



POLO | DENT[®]
COMPOSITE

LC Flowfill
MICROHYBRID COMPOSITE



Technical Product Information

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LC Flowfill is a visible light cure easy flowable microhybrid composite for anterior and selected posterior restorations and for sealing.

LC Flowfill is for the following indications:

- Restorations class III, IV, V
- Small class I and II restorations
- Lining of cavities
- Sealings

LC Flowfill is based on methacrylate-resin and inorganic filler particles of 0.05-1 μm . The total filler load is 62% and the total filler volume 47%. The composite material meets the requirements of DIN EN ISO 4049.

LC Flowfill is available in VITA® shades and several special shades.

Features and Benefits

Features:

easy application consistency

- good radiopacity
- good physical properties and abrasion resistance
- high gloss polishability and excellent color stability

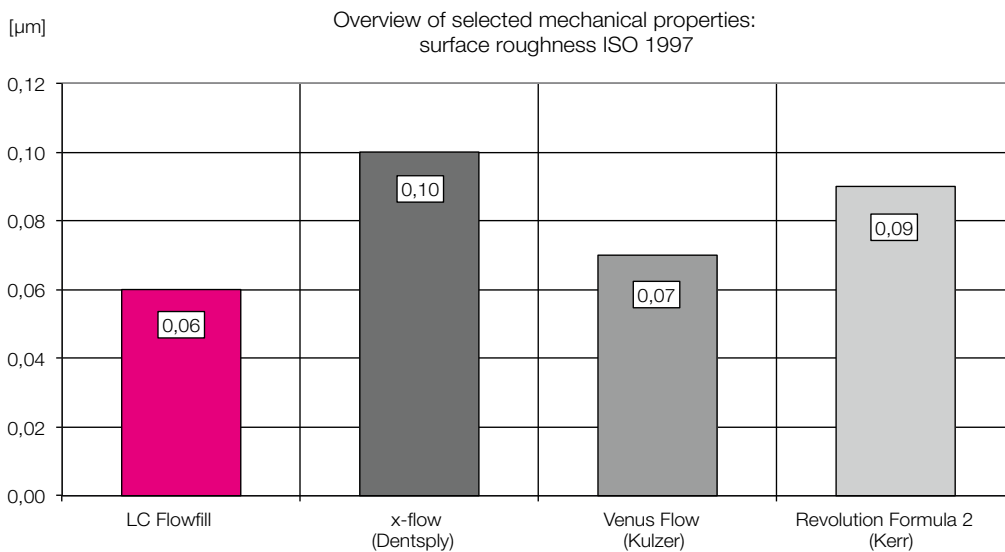
Benefits:

- convenient working
- improved postoperative diagnosis
- lasting restorations
- permanent esthetic restorations

Mechanical properties: surface roughness

A smooth surface after polishing is important for the clinical performance and the esthetic appearance of a composite restoration. A rough surface facilitates discolorations and plaque formation. For measuring surface roughness, test specimens were polished with polishing discs of different grit, 15s each.

The surface roughness was measured with a Mitutoyo SJ-400 measuring device. A lower value implies a higher gloss. **LC Flowfill** has a low surface roughness after polishing and is therefore the ideal composite for small restorations with high esthetic requirements.

