De Dietrich
PROCESS SYSTEMS

REGLASSING

De Dietrich

Process Description

Reglassing is the process by which older or damaged glass-lined steel equipment is refurbished to like-new condition. All glass-lined reactors, tanks, columns, and accessories such as covers, agitators and baffles, can be reglassed if the steel substrate is in good or repairable condition.

The process starts once a vessel has been inspected and approved as a candidate for reglass. Next, the old glass lining is removed by grit blasting. After any steel repairs and modifications are complete, DDPS proceeds with the glassing process. Here we fuse corrosion resistant 3009 glass onto the prepared steel in our computer controlled electric furnaces. Finally external protective coatings are applied via DDPS' epoxy system. The end product is a high quality, glass-lined steel vessel or accessory.

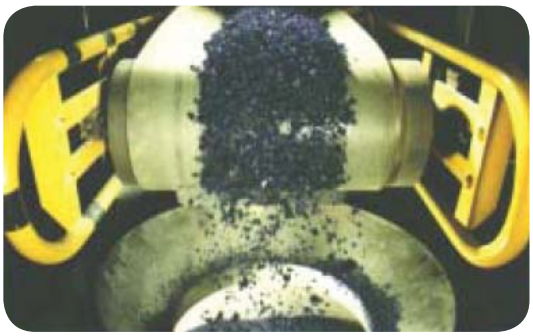
All reglassing done by DDPS is performed in the USA, in accordance to the ASME and NBIC code, at our state-of-the-art glassing facility in Corpus Christi, Texas.

Reglassing Advantages

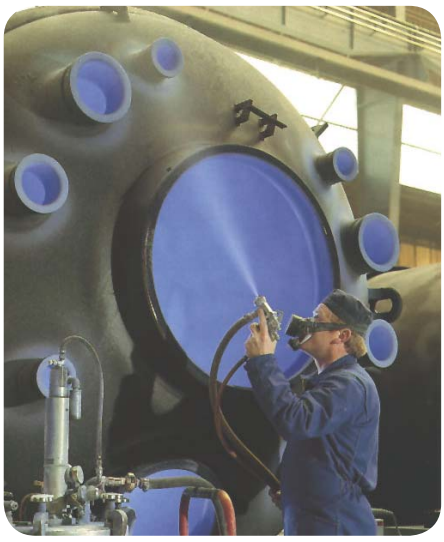
Reglassing is ideal for situations when time and cost are a primary issue. The turnaround time is within weeks versus months to fabricate a new vessel and there is nearly a 50% cost savings compared to buying a new vessel. Additionally, upgrades such as OptiMix baffles, extra nozzles and insulation rings can be added. All vessels reglassed by DDPS come with the same standard warranty as new vessels, ensuring you are receiving a vessel "as good as new". DDPS also offers reglassing on competitors' equipment.

BENEFITS OF REGLASSING

- Delivery – Turnaround time to reglass is within weeks versus months to fabricate a new vessel.
- Cost savings – Typically costs 40-60% of the price of a new vessel
- Cash flow – Many companies find reglassing (a maintenance budget expenditure) preferable to a new capital expenditure.
- Warranty – All vessels reglassed by De Dietrich Process Systems come with the same warranty as new vessels. DDPS also offers reglassing on competitors' equipment.



Enamel being prepared for reglassing process



Enamel is sprayed like paint on the surfaces to be glass-lined

Vessel is fired at high temperatures in an electric furnace

REGLASSING

When is Reglassing Needed?

Glass-lined steel equipment becomes a candidate for repair and reglassing in the following instances:

- The addition of more plugs, patches or sleeves becomes uneconomical, or results in a repair of questionable integrity
- Spalling of the glass due to nascent hydrogen attack
- Galvanic corrosion caused by the use of dissimilar metals in the reactor, like dip pipes, valves and/or repair plugs
- Substantial damage caused from the loss of a repair plug
- Build up of extremely corrosive or erosive products from batch type operations and pilot operations
- Contamination of jacket heating and cooling media, causing accelerated corrosion at the bottom closure ring
- Lack of venting, which can allow corrosion-producing air pockets at the top jacket closure ring
- Damage caused from a component being welded to the substrate during replacement
- Accidental damage to the lining of the vessel
- Mechanical damage, e.g. a workman drops a tool or other object he shouldn't have in his pocket
- Poor workmanship on a repair
- Thermal shock or stress beyond the safe limits of the glass

BEFORE

AFTER

OptiMix for Reglassed Vessels

DDPS now has the capability to convert standard reactors into state-of-the-art OptiMix vessels during the reglassing process. OptiMix technology integrates three wall-mounted baffles to optimize:

- Mixing
- Heat Transfer
- Cleanability

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