

# DIN EN ISO 9693:2020-02 (E)

## Dentistry - Compatibility testing for metal-ceramic and ceramic-ceramic systems (ISO 9693:2019)

---

<b>Contents</b>	<b>Page</b>
European foreword.....	3
Foreword.....	4
Introduction.....	5
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 Requirements</b> .....	<b>7</b>
4.1 Biocompatibility.....	7
4.2 Physical properties.....	7
4.2.1 General.....	7
4.2.2 Thermal expansion.....	7
4.2.3 De-bonding/crack-initiation test.....	7
4.2.4 Thermal shock resistance.....	8
<b>5 Sampling</b> .....	<b>8</b>
5.1 Metallic substructure material.....	8
5.2 Ceramic substructure material.....	8
5.3 Veneering ceramic.....	8
<b>6 Test methods</b> .....	<b>8</b>
6.1 Linear thermal expansion.....	8
6.1.1 Metallic materials.....	8
6.1.2 Ceramic materials.....	8
6.2 Glass transition temperature.....	8
6.3 Young's modulus.....	8
6.4 De-bonding/crack-initiation test.....	8
6.4.1 Apparatus.....	8
6.4.2 Preparation of test specimens.....	9
6.4.3 Determination of fracture force.....	9
6.4.4 Test report.....	11
6.5 Thermal shock testing.....	11
6.5.1 General.....	11
6.5.2 Preparation of test specimen.....	12
6.5.3 Thermocycling test with fixed temperature interval.....	12
6.5.4 Thermocycling test with increasing temperature interval.....	12
<b>7 Test report</b> .....	<b>13</b>
<b>Bibliography</b> .....	<b>15</b>