### Sulfuric Acid Storage Tanks

#### Challenge

**Issue**
Pitting of carbon steel tanks used for acid and caustic storage during demineralized water treatment had destroyed unprotected tanks within 3 years, requiring tank replacement.

**Goals**
- Protect new tanks from corrosion with extended life of new tanks to >5 years

**Root Cause**
As tank level drops, 98% H₂SO₄ in head space drops to <93%. Carbon steel is no longer resistant to corrosion at this level.

#### Solution

**Preparation**
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

**Application**
1. Stripe coat internal weld seam with 1 coat, followed by 2 coats ARC S4+ in alternating colors with a total DFT of 30-40 mils (750-1000 µm)
2. Apply 2 coats of ARC S2 with total DFT 20-30 mils (500-750 µm) on the tank exteriors

#### Results

**Client Reported**
- After 36 months in service, no flaws could be found in the lined surface
- Some ultra-violet-light related chalking on externals. Aliphatic urethane coating applied to address chalking
- After 60 months tanks are still in excellent condition
- After 13 years of service, ARC coatings is preferred protection for these assets

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*Corroded tanks, containing 98% H₂SO₄*  
*New tanks coated with ARC S4+ internally and ARC S2 externally*  
*After 13+ years, only chalking and staining is evident*