

Success made easy
for everyone



91%
clinical
success
after 2 years
—
Exceeds
success rates found
in the literature*



BioRoot™ Flow

Bioactive Mineral
Root Canal Sealer

* 24 months after treatment, the overall efficacy rate using loose criteria was 91.0% in the BrF group and 90.4% in the BrRCS group ($p=0.0003$)
Clinical study results (Clinicaltrial.gov/NCT04757753) currently under peer review.
Class III Medical Device - Certified by BSI (2797) for MDR/EU compliance.



BioRoot™ Flow makes obturation easy

Ready-to-use syringe

- ▶ Easy and fast: no preparation time
- ▶ Consistent viscosity with every application

Direct intra-canal delivery

- ▶ 21 gauge bendable tip
- ▶ Ensures adaptation to all root canals
- ▶ Limits the risk of overfilling



Suits your technique

- ▶ Keep your preferred obturation technique
- ▶ Or shift to easy single cone technique with efficient results ⁽¹⁾

Highly radiopaque

- ▶ >5 mm Al radiopacity
- ▶ Easily visible on X-Rays

Easy extrusion

- ▶ Limited plunger resistance ^(A)
- ▶ Anatomic finger grip for improved syringe handling
- ▶ Easy and precise delivery in mouth
- ▶ More comfortable and user-friendly ^(A)

Easy and fast removal ⁽²⁾

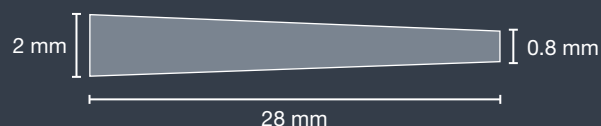
- ▶ Retreatable in less than 10 min



Technical Insights

Innovative tip allows direct & precise placement in the root canal

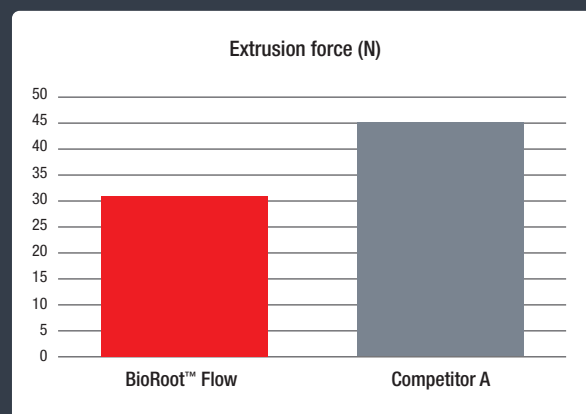
- Flexible tips allow bending and access to all root anatomies
- Precise 21-gauge diameter for optimal delivery, limiting the risk of going too deep



Source: Internal R&D document page 5

(A) Less force needed for product extrusion

- BioRoot™ Flow requires only 31N
- Product extrusion is easy and comfortable



among calcium silicate based materials

Source: internal data

BioRoot™ Flow: Internal R&D document page 17

sealer: Internal R&D document page 14

BioRoot™ Flow makes obturation successful

No shrinkage⁽³⁾

- ▶ Resin-free formulation
- ▶ Hermetic seal of the root canal⁽²⁾
- ▶ Even with single cone technique⁽⁴⁾

Limits bacterial growth

- ▶ High pH 8.5-11.5
- ▶ Creates an alkaline^(c) environment, unfavourable for bacterial growth

Penetrates all radicular canals

- ▶ Without the need for compaction
- ▶ Hydrophilic sealer seeks residual water in accessory canals & tubules⁽⁵⁾
- ▶ Excellent flowability of 32.2 mm and low solubility of 0.2%⁽⁶⁾

Highest concentration of C3S on the market*

A high quantity of C3S⁽⁸⁾ gives

- ▶ A great bioactivity
- ▶ A better 3D seal
- ▶ A shorter setting time



* 36% C3S: internal RD data - highest concentration on the market: compared to all endodontic sealers in a ready-to-use syringe.

