

## Technical data sheet

# Tangit UPVC

## I. Material

### Product name:

Tangit UPVC special adhesive

### Material type:

Adhesive containing solvents on the basis of tetrahydrofurane (THF stabilized).

The cured adhesive meets the requirements of admission for drinking water supply through UPVC pipes in compliance with the Recommendation no. VIII of the Plastics Commission of the Bundesgesundheitsamt (German Health Authorities).

### Intended use:

Tangit UPVC is suitable for joints resistant to shear strain of pressure pipes (e. g. drinking water and gas pipes) with UPVC\* fittings in accordance with the recommendations of the Plastic Pipe Association.

\*UPVC = hard PVC

### Package sizes:

#### Tangit adhesive

Tube with 125 g  
Tin with 250 g  
Tin with 500 g  
Tin with 1.0 kg

#### Tangit cleanser

cone top bottle with 1 l

### Sales units:

#### Tangit adhesive

TI 60 = 12 tubes à 125 g  
TI 26 = 24 tins à 250 g  
TI 14 = 12 tins à 500 g  
TI 6 = 8 tins à 1.0 kg

#### Tangit cleanser

TR 8 EN = 12 cone top bottles à 1 l

## II.

## Characteristic features

- Tangit UPVC complies with DIN 16970 and KRV guideline R 1.1.7. and the rules for construction and testing of drainage pipes.
- Complies with the adhesives standards BS 4346, part 3, and ASTM D 2564, NEN 7106

Tangit is supervised by:

1. Staatliches Materialprüfungsamt NRW, Dortmund, mark of conformity PA-I 2647
2. Süddeutsches Kunststoffzentrum, Würzburg
3. Centre Scientifique et technique du Batiment, Champs sur Marne, CSTB-Atec 15/81-57
4. Keuringsinstituut voor Waterleiding-artikelen KIWA N.V.

### Technical data

#### Raw material basis:

UPVC, tetrahydrofurane, (THF stabilized), methylethylketone, cyclohexanone.

#### Density (spec. gravity):

abt. 0.96 g/ml

#### Temperature resistance:

corresponds to that of PVC-U

#### Resistibility:

The glued joints are water resistant. Their chemical resistance, especially to inorganic acids, depends on the pipe tolerances, the curing time, the pressure loads, the operating temperatures, the type of acid and the acid concentration.

In case the flow medium is concentrated acid the special adhesive Dytex is available (ask for separate technical data sheet). For CPVC\*\*-pipelines to be operated under pressure and high temperatures, special adhesive Tangit CPVC is applicable (ask for separate technical data sheet). For ABS pipelines Tangit ABS is applicable.

\*\*CPVC = post-chlorinated PVC

#### Viscosity:

1800-3500 mPas, (Epprecht viscosimeter, measuring body 3 at 23°C)\*\*\*

\*\*\* 0°C = 273K  
23°C = 296K

**Consumption:**

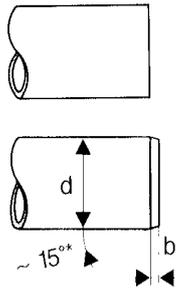
For the production of 100 glued joints the following approximate amounts of adhesive and cleanser are required.

pipe dimensions dn	da (mm)	Tangit cleanser kg	Tangit adhesive kg
25	32	abt. 0,5	abt. 0,8
32	40	0,7	1,1
40	50	0,9	1,5
50	63	1,1	1,7
65	75	1,3	2,2
80	90	1,4	4,0
100	110	1,7	8,0
125	140	2,1	13,0
150	160	2,5	19,0
200	225	4,5	26,0
250	280	6,5	38,0
300	315	10,2	52,0

### III. Instructions for use

**Preparation of the surfaces to be bonded:**

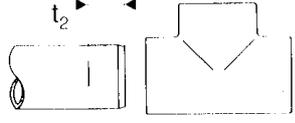
If pipe ends and sockets are not in accordance with the following illustrations, they must be chamfered and deburred. No stable and tight bonding can be achieved unless pipes have been accurately chamfered.



