1 Purpose

The purpose of this specification is to describe the requirements for chlorine pigtails (copper flexible tubing/piping) used at Water Corporation sites to connect chlorine drums to the chlorine manifold.

2 Scope

This specification applies to all Water Corporation chlorine liquid drum facilities. The requirements listed below are mandatory for chlorine pigtails.

3 Definitions

N/A

4 References

AS 1572:1998 – Copper and Copper Alloys – Seamless Tubes for Engineering Purposes

AS/NZS 2927:2019 – The Storage and Handling of Liquefied Chlorine Gas

WC Mechanical Maintenance – Generic work instruction M00026:
5 Specification

The CHLORINE PIGTAIL is a round coiled tube/pipe made from copper alloy with brass alloy end fittings which shall comply with the following requirements;

- Copper alloy tube C122 manufactured to AS1572 with supplier certified to AS ISO9001-2000
- Brass alloy end fittings 385 manufactured to AS1567
- Brazing procedure F98009 Issue 3 certified to AS ISO9001-2000
- Length of 1.8m
- Replaced 12 monthly as a minimum (as per M00026) or if a visual inspection suggests that replacement is warranted.

6 Additional Information

- Each pig-tail is fitted with an expansion chamber and rupture disc, designed to allow expansion of any trapped chlorine when a pressure of ~2600kPa is reached (it also takes some time, depending on ambient temperature, for any chlorine trapped to heat up enough to reach ~2600kPa). Pipework and pig-tails in good working order are designed for pressures well in excess of 2600kPa.
- Expansion chambers are recognised by AS2927 as devices that prevent over-pressure and possible hydrostatic rupture (due to the thermal expansion of liquid chlorine that is trapped between two closed valves).
- Should a rupture disc fail in such a way as to cause external leakage, the quantity of chlorine in a pig-tail is limited to less than 250mL of liquid, which should be significantly contained within the chlorine store – limiting the impact on WC personnel, as well as the environment.
- Isolation of pig-tails by ESD's should not be a frequent event, with the exception of controlled ESD testing, which is conducted over a very short period.

Document Revision History

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<tr>
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