



# Polofil® NHT

NEW NANO-HYBRID TECHNOLOGY FOR YOUR  
EVERYDAY USE



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You need a composite that allows you to easily achieve high quality restorations? Polofil NHT, the new nano-hybrid composite by VOCO will convince you with its universal applicability, easy handling and very good material properties. It was developed to make the day-to-day running of your practice easier.

### High stability and longevity

Polofil NHT is an up to date, light-curing, nano-hybrid composite. Nano-particles evenly imbedded in the resin matrix are effectively combined with special glass ceramic fillers, for which the particle size has been exactly matched.

With a filler content of more than 83 % w/w, Polofil NHT can be universally used for aesthetic anterior and posterior restorations of all cavity classes, core build-ups and indirect composite inlays. Furthermore the extremely high filler content provides Polofil NHT with a very hard surface, high flexural and compressive strength, plus a high abrasion resistance.

### Excellent natural aesthetics

Polofil NHT is available in five shades and demonstrates a brilliant chameleon effect for restorations that are close to the natural tooth. The material has a very high degree of translucency, making it possible to achieve natural, vital

aesthetics using only one shade! The shade simplicity concept results in fewer shades to store for the clinician without any aesthetic compromise for the patients.



The shade guide, made from light-cured original material, simplifies coordination with the natural tooth substance in every case. In combination with the material's simple application, Polofil NHT proves to be exceptionally user-friendly and makes the day-to-day running of your practice easier.

### In comparison

Technical data	Polofil NHT	Filtek Z350XT	Filtek Z250XT	Spectrum TPH <sup>3</sup>	Ceram X Mono	Tetric N Ceram*
Filler content (% w/w)	> 83	77	82	76	76	80 - 81
Polymerisation shrinkage (%)	< 1.8	1.92	1.89	1.97	2.43	2
Flexural strength MPa	> 157	155	155	114	119	130
E-modulus MPa	> 17,000	10,620	12,500	8,920	9,750	10,800
Compressive strength MPa	> 440	315	357	335	361	267
ACTA Abrasion µm	< 20	13	20	94	75	- <sup>1</sup>
Water absorption µg/mm <sup>3</sup>	< 12	27	21	20	18	24
Water solubility µg/mm <sup>3</sup>	< 1	< 0.1	< 0.1	1.7	2.6	< 1
Radiopacity %Al	250	270	260	200	420	400

Source: VOCO internal measurements

\* competitive manufacturer's technical data  
<sup>1</sup> no data available

# Polofil® NHT

## OUTSTANDING HANDLING PROPERTIES

When hearing about Polofil NHT's filler content of more than 83 % w/w, almost every general practitioner expects to find an extremely hard material of amalgam-like consistency. Due to the liquid-like behavior of the nano particles, however, Polofil NHT is smoother than most conventional micro-hybrids without slumping. Polofil NHT will not stick to instruments, thereby avoiding a "pull-back effect".

### Indications

- Class I to V fillings
- Reconstruction of traumatically affected anteriors
- Facetting of discoloured anteriors
- Correction of shape and shade for better aesthetic appearance
- Locking, splinting of loose anteriors
- Repairing veneers
- Filling deciduous teeth
- Core-build-up under crowns
- Composite inlays



### Simplest handling – best results



Amalgam restoration in need of replacement



Excavated tooth prepared for filling



Lining with Polofil NHT Flow



A class I cavity results from restoring the marginal ridge



Designing the occlusal anatomy



Finished restoration

Source: Dr. Walter Denner, Fulda

# Polofil® NHT Flow

## THE FLOW COMPOSITE FOR ALL CAVITY CLASSES

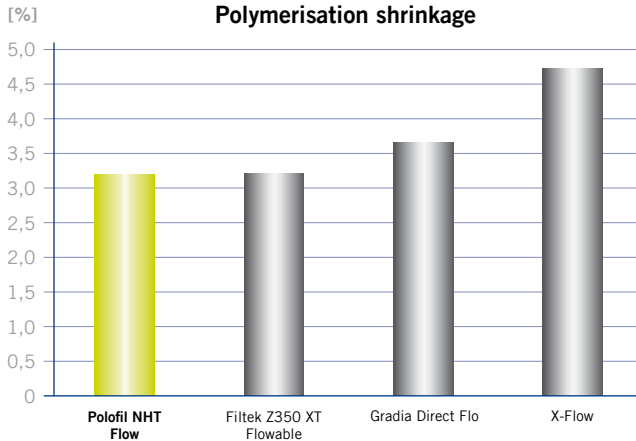
Polofil NHT Flow is the ideal universal flowable composite for your surgery – you can use it for all restorative indications. It is a very reliable restorative for the indication-appropriate treatment of all cavity classes and ranges of use. Polofil NHT Flow combines all advantages of the nano-hybrid composite valued by dentists in its material properties, while still being flowable.

