

## PRODUCT DESCRIPTION

The **tecnolato** coating system is specially designed for pipelines and appurtenances that are either aerial, buried or submerged. This system consists of a layer of **tecnolato-primer**, a layer of **tecnolato-tape**, and a finishing layer for mechanical protection of **tecnolato-shield** (polyethylene tape with butyl adhesive); it is also possible to apply an alternative finishing layer of **tecnolato-rockshield** (polyethylene mesh) that provides a higher protection to the pipeline when the burial material has coarse particles.

The corrosion protection is provided by a formula of inert petrolatum waxes, plasticizers with silica sealers, and moisture repellants that inhibit the corrosion process.

Additionally, with the addition of the **tecnolato-mastic** over the primer, the complex structures such as flanges, valves, and other appurtenances can be coated, obtaining a long-lasting protection against corrosion.

In addition to having excellent properties for buried service, **tecnolato** is especially applied in the transition from buried to aerial crossings, in this case the buried coating must stand out and continue in the aerial sector.

## MAIN FEATURES

- Excellent performance with minimum surface preparation.
- Application for corrosion protection in aerial-buried crossings.
- Excellent resistance to UV rays.
- Excellent resistance to cathodic disbondment, compatible with cathodic protection
- Excellent operation in areas with limited access.
- It can be installed under water.
- High impermeability and completely hydrophobic.
- It is also appropriate for irregular shapes.
- Excellent resistance to water, acids, salts, or organic soils.
- Easy application, minimum requirements of personnel training.
- It reduces failures due to bad installation.
- It does not require curing time and the service is immediate, increasing the production time.
- It does not require surface preparation with sandblasting or shot peening; a hand tool cleaning is enough.
- There are no specific surface or environmental conditions for its installation.
- It can be applied on cold or wet surfaces and under water.
- **tecnolato** has an inert formula and does not degrade with time, which ensures that the product has high durability.
- Environmentally friendly and none toxic.

For coating systems, the first layer prevents corrosion of the metal surface due to the fact that it has a corrosion inhibitor (**tecnolato-primer**). Next, a waterproof barrier and corrosion inhibitor layer (**tecnolato-tape**) is applied, which for outdoor applications may or may not use the finishing system due to its excellent resistance to UV rays, additionally if wanting to increase resistance to corrosion and weathering, a layer of UV-resistant polyethylene tape (**tecnolato-shield**) is applied, obtaining a long-lasting coating system.

The **tecnolato-shield** is always recommended to be used in buried applications and its use is optional for aerial applications, because the **tecnolato-tape** is inert to destabilization by UV rays.

## SURFACE PREPARATION

A pre-cleaning of the surface has to be done before the surface preparation according to SSPC SP1 – solvent cleaning, using water or paint solvent to remove oil and other existing contaminants. The surface must be prepared with hand tool cleaning, removing all calamine, oxide, paint, and other materials according to SSPC SP2/SP3 – hand and power tool cleaning.

Although the **tecnolato** system is designed for direct application over the metallic surface, in some cases it can be installed over an existing coating, as long as it has excellent adhesion; it is considered that the coating can remain on the substrate if it can not be lifted or detached with a spatula.

Previous to the application of **tecnolato-primer**, the surface needs to be completely free of dust, dirt, oil, and other contaminants, which can be done using water or solvent according to SSPC SP1.

## INSTALLATION CONDITIONS

There are no specific conditions of substrate humidity or environmental conditions for the coating system installation because this product can be applied under water, the products of the **tecnolato** system do not require induction time and can be applied as soon as the container is opened. It is also clear that the remaining product that was not used can be closed and saved for the next application because the products never cure.

## INSTALLATION

### **tecnolato-primer installation:**

After the surface preparation is finished, a homogeneous layer of **tecnolato-primer** is applied using nitrile gloves, until the surface is completely covered with a 2-8 mil thickness layer, including 2 additional inches on each side of the coating area.

The **tecnolato-primer** has the advantage that it can be applied over moist surfaces or under water, displacing the water and allowing the installation of the **tecnolato tape**.

### **tecnolato-mastic installation:**

It is only used if an irregular surface is going to be protected; the product shapes the edges of flanges and appurtenances, in order to give an appropriate contour for the installation of the **tecnolato-tape**.

### **tecnolato-tape installation:**

Following the primer installation, it is applied over the **tecnolato-primer** or the **tecnolato-mastic** with 50% overlapping. Please watch the installation videos on our webpage for further information.

The following table presents the maximum recommended widths of the tape according to the pipeline diameter.

DIAMETER	MAX. RECOMMENDED WIDTH OF THE TAPE
½" - 1"	50 mm (*)
1 ¼" - 2 ½"	50 mm
3" - 8"	150 mm
10" - 8"	150 mm
≥ 10"	300 mm

(\*) Overlap the tecnolato-tape for only 1.5 inches

#### tecnolato-shield installation:

It is used to provide an additional protection, in order to avoid damages on the coating system and to allow the pipeline burial. In this step the polyethylene tape is installed with a 50% overlap.

#### tecnolato-rockshield installation:

When there are coarse particles in the burial material and there is a risk of affecting the coating system, the **tecnolato-rockshield** is used in order to avoid mechanical damage of the **tecnolato-tape**.

For large diameter pipelines it is recommended that two installers work together with the tape's overlapping, each one located at one side of the pipeline.

#### QUALITY CONTROL

- Verify that all the calamine, oxide, paint and other contaminants were removed after surface preparation, according to SSPC SP2/SP3 – Hand and power tool cleaning.
- Test with holiday detector at 10 kV over the **tecnolato-tape** and at 12 kV after the installation of the **tecnolato-shield**.
- Visual inspection to identify and correct areas with blisters or insufficient overlapping.

