

Lacquer based Coating of Combirepel®™

Combirepel®™ is also available in the Lacquer form. For certain applications, the master batch form of the product cannot be used as it requires a topical application. In these instances the lacquer form is used for a number of applications.

The lacquer form of Combirepel®™ was developed specially by C Tech Corporation for coating and topical applications.

Coating Applications and Uses

Railways:

Rodents, termites, cockroaches, bed bugs, lizards as well as other insects and pests are a menace in trains. They infest the coaches and berths present. Conventional insecticides and pesticides are not very effective with these pests.

To control the rodents, termites, bedbugs and other insects, the lacquer based coating is used to coat the undercarriage and walls of the railway coaches as well as the galvanized surfaces of the pantry. It can be added to the berthing as well. This method does not have the problems of the use of conventional pesticides and the rodents and other pests are effectively repelled.



Wood Applications:

The Lacquer based coating of Combirepel®™ can also be used for applications in the wood industry and furnishings sector to deter rodents, termites and other pests. The wooden furnishings can be dipped in the lacquer based coating or the coating can be painted on the structures. This does not affect the properties of the wooden structures in any way.



Wooden structures, utility poles, marina dockage poles, antiques etc all can be protected from termites using the lacquer based coating of Combirepel®™. Subterranean termites have been known to hollow up entire utility poles from the inside causing the poles to fall. There have been many instances of termites damaging communication lines

and compromising high-voltage cables.

There have been many cases of termite infestation and damage on boats. The marine environment creates a favourable surrounding for the termites. Boats and other marine structures can be protected from termites by a paint based solution of Combirepel®™ applied as an outer coating. Marina dockage poles used for the dockage of boats are also affected. The poles are inserted into PVC sleeves and the space between the poles can fill with water and provide a safe area for termites. Both subterranean as well as drywood termites can live in these areas. A coating of the Combirepel®™ lacquer will protect these structures from damage.

It is an ideal way to protect wooden structures from termites.

Wires and Cables:

Existing wires and cables face damage due to rodents gnawing on them and termites damaging them. Subterranean termites cause large damage to underground wires and cables. Rodents have been known to chomp through fibre optic cables and wires disrupting communication. The Combirepel®™ based lacquer can be used to coat the wires and cables protecting them from termite attack. In this case replacement of the wires and cables is avoided.



Thus even existing wires and cables which would need to be changed in case of rodent or termite damage can be protected with the lacquer.

Pest protection in homes:

The Combirepel®™ based lacquer is also used for pest protection in homes and residential areas. It can be used to coat the interiors of the structures to deter rodents, termites and bed bugs. Existing furnishings and walls can be coated to prevent infestations and prevent pests from entering houses.

Salient Features

- Non-toxic
- Non-hazardous
- Environmentally safe
- Acts as an aversive
- Can be customized according to customer requirement
- Suitable for a number of solvents

- Not a deterrent to humans
- No toxic fumes
- Life Span depends on final coating application
- Safe for use by workers
- Acts as a repellent to rodents as well as termites, bedbugs and many other insects

Project with Indian Railways

The Indian railways are the largest railway network in Asia transporting about 30 million passengers and more than 2 million tons of freight daily. Rodents, termites, cockroaches, bedbugs, lizards and other insects are a large nuisance to commuters as well as a carrier of diseases in these trains

The pantry coach is usually infested as rodents, termites and other pests use it for food and shelter. Railway coaches are also a breeding ground for insects like termites, cockroaches, bedbugs and lizards.

Conventional treatments such as fumigation, using glue boards, rodent traps, use of toxic rodenticides and insecticides have limited effectiveness and are also unhygienic as well as toxic.

To overcome the pest problem in trains and also to provide a suitable solution C Tech Corporation developed the lacquer based solution of Combirepel®™. Combirepel®™ being an aversive ensures that the pests to be repelled are effectively controlled and non target species and humans are not harmed. C Tech Corporation has undertaken testing in various zones of the Indian Railways- the South Western zone, the Konkan zone, Northern Zone and the Central zone.

One of the most extensive testing was undertaken with the Northern Railways. The Northern Railways is the largest zone in terms of route kilometers. After collaboration with senior representatives from Northern Railways, 4 coaches were used for the testing, 1 pantry coach and 3 AC coaches. The entryways and areas susceptible to rodent and termite infestation were also identified.

The painting of the coaches was undertaken in 3 stages, the painting of the under carriage, the painting of the body panel and the painting of the interiors.

The undercarriage and walls of the coaches as well as the galvanized surfaces were coated with the lacquer based Combirepel®™. The interiors of the coach, body panel, doors, lavatory, coach passage, window sides, seat sides and seat corners were coated with the Combirepel®™.

The coaches were put in the rolling stock and tested along with coaches which were treated with conventional pesticides running along the same route at the same time.

After this a testing protocol was followed along with inspections by representatives from C Tech Corporation and Northern Railways.

A feedback was also taken from the representatives, the attendants and personnel in the coaches. Every 2 months a complete inspection of the treated coaches was carried out.

The pantry area which is susceptible due to the food present in it, resting area for the passengers, the lavatory, which is one of the most vulnerable areas for roaches and insects, the area outside the lavatory, under the seats and bed linen storage area was checked. No sign of infestation was noted. The storage room acts as a habitat for roaches due to its damp and dark conditions, was found free of roaches and other insects as well. A large difference was found in rodents, termites, roaches and other pests seen in the coaches which were treated with Combirepel®™.

Combirepel®™ being completely non-toxic and non-hazardous and environmentally safe is ideal for use even in pantry car and can safely be used in the railways to deter the pest problem.

Usage

The Lacquer coating is easy to use and apply. The Combirepel®™ is mixed with the lacquer in a ratio of 1:100 by simple mixing and the surfaces are painted. The mixture is blended by means of a blender before application. After which the paint was applied to the surface to be coated in uniform strokes. Standard painting procedures are used.

Wooden surfaces and walls require 1 coat while galvanized surfaces require 2 coats.

A total of 50 ml of the lacquer is needed per square foot to be coated on a double coating basis.

Smaller objects may also be coated by dipping in the lacquer.

Combirepel®™ can also be produced in a paint compatible form and the same is then blended with paint in a specific ratio.