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4.6.2 Seawater; 4.6.3 Lye or hydroxides; References; 5 Removal of Particles; 5.1 Introduction; 5.2 Characterization of the water; 5.3 Methods for particle removal in fish farming; 5.3.1 Mechanical filters and micro screens; 5.3.2 Depth filtration - granular medium filters; 5.3.3 Settling or gravity filters; 5.3.4 Integrated treatment systems; 5.4 Hydraulic loads on filter units
5.5 Purification efficiency
5.6 Dual drain tank; 5.7 Sludge production and utilization; 5.8 Local ecological solutions; References; 6 Disinfection; 6.1 Introduction; 6.2 Basis of disinfection; 6.2.1 Degree of removal; 6.2.2 Chick's law; 6.2.3 Watson's law; 6.2.4 Dose-response curve; 6.3 Ultraviolet light; 6.3.1 Function; 6.3.2 Mode of action; 6.3.3 Design; 6.3.4 Design specification; 6.3.5 Dose; 6.3.6 Special problems; 6.4 Ozone; 6.4.1 Function; 6.4.2 Mode of action; 6.4.3 Design specification; 6.4.4 Ozone dose; 6.4.5 Special problems; 6.4.6 Measuring ozone content; 6.5 Other disinfection methods
6.5.1 Photozone
6.5.2 Heat treatment; 6.5.3 Chlorine; 6.5.4 Changing the pH; 6.5.5 Natural methods: ground filtration or constructed wetland; References; 7 Heating and Cooling; 7.1 Introduction; 7.2 Heating requires energy; 7.3 Methods for heating water; 7.4 Heaters; 7.4.1 Immersion heaters; 7.4.2 Oil and gas burners; 7.5 Heat exchangers; 7.5.1 Why use heat exchangers?; 7.5.2 How is the heat transferred?; 7.5.3 Factors affecting heat transfer; 7.5.4 Important parameters when calculating the size of heat exchangers; 7.5.5 Types of heat exchanger; 7.5.6 Flow pattern in heat exchangers
7.5.7 Materials in heat exchangers

Sommario/riassunto

As aquaculture continues to grow at a rapid pace, understanding the engineering behind aquatic production facilities is of increasing importance for all those working in the industry. Aquaculture engineering requires knowledge of the many general aspects of engineering such as material technology, building design and construction, mechanical engineering and environmental engineering. In this comprehensive book, Odd-Ivar Lekang introduces these principles and demonstrates how such technical knowledge can be applied to aquaculture systems, offering the reader coverage including:
