

Rusty tank? ... no problem!

WAGNER Tank Sealing Kits provide a complete solution for the long-term sealing of metal, plastic and aluminium tanks.

Processing

Please remember that the success of any tank sealing process depends on the quality of the preliminary work.

Please read these instructions on tank sealing carefully before you start working. Have all equipment and materials ready that you will need for the tank sealing. And never work without safety goggles and gloves.

Galvanic treatments (chrome plating), coatings and other necessary tasks should be carried out prior to sealing, since the finished coating could be damaged at temperatures above 130°C.

A warm work environment is better than a cold one. Low temperatures prolong the application time and the drying phase. The times stated in these instructions refer to a continuous ambient temperature of at least 15° C. At lower working temperatures you should expect to double the application times, to be on the safe side. And at temperatures around the freezing point or even below, you should not attempt to seal a tank. However, preliminary work such as cleaning and derusting can also be carried out at low temperatures with no negative effects.

Preparation

In preparation, everything that can be removed from the tank must be removed. Filters, fuel valves, tank level sensors, fuel caps, etc. could be damaged by the sealing and should therefore be set aside for the duration of the process.

All openings in the tank must be opened and closed several times during the cleaning and sealing process. Therefore, suitable screws and plugs should be manufactured/prepared in advance. Ideally, an old fuel cap should be used, which can be discarded afterwards. If not, a sturdy foil is needed in order to screw on the fuel cap without damage to the tank lock, cap seal or ventilation hole from the cleaning chemicals or the tank resin.

If you wish to protect the outside of the tank, it must be wrapped tightly in plastic foil. A suitable material for this would be a blue trash bag fastened with tape.

Water test

Every tank is different, and each will have their own peculiarities. It is therefore a good idea before pouring in the coating material to check the tank using water to see how the excess tank sealing resin can optimally be removed later. Depending on the construction, this will usually be the filling or draining opening (on motorcycles the hole for the fuel valve). Some tanks cannot be completely emptied. In the case of

such constructions, suction tools must be used to extract the excess liquid. An example of such a tool would be a large syringe with a matching extension hose.

During the water test it is best to observe how the liquid is distributed on the bottom of the tank. It is also a good idea to check whether larger puddles form. There is also a risk during the coating process that too much sealing resin will collect at such problem areas, drying too thickly. During this inspection it is also worthwhile to examine the construction of the inside of the tank, the position of the splash plates, openings in the splash plates, recessed tank lids, tank drains that are too high, brazed pipes and other construction peculiarities. This knowledge will be useful during the actual sealing process, when it is necessary to distribute the sealing resin optimally, without being able to look directly into the tank.

If the tank has any leaks, they should be sealed temporarily to facilitate preliminary cleaning, derusting, degreasing and phosphating. Before sealing the tank, these leaks can be sealed later with WAGNER single-component tank sealing resin. Important: leaks can also be exposed during preliminary cleaning and derusting. Watch out for this when derusting the tank.

Preliminary cleaning (if necessary)

Badly rusted or dirty tanks must be cleaned by mechanical means before the rust converting process. In addition to scales and flaking rust, old tanks frequently also contain rubber-like or gummy deposits from old oils, greases or fuels. These should also be removed during preliminary cleaning. Preliminary cleaning is not necessary in the case of tanks that are new, like new, clean or only slightly rusty.

An ideal method is the good old concrete mixer. Fill the tank with a few handfuls of sharp material, such as pointed screws or glass splinters (e.g. broken security glass, like from a windshield). When choosing this material, it is helpful to know what the inside of the tank looks like, as described above. Remember that you will have to remove all of this material from the tank after derusting. Screws can easily be collected with a bar magnet – not, however, if they are caught behind the rearmost of three splash plates. Glass splinters can be removed by sloshing water around inside the tank and shaking vigorously. But it can be a tedious process to get them all out, since the tank has to be completely dry first.

No matter what material is used, water must be added. About one third of the entire tank volume should be filled with the mixture. Then place the tank in the drum of the concrete mixer and fasten securely. Larger tanks can be fastened to the outside of the drum. The machine should turn and roll the tank in every direction at slow speed for about two hours.

Alternatively, you can shake and rattle the tank with muscle power. Large tanks may require several people. The tank does not have to be free of rust; that is what the rust converter is for, but all loose paint and rust splinters, and especially all coarse, greasy residue must be removed at the end of the cleaning process. Otherwise, repeat the process as often or as long as necessary to achieve satisfactory results.

Afterwards – as already mentioned – the tank must be flushed and cleaned in a suitable manner. All material that was placed in the tank must be completely removed.