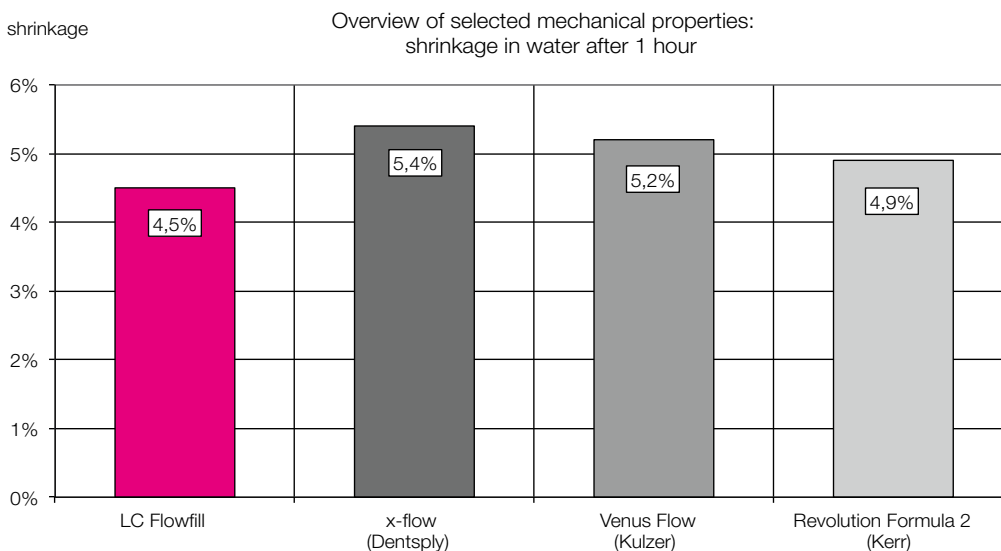


source: manufacturer's research and evaluation labs

Mechanical properties: shrinkage

Shrinkage is very important for sealing of the interface between tooth and restoration. Low shrinkage means that the requirement on the adhesive force of the bonding is reduced to achieve a perfect marginal seal.

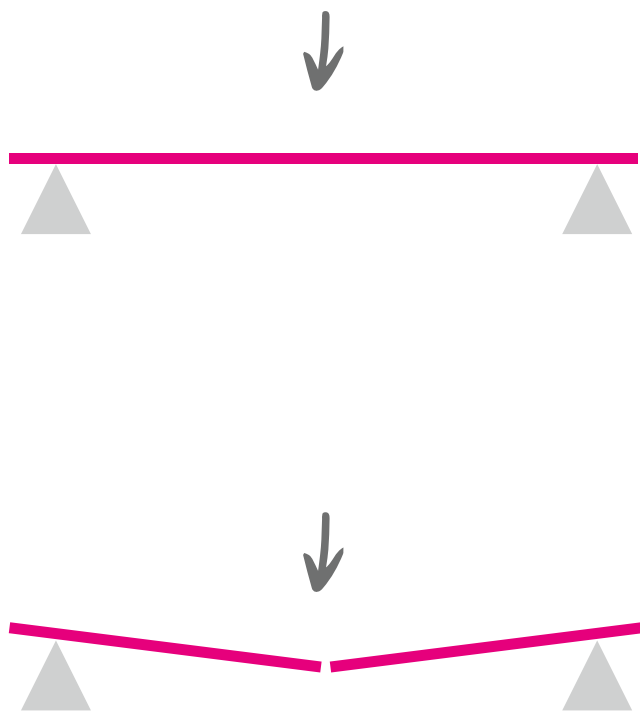
Shrinkage of flowable composites is somewhat higher than for moldable composites, but due to the fact, that in general only very thin layers are applied, the higher shrinkage will be negligible. With its optimized easy flowable consistency it is ideal for perfect wetting of the adhesive layer to assure high bond strength.



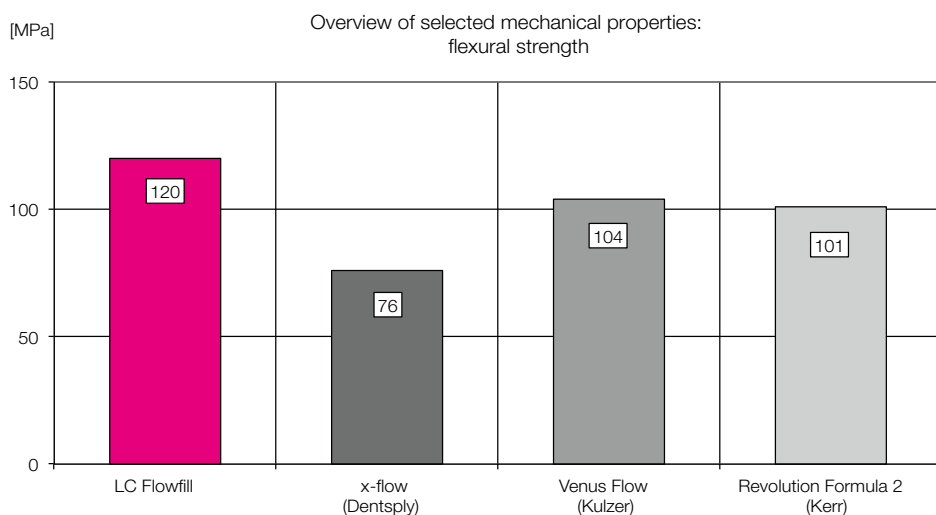
source: manufacturer's research and evaluation labs

Mechanical properties: flexural strength

The flexural strength is determined from the 3-Point bending experiment.



