

# DIN EN ISO 3990:2023-12 (E)

## Dentistry - Evaluation of antibacterial activity of dental restorative materials, luting materials, fissure sealants and orthodontic bonding or luting materials (ISO 3990:2023)

---

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	
<b>Foreword</b> .....	
<b>Introduction</b> .....	
<b>1 Scope</b> .....	
<b>2 Normative references</b> .....	
<b>3 Terms and definitions</b> .....	
<b>4 Requirements</b> .....	
4.1 General.....	
4.2 Extract.....	
4.3 Direct contact.....	
<b>5 Sample preparation and control material preparation</b> .....	
5.1 General.....	
5.2 General requirements and recommendations for sample preparation.....	
5.3 Specific requirements and recommendations for light-curing materials.....	
5.4 Specific requirements and recommendations for chemically setting materials.....	
5.5 Specific requirements and recommendations for CAD/CAM milled or subtractive manufactured materials.....	
5.6 Sterility of samples.....	
5.7 Preparation of liquid extracts of material.....	
5.7.1 Principles of extraction.....	
5.7.2 Extraction vehicle.....	
5.7.3 Extraction conditions.....	
5.7.4 Consecutive elution cycles.....	
5.8 Preparation of materials for direct contact tests.....	
5.8.1 Form of samples.....	
5.8.2 Principles of direct contact tests.....	
<b>6 Bacterial strains, nutrient broths and preparation of bacterial cultures</b> .....	
<b>7 Test procedures</b> .....	
7.1 General.....	
7.2 Test on extracts.....	
7.2.1 Tests on extracts toward planktonic cultures of bacteria.....	
7.2.2 Test on extracts toward bacterial biofilms.....	
7.3 Test by direct contact.....	
7.3.1 Test by direct contact toward planktonic cultures of bacteria.....	
7.3.2 Test by direct contact toward bacterial biofilms.....	
7.4 Determination of antibacterial effects.....	
7.4.1 General.....	
7.4.2 Assessment of the reduction of the bacterial ability to replicate.....	
7.4.3 Assessment of bacterial membrane damage.....	
7.4.4 Assessment of the reduction in bacterial metabolic activity.....	
<b>8 Assessment of results</b> .....	
<b>9 Final test report</b> .....	
<b>Annex A (informative) Bacterial strains and corresponding nutrient broths</b> .....	
<b>Bibliography</b> .....	