Degreasing

Derusting must always be preceded by degreasing. Degreasing is absolutely necessary, also in the case of new tanks! At WAGNER Oldieoel we have tried all degreasing agents that are available for purchase. In the end, it turns out that the easiest and least expensive method is also the most effective: acetone and brake cleaner are the best degreasers. Acetone is very inexpensive, yet such large quantities are needed that the shipping costs would be higher than the price of the product. Therefore, we do not supply acetone ourselves. It can be purchased in paint stores and DIY markets.

Please observe the normal safety regulations: acetone and brake cleaner can form explosive gases – do not smoke while working and do not work in the vicinity of flying sparks.

Especially in the case of two-stroke and diesel vehicles the tank can be saturated with greasy or oily residue. This must be completely removed, since neither rust converter nor sealing resin can work effectively or adhere to a greasy surface.

The tank does not have to be filled to the brim with acetone. It is important, however, that the degreaser be in contact with all surfaces for several hours. This can be achieved by changing the position of the tank accordingly. Tanks with splash plates must be filled with enough acetone to ensure that the splash plates are degreased.

Afterwards, flush the tank with water. No degreaser should remain in the tank.

Derusting

Mix WAGNER rust converter with enough water to match the capacity of the tank to be derusted – the maximum possible dilution is 1:60 (1 part rust converter to 60 parts water).

Fill the tank completely with this mixture. Check for air bubbles caused by the tank construction. They can occur for example in tanks with a filler neck that is recessed in the top of the tank. Remove air with the aid of a syringe and an extension hose so that the hollow space fills with water. If this is not possible, the tank must be moved after half of the application time so that the hollow space can be completely flooded.

Caution: Fluctuations in the ambient temperature can result in expansion of the water/rust converter mixture in the tank. In this case, the mixture will emerge at the filling opening, which should be protected by an old rag or other means. During derusting, never completely close the tank; depending on the position, always leave the filling opening or outlet open!

Leave the mixture in the tank for two days, then completely drain the rust converter mixture. Badly rusted tanks need longer; a suitable time can be as much as 4 or 6

days, depending on the amount of rust. Low temperatures do not prolong the application time; the rust converter mixture is effective at temperatures of 0 °C or above.

Use small mirrors under conditions with sufficient light when checking the derusted surfaces. If you determine that the inside of the tank is not yet sufficiently derusted, the entire procedure must be repeated. The used mixture can be filtered through a fine sieve and used to fill the tank again. Or you can prepare a new mixture, for faster results.

Before the second attempt it is necessary to degrease the tank again with acetone or brake cleaner. Tests have shown that greasy or oily residue is ALWAYS the cause if the rust converter mixture does not achieve satisfactory results. Especially – but not only – in the case of two-stroke and diesel vehicles, greasy residue often gets underneath the rust and scales, where it is difficult to remove. However, no rust converter is effective on a greasy surface, and no sealing resin will adhere there, either.

Depending on the dilution ratio or concentration of the rust converter/water mixture a rust film can easily form in the tank after drying. We recommend conducting final phosphating with the remaining quantity of rust converter.

Cleaning after Derusting

All dust, residue, and liquid rust converter must be removed from the tank before applying the final coating.

Therefore, immediately after removing the mixture of rust converter and water you must wash the surfaces with acetone until the surfaces are completely clean. Then remove the acetone and wait a few minutes for the surfaces to dry. Once dry inspect the surfaces again, if you find any grease/oils/or other contaminants you will have to wash them with acetone again. If the surfaces are extremely dirty we recommended repeating the washing process with fresh acetone or adding fresh acetone during the washing process. This keeps dissolved residues from drying and sticking to the cleaned surfaces.

DO NOT add water to the tank after cleaning, rinse with pure acetone only! Before moving on to the next steps, check the surfaces to make sure the steel is bright and ready for the final coating.

Final phosphating (optional)

To intensify the effect of the phosphating, mix the remaining rust converter at a ratio of 1:5 and pour it into the tank while it is still wet; then distribute the mixture by shaking the tank and wait about 2 - 4 hours. Turn and move the tank several times during this time so that all surfaces are phosphated. The phosphate layer will seldom be completely even; it is difficult to avoid spots or runs. This depends on the condition of the underlying surface. But this has no effect on the quality of the tank coating.

In most tanks the rust converter leaves a clean metallic, grey phosphated surface. Depending on the applied thickness of this phosphate layer, there may be a powdery dust on the surface. On other tanks a very thick phosphate layer forms. A jelly-like layer can form especially if the mixture is left in the tank for too long.

