



CASE HISTORY ~ CH-032

BIO-DUR 560 REPAIRS “BATHTUB RING” AT HANFORD

THE CHALLENGE: A spent fuel storage tank in the “K” Basin at the Hanford site, Washington suffered from serious radiologic contamination around the waterline. Over many years the spent fuel containers had allowed their radioactive contents to enter the shielding water and radioactive contamination had precipitated at the waterline to contaminate the concrete tank wall. Personnel walking above the pool were being exposed to unnecessarily high levels of radiation from the concentrated isotopes at the surface.

THE SOLUTION: A nominal ¼” thickness of contaminated concrete was removed from approximately 9” above and below the waterline for disposal. BIO-DUR 560 was then applied using a robotic application system to seal the waterline area against further contamination.

BIO-DUR 560 was the ideal coating for this area for several reasons:

- 1) The BIO-DUR 560 formula is almost identical to BIO-DUR 561 which has successfully passed the 340°F BWR curve of ASTM D-3911 with a dose rate of 2.2×10^6 rads per hour to a total dose of 1.1×10^9 rads. BIO-DUR 561 passed Decon at 95% removal in this testing.

BIO-DUR 560 is formulated with a 1/1 by volume mixing ratio which is ideal for demanding applications such as the remote robotic project employed to coat the “K” Basin waterline. BIO-DUR 560 is based on an extremely tough synthetic resin system, which is further reinforced with Kevlar™ microfibers. This formulation has the abrasion resistance and toughness necessary to withstand the regular scrubbing with a stainless steel bristled brush to maintain a contamination-free bathtub ring area.



- 2) BIO-DUR 560 is formulated for complete compatibility with wet or immersed surfaces. Underwater application using a pressure-fed roller system on concrete is facile and results in a smooth, tightly adherent film on both horizontal and vertical surfaces.
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The application crew purchased “off-the-shelf” equipment recommended by Thin Film Technology and quickly mastered remote pressure roller application monitored by CCTV.

RESULT: The forgiving BIO-DUR 560 formulation assisted the application crew to achieve all desired criteria resulting in a smooth, adherent and abrasion resistant coating around the “K” Basin waterline.

For more information regarding this project, contact:

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PRODUCT: BIO-DUR 560

YEAR: 2001

LOCATION: HANFORD, WA

We go where others fear to spread!

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