

# Wallace & Tiernan<sup>®</sup> Anode Warranty For on-site electrolytic chlorination systems

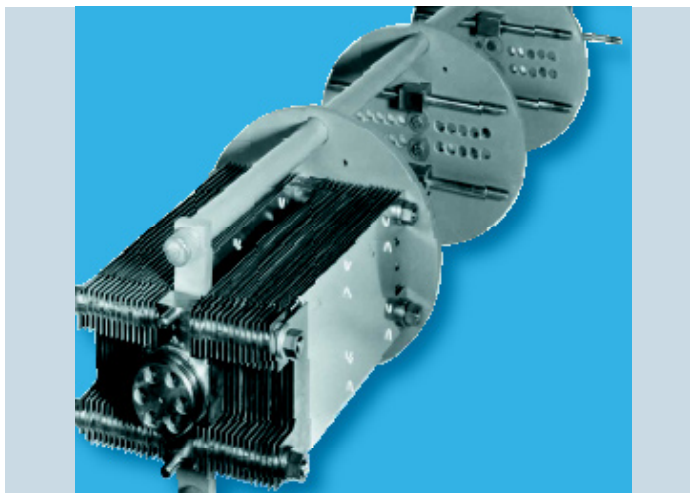
## Anode Warranty Conditions

The anodes used in the electro-chlorinator are warranted for five calendar years after the equipment start up unless stated otherwise at the time of tender or there is a temperature variance as mentioned under Item 1.

Siemens Water Technologies will replace or refurbish the anodes, at its option ex-works, during the period stated in the tender after installation and commissioning at the spare parts price in effect at the time of replacement, less a percentage equal to that portion of the guaranteed life which was not obtained from the anodes being replaced. The warranty and conditions current at time of replacement will then apply.

Anode life is dependent upon many factors, the warranty is therefore conditional upon correct operation of the equipment in accordance with the operation and maintenance manual and subject to the conditions outlined within this document

1. A 5 year warranty will apply if the temperature of the incoming electrolyte does not fall below 10°C (except for a maximum start up period of 20 minutes which shall be further limited to a maximum of 4 starts on any one day).



To achieve the above condition on an electrochlorinator fitted with a standard heat exchanger the inlet water temperature must not fall below 6.5°C at any time.

If the inlet water temperature can fall below 6.5°C then it must be heated using an auxiliary thermostatically controlled heater.

2. The salinity of the electrolyte must be above 18,000mg/l chloride (Cl-) unless otherwise specified by Siemens Water Technologies. The sulphate content ( $SO_4$ ) must be less than 1/7th of the chloride content (as Cl-).
3. The manganese level in the electrolyte entering the electrolyser must not exceed 10mg/m<sup>3</sup> at any time.
4. The electrolyte must contain less than 2mg/l fluoride (F).
5. The electrolyser as specified must not be operated at a current above the figure shown in the instruction manual.

## Warranty Conditions Sheet

6. The operational log must be maintained in accordance with the time periods specified.
7. A monthly log of water analysis must be maintained by water authorities and, in the case of other users, as determined by agreement with Siemens Water Technologies.
8. Salt quality must be to the following specification:-
 

Water insolubles	0.1% maximum
Magnesium chloride	0.1% maximum
Calcium sulphate	0.14% maximum
Sodium chloride	99.82% minimum
Magnesium sulphate	0.02% maximum
9. Acid cleaning is to be carried out if current efficiency falls below the normal by more than 5%, otherwise once per year.
10. Water hardness ex the softener must not exceed 17mg/l of CaCO<sub>3</sub>.
11. If it is found that the performance of the anode coatings has been impaired by organic contaminants in the electrolyte causing directly or indirectly blinding or reduced coating life, then the anode coating lifetime guarantee will not apply.
 

It is recommended that the total organic content in the electrolyte should be less than 1mg/kg, the actual limit dependent on the species.
12. Brine dilution shall normally be a nominal 10:1, this may be increased to a nominal maximum of 12:1 providing the incoming electrolyte is always above 10°C.

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