



Numerical Answers to Calculation Questions

Chapter 1 - Watertube Boiler Designs

2. 2300, 65 000, 1700, 6200

Chapter 2 - Special Boiler Designs

5. 75 m³/h to 200 m³/h feedwater flow, 20 000 kPa

Chapter 3 - Boiler Construction

28. 3450 kPa

30. 6 mm

Chapter 5 - High-Pressure Boiler Fittings

- 7. 47, 1100
- 10. 75
- 15. 3000
- 40. 65

Chapter 6 - Burner Designs and Supply Systems

- 16. Conventional burners: 100 ppm to 200 ppm
Low NO_x burners: 25 ppm to 80 ppm
- 29. 1200 tonnes/h, 4.25, 18°

Chapter 8 - Boiler Control Systems

- 7. 25
- 8. 1700, 50 000

Chapter 13 - Pump Head Calculations

Objective 1

- 1. 45 126 Pa or 45.126 kPa
- 2. 154.49 m
- 3. a) 1325 kg/m³
b) 207 972 Pa = 208 kPa
- 4. 318.9 m
- 5. 6.19 m
- 6. 5069.8 Pa = 5.07 kPa
- 9. a) 4 m + 5 m = 9 m
b) 10 m + 13 m = 23 m
c) 14 m
- 10. a) 2 m + 1 m = 3 m
b) 4.5 m - 1 m = 3.5 m
c) 6.5 m
- 11. a) 12 m + 3 m = 15 m
b) 8 m + 10 m = 18 m



- c) 3 m
d) 142 037 Pa = 142 kPa
e) 170 444 Pa = 170 kPa
12. 30.387 m or 30.4 m
13. a) 5 m
b) 0.5 m
c) 65 m
d) 1 128 150 Pa = 1128 kPa
e) 175.5 m
15. 12 Elbows - 40.2 m
8 Tees - 53.6 m
2 Globe valves - 67.0 m
7 Gate valves - 35.9 m
18. a) 20.46 m
b) 131.74 m
c) 111.28 m
20. 213.56 kPa
21. 7.18 m





Numerical Answers to Calculation Questions

Chapter 1 - Steam Turbine Principles and Design

37. 14%

Chapter 2 - Steam Turbine Auxiliaries and Operation

4. 20, 40

5. 3

6. 24

10. 11.1%

Chapter 8 - Compressor Theory and Designs

19. 488.6 m³/h



Chapter 14 - Wastewater Treatment

50. 65%