INTRODUCTION

The durability of paint systems depends as much upon the surface preparation as upon the quality of the coating. Even the best paint will not give a full protection when applied on a steel surface which is not entirely rust free.

CONTENTS

The treatment of corroded surfaces has remained a thorny problem despite the existing techniques. This is due to the fact that the development of a passivation process requires a thorough knowledge of the complex corrosion phenomena. Moreover, the treatment must be practical and easy to use when applied in the field.

Most mechanical surface treatments, such as scraping, wire-brushing or sandblasting are generally unsatisfactory as they only retard subsequent corrosion. Such abrasive processes do not often remove all the rust from the cavities of the surface. Moreover, the surfaces obtained are highly reactive and the bare steel metal exposed to atmospheric humidity (dew, rain, etc.) will rust unless the relative humidity of the air lies below +/- 70 percent.

Conventional chemical agents such as phosphoric acid are also unsatisfactory as their reaction with the different rust layers is heterogenous.

Sulphuric and hydrochloric acids are pickling agents, and since iron choride and iron sulphide are water soluble salts, these acids may not be considered as rust converters.

For various reasons, the rust will not be completely removed, and, in many cases, it will not be possible to avoid the spread of the rust beneath the paint film. Obviously, the durability of paint systems subsequently applied will be limited.

Removal of the rust is difficult to achieve, expensive, and often unsatisfactory. The ideal solution would be, therefore, to passivate the layers which cover it. The TANIK rust stabilizer has been developed with this principle in mind.

TANIK is a rust converter based on tannic acid. It reacts with the rust and forms a metallo-organic protective film which neutralizes the corrosion process. TANIK has been developed from basic research made on the chelating effect between the different iron oxides and tannic acid and on the protective effect resulting from this reaction. The inhibitive and protective effects of TANIK have been tested and approved by several scientific centers in Belgium and abroad.

GENERAL PRINCIPLES OF THE CORROSION OF IRON

The following details are intended so give a short, clear survey of the main differences existing between the rust converter TANIK and a conventional rust inhibitor.

The rusting of iron results mainly from the development of a multitude of cathodes and anodes on the steel surface, as the latter is exposed to oxygen and humidity. A typical example of such microcell formation is observed on metallic surfaces which are partially immersed, and thereby irregularly exposed to air. Areas which are subject to a higher oxygen concentration turn into cathodes, while areas of poorer oxygen concentration turn into anodes.

Modern electrochemical corrosion theory has established that a potential difference exists between these anodic and cathodic areas, which results in solution of iron at the anode and the formation of hydrogen at the cathode.

Schematically, iron corrosion occurs through the following phases at the anode, the metal goes into solution as the ion and releases electrons

$Fe \rightarrow Fe^{++} + 2e$

The released electrons may be absorbed following a reaction that involves water and oxygen from the air .

$2\ H^2O + O^2 \rightarrow 4e + 4\ OH^-$

while ferrous ions turn into hydroxide .

$2\ Fe^{++} + 4\ OH^- \rightarrow 2\ Fe(OH)^2$

From this ferrous hydroxide, a series of oxidation reactions are made possible.

$3\ Fe\ (OH)^2 + 1/2\ O^2 \rightarrow Fe\ 3O^4.3H^2\ O$

$2Fe^3O^4.3H^2O + 1/2O^2 \rightarrow {}^3Fe^2O^3.2H^2O$

Sometimes, iron hydroxide (FeOOH) i. e. red rust may also form.

As shown above, rust cannot be defined by one single chemical formula as it never appears in the same form. On the contrary, rust is often made by the superposition of several layers of different chemical composition.

This corrosion in stratified layers is typical of iron rusting, and may be particularly observed on steel members which are in intermittent contact with aerated water. Buoys and canal lock gates, or steel structures exposed to varying tide or water levels, characteristically show this type of corrosion.

This type of rusting is the worse one, as the rust consists of iron oxides and hydroxides spread unequally on the surface and to some depth, thus presenting an irregular surface on which no organic, mineral, or metallic coating will adhere properly.

The poor effects of surface treatments, based on traditional inhibitors are due to the heterogeneous nature of the rust, since indeed such products react differently with the various rust layers.

Phosphoric acid, for instance, is unable to bind the converted rust to the steel surface. It is unable to bind both the divalent iron and the trivalent iron at the same time. As rust is particularly $Fe(OH)^3$, the Fe III phosphate thus formed will adhere poorly to the Fe II phosphate layer which is bound to the metal substrate. The converted rust is therefore left in the surface without binding with the Fe II phosphate formed on the metal.

This is the reason why a conventional rust converter, used on heavy rust, is unable to effect a satisfactory passivation of the surface and assure good adhesion of subsequent paints.

The main difference between a conventional rust inhibitor and **TANIK** is that the latter stabilizes and binds together ALL the stratified rust layers covering the steel surface.

CHEMISTRY OF TANIK

COMPOSITION

TANIK is a rust converter based on a tannic acid of high molecular weight plus synthetic additives. Tannic acid is a glucoside of gallic acid.

TRIPLE ACTION ON THE RUST

TANIK reacts in depth with all the stratified rust layers covering the rusted steel surface. The iron oxidation products are then stabilized to form a ferri-tannic complex. This reaction is in fact a chelation, i. e. A LINKAGE OF IRON AT THE ATOMIC LEVEL. Chelation is characterized by the formation of a metallo-organic complex of blue-black colour which is extremely insoluble. It stops the corrosion process by preventing the migration of ions so that the destructive electrochemical corrosion reaction can no longer occur on the steel surface.

TANIK is characterized by its homogenous reaction with all the iron oxidation products. In fact, the stabilizer complexes both the iron oxidation products as well as the bi and trivalent iron hydroxides. Moreover, TANIK binds together both Fe II and Fe III at the same time. This property is essential, as it results in the forming of an insoluble, stable, smooth protective coat which adheres strongly to the metallic surface.

The additives in the **TANIK** formulation are used to guarantee a perfect homogeneity of the protective coat when the stabilizer is applied on a surface with rust free areas. Discontinuity in the protective coating is there-fore avoided, since the stabilizer also reacts with the rust free metal. The additives also make the metallo-organic coating adhere more strongly.

In short, **TANIK** has a triple action on the rust .

- PENETRATION through all the stratified rust layers.
- REACTION and TRANSFORMATION of the rust.
- STABILIZATION and BINDING of the rust layers together by transforming them into a protective, 100 % neutral coat.

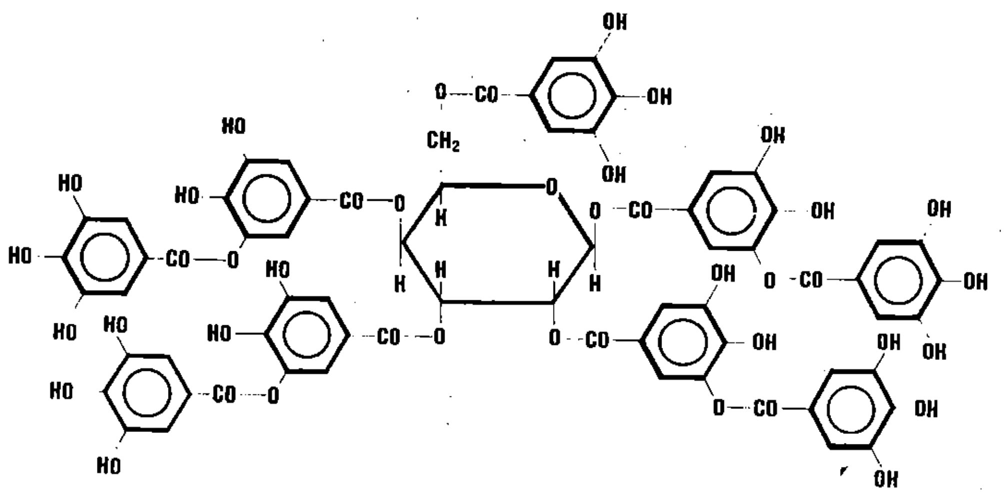
FORMATION OF A FERRI-TANNIC COMPLEX

The molecules which may react with rusted iron substrates and form Fe complex are well known. Such reactions are obtained particularly from reactive groups like methylene-disalicylic acid, certain phenolic resins, resorcin, pyrocatechol or pyrogallol.

A few reactive groups have received special. Attention among those are the polyhydric, phenol and acetoacetate groups, which react to form metal complexes (chelates), and phosphonic or sulphonic acid groups, which form ionic complexes (salts).

It should be noted that most systems complexing the rusted iron substrates contain a maximum of 3 hydroxyl groups. Consequently, they form Fe complex with only a small number of iron molecules, and only comparatively small molecules are formed. It is essential to use a rust converter which is rich in reactive groups so as to obtain maximum complexing and the most insoluble protective coat possible.

This high degree of insolubility is attained by application of **TANIK**. In fact, the special tannic acid grade contained in **TANIK** has a high molecular weight, and the number of its OH groups is estimated at 23, as per the following formula :



The ferri-tannic complex obtained is extremely insoluble, and molecular weight measurements are difficult. However, it has been possible to establish the existence of a polymeric structure.

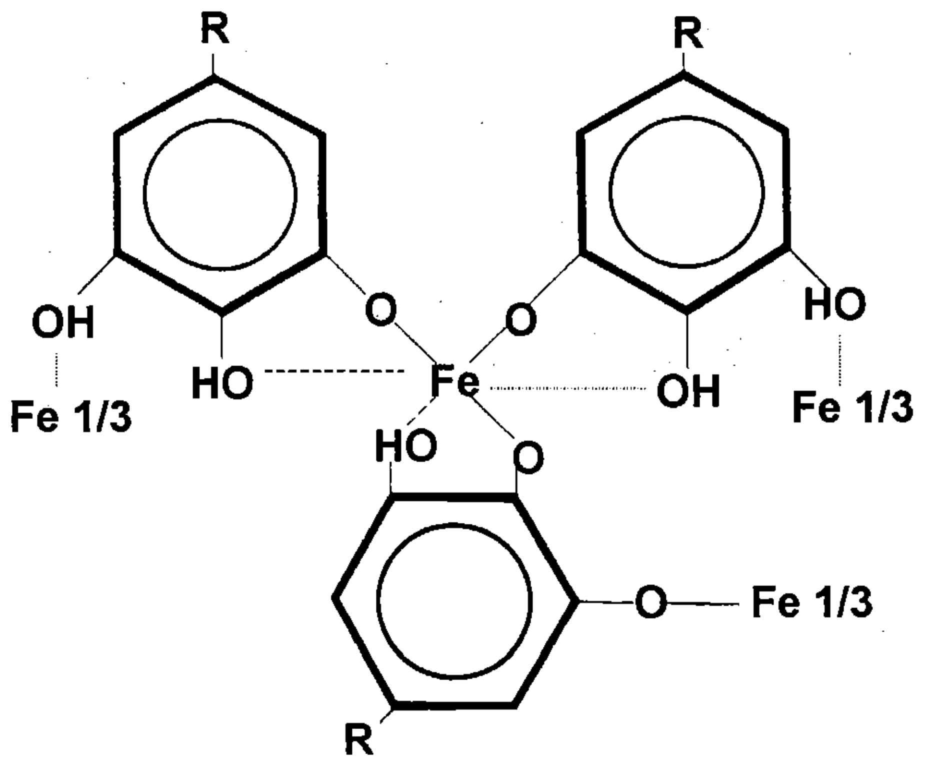
The iron complex appears to exist as ferric, and the formation of this complex depends upon the action of the oxygen contained in the atmosphere. In fact, no complex will form under an atmosphere of inert gas.