Biocompatible⁽⁷⁾

- ▶ High purity tricalcium silicate from proprietary manufacturing process
- ▶ Ensures favourable tissue response
- ▶ Limits the risk of adverse reaction

Bioactive: triggers mineralisation^(B)

- ▶ Calcium ions release forms hydroxyapatite
- ▶ Increases the mineral density of dentine

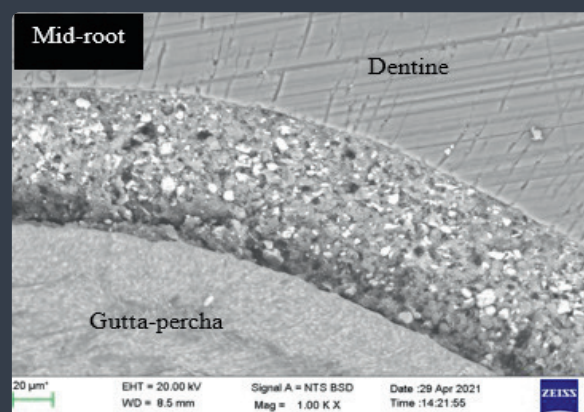
Successful results even with single cone technique⁽⁷⁾

- ▶ Unique benefits of tricalcium silicate enhancing cold technique efficacy
- ▶ Obturation is just as successful as with warm techniques⁽³⁾

> Technical Insights

Hermetic seal of the root canal

- Excellent adhesion to dentine & gutta-percha
- Eliminates residual spaces for bacteria to grow



BioRoot™ Flow SEM interfaces

Source: C. Wang, N. Mosahebi, J. Camilleri (2021). Testing of a new premixed BioRoot™ RCS (Septodont)

(B) Bioactivity and mineralisation

- BioRoot™ Flow induces hydroxyapatite crystal formation by the reaction between calcium hydroxide and phosphate

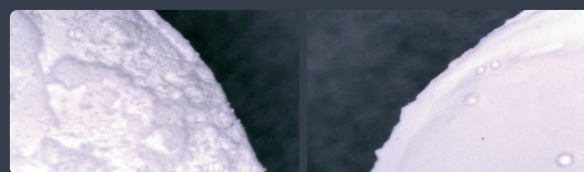
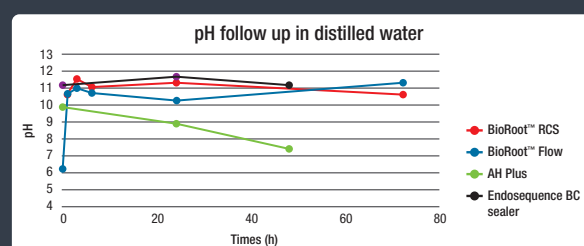


Image shows BioRoot™ Flow is immersed in Phosphate Buffered Saline (PBS - left picture) vs. water (right picture)

Source: Internal R&D document page 15

(C) Long lasting high pH

- High pH is maintained over time, creating an alkaline environment preventing bacterial growth



Source: Internal R&D document page 4

Proven clinical success

▶ **2 years**
of clinical follow-up

2-year efficacy study*

- ▶ Multicentric randomised controlled trial
- ▶ Assess the efficacy and safety of BioRoot™ Flow over a 2-year period
- ▶ 160 patients

BioRoot™ Flow

91%
clinical success
after 2 years

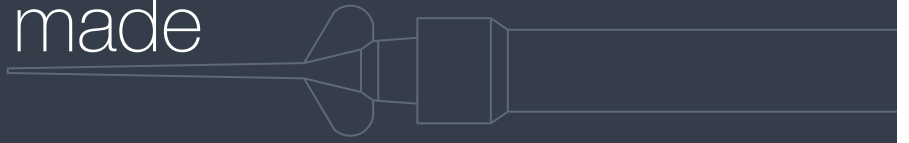
No
postoperative
pain reported
by day 7

Exceeds clinical success rates found in the literature

- ▶ Primary endodontics⁽⁹⁾ **82-90%**
- ▶ Retreatment⁽¹⁰⁾ **77-89%**

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BioRoot™ Flow is made for everyone



