

# ISO 19604:2018-05 (E)

## Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at high temperature - Determination of stress-rupture time diagram under constant tensile loading

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms, definitions and symbols .....	1
4	Principle .....	3
5	Significance and use .....	3
6	Apparatus .....	3
6.1	Test machine .....	3
6.2	Gripping devices .....	4
6.2.1	General .....	4
6.2.2	Active gripping devices .....	4
6.2.3	Passive gripping devices .....	4
6.3	Test chamber .....	4
6.4	Load indicator .....	4
6.5	Extensometer .....	6
6.5.1	General .....	6
6.5.2	Mechanical extensometer .....	7
6.5.3	Electronic optical extensometer .....	7
6.6	Heating apparatus .....	7
6.7	Temperature measurement devices .....	7
6.8	Data recording system .....	8
6.9	Micrometers .....	8
7	Test specimens .....	8
7.1	Test specimen geometry .....	8
7.2	End tabs of specimen .....	9
7.3	Test specimen preparation .....	10
7.4	Number of test specimens .....	11
8	Test preparation .....	11
8.1	Alignment adjustment in tensile axis direction .....	11
8.2	Adjustment of heating apparatus and temperature measuring device .....	11
8.3	Measurement of test specimen dimension .....	11
9	Test procedures .....	12
9.1	Testing technique .....	12
9.1.1	Test specimen mounting .....	12
9.1.2	Setting of extensometers .....	12
9.1.3	Setting of inert atmosphere .....	12
9.1.4	Heating the test specimen .....	12
9.1.5	Monitoring of temperature and elongation .....	13
9.1.6	Applying load .....	13
9.2	Post-testing treatment .....	13

9.3	Test validity .....	13
9.4	Stress levels in tests .....	14
9.5	Accidental interruption of the test .....	14
10	Calculation of results .....	14
10.1	Tensile applied stress .....	14
10.2	Tensile strain .....	15
10.3	Drawing of tensile strain curve .....	15
10.4	Drawing of stress-rupture diagram .....	15
11	Test report .....	15
Annex A (informative) Measurement procedure of bending ratio in the adjustment of a tensile axis .....		17