

ISO 20501:2003-12 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Weibull statistics for strength data

Contents		Page
Foreword		iv
1	Scope	1
2	Terms and definitions	1
2.1	Defect populations	1
2.2	Mechanical testing	2
2.3	Statistical terms	3
2.4	Weibull distributions	4
3	Symbols	5
4	Significance and use	6
5	Method A: maximum likelihood parameter estimators for single flaw populations	7
5.1	General	7
5.2	Censored data	7
5.3	Likelihood functions	7
5.4	Bias correction	8
5.5	Confidence intervals	9
6	Method B: maximum likelihood parameter estimators for competing flaw populations	11
6.1	General	11
6.2	Censored data	12
6.3	Likelihood functions	12
7	Procedure	13
7.1	Outlying observations	13
7.2	Fractography	13
7.3	Graphical representation	13
8	Test report	16
Annex A (informative) Converting to material-specific strength distribution parameters		17
Annex B (informative) Illustrative examples		19
Annex C (informative) Test specimens with unidentified fracture origin		26
Annex D (informative) Fortran program		29
Bibliography		33