

# BELZONA 5811 INJECTION PREVENTS NOZZLE CORROSION

ID: 6021

**Industry:** Chemical & Petrochemical  
**Application:** VPF-Valves, Pipes and Fittings  
**Substrate:** Carbon Steel  
**Products:** \* Belzona 1121 (Super XL-Metal) ,  
\* Belzona 5811 (Immersion Grade) ,

**Customer Location:** Gulf of Mexico, USA  
**Application Date:** 2016

## Problem

"Dog Leg" nozzles ranging from 2" - 4" were suffering severe corrosion and wall loss due to condensate build-up in the nozzle and lack of draining or cleaning.



## Photograph Descriptions

- \* Encapsulation nozzle with blind flange bolted on. ,
- \* Cut off old nozzle encapsulated by new nozzle. ,
- \* Belzona 1121 used to fill void prior to injection. ,
- \* Belzona 5811 injection in progress. ,

## Application Situation

40 inch gas transfer pipeline 2", 3" and 4" nozzles.

## Application Method

Old corroded nozzles were cut off and new encapsulation nozzles of a larger diameter were welded on around the stub from the old cut-off nozzle. Belzona 1121 was used to fill in the void between the old stub and the new encapsulation wall (where an air pocket would have formed). A blind flange tapped for a 3/4 inch hose was then secured to the new encapsulation nozzle. The blind flange had a 3/4 inch hose and ball valve which was connected to a paint pot. The correct calculated volume of Belzona 5811 was then

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FS 695214  
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mixed and set into the paint pot, and air pressure was applied to inject the Belzona 5811 into the encapsulation nozzle. The hose was quickly swapped out for a threaded plug, and the whole encapsulation was wrapped in heat trace elements. After a one hour set up at ambient temperature, the encapsulation was brought to 175°F over a 4 hour period, and then held for two hours to ensure full mechanical cure.

## Belzona Facts

Belzona was approached to assist in this project because the Engineers involved had knowledge of Belzona's high adhesion and high mechanical properties. By filling the nozzle encapsulation flush with the flow line, no void exists for condensate to accumulate and begin corrosion cells.

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