

DIN EN ISO 24370:2023-06 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for fracture toughness of monolithic ceramics at room temperature by chevron-notched beam (CNB) method (ISO 24370:2005)

Contents		Page
European foreword		3
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4	Symbols	6
5	Principle	7
6	Apparatus	7
6.1	Test machine	7
6.2	Flexure fixtures	7
6.3	Micrometer	8
6.4	Optical microscope	8
6.5	Stability detection equipment	9
7	Test specimens	9
7.1	Geometry, size, preparation and edge chamfering	9
7.1.1	Recommended geometry	9
7.1.2	Alternative geometry	12
7.1.3	Preparing test specimens and chamfering	12
7.1.4	Cutting the chevron notch	12
7.2	Number of specimens	12
8	Procedure	13
8.1	Permitted test environments	13
8.1.1	Laboratory ambient environment	13
8.1.2	Application-specific environment	13
8.1.3	Inert environment	13
8.2	Test specimen dimensions and alignment	13
8.2.1	Test specimen dimensions	13
8.2.2	Measure the chevron tip dimension, chevron dimensions and notch thickness	13
8.2.3	Measure the inner and outer span	14
8.2.4	General guidance on bend testing	14
8.2.5	Fracturing the test specimen	14
8.3	Post-test measurements	14
8.4	Post-test interpretation	14
9	Calculation	16
9.1	Calculations of the minimum stress intensity factor coefficient Y^*_{min}	16
9.1.1	Recommended test specimen geometry	16
9.1.2	Alternative test specimen geometry	17
9.2	Calculation of the fracture toughness value, $K_{I,CNB}$	17

10	Test report	17
Bibliography		19