

➤ HONG KONG

Airport P3801

Fabricated PE Air Valve Tees



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Hong Kong International Airport installs fabricated PE air valve tees.

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HKIA project P3801 - Comprising 2500 meters of PE100 RC gravity drainage pipes and sewer rising mains in sizes: 160, 225, 500, 560, 710, 800mm OD.

PE100 RC pipe provides more than FOUR times the design and actual service life in wastewater / Sewer pipelines, when compared to traditional EN598 Ductile Iron pipe.

However just replacing the DI pipe with PE provides only half a solution. The DI fittings installed in a PE sewer pipeline will require replacement three times over the operating life of the system, whilst the PE pipe will not require any maintenance in the same period. It makes no economic sense designing wastewater systems with components that have one quarter of the service life of the pipe being installed.

This fact is not lost on system designers, all over the world the use of PE fittings in large diameter sewers is now common place. The design objective to have an end to end PE system, the common exception being valves, which are generally designed to be maintainable / replaceable in all pipeline systems.

In P3801, Hong Kong Airport Authority opted for sewer pressure tees machined and fabricated from PE hollow bar to eliminate flanged ductile Iron tees for the air valves. Not only did this reduce cost, but right up to the air valves flange joint, no iron is present in the system.

The fitting body is machined from large diameter hollow PE bar stock. It can be seen in the images that the design includes external reinforcement to ensure the removal of the cross-sectional area for the outlet does not compromise the structural integrity of the fitting, especially with the cyclic loads found in rising mains.

Pipe ends are butt welded to the fitting body to provide spigots for electrofusion joining on site. All butt welds are perpendicular to the pipe's axes, therefore no deration of the fitting is required. This fitting is cast directly into concrete the base of the valve chamber with the external PE reinforcement also acting as a puddle flange to anchor the fitting / pipeline to the chamber.

For more information on hollow bar fittings click [here](#).

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