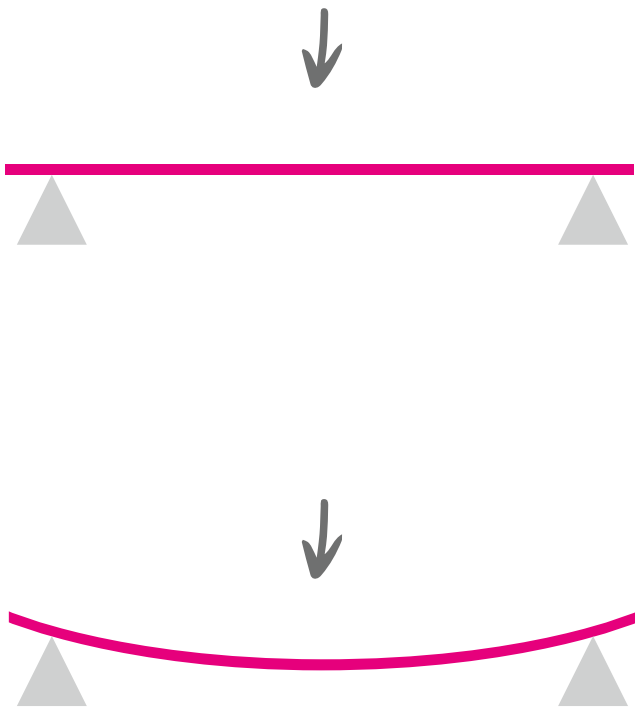
Mechanical stability is important for the clinical success of filling materials. Flexural strength is a very good prediction of the clinical performance in the mouth. Flexural strength values for **LC Flowfill** are in the same range as the values for the competitive products.



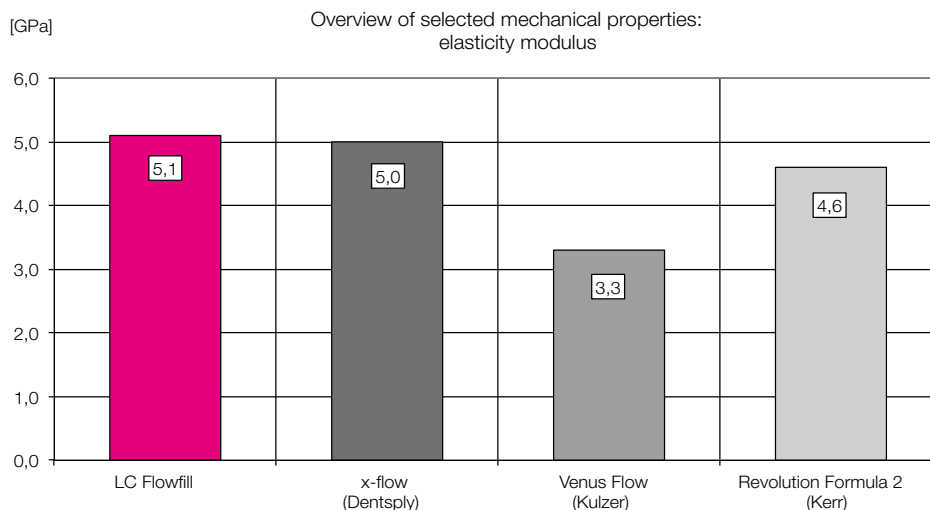
source: manufacturer's research and evaluation labs

Mechanical properties: flexural modulus

The flexural modulus is determined from the 3-Point bending (flexural strength) experiment.

