Kamco
Solutions to Scale

Guidance notes on descaling galvanised cooling towers with SCALEBREAKER SR + ZnI Inhibitor

CHOICE OF DESCALING CHEMICAL AND QUANTITY REQUIRED:

As galvanised steel is present, then SCALEBREAKER SR, together with ZnI booster inhibitor, should be used.

Calculate the amount of descaling chemical required. As a guide, for 200 litres of descaling solution, use 20 kg SCALEBREAKER SR crystals, (ie. a 10% solution by weight). A weaker solution may be used, but will take longer to remove a given amount of scale.

1. Isolate flow and return to the cooling tower coil and isolate/switch off the cooling tower fans.

2. Reduce the water level in the sump to a minimal level of 25 to 30 cm, and close drain cock securely.

3. Commence re-circulation, such that sump water is being continually cascaded over the fouled heat exchanger piping.

4 Slowly gravity feed the ZnI booster inhibitor into the sump water via access manhole, taking care not to choke pump inlet.

5. Slowly gravity feed the SCALEBREAKER SR crystals into the sump water, allowing them to dissolve, giving a pink / red solution, monitoring the reaction of the solution with the deposit build-up. Again, take care not to choke pump inlet.

SCALEBREAKER descaling chemicals contain a built-in colour change to monitor strength.

6. If access permits, the SCALEBREAKER SR crystals may be sprinkled directly along the length of the cooling tower heat exchanger coil from above, as water is being re-circulated. This may not be a viable option in brisk wind conditions.

7. If excessive foaming is a problem, add FOAMBREAKER in 25 ml doses.

8. When there is no further apparent foam generation from the sump, and yet the solution is still pink, then descaling may be assumed to be complete.

9. If the reaction ceases, and the solution has become yellow, indicating that the SCALEBREAKER SR has become exhausted, add another 5 kg crystals to the solution to see if there is any further evolution of foam.

10. If not, descaling is complete.

11. Cease circulation of the solution, and check pH of the solution with a pH meter, or pH indicator paper.

12. If pH is greater than 4.5, the solution may be discharged to drain, allowing an excess of fresh water to follow.

13. If pH is lower than 4.5, slowly add NEUTRALISING CRYSTALS until the requisite pH level is reached, and then discharge.

14. Introduce fresh water into the cooling tower, and re-circulate for 5 minutes, and dump.

15. Repeat this process again, and check pH of water. Repeat process until pH of 7 is reached.

IMPORTANT: When working with acidic descaling chemicals, always wear suitable protective clothing and goggles. Refer to instructions on labels of descaling chemicals, and refer to Material Safety Data Sheets.

Caution
When descaling with any acid, some hydrogen gas may be evolved.

Hydrogen is flammable, and the working area should be well ventilated. Avoid smoking nearby, or any other means of ignition.

Legal disclaimer: It is stressed that these are guidance notes only, and the above information is based on the present state of our knowledge of cooling towers in general. It is given in good faith, but due to the diverse and varied nature of such equipment, the user must satisfy himself that the above procedure is viable in the prevailing situation.