# ISO/TR 22694:2008-05 (E)

## Gas cylinders - Methods for establishing acceptance/rejection criteria for fl aws in seamless steel and aluminium alloy cylinders at time of periodic inspection and testing

## Contents

Page


Foreword ..... iv

Introduction ..... v

1 Scope ..... 1

2 Technical approach ..... 3

3 Normative references ..... 1

4 Terms and definitions ..... 1

5 Cylinder symbols ..... 2

6 Modelling and analysis of flaw sizes ..... 4
6.1 Basis and theory ..... 4
6.2 Summary of the fitness-for-service method of analysis ..... 5

7 Experimental results ..... 7

8 Verification of the flaw size analysis ..... 8
8.1 Seamless steel cylinders ..... 8
8.2 Seamless aluminium alloy cylinders ..... 12
8.3 Critical flaw size analysis and verification ..... 16

9 Allowable flaw size analysis and verification ..... 23

10 Discussion ..... 37
10.1 Significance of analysis ..... 37
10.2 Significance of critical flaw size (CFS) ..... 38
10.3 Significance of allowable flaw sizes ..... 38
10.4 Significance of other failure modes ..... 38
10.5 Considerations for establishing acceptance/rejection criteria ..... 38
11 Summary and conclusions ..... 39

Annex A (informative) Tests conducted on seamless steel cylinders for fitness-for-service analysis ..... 40

Bibliography ..... 55