products is out of our control.