

## **TUBICOLL 1510 A TUBASSIST FIX 1060 L TUBASSIST SLV 4050 L**

<b>Characterization</b>	Universally applicable adhesive system for the electrostatic flocking, in particular full area flocking	
<b>Chemical Composition</b>	TUBICOLL 1510 A:	Polyester polyol in organic solvents
	TUBASSIST FIX 1060 L:	Polyfunctional aromatic isocyanate
	TUBASSIST SLV 4050 L:	Organic solvent
<b>Supplied Form</b>	TUBICOLL 1510 A:	Slightly colored, high viscosity paste
	TUBASSIST FIX 1060 L:	Yellow, medium viscosity liquid
	TUBASSIST SLV 4050 L:	Colorless liquid
<b>Viscosity</b>	TUBICOLL 1510 A:	9,500 – 13,650 mPa.s (Brookfield RVT 20/5)
<b>Conductivity</b>	In a ready for use mixture approx. 100 graduation values (Mahlo textometer)	
<b>Solvents</b>	We recommend TUBASSIST SLV 4050 L for diluting the adhesive and removing it from the working instruments.	
<b>Storage / Storability</b>	If stored properly between + 5°C and + 25°C in closed original containers in a cool and dry place, the product will hold for at least six months. Protect from frost and excessive heat. Opened containers must be closed tightly as the products react with water or air moisture.	

The above given values are product describing data. Please consult the 'delivery specification' for binding product specifications. Further data about product properties, toxicological, ecological data as well as data relevant to safety can be found in the safety data sheet.

## **Properties**

TUBICOLL 1510 A is a dissolved oligomer polyester polyol which cannot be used as single component. Stable and resistant films are achieved only after cross linking with TUBASSIST FIX 1060 L or other suitable isocyanate cross linking agents.

## **Film Properties**

The adhesive system produces a harsh, tacky film with a good stability to temperature and solvents.

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## Application

Due to its specific rheological properties the combination of TUBICOLL 1510 A and TUBASSIST FIX 1060 L, if necessary blended with TUBASSIST SLV 4050 L, may be applied with the usual application methods. Without the addition of TUBASSIST SLV 4050 L the system consisting of TUBICOLL 1510 A and TUBASSIST FIX 1060 L is preferably applied in screen printing, in the squeegee process and for brushing or rolling on vertical surfaces. If the adhesive system is to be applied in the spray process, it ought to be diluted to a suitable processing viscosity by adding TUBASSIST SLV 4050 L.

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## Application Technique

### Recommendation for Use and Processing

#### Application Field

The adhesive system is preferably used for producing flocking which are highly stable to abrasion, stable to water and largely stable to chemicals and solvents on concrete, cement asbestos, glass, wood, plastics, metal, paper, plaster, gypsum plasterboard, etc. Due to its long open time, the system is highly suited for flocking large areas such as walls, oversized parts, profiles, plates and metal sheets.

### Standard Recipes

#### 1. Screen Printing and Squeegee Application

100	parts by weight	TUBICOLL 1510 A
100	parts by weight	TUBASSIST FIX 1060 L
0 - 5	parts by weight	Pigment color VD

#### 2. Roller Application (Vertical or Hanging Areas and High Adhesive Application)

100	parts by weight	TUBICOLL 1510 A
100 - 105	parts by weight	TUBASSIST FIX 1060 L
0 - 15	parts by weight	TUBASSIST SLV 4050 L
0 - 5	parts by weight	Pigment color VD

#### 3. Spray or Brush Application

100	parts by weight	TUBICOLL 1510 A
100 - 105	parts by weight	TUBASSIST FIX 1060 L
15 - 50	parts by weight	TUBASSIST SLV 4050 L
0 - 5	parts by weight	Pigment color VD

The components ought to be exactly weighed and blended homogeneously.

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## Application

Besides using the above standard recipes and possible further combinations with TUBASSIST SLV 4050 L, this adhesive system may also be applied according to the usual, known application methods. Due to the rheology of the system, the adhesive will not run or drop from vertical surfaces if it is applied with the roller, brush or spray gun. If a high adhesive amount is applied or if critical moldings have to be flocked, we recommend working without TUBASSIST SLV 4050 L.

Before the adhesive application the substrates to be flocked must be dry and free from fat and dust. The adhesive application depends on the flock type in use and the fastness demands and is generally between 80 - 250 g wet adhesive per square meter. The adhesive should be processed within its pot life of 6 - 8 hours.

## Pot Life

With the blending ratio

100	parts by weight	TUBICOLL 1510 A
100 – 105	parts by weight	TUBASSIST FIX 1060 L

the pot life is 6 – 8 hours at room temperatures of 20 – 22 °C. Within this period the adhesive stock ought to be processed. Higher temperatures but also high air moisture or the addition of pigments reduce the pot life of the adhesive.

## Flocking

The maximally allowed period between adhesive application and flocking depends on the thickness of the adhesive layer, the absorbency of the substrate, the air moisture, the processing temperature and above all on the required fastnesses. Taking these influencing aspects into account, an open time of 30 minutes or longer is possible if favorable processing conditions are selected.

Flocking itself is carried out according to the usual process. For an electrostatic flocking it is important to have well-earthed adhesive films, which is normally achieved by fixing a metal part, e. g. a nail, to an area on the substrate where it will not be visible later. The adhesive film should be possibly in full contact with the nail. To this nail the earthing of the flocking device will be effected.

## Fixation

After 1 - 2 days of curing time at room temperature (20 - 22 °C), the system can be strained mechanically. Excess flock material can be removed easily afterwards. The final curing of the adhesive film is finished after 3 - 4 days at room temperature.

When flocking walls, please pay attention to the fact that the surface temperature of the wall and thus also of the adhesive may be clearly lower than room temperature, which may affect the required drying time.

With very high to high air moisture isocyanate and water compete with one another, which leads to bubble formation in the adhesive film and may impair the film strength.

#### Reduction of the Fixation Temperature

While keeping the open time and pot life of the adhesive system, the curing time can be clearly reduced by increasing the fixation temperature. An increase in the fixation temperature from 20°C to 80°C e.g. reduces the curing time from 2 days to 30 – 60 minutes.

#### **Special Remarks**

The products TUBICOLL 1510 A, TUBASSIST FIX 1060 L and TUBASSIST SLV 4050 L contain combustible, organic solvents. Please pay attention to the usual safety precautions for storing and processing such products.

**We reserve the right to modify the product and technical leaflet.**

**Our department for applied technique is always at your service for further information and advice.**

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding with regard to possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods which are beyond our control.

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