The adhesion and resistance of the ferri-tannic complex increase steadily to a maximum after 24 hours, after which the protective coating has become practically insoluble. The tannic acid and the iron have by now formed a real network of **TANIK** molecules and Fe atoms.

In fact, every molecule of **TANIK** can chelate several Fe atoms. In addition, a single Fe atom can also be linked to 3 different molecules of **TANIK.** This explains the considerable complexing potential of **TANIK** and the strong resistance of the complex to corrosive agents.

Infra-red spectroscopic studies on model compounds, and the corresponding Fe complexes formed on steel, have provided evidence on the structural changes involved, Although spectra are fairly complex, they can be interpreted in terms of strongly semipolar hydroxyl groups (associated with chelation) and C-O-Fe linkages.

A re-arrangement of the aromatic ring is also observed in certain cases together with the probable appearance of quinonoid structures. The suggested structure of tannic acid combined with $Fe_2O_3 \times H_2O$ is illustrated in the following formula .



PROPERTIES

The following properties were particularly noted .

- resistance to accelerated weathering
- preventive protective effect
- drying and reaction time
- compatibility with subsequent coatings
- temperature range for application
- coverage
- adhesion

RESISTANCE TO
ACCELERATED WEATHERING
(ASTM BI17 - 64)

In spite of the limitations of the interpretation in the results of salt-spray tests, the latter permit an accurate comparative measurement of the protective effect of **TANIK**. Metal panels treated with **TANIK** were exposed in an air-conditioned salt-spray cabinet, to an atmosphere which was rich in vapour containing 5 % sodium chloride.

Just prior to exposure, a nearly corner-to corner X-mark (EVANS X) is scribed to the bare metal.

The panels are inclined upwards at 15° to the vertical, and are exposed to a saline atmosphere which is maintained at a temperature of 35° C.
(100° F). The result is that the panels are continuously covered with a thin, slowly flowing film of well-aerated salt solution.

This test does not exactly reproduce atmospheric conditions. Recognizing this limitation, it is generally accepted that a 100 hours exposure to a salt-spray test is equivalent to a 12 months exposure in a rural area.

The paint film covering the panel thus exposed may exhibit one or more of the following forms of failure.

1. - RUSTING ALONG THE SCRIBE MARK .

this may occur as a simple, fairly uniform widening of the rusty strip, or it may proceed rapidly and irregularly under the paint film via undercut areas and blistering adjoining the scribe mark.

2. - UNDERCUTTING FROM THE SCRIBE MARK : this is destruction of the paint film resulting from rusting beneath the paint film.
This underrusting is characterized by areas where the paint film has lost adhesion. Such areas extend outward from the scribe mark.

3. - ZONE OF BLISTERS ALONG SCRIBE MARK : extensive blistering along the scribe mark usually occurs in fairly uniform but ever widening zones on both sides of the mark. The advancing blister zones may be preceded by bands in which adhesion has been lost, revealed usually by subtle sub-surface yellowing of the coating.

