Good Plumbing Practices Protect San Francisco Bay

A Fact Sheet for Installers / Plumbers

Copper Affects the Bay
Copper enters San Francisco Bay through storm drains and from wastewater discharged from wastewater treatment plants. Copper is acutely toxic to plankton and affects the reproduction and growth of shellfish.

Much of the copper entering San Francisco Bay (about 77%) passes through storm drains and goes into the Bay untreated. The rest comes from wastewater, which moves from sewers through wastewater treatment plants and is discharged to the Bay.

All Bay Area wastewater treatment plants have permits to discharge into the Bay. These permits strictly limit copper discharges. Many permits also require pollution prevention programs to reduce copper — this is where plumbers come into play.

Of the 23% of copper from treated wastewater, about 60% is estimated to be from copper pipe corrosion. While that might seem like a small portion of the overall problem, copper from pipe corrosion is one source that can be easily reduced.

Reducing Pipe Corrosion Reduces Copper to the Bay
Your skilled installation techniques can greatly reduce pipe corrosion and help protect the Bay. Here are some ways you can make a difference:

♦ BEST MANAGEMENT PRACTICES
Follow the installation techniques specified by the ASTM B828 and the Copper Development Association in its Application Data Sheet for “soldering and brazing copper tube and fittings.”

♦ SYSTEM DESIGN
Design each plumbing system to:
1. Minimize velocity
2. Minimize hot water temperature
3. Avoid stagnant sections
4. Minimize direction and size changes

♦ CAREFUL REAMING
Eliminate small burrs created from pipe cutting. This reduces turbulence and significantly decreases corrosion.

♦ PROTECTED STORAGE
Protect stored pipe from weather and damage so that installed pipe is as clean as possible.

♦ THOROUGH CLEANING
Remove all oxides, debris, and surface soil from tube ends.

Typical Breakdown of Bay Copper Sources

- Stormwater sources: 77%
- Wastewater: pipe corrosion: 14%
- Wastewater: all other sources: 9%

* Based on calculations for South San Francisco Bay, south of the Dumbarton Bridge.

Less Corrosive Fluxes
The ASTM B813 flux standard limits flux corrosivity and requires that the flux be water flushable. While these are voluntary standards, the Copper Development Association encourages architects, engineers, contractors and building officials to specify and require the use of B813 fluxes.

All flux manufacturers make a B813 flux. B813 fluxes commonly available in California include:
- Everflux
- Harris Bridget
- Sterling
- Fry’s Fire Eater
- LaCo Ultimate B813 Flux

Bay Area Clean Water Agencies
A Joint Powers Agency
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Bay Area Pollution Prevention Group

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