Flare Knockout Drum and Underground Piping

Ar-Tech Coating Ltd.

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Background & Application (Vessel)

Ar-Tech was contracted to complete the exterior and interior coating work for a flare knockout drum and associated underground piping for a large Alberta producer of crude oil. The project was to be completed in two stages. The first stage was the drum and associated pipe. The second was the underground pipe. Each piece of pipe is identified for lot control traceability. All work was completed at the Ar-Tech shop and subject to 3rd party inspection prior to delivery.

The vessel was double walled with dimensions of 6' diameter by 24' in length. The internal coating specified was Devchem 256, an epoxy novolac, which is tailored for higher temperature (up to 300°F) and higher pressure applications. This vessel is going to be buried so the exterior coating was Devtar 5A, a coal-tar free epoxy formulated for underground storage. Piping directly associated with the vessel was to be coated to similar specification.

The flare knockout drum was coated with Devtar 5A to an average of 16 mils DFT (dry film thickness) for buried/immersion service. Ar-Tech insured the coating was holiday free prior to 3rd party inspection.

The associated 24" diameter, 12' section of pipe was to be similarly lined and coated. Both of these epoxy coatings are designed to be applied with conventional airless spray pumps.

Application (Pipe)

Additional underground piping was specified to be coated internally with Devchem 256 and externally with Novocoat SC-2200, a 100% solids epoxy. SC-2200 is designed as an exterior coating for buried pipe. The fast reactivity of this coating (pot life at 25°C is 9 minutes) requires the use of a plural pump for application. Ar-Tech uses a Graco XP70 with electronic pressure monitoring of A & B components to ensure on ratio mixing, an important control point for plural spraying.

The pipe was blasted internally and externally to an SSPC-SP5 white metal finish. The blast surface is uniform with weld preparation that is smooth and free of burrs or raised edges. This ensures that the coating will wet out completely with no holidays and no areas for chipping on sharp edges.

After blasting, the internal application of Devchem 256 is completed. Dry film thickness and holiday inspection checks are documented on the Ar-Tech Quality Control sheets. Internals are masked and the SC-2200 is applied externally using the same quality documentation.