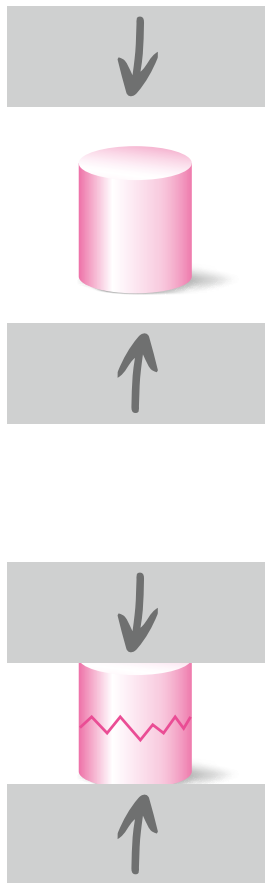


The flexural modulus represents the flexibility or stiffness of the material. Higher value means a stiffer material. Stiffness is important to assure that the masticating force does not displace the filling, which will lead to leakage. On the other hand during polymerisation very high stiffness of the composite may result in high shrinkage stress.

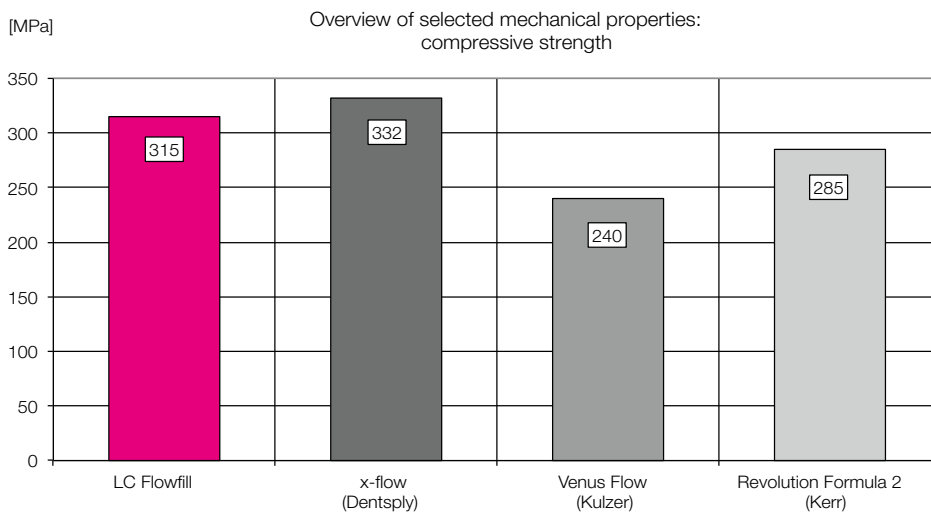


Mechanical properties: compressive strength

The compressive strength is determined from a cylinder with a diameter of 4 mm and a height of 6 mm.



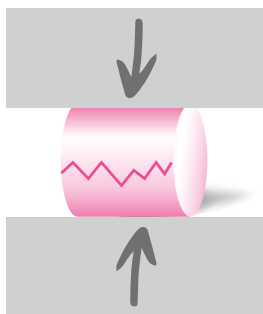
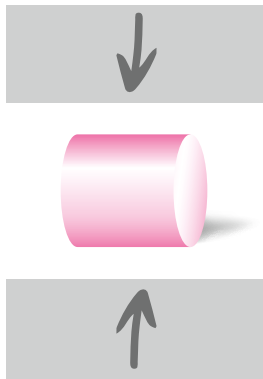
The measurement of compressive strength is a good prediction of clinical performance of filling. Like with all in-vitro tests it represents only a part aspect of the real clinical situation. Therefore the summary of all mechanical testing experiments have to be viewed as a prediction of the clinical situation. Higher value means stronger material.



