

## SAN FRANCISCO WATER DEPARTMENT DISTRIBUTION COMPLEX



**CTEM system was chosen for this project because it is located in a heavy industrialized area. The performance characteristics of CTEM along with its resistance to chemicals/retarded drainage made it a natural choice.**

The San Francisco Water Department's City Distribution Division Corporation Yard is a large complex of seven buildings with bustling activity five days a week. The facility was originally built in 1963 and last re-roofed in 1988. All the roofs leaked excessively for the past several years. Multiple efforts over the past few years to stop the leaks met with little success.

The roof areas total nearly 100,000 square feet. The existing roof system was a low sloped built-up roof with gravel. The different conditions on the various roofs included some ponded areas, perimeter and inside parapets, gravel stop details, inside drains, pipe and vent penetrations, multiple sky lights, HVAC units and inside gutters on two of the roofs.

It was important that the new roof be fire rated, wind up-lift compliant, resistant to ponded conditions, UV/ozone and be easily maintained as well as repairable over time. The existing roof deck design precluded the feasibility of installing crickets or tapered insulation without interfering with the building profile. Due to the size of the larger roofs and the suspected movement that exists it was preferred that the new roof be flexible and elastomeric. The Corporation Yard is located in an industrial area of San Francisco so the selected roof also had to be highly chemically resistant to withstand pollutants, bird droppings, etc.

The facility manager was also concerned about the possible interruptions or problems that might be caused by fumes from kettles, pumping equipment, cold process mastics and possible hazards from open flame torches.

After extensive research and evaluation, the Bureau of Architecture, Department of Public Works, selected the Hyload, Inc. Elvaloy® based Coal Tar Elastomeric Membrane (CTEM) roof system. The specification included removal of all existing roofing material and flashings. On five of the roofs a 1 1/2" inch thick isocyanurate insulation board was mechanically attached to the fluted steel deck. On the remaining two roofs a 1/4 inch thick non-structural glass mat faced board was mechanically attached to the fluted steel deck. All insulation boards were primed with an ASTM D-41 asphalt primer. HyBase SAM (Self Adhered Membrane) CTEM base sheet was adhered to the primed insulation. The Hyload WS cap sheet was then self adhered to the HyBase SAM. All laps of the cap sheet were hot air welded. New metal was specified for the perimeter edges, copings, etc.

The contract was awarded to Pioneer Roofing Organization of San Francisco. According to Manuel Avila, Superintendent, "the Hyload system is very clean and easy to work with. There are no odors to contend with, making the installation more tolerable to both the roofer and property owner. The base sheet is sufficient to make the roof watertight, which is excellent in a rainy climate. We were then able to schedule completion of the cap sheet installation, weather permitting, without the fear of leaks and emergency repairs. I would recommend this system for all types of buildings, especially those where daily operations continue, such as schools, hospitals, factories, etc."

The facility manager stated "the project went very well with little or no interruption. The system design features, capabilities, and maintenance requirements were well explained. I no longer receive phone calls about leaks."

Hyload Representative, Don Burrows, based in Rohnert Park, California, said, "the Hyload system offers a compilation of benefits derived from the redundancy of built-up roof systems, flexibility of single-ply systems, and the time tested resistance to ponding water and pollutants of coal tar. With the self adhered system, the annoyances and hazards of kettles, torches, cold process adhesives, etc. are eliminated."

® (Elvaloy) is a registered trademark of DuPont.

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CTEM base sheet is installed over roof insulation.



CTEM weathering membrane is installed on top of the CTEM base sheet.



All CTEM laps and termination points of the weathering membrane are hot air welded.



Completed CTEM roof is in excess of 125 mils of total CTEM products.