



# Treater Roll Maintenance Considerations

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Having to maintain a treater roll can be costly and time consuming. Using preventative maintenance techniques and anticipating normal maintenance requirements will help reduce the overall costs of maintaining treater rolls.

Choosing a Glassed Steel Treater Roll instead of another treater roll covering will require less maintenance at the treater roll and at the treater station.

## PREVENTATIVE MAINTENANCE CONSIDERATIONS

**1. Roller Replacement and Resurfacing** – Before purchasing a replacement treater roll or recoating your existing treater roll, consider why your treater roll is no longer working properly. Preventing these same issues from occurring again will help control the cost of maintaining all your treater rolls. Of course, the longevity of a treater roll coating directly impacts the majority of the costs of maintaining a treater roll.

In the case of a Glassed Steel Treater Roll (GSTR) there is rarely a need to recoat the roller surface. The GSTR is the only treater roll surface that is entirely inorganic and free of voids. Inorganic roll surfaces do not degrade and do not deteriorate from ozone or cleaning chemicals. Conversely, ceramic treater rolls use an organic filler to fill the voids generated during the application of the roll coating. Cleaning chemicals as well as ozone and heat eat away at this organic filler leaving the ceramic roll susceptible to dielectric failure. The voids in the roll become exposed and the roll fails due to pinholing (dielectric failure). Other treater roll surfaces like silicone, hypalon and epoxy are made up of entirely organic material and will be even more susceptible to surface degradation. Choosing the correct treater roll surface for your application is critical in controlling and preventing maintenance costs.

**2. Avoid Backside Treatment** – The GSTR helps to eliminate backside treatment problems. The smooth surface of glassed steel helps the film run flat against the roll eliminating air pockets which can cause backside treatment.

## IN-LINE MAINTENANCE CONSIDERATIONS

**1. Cleaning treater roll surfaces** – Cleaning a treater roll is time consuming and potentially harmful to the roll surface. Cleaning is only a requirement, however, if build-up from dust, dirt or film additives is adhering to the roll surface. Choosing the right treater roll surface, and avoiding the build-up of residue, will determine the level of cleaning effort necessary to properly maintain the roll.

When using a Glassed Steel Treater Roll, there is rarely a need to stop a line for cleaning the roll surface. Other roll coatings will accumulate dust, dirt and film residues due to the attraction of these particles to the roll surface and because of static electricity. A Glassed Steel Treater Roll does not accumulate these residues because the surface is a very smooth, non-sticky surface that is connected to an anti-static bar. This prevents dust and dirt and other residues from building up on the treater roll surface, ultimately reducing the amount of maintenance time spent cleaning roll surfaces.

As more and more build-up occurs on the treater roll surface it becomes more difficult to clean. If steel wool, metal tools or strong chemicals (including acids and bases) are required to clean the roll surface, it will abrade and deposit metal on the roll surface and cause electrical failure on start-up. The build-up can also cause treatment problems as the roll

surface is now uneven. An uneven surface can cause uneven treatment and backside treatment.

**a. The effect of cleaning chemicals** – Unlike other roll surfaces, there is no need to use special cleaning solutions on a Glassed Steel Treater Roll. In the unusual situation where a Glassed Steel Treater Roll requires cleaning usually a damp cloth is all that is required to clean the roll surface. In the event a maintenance person inadvertently uses harsher chemicals or cleaning agents they will not affect a glassed steel surface. The chemicals on other treater roll surfaces will cause the roll surface to degrade and wear prematurely.

**2. Roll Patching** – Choosing a treater roll surface that does not require patching will significantly reduce the cost of operating and maintaining a treater roll. Patching of treater rolls is necessary when the roll surface has failed dielectrically (pinholed). Choosing a treater roll surface that has a very high dielectric strength will help reduce the cost of maintaining a treater roll. GSTRs have a dielectric strength of 900 volts/mil., while other treater roll coverings are typically in the range of 400-500 volts/mil. With the dielectric strength of a GSTR, patching is a very rare, almost non-existent occurrence. Epoxy, silicone and hypalon have a low dielectric strength which leads to more pinholing and more patching and ceramic is a porous material which will also cause failures. In the unusual circumstance where a patch is needed on a GSTR it can be done onsite with a patch kit designed specifically for the GSTR. Alternatively, it can also be repaired with the same high strength glass coating at our facility.

## OTHER MAINTENANCE CONSIDERATIONS

**1. Treater Station Maintenance** – The dense, durable, high-strength glassed steel coating maintains its electrical properties better than any other treater roll coating. This will help maintain the treater station specifications. This characteristic will help keep the operators from having to make frequent adjustments to their treater station controls.

There is less maintenance due to a wider range of treater station control:

**a.** The Glassed Steel Treater Roll is more forgiving to excessive high voltages due to its high dielectric strength. The dielectric strength of glassed steel is 900 volts/mil where as ceramic and other surfaces are 500 v/mil or less.

**b.** The Glassed Steel Treater Roll is also more forgiving to excessive surface temperatures that are common in treater stations. Glassed steel has a much higher heat dissipation rate so it will run cooler.

**2. Bearing Surface Maintenance** – When roll journals require repair it is much simpler with a GSTR. GSTRs use a bolt-on journal design. Journals can be easily removed for repair. Another bolt-on journal can be substituted for the one under repair minimizing downtime.

There can be many hidden costs in order to properly maintain a corona treater roll. Identifying the root causes that lead to high levels of maintenance will help you choose the correct treater roll covering and reduce line downtime associated with maintaining treater rolls. The GSTR will prevent these causes from even starting. We call it....

*“Install it and Forget About It”*

