


Technical Data Sheet
Tangit PVC-U
I. Material
Product name:
Tangit PVC-U special adhesive
Material type:

Solvent-containing adhesive based on tetrahydrofuran (THF stabilized).

Intended use:

Tangit PVC-U is suitable for producing tensile stress resistant connections between pipes (e.g. drinking water and gas pipes) and fittings made of PVC-U* in compliance with the recommendations of the German Plastic Pipe Association.

**PVC-U = rigid PVC*
Packaging:

 125 g tube
 250 g tin
 500 g tin
 1.0 kg tin

The cured adhesive meets the conditions of admission for drinking water supply via PVC-U pipes acc. to Recommendation No. VIII issued by the Plastics Committee of the German Health Office. Tested by the Water Technology Center (TZW-Karlsruhe).

Shipping units:

 TI 60 = 12 tubes of 125 g
 TI 24 N = 12 tins of 250 g
 TI 12 = 12 tins of 500 g
 TI 8 N = 6 tins of 1.0 kg

II. Special Features

- Tangit PVC-U complies with the requirements of EN 14814, Adhesives for thermoplastic piping systems for fluids under pressure.
- Tangit PVC-U complies with DIN 16970, KRV Guideline R 1.1.7 and the principles for the construction and testing of drainage pipes.
- Tangit PVC-U complies with the requirements of the LFGB and EC Directive 1935/2004 for aqueous, acidic and fatty food (SGS, Institut Fresenius, test report no. 727685-01/02).
- Tangit PVC-U received National Technical Approval (no. Z-42.4-284).

Tangit is supervised by:

1. Staatliches Materialprüfungsamt NRW, Dortmund, test mark PA-I2647
2. Süddeutsches Kunststoff-Zentrum, Würzburg
3. Centre Scientifique et Technique du Batiment, Champs sur Marne, CSTBAtec 15/81-57
4. Keuringsinstituut voor Waterleidingartikelen KIWA N.V.

Technical data
Raw material basis:

PVC-U, tetrahydrofuran (THF stabilized), methyl ethyl ketone, cyclohexanone.

Density (spec. gravity):

 approx. 0.96 g/cm³
Temperature resistance:

Corresponds to that of PVC-U.

Resistibility:

The bonded joints are waterproof. Their chemical resistance, especially to inorganic acids, depends on pipe tolerances, curing times, pressure loads, temperatures, acid type and acid concentration.

If the flow medium is concentrated acid, the special adhesive Tangit Dytex should be used (request separate Technical Data Sheet). In the case of PVC-C** pipes operated under pressure and high temperatures, use the special adhesive Tangit PVC-C (request separate Technical Data Sheet). The recommended product for pipes made of ABS is Tangit ABS.

**PVC-C = post-chlorinated PVC

Viscosity:

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

 *** 0°C = 273 K
 23°C = 296 K

Consumption:

For the production of 100 bonded joints the following **approximate** amounts of adhesive and cleaner are required:

Please note: The adhesive amounts indicated above are maximum values based on practical experience. The actual consumption in a given application depends on working method, pipe gap and temperature.

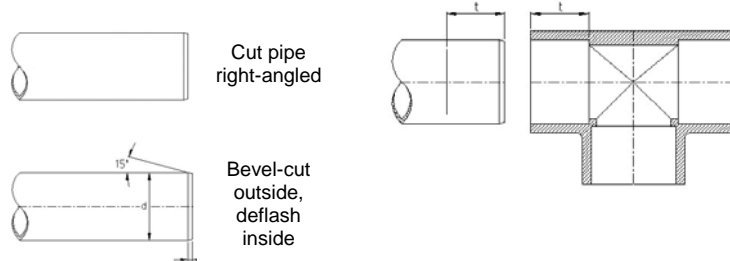
Pipe Dimensions		Tangit Adhesive	Tangit Cleaner
DN	OD (mm)	(kg)	(kg)
25	32	0.8	0.5
32	40	1.1	0.7
40	50	1.5	0.9
50	63	1.7	1.1
65	75	2.2	1.3
80	90	4.0	1.4
100	110	8.0	1.7
125	140	13.0	2.1
150	160	19.0	2.5
200	225	26.0	4.5
250	280	38.0	6.5
300	315	52.0	10.2

III. Instructions for use

Preparation of the surfaces to be bonded:

If pipe ends and sockets have not yet been prepared according to the illustrations below, they must be chamfered and deburred.

No tight and durable bond can be produced unless pipes have been properly chamfered.



Pipe Outer Diameter (mm)	Measure b in mm, application with fittings
up to 16	approx. 2
20 – 50	approx. 3
63 – 315	approx. 5

Pipe Outer Diameter (mm)	Plug-in Depth in mm t
16	14
20	16
25	19
32	22
40	26
50	31
63	38
75	44
90	51
110	61
140	76
160	86
225	118,5
280	146
315	163,5

Pretreatment:

Remove heavy dirt adherent to the surfaces to be bonded (pipe end outside, socket inside). Then measure the fitting insertion depth (= bond length) and mark it on the pipe end so that the application of the required amount of adhesive and the complete insertion of the pipe can be checked.

Final cleaning is done using Tangit Cleaner. Spray the cleaner onto white tissue paper and thoroughly clean the dry surfaces to be bonded so that they are free of dirt and grease. Use a new piece of tissue paper for each cleaning operation. The cleaned surfaces must be dry before applying the adhesive. Any ice must be removed by careful heating.