Whatever your technique

Warm or cold, BioRoot™ Flow allows reproducible success

Cold technique

- ▶ No shrinkage ensuring no gaps or voids ⁽³⁾
- ▶ Excellent flow to penetrate accessory canals without compaction ⁽⁵⁾
- ▶ Tight adhesion to dentine & gutta-percha for lower risk of bacterial infiltration ⁽⁶⁾



Warm technique

- ▶ Thin film thickness contributing to the clinical performance of the obturation
- ▶ Water intake from root canal only, allowing the stability of the material while heated ⁽⁶⁾

Whatever your practice

General dentistry or endodontics, BioRoot™ Flow is designed for you

General dentistry

- ▶ BioRoot™ Flow takes single cone technique to the next level
- ▶ Allows you to save chair time with each endodontic patient
- ▶ While making no compromise with the quality of obturation



Endodontics

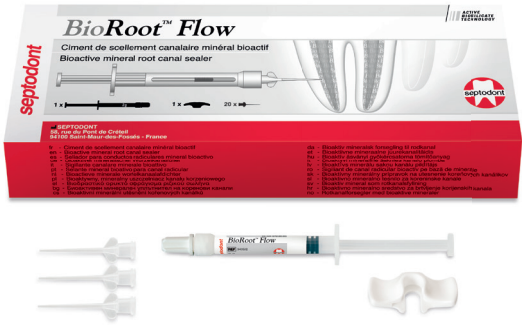
- ▶ BioRoot™ Flow penetrates areas that are hard to reach with a heated plugger (e.g. complex root canal anatomies) ⁽⁶⁾
- ▶ Consistent sealing quality whatever the obturation technique used ⁽⁶⁾
- ▶ BioRoot™ Flow helps you value your expertise of saving teeth and of avoiding extractions

Technical Features

Working time	>60 min	Radiopacity	5 mm Al
Setting time	5 to 6h00	Flow	32.2 mm
Extrusion Force	31N	Film Thickness	22 µm
pH	8.5 - 11.5	Solubility	0.2%
Calcium release	High	Source: internal data; Dr Camilleri	

Product information

- 1x 2g syringe
- 1x finger grip
- 20 intra-oral tips



Sources:

- (1) Internal R&D document page 4.
- (2) Internal R&D document Internal RD data page 4 and page 25.
- (3) Internal R&D document page 3.
- (4) A. Zavattini, A. Knight, F. Foschi et al. Outcome of Root Canal Treatments Using a New Calcium Silicate Root Canal Sealer: A Non-Randomized Clinical Trial. J Clin Med. 2020 Mar 13;9(3):782. doi: 10.3390/jcm9030782.
- (5) S. Drukteinis, J. Camilleri (Eds.). (2021). Bioceramic materials in clinical endodontics. Berlin/Heidelberg, Germany: Springer.
- (6) Internal document. C. Wang, N. Mosahebi, J. Camilleri (2021). Testing of a new premixed BioRoot™ RCS (Septodont).
- (7) Internal R&D document page 7. Pr. Imad About.
- (8) S. Castro- Jara, B. Antilef, C. Osbén. Bioactivity analysis of calcium silicate-based sealers and repair cements on the phenotype and cytokine secretion profile of CD14+ monocytes: An ex vivo study. International endodontic Journal.2023;56:80-91.
- (9) Ng, Y.-L., Mann, V., Rahbaran, S., Lewsey, J., & Gulabivala, K. (2007). Outcome of primary root canal treatment: Systematic review of the literature – Part 1. Effects of study characteristics on probability of success. International Endodontic Journal, 40, 921–939.
- (10) Ng, Y.-L., Mann, V., & Gulabivala, K. (2008). Outcome of secondary root canal treatment: A systematic review of the literature. International Endodontic Journal, 41(12), 1026–1046.

Septodont

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