

Cold Plate Bonding and Traditional Composite Wrap Restores Discharge Pipe

ID: 7504

Industry: *Fluid Flow*
Application: *VPF-Valves, Pipes and Fittings*
Substrate: *Carbon Steel*
Products: ** Belzona 1121 ,*
** Belzona 1111 ,*
** Belzona 5811 ,*
** Belzona 9341 ,*
** Belzona 9331 ,*

Customer Location: *Montana, USA*
Application Date: *May 2017*

Problem

Years of pumping salty river water eroded this discharge pipe which feeds an irrigation ditch. The severe reduction in wall thickness resulted in numerous failures. The pipe was too thin to weld, and being roughly 30" in diameter, a repair was more conducive to the exposed exterior than on the inside.



Photograph Descriptions

- * Surface preparation of saddle plates and pipe ,
- * Some of the numerous plates cold bonded in place ,
- * Second wrap of the composite repair prior to application of an UV protection third coat ,
- * 33 feet of pipe length completed and painted to withstand ultraviolet light exposure ,

Application Situation

This irrigation district was unable to continuously operate as the pump discharge pipe was suffering from metal loss due to internal erosion.

Application Method

A modified Belzona System Leaflet VPF-11 was used. The pipe was already riddled with large through-wall defects, and after abrasive blasting the pipe, numerous small holes developed. These small holes were repaired with Belzona 1111 reinforced with

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ISO 9001:2015
FS 695214
ISO 14001:2015
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Belzona 9341. The larger holes were repaired using a plate cold bonding technique. The adhesive used was Belzona 1121 due to its extended working life. A two-wrap traditional composite system, consisting of Belzona 5811 reinforced with Belzona 9331, was applied. A third coat was used to fully encapsulate the reinforcement sheet. A final paint was used to prevent UV degradation.

Belzona Facts

Due to the extensive reduced wall thickness of this discharge pipe, neither replacing or welding were viable solutions at the time. This repair prevented the excavation and total replacement of hundreds of feet of pipe on a slope to the canal, which would have taken weeks, if not months, to complete. The repair was done within a few days. The repair also saved agricultural needs served by all the canal users. This traditional composite solution with Belzona products was the lower cost bid.

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