### High stability and longevity

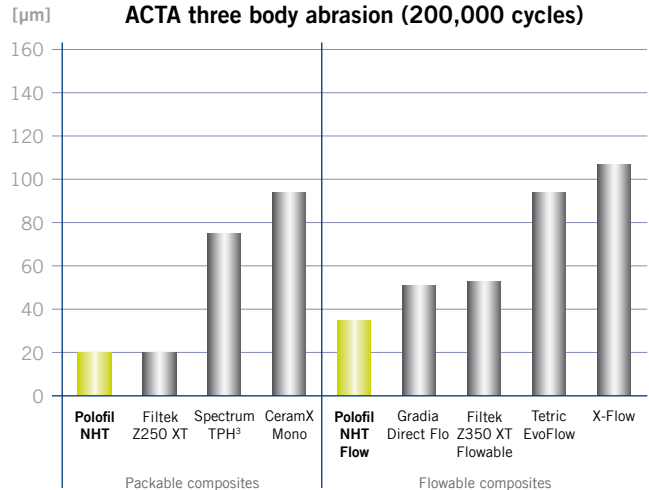
The ratio of resin to fillers determines the physical properties of the restorative. Polofil NHT Flow combines nano scaled particles with conventional sized glass ceramic fillers of a select size range. The result: an extremely high filler content of more than 76 % w/w, with an extremely low resin content, compared to other flowable composites. This successful combination leads to Polofil NHT Flow's outstanding physical properties. Polofil NHT Flow offers a substantially higher surface hardness and resistance to abrasion than traditional flowable composites. The extremely high filler content provides Polofil NHT Flow with a distinct surface hardness (> 115 MHV) that is superior to traditional flow composites.

Polofil NHT Flow is thus an extremely abrasion resistant material. In comparison with other composites, Polofil NHT Flow exhibited the least amount of abrasion with 35 µm (ACTA method). The extreme surface hardness and abrasion resistance not only benefit uniform chewing stability and thus clinical stability of the restoration, but also the durability of the polish.

Generally Polofil NHT Flow performs more like a packable hybrid than a flowable composite, in some categories even better than some established packable composites.



Source: VOCO internal measurements analogous Watts et al.



Source: VOCO internal measurements analogous De Gee and Pallav

### Smart handling

Polofil NHT Flow is a thixotropic material that will “flow on demand”, i.e. the material flows under pressure, but holds its shape and stays in place prior to light cure. Excellent flow properties ensure excellent wetting of the entire cavity. The material adapts itself to the cavity walls and fills even the smallest of cavities without trapping air.



### Indications

- Filling minimally invasive cavities of all classes
- Filling small class I cavities and extended fissure sealing
- Filling class II - V cavities including V-shaped defects and cervical caries
- Blocking out undercuts
- Lining or coating cavities
- Repairing fillings and veneers
- Luting translucent prosthetic pieces (e.g. full ceramic crowns, etc.)

## Bondfix®

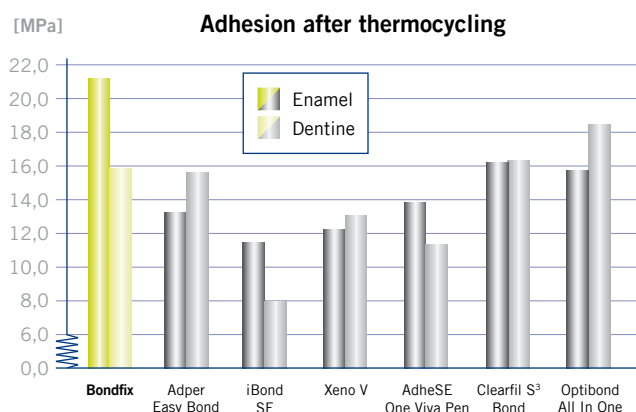
### HIGH QUALITY SELF-ETCH BONDING IN ONLY ONE STEP

The quality of the adhesive attachment is crucial for the long-term success of a restorative therapy. Because of this, the light-curing Bondfix as a one-component self-etching bond offers a fast, easy and above all safe application.