Cut pipe at right angles

Chamfer outside  
Debur inside

$\sim 15^\circ$



Outside pipe diameter d (mm)	Measurements for b in mm Glueing with fittings	Outside pipe diameter d (mm)	insertion depth (mm) t
up to 16	abt. 2	16	14
20 - 50	abt. 3	20	16
		25	19
		32	22
		40	26
		50	31
		63	38
		75	44
		90	51
		110	61
		140	76
		160	86
		225	119
		280	-
		315	-

\*0,2618 rad.

**Pre-treatment:**

Remove any crude dirt adherent to the surfaces to be bonded (pipe end outside, socket inside) using tissue paper. Then measure the fitting insertion depth and mark it on the pipe end, so that the application of the necessary amount of adhesive and the complete insertion of the pipe can be checked. Final cleaning is then done using tissue paper and Tangit cleanser. Spray Tangit cleanser onto a piece of white tissue paper and thoroughly clean the dry surfaces to be glued of grease and dirt.

Use a new piece of tissue paper for each cleaning operation. The surfaces cleaned with Tangit cleanser must be dry before applying the adhesive. Ice, if any, must be removed by careful heating.

**Glueing:**

Stir Tangit UPVC well before use. It should flow slowly off a stick held at an angle, forming a trail. Apply a uniform coating of adhesive in an axial direction, first to the inside of the socket, then to the pipe.

Apply the adhesive thinly to the socket in order to avoid the detrimental formation of humps inside the pipe, but generously to the pipe end. Tangit is capable of bridging gaps caused by pipe tolerances of up to +0.2 mm, in accordance with DIN16970.

**Recommended brush sizes:**

DN 25:	8 mm round brush
DN 32- 50:	1" flat brush
DN 65-150:	2" flat brush
DN 200-250:	2.5" flat brush
Above DN 300:	3" flat brush

Insert pipe into socket to stop or full depth, respectively, without twisting/tilting and hold fast for several seconds, until adhesive begins to dry. From DN 150 upwards, insertion is facilitated by using a pipe joiner. Then remove excess adhesive with tissue paper. Owing to the quick curing of the adhesive, the components must be completely fitted together within 4 min. after application. Because of the time consuming application of Tangit in tubes, this should not be used with pipe dimensions above DN 80. From dimensions of DN 80 and above, the adhesive should be applied simultaneously to pipe and

socket by two persons. The open time of Tangit UPVC, i. e. the period from the start of the application until the fitting of the parts, depends on the ambient temperature and/or the film thickness of the adhesive. With a film thickness of 1 mm, the parts should be fitted within the following time:

20°C = 4 min

25°C = 3 min

30°C = 2 min

40°C = 1 min

>40°C = <1 min

During 5 min. after glueing the pipes must not be moved. At temperatures below 10°C, this period must be extended to a minimum of 15 min.

The pipes should be lowered into the trench after 10 to 12 hours. Filling of the pipelines and pressure test at a testing pressure of 1.5 x PN should not be performed earlier than 24 hours after the last glueing. If the line is to be charged with the operating pressure, a minimum waiting time of one hour per bar must be observed. If lines are not to be operated immediately, it is advisable that they are flushed thoroughly and allowed to stand filled with water.

0°C = 273 K

5°C = 278 K

20°C = 293 K etc.

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## IV. Special instructions

Before starting, pipelines must be carefully flushed in order to remove possible residual solvent vapours. Tangit UPVC is ready for use and must not be diluted under no circumstances! Tangit UPVC and Tangit cleanser affect UPVC. Pipes and fittings should therefore not be exposed to spilled adhesive or cleanser. Containers no longer in use should be closed tightly in order to avoid evaporation of solvents and thickening. Remove skin of dried-up adhesive. Strip off thickened adhesive from brushes using dry tissue paper. Cleaned brushes must be dry prior to further use.