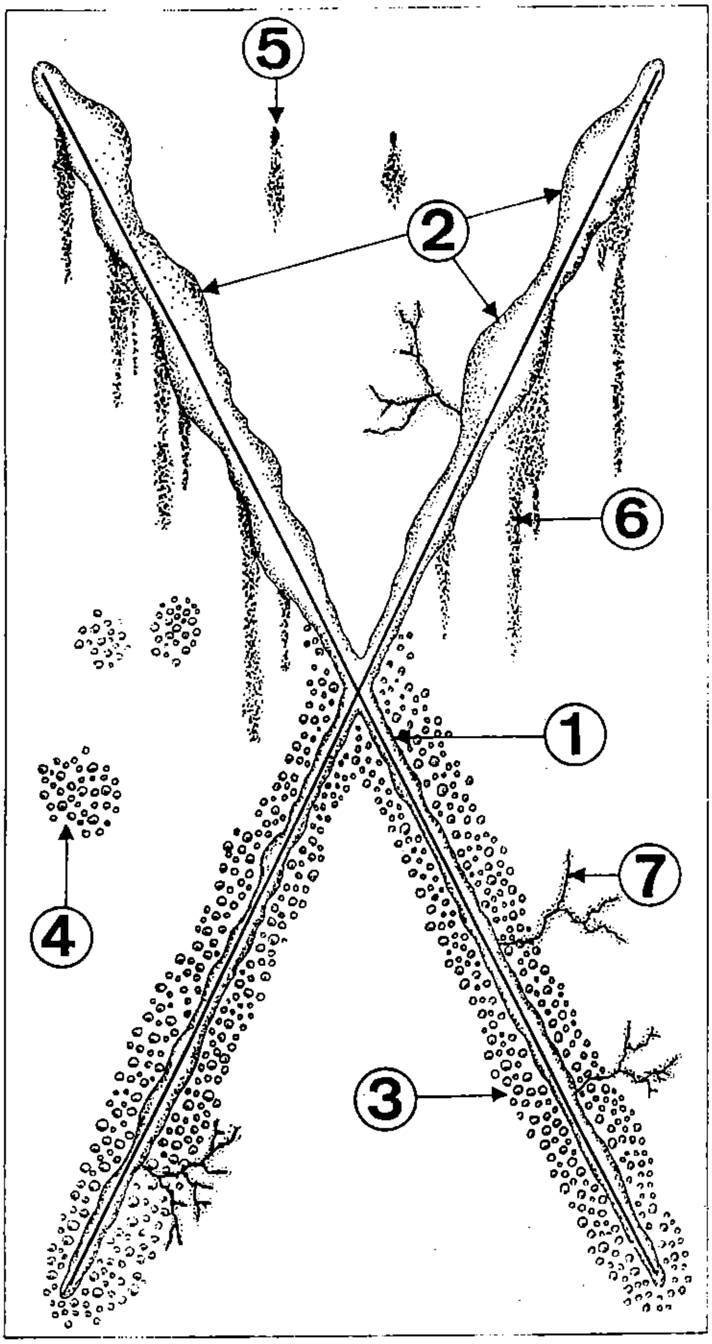
4. - RANDOM BLISTER COLONIES : these are unpredictable and randomly distributed groups of blisters.

5. - RANDOM SPOTS : random single spots are also observed which penetrate the coating.

6. - RUST-COLOURED STAINS : as salt Solution flows down the face of the. test panel, stains caused by the oxidation products are deposited. The intensity of the stains shows the degree of resistance of the metal exposed.

7. - FILIFORM RUSTINGS . rusting continues after the panel has been permanently removed from the salt-spray cabinet. This is usually manifested as either general rusting, or rusting in filament like patterns. Both types of rusting proceed outward from previously corroded areas.

The following figure illustrates these forms of failure.



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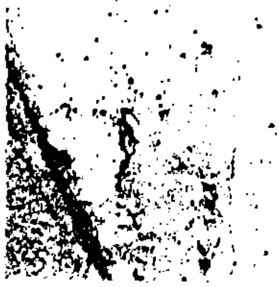


⑤

1. Rusting along the scribe mark.
2. Underutting from the scribe mark.
3. Zone of blisters along scribe mark.
4. Random blister colonies
5. Random spots.
6. Rust-coloured stains.
7. Filiform rustings.

In order to demonstrate the important protective effect of the **TANIK**, 5 different panels were exposed to salt spray testing.

Method :

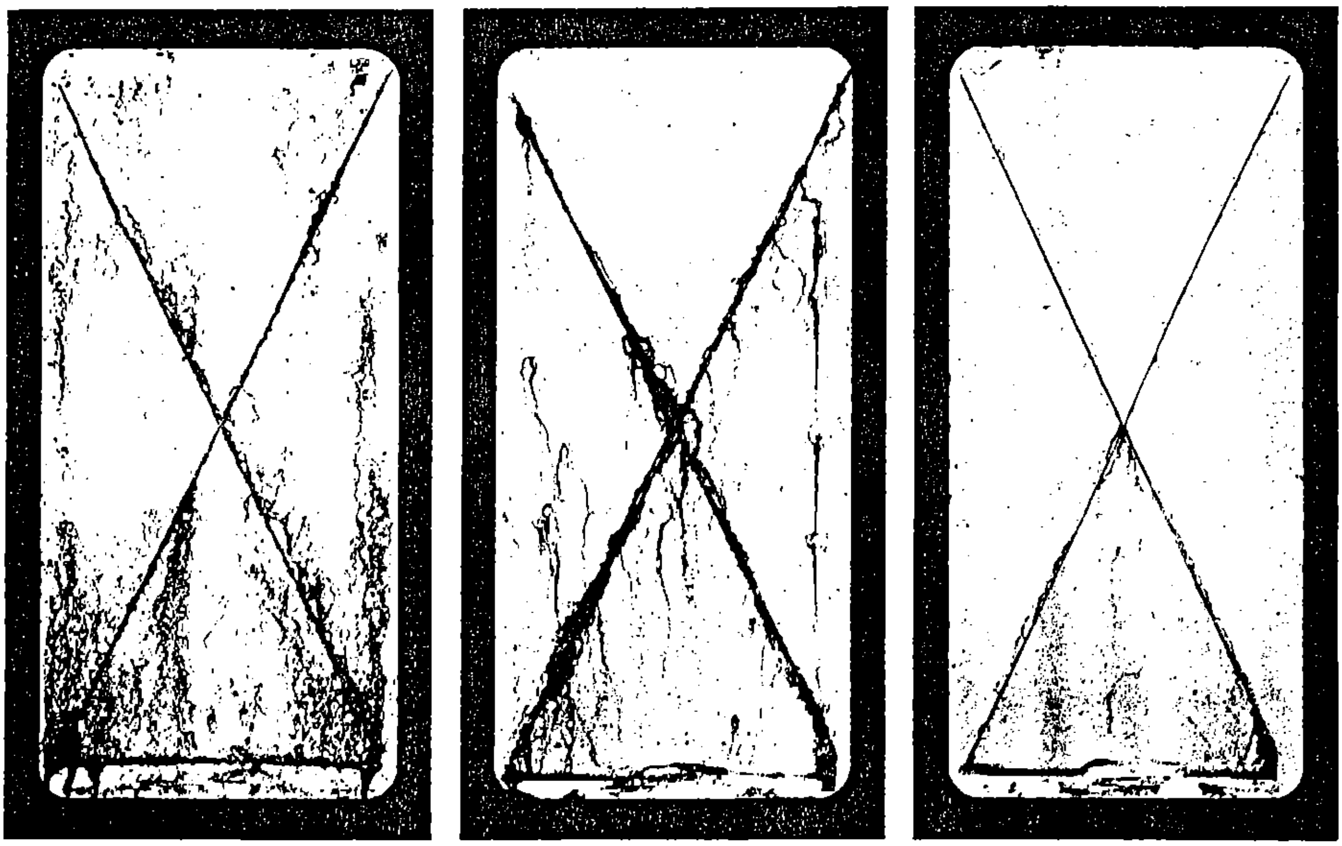
All panels were weathered prior to treatment, and the rust was more than 100 microns (4 mils) thick.

