



# **TRANSFORMER OIL LEAKAGES**

## **THE HY POXY SOLUTION**

Leakage of oil from power and distribution transformer is very common problem.

HY POXY SYSTEMS INC. OF USA offers a time tested unique solution for quick and effective stoppage of such leakages.

### **INTRODUCTION OF "HY POXY SYSTEMS, INC," U.S.A :-**

Hy Poxy Systems is one of the leading MRO EPOXY SOLUTIONS provider & a premiere formulator, manufacturer and worldwide marketer of quality epoxies. The company is headquartered at South Carolina USA & with the completely automated modern manufacturing facilities, provides internationally proven **Metal & Ceramic filled Polymer compounds for maintenance & repair solutions.**

**The Hy Poxy Systems Inc.** has pioneered the concept of "**COLD WELDING REPAIR TECHNOLOGY**".

Under "CWRT" technology, the bonding between metals and ceramics is achieved by cold chemical process and without any heat input as in the case of electric arc or gas welding process.

### **HY POXY PRODUCTS :-**

Hy Poxy range of repair compounds are mostly 2 component systems consisting of the RESIN & HARDNER. The resin contains of finely powdered metals or ceramic suspended in an epoxy filler. The hardner is a chemical curing agent. When the resin and the hardner are mixed in the right proportions, the mixture quickly cures to form the solid mass.

Hy Poxy products are engineered to carry out fast insitu repairs and put damaged equipments back into service quickly.

The cured metallic mass will have comparable and often superior physical and chemical properties as compared to base metal.

### **PROBLEM OF OIL LEAKAGE :-**

In oil cooled transformer, the oil is used for cooling the transformer windings and in turn to maintain the system temperature at a particular level. Since there is constant flow / movement of oil ( Due to temperature gradient ), the oil in the transformer is always under pressure.

At all the joining ends like insulators bushings, flanges, radiator cooling fins, parting plates or top plates etc, the rubber gasket is used to prevent the inside transformer oil to come out which is under pressure.



Due to various thermal, mechanical & electrical stresses , temperature gradient and continuous immersion of gasket in the oil and due to aging, the gasket inside the transformer gets hard and crack at various places.

Due to this, the oil inside the transformer which is under pressure starts leaking out.

Leakage of oil results in :-

1. Loss of costly oil.
2. Overheating of transformer which results in reduction of transformer efficiency.
3. Time and efforts in replenishing oil.
4. High cost of repair.

#### **THE HY POXY SOLUTION :-**

Many solutions have been tried out but with limited success and each solution involves draining of transformer oil before any repair can be carried out.

The Hy Poxy solution is a quick and easy solution and does not involve drain of transformer oil.

The Hy Poxy solution is consisting of two main products

1. Hy Poxy "STEEL FAST"
2. Hy Poxy "TITANIUM BOND"

The Hy Poxy "STEEL FAST" is a quick curing product which also has additional property of bonding with oil soaked metal surfaces. It is applied as a first layer and also to immediately arrest the leakage.

The Hy Poxy "TITANIUM BOND" is recommended for 2<sup>nd</sup> coating and has excellent resistance to water and oil and many chemicals. This layer works as reinforcement layer as well as give extremely high bonding strength.

Additionally, few more products like below are also recommended.

1. Cleaner / Conditioner for making the surface free from dust, sand and grease etc.
2. Reinforcement Tape. – Used additionally if oil leakage is coming out with high pressure.
3. Silicon Sealant Tube. – Use to fill in the bolts to arrest leakage from these areas.

#### **BRIEF PROCEDURE :-**

1. Pin point the leakage area and scrape off all the paint from the area.
2. Clean and roughen the area using the clean cloth and emery paper.



3. Clean and prepare the surface using the Cleaner / Conditioner and hold a cloth pressed to the leak to temporarily stop oozing out of oil.
4. Mix small quantity od Hy Poxy "STEEL FAST"
5. Remove the cloth and immediately apply the putty over the leak and hold firmly for 2-3 minutes.
6. On hardening, inspect area to ascertain leakage stoppage. Apply more if necessary. Use reinforcement tape for additional strength if required.
7. Mix and apply Hy Poxy "TITANIUM BOND" as the case may be over the initial layer and adjoining area on all sides to complete the repair.

**TRAINING :-**The operating staff of a substation can be easily trained to apply these products in case of emergency requirements.

Hy Poxy Systems also offers special training courses for group of operating and maintenance personnel from SEB.

The company offers application services through nation wide presence of techno commercial executive and managers, Team of skilled applicators along with wide network of authorized dealers located at strategic locations.

We provide complete MRO services like Maintenance survey, assessment of problems, Recommendation of suitable products and services & finally the complete application services.

We also provide feedback with the data on financial savings by customers employing our services.

**TESTIMONIALS :-**

The above products and methods are in extensive use in the main and sub stations of various electricity boards and also private power companies.

We can submit few case studies, performance certificates along with job completion reports and job photographs on demand.



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