PRESSURE VESSEL
DESIGN
Concepts and principles

Edited by

J. SPENCE
and
A.S. TOOTH

Department of Mechanical Engineering,
University of Strathclyde, UK

E & FN SPON
An Imprint of Chapman & Hall
London • Glasgow • New York • Tokyo • Melbourne • Madras
## Contents

*Preface* ..................................................  v

*List of Contributors* .................................... xi

1. Introduction ..........................................  1  
   J. Spence

2. Background Analysis and Introduction to Shell Theory .  15  
   J. Spence

3. Plastic Design Concepts ..........................  71  
   J.T. Boyle

4. Design by Rule and Design by Analysis ..........  85  
   J. Spence
5. Local Loads, Supports and Mounting ............... 125
   A.S. Tooth

6. Nozzle Design and Branch Connections ............. 189
   R.H. Price

7. Design Rules for Dished Ends .................... 245
   G.D. Galletly and D.G. Moffat

8. The Design of Externally Pressurised Vessels with BS 5500 . 291
   S.B. Kendrick

9. Fatigue Aspects of Pressure Vessel Design .......... 337
   S.J. Maddox

10. Tubesheet Design .................................. 385
    R.A. McFarlane

11. Flange Design .................................... 419
    G. Thomson

12. Progress Towards a European Standard ............ 455
    R. Fawcett

Index .................................................. 481