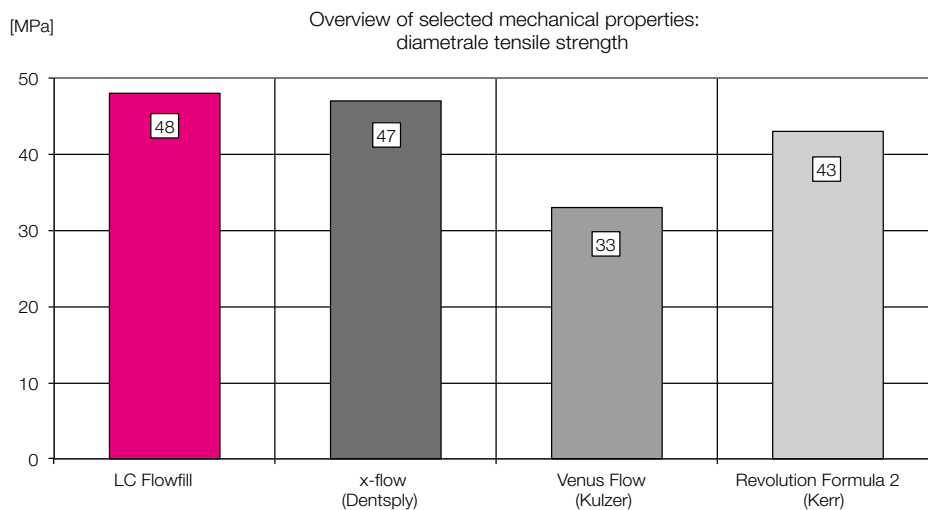
source: manufacturer's research and evaluation labs

Mechanical properties: flexural modulus

The diametral tensile strength is determined from a cylinder with a diameter of 6 mm and a height of 4 mm.

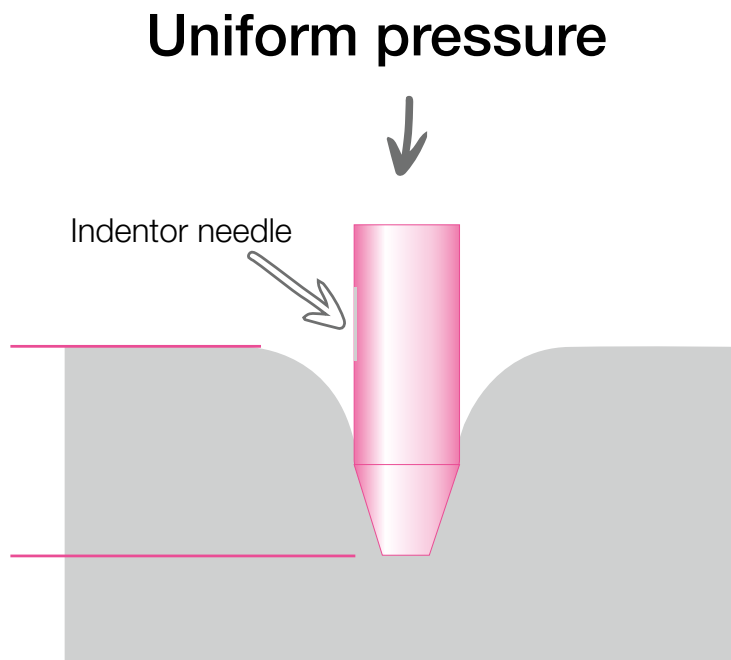


Higher value means stronger material.



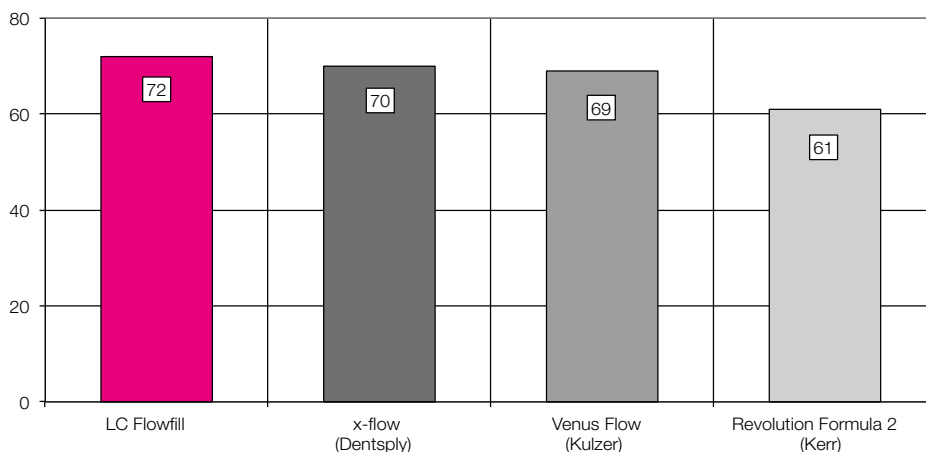
Mechanical properties: barcol hardness

The test specimen is placed under the indenter of the Barcol hardness tester. A uniform pressure is applied to the specimen until the dial indication reaches a maximum. The depth of penetration is converted into about barcol numbers.



