# Inverted Discharge Chutes

*Mining/Mineral & Ore Processing — Beneficiation*
**ARC BX1* and S2 Coatings**
*Case Study 077*

## Challenge

### Issue

Premature wear of tile and rubber lined discharge chutes at 1,500 hours reduced development of heap leach piles, impairing enriched leachate production rate.

### Goals

- Protect existing chutes without exceeding current material cost >25% ($3,125)
- Maintain leachate production

### Root Cause

Highly abrasive copper ore, treated with $H_2SO_4$, wears away lined chutes and perforates steel substrate.

## Solution

### Preparation

- Clean surface with high pressure water
- Mechanically roughen exposed surfaces

### Application

1. Apply ARC BX1* @ 1" (2.5 cm) thickness to remaining tile and rubber surfaces
2. Apply 2 coats of ARC S2 @ total DFT 20 mils for reduced hang-up

**ARC BX1 is the "Bulk" package size of ARC 890*

## Results

### Client Reported

- Chute life extended to > 4,500 hours (3X)

### Client Estimated Cost Breakdown

| | |
|---|---|
| Previous lined chute: | $ 2,500 |
| Annual maintenance (60 hr): | $ 2,700 |
| Total annual cost: | $ 5,200 |
| ARC lined chute: | $ 3,000 |
| Annual maintenance (10 hr): | $ 450 |
| Total: | $ 3,450 |
| Savings per chute/year: | $ 1,750 |
| Savings based on 50 chutes/year: | $87,500 |

*$=USD*

*Circles indicate location of deflector chutes*

*Rubber and tile lined chute after 1,500 hours*

*ARC BX1* coated chutes with ARC S2 topcoat*



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EN23606.28
09/14

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