Application:

Stir Tangit PVC-U well before use. The adhesive should flow slowly off a stick held at an angle, forming a trail. In an axial direction apply a uniform coat of adhesive - first to the inside of the socket, then to the pipe. Apply thinly inside the socket in order to avoid the detrimental formation of beads inside the pipe, but apply generously to the pipe end.

The open time of Tangit PVC-U, i.e. the time from the start of adhesive application until joining the parts, depends on ambient temperature and/or film thickness of the applied adhesive. With a film thickness of 1 mm, the parts should be joined within the following times:

- 20°C = 4 minutes
- 25°C = 3 minutes
- 30°C = 2 minutes
- 40°C = 1 minute
- > 40°C = <1 minute

Immediately insert the pipe into the socket to stop resp. to full depth, without twisting or jamming. Hold fast for several seconds until the adhesive begins to dry. From DN 150 upwards, insertion is facilitated by using a pipe joiner. Remove any excess adhesive with tissue paper immediately after joining. As the adhesive cures rapidly, the components must be completely joined within 4 minutes after application. Since the application of Tangit in tubes is more time-consuming, this procedure should not be applied with pipes exceeding DN 80. From DN 80 upwards, the adhesive should be applied to pipe and socket simultaneously by two persons.

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20°C = 4 minutes
25°C = 3 minutes
30°C = 2 minutes
40°C = 1 minute
> 40°C = <1 minute

During the first 5 minutes after bonding, the pipes must not be moved. At temperatures below +10°C, this time must be extended to at least 15 minutes. The bonded pipes should be lowered into the trench after 10 to 12 hours. Wait 24 hours after the last bonding before filling the pipes or performing leak tests (up to a test pressure of 1.5 x PN). If the pipeline is to be charged with the operating pressure, a minimum waiting time of 1 hour per bar must be observed. If lines are not to be operated immediately, it is recommended to flush them thoroughly and allow them to stand filled with water.

0°C = 273 K
5°C = 278 K

IV. Special instructions

General information:

Before start of operation, pipe-lines must be carefully flushed in order to remove residual solvent vapours. Tangit PVC-U is ready for use and must under no circumstances be diluted.

Tangit PVC-U and Tangit Cleaner affect PVC-U. Pipes and fittings should therefore not be exposed to spilled adhesive/cleaner. Tightly close containers no longer in use in order to avoid solvent evaporation and thickening. Remove the skin of dried-up adhesive. Strip off thickened adhesive adherent to the brush with 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 (embrittlement). Long-term exposure to solvent vapours (as may occur during the drying phase when the pipeline is closed) may therefore result in damage to the system. Since Tangit PVC-U cures physically by evaporation, hardening may be slowed down considerably. Special installation techniques are therefore required at temperatures below +5°C. For this purpose, pipe ends and sockets to be bonded are warmed to +25 to +30°C by means of a suitable hot-air blower (explosion-proof) and then bonding is done as described above. The finished joint must be kept at +25 to +30°C for approx. 10 minutes.

Please note:

The installation of pressure pipes and fittings made of PVC-U requires expertise in the use of these materials. The instructions given here are therefore only meant to support well-trained staff in their work. Please make sure to observe the installation instructions of the pipe and fitting manufacturers as well as the respective guidelines and worksheets of the associations, e.g. DVGW worksheet W 328, KRV installation instructions:

- PVC pressure pipes, indoor installation
- PVC pressure pipes, outdoor drinking and process water supply
- instructions for PVC bonding of pressure pipes.

Safety measures:

Tangit PVC-U and Tangit Cleaner are flammable. Solvent vapours are heavier than air. They may accumulate at ground level and form explosive mixtures. Therefore ensure sufficient airing and ventilation during application 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 the pipes with water, flush and purge them well. Do not close / seal the pipes while drying. Prolonged inhalation of solvent vapours may be injurious to health. In order to minimize exposure to solvent vapours, keep used tissue paper in closed containers (e.g. buckets with lids). As precaution, protective gloves should be worn to avoid skin contact and maximum cleanliness should be observed (repeatedly wash hands during work and use a greasy skin cream or emulsion).

In case of contact with the eyes, rinse thoroughly with water and obtain medical advice. Immediately take off any clothing stained with adhesive.

For further information refer to the leaflets and accident prevention regulations of the employers' liability insurance associations and the safety data sheets. Detailed information on safety requirements and workplace hygiene in connection with Tangit can be found in the leaflet "Working with Tangit".

Storage:

For practical reasons, Tangit should not be stored at temperatures below +5°C since this leads to a higher viscosity and thickening of the adhesive, thus affecting its workability. After conditioning at room temperature and thorough stirring, the temperature-induced viscosity increase and thickening is reduced again.

Shelf life:

If stored at +20°C, shelf life is at least 12 months for Tangit in tubes and 24 months for Tangit in tins from the date of filling. Date of manufacture and batch number are indicated at the bottom of the tin resp. at the tube end closure.

Disposal:

Product remains must be disposed of as special waste. Only recycle well-emptied containers with dried-up adhesive residues and free of solvent vapours.

The respective codes of the European Waste Catalogue (EWC) can be enquired from the manufacturer.

Internet:

www.tangit.com

This Technical Data Sheet is based on our present knowledge and experience.

**Please note:**

The above information can only be of a general nature. As materials and conditions may vary with each intended application and thus are beyond our influence, we recommend that the user always carries out sufficient tests to ensure our products are suitable. No liability can be accepted for particular application results based on the information and instructions given in this leaflet.

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