Neither dust nor residue nor liquid rust converter may remain in the tank. Therefore, final cleaning with acetone is always necessary to produce a surface that is clean, dry and firm. After the final phosphating do not use water in the tank – rinse only with pure acetone. The sealing coat can be applied directly to the surface cleaned in this manner.

Dispose of any leftover acetone in accordance with regulations for hazardous substances.

Drying

Afterwards, immediately uncover all openings on the tank and provide for air circulation, ideally blowing out the tank with a compressor. Speed up drying with a hot air blower or hair dryer.

Completely dry the tank as quickly as possible to prevent film rust formation.

Sealing (if necessary)

If the water test revealed any leaks, they can now be sealed with WAGNER single-component resin. Where possible the seam or hole can be pre-treated from outside with the tank sealing resin. Apply two or three layers of resin and then carry out the internal sealing process.

Larger holes must be freed of paint by sanding and then treated with rust converter. Then cut a patch of glass cloth (fiberglass) and glue it over the hole with tank sealing resin. Afterwards, use a brush to apply a thin coat of tank sealing resin over the patch. After a few hours, when the resin has dried firmly, apply a second layer of resin. Repeat inspection after a few hours, then apply a third layer of resin.

To prevent the tank sealing resin from being visible from outside one can attempt to tape the porous area with duct tape and then carry out the inner sealing process. In this case, at least three coats of inner sealing should be applied to the damaged area. Do not remove the tape until the tank sealing resin has dried completely, at least 10 days after applying the coating.

Coating

WAGNER single-component resin hardens when exposed to humidity in the air. It is therefore advisable to carry out the coating process when the tank has completely dried, so that the remaining amount does not come into contact with moisture. Any remaining amounts poured from the container must be sealed carefully to prevent exposure to air and moisture, so they can be used at a later time for additional coatings.

Before sealing the tank, all tank openings must be closed carefully. After pouring the WAGNER single-component resin into the tank, the filling opening must also be closed – ideally with a suitable tank cap. If the tank cap is to be used later as such, a tear-resistant plastic foil should be placed over the opening before screwing on the cap, so that the tank ventilation hole is not accidentally sealed.

Check the protective covering of the tank. If, despite all care, resin emerges at undesired locations, it can be removed with acetone or PU thinner. Damage to dry surfaces cannot be ruled out when removing resin!

First layer

Pour the needed quantity of WAGNER single-component resin into the tank and shake vigorously; then carefully slosh it around. The resin should completely saturate all inner walls, especially also any partitions or splash plates.

After about 5 to 10 minutes of sloshing, pour out the resin remaining in the tank. It is important here to remove the entire quantity of excess resin from the tank. If necessary, use a syringe with a suitable extension (e.g. silicone hose) to extract the resin. Do not pour residual amounts removed from the tank back into the original container; use a separate container.

If the tank has ventilation pipes, they must be blown out with compressed air to keep them free and prevent accidental blockage.

Depending on the ambient temperature it can take about 4 hours until the liquid reaches the solidification point. During this time the tank should be turned repeatedly to change the direction of flow. In the end, it cannot be avoided that a certain amount of liquid will accumulate at the lowest point. The tank should therefore be positioned at the end of the process so that this thickened remaining liquid cannot interfere with the function of the tank.

Due to the construction of a very few tanks, there is no way to avoid a larger accumulation of tank sealing resin in a puddle at the lowest point of the tank. Such a puddle must be extracted before it becomes too thick. Once the liquid has thickened, extraction is no longer possible!

Second layer

When the inner coating is dry to the touch and no longer sticky (after 12–24 hours, depending on the processing temperature), pour in the rest of the WAGNER single-component resin and slosh around, as described above. Again, completely empty the tank to remove any remaining liquid.

A second coating is no longer possible after a hardening time of more than 48 hours, since the two layers can then no longer bond with each other. If for any reason this happens and the first coating has already hardened, there is no other alternative but to dispense with the second coating.

Touch-up (if necessary)

The edges of the openings for fuel sensors, pumps, tank filling necks, etc. and the metal areas of these openings can be touched up with sealing resin by using cotton buds or small brushes.

Hardening

For hardening, store the tank open in a dry, well-ventilated room. The hardening time of the inner sealing in the tank is about 7 to 8 days at temperatures above 15 °C. Below 15 °C ambient temperature allow the sealed tank to harden twice as long before filling it.

Cleaning

All tools and objects can be cleaned with acetone, as long as the resin has not dried thoroughly.

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