This experiment measures the resistance of the surface of the specimen against a standardised testing needle. Clinically it can be viewed as the resistance to allow initial cracks in the filling. Higher value means stronger surface.

Overview of selected mechanical properties:
barcol hardness after 24 hours

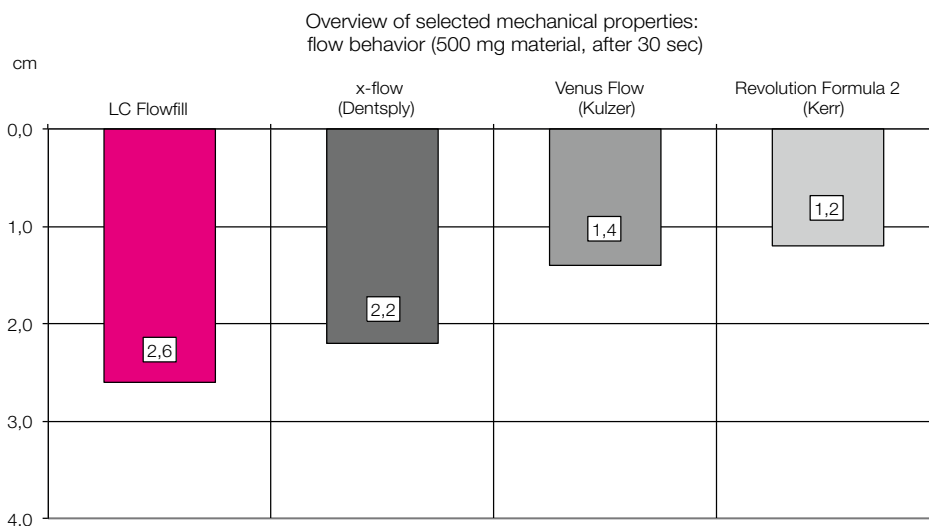
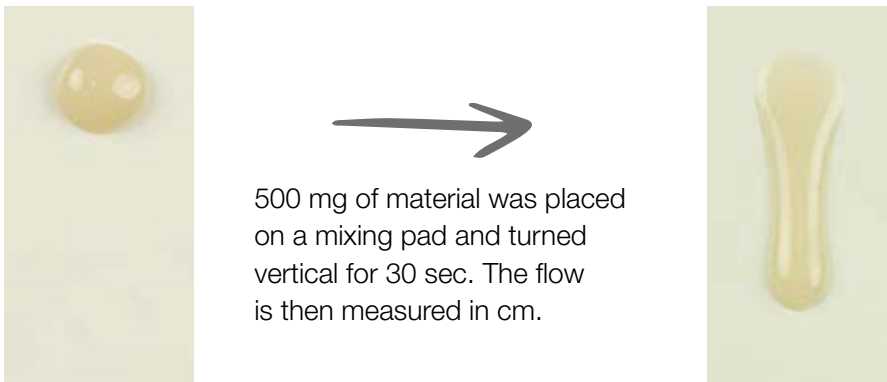


source: manufacturer's research and evaluation labs

Mechanical properties: flow behavior

To quantify the flow behavior, a premeasured volume of material is placed on a mixing pad and turned vertically for 30 seconds. The flow of the material is then measured on a calibrated scale. Higher value means more flowable consistency. The ideal flowable composite would flow readily when manipulated and hold its shape when placed.

Due to its thixotropic behavior, **LC Flowfill** flows easily, when manipulated and thus ensures perfect adaptation to the cavity walls.



- This presentation contains a survey of internal scientific product data.
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