



Maximum corrosion protection for your vehicle

What does our KTL installation include?

- It is the largest e-coat plant in Europe, for immersion due to the capacity of the tanks, with a surface area of 10.000 m².
- Each of the 10 tanks used in the process has a capacity of 210 m³ (210.000 litres).
- It has been conducted by the best national and international suppliers in each of the areas to be developed.
- At Lecitrailer, we will paint our own products and external parts: chassis, bodywork, trucks.....
 - Maximum size of the part is 14 x 2,6 x 2,8m
 - Maximum weight of the part is 5 Tn

Summary of stages:

0. Shot Blasting.
1. Degreasing - alkaline spray
2. Degreasing - alkaline immersion.
3. Rinsing.
4. Rinsing.
5. Nanotechnological conversion (5 nanos) - zirconium salts
6. Rinsing.
7. Rinsing.
8. KTL - deposition of Epoxy Primer (40-50 microns)
9. Rinsing.
10. Rinsing.
11. Pre-heating 80°C.
12. Polymerisation-oven-180° C 40 mins.
13. Cooling.





What does our KTL facility involve, technically speaking?

- It involves the installation of the most modern cathodic coating system on the market: KTL with nanotechnological conversion.

This is the technology used in automotive industry which has the highest quality standards.

- KTL applies a layer of Epoxy primer through complete immersion and then passing an electrical current (Electrophoretic deposition).

The nanotechnological conversion will ensure that the KTL layer is even, with the same thickness of the layer over its entire surface and reaching all the nooks and crannies of the part.

What advantages are there with the nanotechnological version of KTL?

- Nanotechnology, which is the version that we have implemented, is a new cutting the edge technology which:
 - It allows for greater versatility in the materials to be treated: steel, aluminium and stainless steel.
 - It ensures better adhesion of the paint.
 - It is the most advanced version and therefore it will be valid for longer on a technological level in the future.
- Eco- is an environmentally friendly technique for two main reasons:
 - The paint is water based.
 - Non waste: exploitation on the part at around 98%.
- It is the best anti-corrosion system for our vehicles, through which we can ensure a longer lifetime of our products and a better state of conservation.

- The finish product has obvious visual and aesthetic advantages.
 - Also, in contrast to the silvery tone and usual deterioration over time of galvanisation, cathaphoretic coating allows us to personalise the RAL colour of each order.
 - In addition to being customised for each customer, it will last longer over time.
 - Available options: the full range on the RAL chart.
- Anti-perforation warranty for 10 years.
- There is the possibility of extra protection by carrying out the process KTL + Epoxy Primer + Colour.

The process:

Arrival of the part: 2 platforms, our chassis arrive on skid at ground level and the outer parts (bodywork, cranes...) via air freight.

Automatic shot blasting with steel ball:

- Not everyone shot blasts before the KTL process, but we do, and this is a significant advantage of ours
- In addition, this area represents improvements over our previous shot blasting system due to:
 - The greater power of the new shot blasting machine (24 turbines instead of the 16 it had previously).
 - It allows us to put parts in which are both hanging and at ground level.
 - Greater versatility, due to the different geometries of the parts.
 - Larger size and capacity up to 5000Kg (the bodywork also fits).



Shot blasting output area - al fondo, at the back, the shot tumbler:

- Rotating air throughout full 360°, which facilitates the elimination of all shot debris.
- Its geometry makes it versatile for all the model type we manufacture.

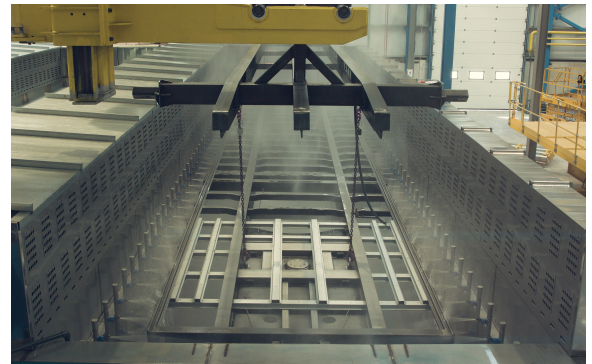
Once all the shot debris has been eliminated in the rotating tumbler, the part reaches the programmed carts in the tanks using the lifting platform (to the left in yellow) and from there, the part will be successively entered into the 10 tanks.

Tanks

- It is the largest KTL plant in Europe, in terms of immersion due to the capacity of the tanks: each of the 10 tanks used in the process has a capacity of 210 m³. The length of the tanks is 14m
- It is an extremely clean and well-prepared process for immersion and forced electrical current which will ensure that the paint reaches all nooks and crannies.
- The treatment time passed between the first and last tank is 30 minutes.
 - Every 15 minutes a treated part comes out. Cycle time: 15 mins.
 - The tank installation contains two parts at the same time, and tank 6 is the interchange point.
- Through the cycle, variables such as temperature, PH balance and water conductivity are measured and controlled from the control room to 100% guarantee optimal quality during the process.
- The content of the tanks is constantly stirred to guarantee the highest quality of the system

Function of each tank:

- **Tank 1:** Degreasing by alkaline spray at 50°C.
 - To clean the shot blasted part.
 - It contains the only spray treatment as the rest of the treatments are via immersion.
 - Very high pressure spray with osmotic water and alkaline detergents (soap).
- **Tank 2:** Degreasing via alkaline immersion at 50°C.
- **Tank 3:** 1st rinse by immersion.
 - With purified osmotic water.
- **Tank 4:** 2nd rinse by immersion.
 - With purified osmotic and demineralised water.
- **Tank 5:** Nanotechnological conversion.
 - Surface preparation with zirconium salts to ensure optimal adhesion of the paint which will be applied in tank 8.
 - Performed at 40°C.
 - The thickness of the layer of zirconium salts is nanotechnology, between 10 and 12 nanos.
- **Tank 6:** 3rd rinse by immersion, elimination of impurities.
 - Our facility is designed in such a way that, in tank 6, the interchange of the part between the 2 programmed carts is also carried out.
- **Tank 7:** Rinse by immersion with very pure demineralised water achieved with double osmosis.



- **Tank 8:** Electrophoretic deposition - cataphoresis KTL.
 - With the application of a high electrical current after immersion of the part in this tank, a difference in strength is caused which will make the paint adhere evenly to the part all over its surface, reaching every nook and cranny.
 - Ecological treatment: Water based paint with 2 components.
 - Grey tone- as proof of our self-commitment, so that when it is later painted, the gaps in the painting will be highlighted. If we painted black on black, like other competitors, the defects would be more easily hidden.
 - Higher quality: The thickness of the layer of paint is 50 microns (compared to the 15-20 previously applied) which has been achieved:
 - With longer immersion time.
 - With a high current - 300 volts, 1200 amperes



- **Tanks 9 and 10: Cataphoresis rinsing**
 - Following the ecological principle of this facility, the last two tanks rinse the excess paint resulting from tank 8 for maximum recovery (99%) of both paint and excess water to be reused later.

Dry: Oven

- Pre-heating 80°
- Heating - polymerisation - 180°, 60 mins approx for optimal results and better adhesion.
- Cooling.

Output: Bifurcación de piezas con destino a pintura en función de

- Chassis which go directly to the chassis paint line.
- External part which go to auxiliary cabins located in this plant.