

Technical Bulletin

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Plastic piping

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Many ships today are fitted with both ballast and IG system pipes manufactured from approved types of plastics and glass reinforced plastics (GRP).

As this piping is said to be impervious to corrosion it may be thought that there are no particular maintenance problems associated with its use on board vessels. However, it has come to the attention of Club Inspectors that certain major problems can occur:

1. Pipes in double bottom and side tanks are normally continuous lengths secured by metal hoops to the frames of the tank. Over time, the strength of these hoops is degraded by corrosion which can allow the pipe to shift under the pressure of the water passing through it, or from a *hydraulic shock* caused when a valve is opened and water rushes in to fill the void in the pipe. This can cause cracking of the pipes and problems at flanges that are required to pass through tank bulkheads.



Weakness in the hoop (photo, below left) has allowed the pipe to shift under pressure and caused it to pull out of the flange at the tank bulkhead (photo below).



It is recommended therefore, that ship's personnel should pay particular attention to these pipes when inspecting ballast spaces in the normal course of planned maintenance and cleaning, and that any damaged securing hoops should be replaced as soon as possible.

2. Where plastic pipes are used at tank suction bells or in wells of tanks for suction, such pipes are very much less prone to erosion caused by the suction turbulence and, in fact, the steel of the tank is more liable to be eroded heavily under these suction bells, which can lead to serious holes forming in shell plating.

An erosion hole is shown below, found in a coated ballast tank when the suction bell was removed.



In these areas it is recommended to check the plate thickness on a regular basis to avoid such problems and to renew the plate in good time to prevent holes occurring.