Bondfix is a nano-particle reinforced, light-curing, one-component self-etching bond that achieves a lasting adhesion between tooth substance and restorative, free from marginal gaps. It allows etching, priming and bonding in only one step and is suitable for direct restorations with all light-curing filling materials.

As a one-step bond it saves considerable amounts of time and material, since the mixing and the application of several components become unnecessary. A single application of the bonding and subsequent light-curing take up only 35 seconds of your time and are sufficient to cause a permanently stable bond between restorative and tooth. Another advantage: Bondfix has a working time of up to five

minutes and thus allows short breaks during application without any loss of quality for the adhesive.



Source: VOCO internal measurements

## Solobond M

### THE STRONG TOTAL-ETCH BOND

Solobond M is the light-curing total-etch bond for all light-curing restorative materials. The single-component one-layer adhesive ensures fast handling, combined with secure application and excellent adhesion values on enamel and dentine.

#### Quick and simple handling

The total-etch bond, which is applied in a single layer, provides numerous advantages. This means that with Solobond M, priming and bonding is carried out in a single step and only one application. This provides distinct savings in terms of time and materials in comparison to many two-step systems. Furthermore, the use of Solobond M prevents mixing errors.

The immediate bonding effect is a further aid for application. The restorative material immediately adheres to the bond, facilitating subsequent modelling.

#### The advantages at a glance

- One component – one application
- Excellent adhesion (28.1 / 32.0 MPa on dentine / enamel)\*
- High material elasticity and permanently tight margins
- “Stick-immediately-effect” for easy application of the restorative
- Universal for all light-curing restoratives



\* analog Reinhardt, Philip Journal 3-4, 1997, 101-104



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### Advantages

#### Polofil® NHT

- High filler degree (> 83 % w/w)
- Superior physical properties
- Tooth-like thermal behaviour
- Minimal shrinkage (< 1.8 %)
- Won't stick to instrument
- Adaptable consistency / easy to model
- Very aesthetic restorations
- Very good colour stability

#### Polofil® NHT Flow

- Ideal flowability
- Outstanding physical properties
- Excellent wetting properties
- Very high filler content (> 76 % w/w)
- Significantly less polymerisation shrinkage (3.2 %)
- Extremely high resistance to abrasion (ACTA < 35 µm)

#### Bondfix®

- No postoperative sensitivities
- High bond strengths on enamel and dentine
- No shaking, no massaging
- Tolerates moisture

### Presentation

#### Polofil® NHT

REF 2370 Set syringe 5 × 4 g  
(A1, A2, A3, A3.5, B2)

REF 2371 Set syringe 3 × 4 g (A1, A2, A3), Bondfix bottle 2 ml

#### Polofil® NHT Flow

REF 1113

REF 1114

REF 1115

#### Bondfix®

REF 1095 Bottle 2 ml

Shade	Syringe 4 g
A1	REF 2373
A2	REF 2374
A3	REF 2375
A3.5	REF 2376
B2	REF 2377

Shade	Syringe 1.8 g
A1	REF 1113
A2	REF 1114
A3	REF 1115

#### Solobond M

REF 1225 Set bottle 4 ml, Vococid gel syringe 5 ml, accessories

REF 1226 Bottle 2 × 4 ml

REF 1227 Bottle 4 ml

REF 2249 Micro Tim, fine application brushes, 100 pcs.

REF 2315 Mixing palettes, 20 pcs.

REF 2338 Brush holder for VOCO disposable dental brushes and Micro Tim, 5 pcs.

Filtek Z350XT, Filtek Z350 XT Flowable, Filtek Z250XT, Tetric N Ceram, Ceram X Mono, Adper Easy Bond, iBond SE, Xeno V, AdheSE One Viva Pen Clearfil S<sup>3</sup> Bond, Optibond All In One, Gradia Direct Flo, X-Flow, Spectrum TPH<sup>3</sup> and Tetric EvoFlow are not registered trademarks of VOCO GmbH.

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