### Installation:

Installation at low temperatures requires utmost care. At temperatures below 5°C, pipes and fittings tend to be more vulnerable to impact (brittleness), so that long term exposure to solvent vapour, as may occur in the drying phase when the pipeline is closed, may result in damage to the system. Since Tangit UPVC cures physically, it is also possible that hardening is slowed down considerably. Special installation techniques are therefore required at temperatures below 5°C. For this purpose, pipe ends and sockets to be glued are warmed to 25 - 30°C by means of a suitable hot-air blower (which must be explosion-proof). Only then the glueing should be done as described above.

The finished joint must be kept at 20 to 30°C for abt. 10 min.

### Remarks:

Installation of pressure pipes and sockets made of UPVC requires expertise in the processing of the materials. These instructions are therefore only comments in order to support competent personnel in their work. Installation instructions of the pipe and fitting manufacturers must be observed as well as the respective guidelines and work-sheets of the associations, e.g.:

DVGW worksheet W 328

KRV installation instructions:

- PVC pressure pipes, installation indoors
- PVC pressure pipes, outdoor drinking- and process water supply
- instructions for PVC glueing of pressure pipes

### Safety precautions:

Tangit UPVC and Tangit cleanser are flammable. Solvent vapours are heavier than air. They may accumulate at ground level and form explosive mixtures. Therefore ensure good ventilation during processing and drying.

No smoking and no welding in the working area and in the rooms adjacent to it! No open light or fire, avoid any sparking. Accumulated solvent vapours and explosive mixtures must be removed prior to welding. Fill pipes with water, flush and purge well. Do not seal pipelines while drying. Prolonged inhalation of solvent vapours may cause injuries to health. In order to minimize contamination by solvent vapours keep used tissue paper in sealed containers (e. g. buckets with lids). As preventive measures gloves should be worn to avoid skin contact and maximum cleanliness should be observed (repeatedly wash hands during work and use fatting skin-protective cream or emulsion). In case of eye contact rinse carefully with water and consult physician. Change any clothing stained with adhesive.

For further instructions see leaflets and safety directions of the employers' liability insurance associations, e. g. VBG 15 "Welding", VBG 81 "Processing of adhesives", M 017 "Solvents" and safety data sheets. Full information on safety and workplace hygiene in connection with Tangit can be found in the leaflet "Working with Tangit".

### Storage:

Practically, Tangit should not be stored at temperatures lower than 5°C since this leads to an increased viscosity and to a hardened structure, which will affect the bonding process. After conditioning at room temperature and good stirring of the adhesive, the temperature dependent increase in viscosity and structure is again reduced.

### Storage life:

The storability at 20°C is at least 12 months for tubed product and 24 months for canned product from the date of filling. Date of filling and lot number are displayed at the bottom of the tin or at the tube end closure.

### Instructions for disposal:

When recycling the tins, there must be no solvent vapours left and the adhesive in the containers must be completely dried up.

When preparing this technical data sheet, the present state of technology has been considered in accordance with our experience.

## VbF: B



X<sub>n</sub> = irritant



F = highly flammable

#### Warning:

Irritating to eyes and respiratory system

#### Safety advice:

- Keep out of reach of children
- Keep away from ignition sources – do not smoke
- Avoid contact with eyes
- Keep container tightly closed and store in a cool, well ventilated place
- If swallowed accidentally, consult physician immediately and show this container or label.



Please note: The above information can only be of a general nature. Because of the various modes of processing and use being beyond our control and of the large variety of materials we recommend that sufficient tests always be carried out. No liability for particular results of application based on the information and instructions given in this leaflet can therefore be given. Warranty applies exclusively to the consistently high quality of our products in connection with our sales conditions.

**Henkel KGaA - 40191 Düsseldorf, Germany**