The surface was then prepared prior to painting in five different ways (sand blasting, wire brushing, application of **TANIK+**, etc.)

The surface was cleared of dust and oil, then all five panels were coated with two coats of a primer based on red lead oxide and one coat of synthetic paint. The paint system has a total dry film thickness of about 125 microns (5 mils).

The behaviour of the 5 panels salt-spray exposure is summarized in opposite Table.
The main feature that can be distinguished among the results is the high level of corrosion protection of **TANIK +**: Panel C exhibits but little rusting besides the scribemark itself.

A **B** **C**

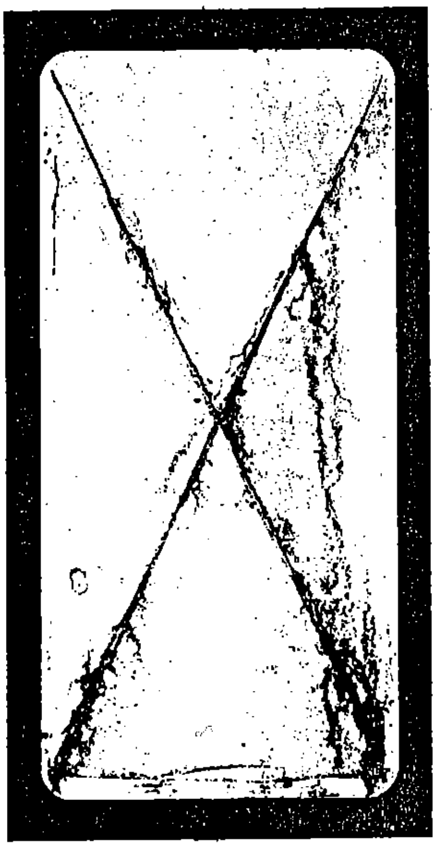


SALT-SPRAY BEHAVIOUR

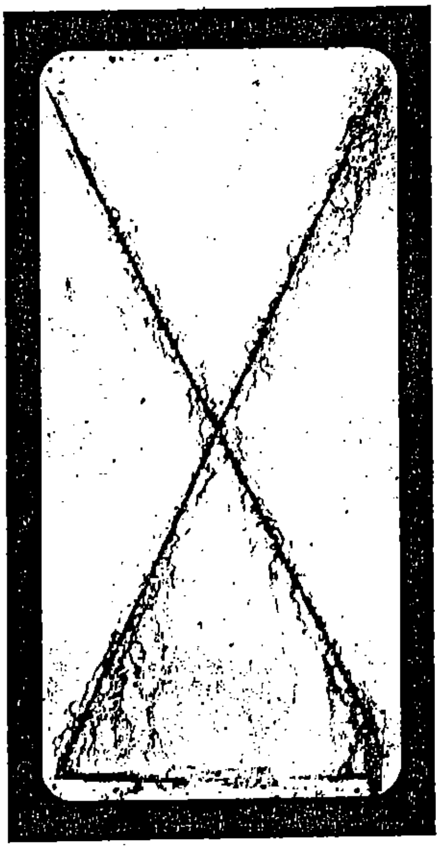
	Surface preparation of The rusted substrate.	Condition of coatings after 2.000 hours testing.
A	Wire-brushing.	Heavy undercutting from scribe mark. Large zones of blisterings along scribe mark : D2. (*). Surface densely covered with random blister colonies :M6. Numerous pin-point rust spots. Wide rust spots from X.
B	Blast-cleaning.	Severe undercuttings with destruction of paint film to 3mm from scribe mark. Large blistering areas alongs scribe mark : M2. Some isolated small blister colonies on surface : M8. Several pin-point rust spots. Large rust-coloured stains from scribe mark.
C	One coat of TANIK	No undercutting from scribe mark, no destruction of paint film. Some small blister colonies along scribe mark : M8. No random blistering on surface. No pin-point rust spots. No rust coloured stains.
D	One priming coat based On fish oil	Light undercutting from scribe mark with limited destruction of paint film, up to 1 mm from scribe mark. Medium blistering along scribe mark : M4. Some random small blister colonies on surface : M8. Few if any pin point rust spots. Faint rust spots from X.
E	Treatment with 20 % Solution of phoshoric acid	Heavy undercutting from scribe mark with destruction of paint film up to 3 mm from scribe mark. Medium dense blistering along scribe mark : MD4. Many random blister colonies on the surface : M6. Faint rust-coloured spots from X. No random rust spots.