#### tecnolato-primer PROPERTIES

PROPERTY	TYPICAL VALUE
<i>Specific Gravity</i>	0.98
<i>Flash Point</i>	≥35°C
<i>Covering Capacity</i>	5m <sup>2</sup> / liter (5.1 m <sup>2</sup> /kg)
<i>Wet Film Thickness</i>	230 micron
<i>Dry Film Thickness</i>	160 micron
<i>Drying time</i>	60 minutes
<i>Installation Temp. Range</i>	-5°C to 50°C
<i>Service Temp. Range</i>	70°C max.

#### tecnolato-mastic PROPERTIES

PROPERTY	TYPICAL VALUE
<i>Specific Gravity</i>	1.40
<i>Flash Point</i>	> 180°C
<i>Color</i>	Green, brown
<i>Installation Temp. Range</i>	0°C to 50°C
<i>Service Temp. Range</i>	100°C max.

## tecnolato-tape PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
<i>Tensile Strength</i>	ASTM D1000	> 40 N/cm
<i>Elongation</i>	ASTM D1000	15%
<i>Breakdown Voltage (55% overlap)</i>		> 18 kV
<i>Chemical Resistance (7 days, 10% HCl)</i>		Excellent
<i>Chemical Resistance (7 days, 20% NaCl)</i>		Excellent
<i>Chemical Resistance (7 days, 10% KCl)</i>		Excellent
<i>Color</i>		Brown, light yellow
<i>Thickness</i>	ASTM D1000	1.2 mm
<i>Width</i>	ASTM D1000	50 mm, 100 mm, 150 mm
<i>Length</i>	ASTM D1000	10 m
<i>Weight</i>		1.5 kg/m <sup>2</sup>
<i>Installation Temp. Range</i>		-30°C to 70°C
<i>Service Temp. Range</i>		-5°C to 50°C max.

## tecnolato-shield PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
<i>Backing</i>		0.254 mm
<i>Adhesive</i>		0.127 mm
<i>Thickness</i>		0.38 mm
<i>Tensile Strength</i>	ASTM D1000	45N/cm
<i>Cathodic Disbondment</i>	ASTM G8EN12068	6.4 mm
<i>Water Vapor Transmission Speed</i>	ASTM F1249	< 0.2/m <sup>2</sup> – 24 hours
<i>Resistivity</i>	ASTM E257	2.5 x 10 <sup>15</sup> ohm-cm
<i>Dielectric Force</i>	ASTM D149	25-28 kV
<i>Water Absorption</i>	ASTM D570	< 0.1%
<i>Impact Resistance</i>	ASTM G-14	> 6.5 N-m
<i>Installation Temp. Range</i>		-5°C to 50°C
<i>Service Temp. Range</i>		-30°C to 85°C

## SAFETY MEASURES




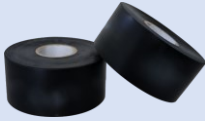

All the **tecnolato** system products have 100% of solids per volume, so they use a low quantity of solvent, however, it is recommended to use organic vapor filters for their installation as a precaution. Use personal protection equipment for any activity that require our products.

## TECHNICAL SERVICE

For any technical questions regarding the use of our products, let us support you by contacting our commercial technical department. Contact us, we have NACE certified cathodic protection professionals ready to support you in product selection.

## PRODUCT ORDERING INFORMATION

The following table shows the packaging information of each product.

PRODUCT	USE	PACKAGING INFO	PACKAGING APPEARANCE
<b>tecnolato-primer</b>	Surface primer and adherence promotor of the petrolatum tape.  It is a petrolatum product with a high fusion point in a hydrocarbon solvent.	Bucket - 4 kg Color: Yellow	
<b>tecnolato-mastic</b>	Homogenize irregular surfaces to allow the continuous application of the <b>tecnolato-tape</b> .	Bag – 3 kg Color: Yellow	
<b>tecnolato-tape</b>	Corrosion resistance and inhibition, hydrophobic product.	Roll - 1.2mm x 50mm x 10m. Roll - 1.2mm x 100mm x 10m. Roll - 1.2mm x 150mm x 10m. Roll - 1.2mm x 300mm x 10m. Color: Yellow.	
<b>tecnolato-shield</b>	Coating system product.	Roll - 0.38mm x 150mm x 30m. Color: Black, White or Yellow. Roll's center: 76 mm.	
<b>tecnolato-rockshield</b>	Mechanical protection of the system for pipeline burial material with coarse particles.	Roll - TECNOLOGÍA TOTAL selects the diameter and length according to the diameter and length to be repaired of the pipeline. Color: Black or Gray.	

## WARRANTY AND LIMITATION OF LIABILITY

TECNOLOGIA TOTAL will not be in any case responsible for damages of any nature that could be derived from an inadequate use of the product. Before using the product, the user must determine if the product is suitable for its intended use, taking all risks and liability that could be derived from its use.

If it's proved that a product is faulty due to manufacturing or its material at the time of sale, or that it does not fulfill during its warranty period the indicated properties in this technical sheet, the only responsibility of TECNOLOGIA TOTAL will consist of replacing the buyer with the quantity of product that is found to be defective. TECNOLOGIA TOTAL does not take any responsibility for any additional cost such as manufacturing cost, withdrawal or re-application of the products. If TECNOLOGIA TOTAL offers a warranty to their clients, express or implicit, or a compensation that differs from the established in this section, this stipulation can not be altered unless a signed agreement by the parties.

