

SC 12 MATERIALS TO CONSTRUCT OR REPAIR OVERWATER AND IN-WATER STRUCTURES

The Dana Point Harbor Reconstruction Plan (the “Plan”) has the following features:

- A. The proposed type and amount of materials to be used to construct or repair each component of overwater and in-water structures. List the amount of each material (e.g., the surface area of dock decking). Specify the type of building material (e.g., preservative type and preservative retention level for treated wood), including any coating, wrapping, adhesive, sealant, or grout.
 - a. 535,732.79 square feet of concrete floating docks;
 - b. 833 steel guide piles wrapped with high-density polyethylene sleeves;
 - c. Epoxy sealant, grout and concrete as needed to make seawall repairs; and
 - d. There will be no treated wood used in the overwater and in-water structures.

- B. For dock decking and other above-water dock components, prioritize the use of alternative materials instead of treated wood, such as concrete, fiberglass, metal, plastic (e.g., polyethylene, polypropylene, or PVC), fiberglass-plastic composites (e.g., fiber-reinforced polymer), wood-plastic composites, or naturally decay-resistant untreated wood (e.g., redwood, red cedar, ipe, greenheart, and in some cases Douglas fir), where feasible. An alternatives analysis shall be submitted if treated wood is proposed to be used for any component of the overwater or in-water structures.
 - There will be no treated wood used in the overwater and in-water structures.

- C. If treated wood is used for dock decking or other above-water dock components, a type of treated wood shall be selected that minimizes the risk of aquatic and sediment toxicity.
 - i. For treated wood decking and other above-water components of overwater structures, the preservative Ammoniacal Copper Zinc Arsenate (ACZA) shall be used to treat components where frequent contact with humans or marine mammals is not expected. Wood treated with the arsenic-free preservatives Alkaline Copper Quaternary (ACQ) or Copper Azole Type C (CA-C) shall only be used for components where frequent human or marine mammal contact will occur, as these preservatives leach substantially more copper (and thus have a higher risk of aquatic toxicity) than does ACZA.
 - There will be no treated wood used in the overwater and in-water structures.
 - ii. Specify the preservative retention level of any treated wood that will be used. Treated wood shall be selected that has been treated to the standards of the lowest appropriate Use Category for each component, to ensure that the treated wood does not exceed the minimum preservative retention level. This will help minimize the amount of preservatives that may leach into coastal waters. Use Categories, as specified by the American Wood Protection Association, are based on factors such as whether the wood is subject to saltwater splash vs. immersion, and whether the component is critical and difficult to replace.
 - There will be no treated wood used in the overwater and in-water structures.
 - iii. Where available, only treated wood that has been certified as produced for use in aquatic environments shall be used (as indicated by a BMP Quality Mark or Certificate of Compliance), in

accordance with industry standards such as the Best Management Practices for the Use of Treated Wood in Aquatic and Wetland Environments by the Western Wood Preservers Institute, et al.

- There will be no treated wood used in the overwater and in-water structures.

iv. The use of wood preservatives containing chemicals that may contribute to any listed water quality impairment of the waterway by that chemical shall be avoided. Copper pollution is often an issue for marinas and harbors, due to copper leaching into the water from copper-based antifouling paints commonly used on boat hulls. Dana Point Harbor is listed on the Clean Water Act section 303(d) list of impaired waters as impaired by several pollutants, including copper and zinc, which are chemicals contained in the wood preservative ACZA. Copper is also found in the other common water-based wood preservatives approved for use in marine waters. Therefore, the use of preservative-treated wood for overwater and waterfront structures in Dana Point Harbor shall be avoided, unless there is a valid engineering reason to use treated wood.

- There will be no treated wood used in the overwater and in-water structures.

v. The use of treated wood shall be avoided in locations with a low water circulation or flow rate (typically 0.3 ft./sec. or less, measured at slack tide or low flow conditions). Treated wood shall only be used where water circulation is strong and will provide dilution of any leached chemicals, such as in the surf zone or where tidal flushing occurs.

- There will be no treated wood used in the overwater and in-water structures.

vi. The use of treated wood shall be avoided in locations where especially copper-sensitive aquatic organisms (such as salmon, trout, herring, Dungeness crab, blue mussels, abalone, oysters, sea urchins, and certain zooplankton) may be present. Dissolved copper is highly toxic to a broad range of aquatic species, and juvenile and larval stages of fish and invertebrates are especially sensitive to copper.

- There will be no treated wood used in the overwater and in-water structures.

D. Any fill, coating, wrapping, sealant, adhesive, grout, or other materials used in construction or repair of overwater and in-water structures shall be composed of materials that are inert when fully dried and cured, and will not leach chemicals that could contribute to aquatic toxicity.