* The aforementioned references D2, M2, M4, MD4, and M8 indicate the degree of blistering of the paint film according to the ASTM D714

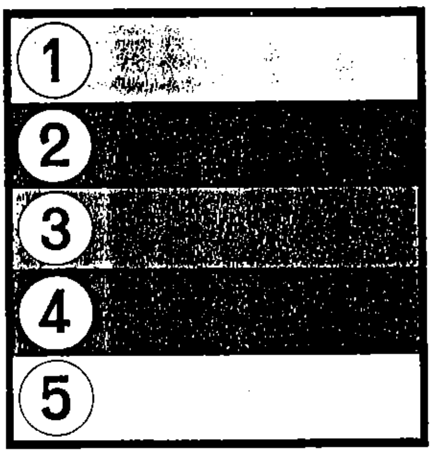
D



E



1. *Rust layer of 100 microns (4 mils)*
2. *One rust converter coat*
3. *First coat of red lead primer*
4. *Second coat of red lead primer*
5. *Finishing coat*



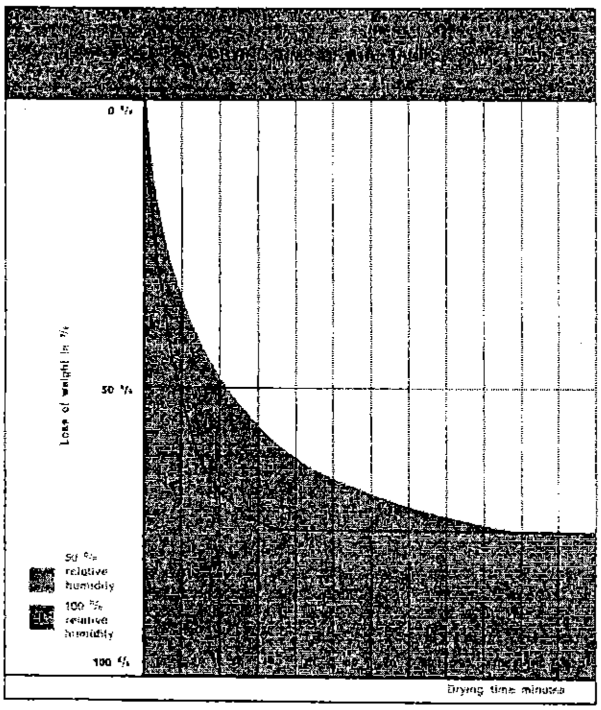
DRYING AND REACTION TIME

Drying time

The drying time varies from 15 minutes to 1 hour, depending upon atmospheric conditions. The drying time of **TANIK** is illustrated by the curve shown hereunder. Here **TANIK** is kept at a temperature of 20° C (68° F) and a relative humidity of 50 %. The drying time is measured by the loss of weight (evaporation of solvents) of the **TANIK** applied on a surface at the rate of 1 gr for a 3 dm^2 (46.5 sq. yards) surface.

When **TANIK** is applied under very wet conditions (relative humidity higher than 50 %) the drying time is of course longer but the Fe-chelation is even more efficient.

TANIK may therefore be safely applied on a damp substrate.



DRIYNG TIME OF THE TANIK

Reaction time

After 12 hours, the chemical reaction of TANIK with the rust is completed. This reaction period is constant as long as the treated surface is maintained at a temperature. Of +2°C to + 40°C. The reaction time also remains unchanged under heavy dampness on the surface to be treated.

It should be noted that one is not necessarily obliged to wait until the reaction is completed before applying the first coat of primer. However, it is necessary to wait at least 3 hours before application of the subsequent coatings.

COMPATIBILITY WITH SUBSEQUENT PAINT COATS

As the protective coating is a ferri-tannic complex, no problem of compatibility with subsequent paint coatings is to be feared.

a). **Primers** : undercoats based on red lead, zinc chromate or red iron oxide were applied on **TANIK**. No incompatibility was observed, and it appeared that the application of primers based on red lead and zinc chromate is to be recommended.

The adhesion of red lead and zinc chromate based primers on **TANIK** is particularly good. As a matter of fact, in addition to its «physical» adhesion due to organic binders, the Pb 304 oxide can react specifically with the polyphenolic groups of the **TANIK** which functions as a reducing agent.

Zinc chromate is equally appropriate. These reactions of oxide reduction at the interface between coats contribute to the «chemical» adhesion.

As far as adhesion is concerned, it can be assumed that all basic or oxidative inhibitive pigments are compatible with **TANIK**, and improve the intercoat adhesion of **TANIK** with the undercoat.

b) **Top coats** . finishing coats should not be applied directly on **TANIK.**

The porosity of a dry film is inversely proportional to the square of its thickness. It is always recommended therefore to coat a steel surface with a paint system which has a minimum total dry film thickness of 125 to 180 microns (5-7 mils) so as to obtain an efficient dry film.

A substantial portion of this thickness should consist of priming coats, which cover the peaks and irregularities of the surface, and provide a smooth, rust inhibitive base for the finishing coats.

c) **Compatible paints** . tests were made by applying various types of paints (primers and top coats) on **TANIK** so as to determine their compatibility.

- PAINTS BASED ON POLYURETHANE .
TANIK is compatible with top coats based on polyurethane. The very high adhesion observed is due to the fact that the hydroxyl groups which are available from ferri-tannic complexes react with the iso-cyanate, thus permitting a binding of the **TANIK** with the polyurethane.

PAINTS BASED ON ALKYD BINDERS :
TANIK is compatible with paints based on alkyd resins - good physical adhesion.

PAINTS BASED ON CHLORINATED RUBBER :
compatible - excellent physical adhesion.

PAINTS BASED ON POLYESTERS :
compatible - good physical adhesion.

PAINTS BASED ON EPOXY RESINS :
compatible - good physical adhesion – additional chemical adherence starting at 100° C (210° F) by reaction of the epoxy group with **TANIK**.

PAINTS BASED ON PHENOLFORMALDEHYDE RESINS :
paints based on phenolic resins combined with oxidising oils or thermosetting phenol resins are compatible with **TANIK**. The slight excess of formaldehyde in these resins was found to contribute to the adhesion between **TANIK** and the phenoplast.

THERMOSETTING LACQUERS :
A thermosetting grade, **TANIK F**, has been perfected for use with stoving finishes. The technical data sheet describing **TANIK** F will be sent to you on request.

COMPATIBILITY WITH SUBSEQUENT PAINT COATS

COVERAGE

The coverage of TANIK is particularly high. One litre of TANIK neutralizes as much as 30 square meters (135 sq. yards/U.S. gallon or 160 sq. yards/U.K. gallon). The average coverage is 25 square meters per litre (115 sq. yards/U.S. gallon or 140 sq. yards/U.K. gallon).

It is recommended, in treating large surfaces, to make a test application to determine the surface coverage, since coverage will depend upon the condition of the surface being treated.

TEMPERATURE RESISTANCE

7-day resistance tests were made at a temperature of 260° C (500° F). The protective coat remained unchanged throughout the tests.

ADHESION

TANIK may be applied on a damp surface without inconvenience.

The resistance to water of the protective film increases steadily to a maximum after 24 hours, at which point it is exceptionally high and a real network of TANIK molecules and Fe atoms is formed. In fact, every molecule of TANIK combines CHEMICALLY with several Fe atoms, which gives the protective coat outstanding adhesion. This protective film is also an excellent base for subsequent paint coats.

It should, however, be noted that the TANIK, like any other coating, must be applied on a physically clear rust. No product whatsoever will adhere to a surface which has not been cleared of mill-scale, rust chips, loose rust, blisters, deteriorated paints, greases, etc...

TEMPERATURE RANGE FOR APPLICATION

TANIK may be applied at a temperature of +4° C to + 40° C.

The rust stabiliser must be kept above 0° C (it's a wateremulsion). If the surface to be treated is hot and especially in dry climates (less than 40 % relative humidity) a special grade of **TANIK** with extended drying time should be used to allow for proper reaction. Please inquire for more details as suck formulations are commercially available at all time.

CHARACTERISTICS

Product name	TANIK +
Chemical characterization	Synthetic polymers in water dispersion containing chelating agents
Physical and chemical data	
Form	Liquid
Colour	Beige
Odor	Slight

	Value	Unit	Method
Density 20° C	1.02+/-0.05	g/cm^3	
Solubility in water	miscible		
PH value 20° C	1.4+/-0.3		
Viscosity 20 ° C	12-16	Sec.	Ford cup n°4
Dryingtime	3 Hours		
Overcoatability	3 Hours		
Coverage	20 to 30 sq.m/Liter		
Dilution	Ready for use. Do not dilute		
Solvent for tools cleaning	Water		

PAINT SYSTEMS

Research on the behavior of a great number of paint coatings on TANIK shows that some of them have excellent compatibility, depending on the chemical nature of the binders, pigments and additives used in paint formulation, Systematic research was carried out to develop paint svstems which are perfectly compatible with the rust converter.
Two ranges of anticorrosion paints have been formulated by choosing components, inhibitive pigments, binders, additives which have a great chemical affinity with **TANIK**.
Both paint systems, conventional and high-build, have wide uses. Some applications are described above.

THE CONVENTIONAL PAINT SYSTEM
The permeability of a dry paint film is inversely proportional to the square of its thickness, For long term protection, total thickness of paint systems should at least be 125 microns.

That is why normally the standard technique stipulates the application of 4 conventional paint coats 2 primers and 2 finishing coats so as to obtain a total dry film thickness of about 125 microns.

This system is perfectly suited to a wide range of industrial applications. However , such protection is only effective where the coatinq is not exposed to a corrosive atmosphere And where the surface is painted immediately after sand-blasting Both conditions are seldom met at the same time.

The conventional paint system will give long-term protection and is recommended where the protective coating is not exposed to highly corrosive atmospheres. The conventional system has a constant effect on both rusted or clean steel surfaces. and includes :

TANIK, chemical stop-rust based on tannic acid with high molecular weight and on additives.

Antirust primer of a good quality : alkyd, alkyd – urethane, water-borne, etc., 2 coats.

Finishing coat : 2 coats

THE HIGH-BUILD PAINT SYSTEM

A rust-free, blast-cleaned, or corroded metallic surface shows rough peaks which may be more than 125 microns high. It is scientifically and experimentally proved that for maximum protection the total dry film thickness should be not less than 200 microns. This thickness can be achieved by 3 coats in the high-build system. With conventional paints, more than 7 coats are required for equivalent film thickness.

Most high-build paints are based on chlorinated rubber. This binder was found, years ago, to be extremely resistant to highly corrosive atmospheres, and to the attack of a great number of chemicals. Its adhesion on the rust converter is excellent.

This high-performance paint system is recommended for a great number of applications. However its resistance to strong solvents (e.g. ketones and esters) and to continuous exposure to temperatures above 80° C, is limited.
Our laboratories examine every specific application.

The high-build paint system includes

TANIK: chemical rust converter composed of a special grade of tannic acid with high molecular weight and additives.

Appropriate high-build paint system based on chlorinated rubber.

MAIN CONSTITUENTS OF TANIK

The various constituents of **TANIK** have been selected after many years of research on iron corrosion and on chemistry of tannic acids. Tannic acids are indeed the main active component of **TANIK**.

Our long experience in the manufacture of soluble tannic acids has led to the development of a special quality highly effective in iron chelation.

This last property is particularly essential. It should be noted that all tannic acids do not have the same chelating power. This depends upon the number of active groups of the molecule, the molecular weight, and the degree of purity.

Two types of natural tannins, or polyphenols, may be distinguished.

Tannins are present in plants, and particularly in gall nuts, foliage, lark, and various types of fruit. They are divided in two groups.

- catechic, or concentrated tannins, whose basic formula is catechin.

- pyrogallic, or hydrolyzable tannins, which are generally glucosides of gallic acid.

The principal active matter of TANIK is a pyrogallic, highly purified tannin which is distinguished by its great number of active groups (more than 23), and its very high molecular weight. Consequently, this grade of tannic acid has an outstanding iron chelating power.

The excellent rust inhibiting properties of this main constituent are due both to the origin as well as the extraction and purification process employed in isolating this tannic acid grade.

It is essential to specify that a rust stabilizer based on catechic tannins, or even some pyrogallic types **will not enable satisfactory iron chelation**. In fact, a concentrated tannin named catechin, extracted from Gambler or Quebracho for example, has a molecular weight of only 290 and contains only two phenolic hydroxyl groups able to complex one single iron atom. The formation of a reticulated polymer network is therefore clearly impossible.

In addition, the **inhibiting power** of a tannic acid is closely related to its reducing properties. A pyrogallic-type tannic acid can absorb 200 to 250 ml. oxygen per gram. The other tannins absorb lesser amounts: about 50 ml. oxygen per gram.

On the other hand, a poorly purified pyrogallic tannic acid can contain impurities which are insoluble (gums, sugars, vegetal resins) which may **interfere with the Iron chelation reaction**.

It should be noted that the high performance of **TANIK** is not only due to the intense activity of the special tannic acid grade used, but is also due to the presence in the stop-rust of special additives some of which are used to accelerate the reaction between polyphenol and the metallic surface; others improve the wetability of the **TANIK** emulsion (and thus the penetration inside crevices, between bolts, etc.) and others imporve the adhesion of **TANIK** onto the metal.

SYSTEMS PAINT

DIRECTIONS FOR USE

TANIK is ready to use. The rust converter may be used on rusted steel as well as on rust free metallic surfaces.

Remove oil stains, fats, paint residues, mill scale, deteriorated paint and loose rust prior to application. Use a hard brush to assist penetration of the product. **TANIK** may be applied on a DAMP surface without inconvenience. Clean tools with water.

The delay before painting should be 3 hours minimum.

TANIK may be stored for several years without deterioration.

RANGE OF USES

TANIK is particularly recommended for applications to the following surfaces: steel frames, building components, cranes, gas holders, storage tanks, rolling-stock, ships and ship-building, engineering equipment, pipework ,etc., i. e. for all rusted surfaces prior to painting or repainting them.

REMARKS

STORAGE

TANIK is stable for several years. If kept in close genuine container, kept out of frost and permanent temperatures above 25° C. Keep out direct sunlight.

PACKAGING

TANIK is delivered in plastic containers ranging from :

80 ml and 200 ml (DO IT YOURSELF)

750 ml, 2.5 L, 5.0 L (professionals).

60 L, 200 L (professionals & export).

The information herein is, to the best of our knowledge and belief, accurate and reliable, but does not constitute a guarantee to this effect. We make no warranty whatsoever since the conditions of storage and use are not under the control of TANIK CHEM sprl.

TANIK IS AN INTERNATIONALY REGISTRED TRADE MARK OF TANIK CHEM sprl

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