

# Copper Band Impression Technique: *Still the Platinum Standard?*

By Daniel Steinberg, DMD



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White Paper

Author



**DANIEL STEINBERG, DMD**

*Dr. Steinberg received his undergraduate degree from Yeshiva University in 1979 and his DMD degree from Tufts University School of Dental Medicine in 1982. He practiced for two years in Boston, MA before opening his Brooklyn, N.Y. general and family dentistry practice in 1984. Dr. Steinberg is a member of The American Dental Association, The Brooklyn State Dental Association, The Second District Dental Society, The Academy of General Dentistry and the Orthodox Dental Study Club. Over the years, he has continued his dental education by keeping up with the latest in dental treatments and technology and attending hundreds of hours of continuing education courses. Dr. Steinberg has special interest in and has taken numerous courses related to implant dentistry and oral appliance treatment of Obstructive Sleep Apnea. He is also a Talmud teacher and a Judaica designer.*

## Copper Band Impression Technique: Still the Platinum Standard?

Recently, I read an issue of *Clinician’s Report* where they had mentioned that the gold standard for tissue retraction and impression-making was using the “double-cord” technique. I, on the other hand view the Platinum Standard for impression-making as using copper bands and Blu-Mousse® bite registration material. Now I know many of you are thinking, “Wow, that technique has to be about 100 years old.” Well, it’s close and let’s face it, when it comes to impressing, it’s important to use a technique that you feel comfortable with AND one that gives YOU the results you’re looking for.

I’ve been using the copper band/ Blu-Mousse technique for over two decades and with terrific success! For me, this technique is unparalleled because it accurately captures incredible detail of the most important tooth in the arch that I’m treating-The prepared tooth-and nothing but that tooth!

Blu-Mousse sets to a very hard durometer—90. Because of its hardness, it was first introduced as a super-rigid, super accurate, bite registration material. The material is not meant for full arch impressions, however, because it will lock onto undercuts and may actually extract teeth in a full arch tray! But, for making impressions of one or two teeth, and by using the right tray or copper band, the material is unbeatable!

The copper band technique is perfect for my procedures because, the hardness of the Blu-Mousse lends itself to reinforcing the strength of the copper band and I never have to place retraction cord! This saves me so much time! And, as I like to think, time is life and time is money! Now, not only am I saving time, but with this technique, I’m also saving money! The economic benefit of using Blu-Mousse is great when you compare using expensive VPS materials and taking a couple of impressions hoping that one turns out good enough to send to the lab.

Because I use so little Blu-Mousse for my accurate die impression, I can use a lesser expensive VPS for my full or double-arch impression as a working model for my lab. This will be the model that provides the interproximal contacts and opposing occlusion for my single crown. Actually, Parkell’s Cinch™ material is pretty great for doing the quad impression or the full arch—depending on what I need. But, the copper band with my Blu-Mousse is the die that the margin will be established on and that the final restoration will be accurately fabricated to.

So, here’s the technique: Before I begin, these are the materials that my assistant and I get ready:

- 1) A full assortment of Parkell’s Gripper Copper Bands (these are pre-annealed, textured and stippled). Because of the stippling, these bands don’t need messy adhesive applied ahead of time.
- 2) A copper band hole puncher.
- 3) A couple of jumbo paper clips.
- 4) A wire cutter.
- 5) A wire bender.



I start off by prepping and temporizing the tooth. (Fig. 1) I choose the appropriate size of copper band that I'll need. (Fig. 2) The key to the copper band is making certain that it fits over and surrounds the entire prep. (Fig. 3 + 4) The copper band should be pre-bent to approximate the shape of the tooth/prep. The fit should also be passive, but not too loose or large. If it is too large or loose, the band will end up impinging on the marginal gingival areas. (Fig. 5)

The proper fit of the band should be passive enough to allow adequate thickness of the Blu-Mousse to be present between the prepped tooth and the inner aspect of the copper band. The edges of the band should also sit subgingivally-apical to the most apically placed part of the prep/bevel. There are times when the copper band needs to be scalloped in order to ensure that the band reaches the full depth of the sulcus surrounding the entire preparation. I also mark the buccal aspect of the band with a bur so that I avoid mixing up the band orientation during the band selection and customization process.

I use the hole-puncher and punch a hole in the band on the buccal aspect. I then punch another hole in the band on the lingual. I take a jumbo paper clip and cut it and make a loop at the other end. The non-looped straight end is always inserted through the two punched holes going from the buccal of the band to the lingual. (Fig. 6) This ensures that my laboratory and I know which side is the buccal aspect of the impression. The straight portion of the paper clip can vary in length from 1 - 1½ inches depending on tooth position and accessibility.

Now it's time for my impression: I like to hand mix my Blu-Mousse. So, I simply mix equal portions of base and catalyst and place the mixed Blu-Mousse inside the copper band (in the opening opposite the paper clip). Make sure to fill only until the material reaches the paper clip. (Fig. 7) With firm, apically applied pressure, and with my fingertip closing the end of the band, I seat the loaded copper band over the prep and press subgingivally.

The excess Blu-Mousse will extrude from the sulcus and from the two paper clip holes. (Fig. 8) I hold the copper band in place until the Blu-Mousse hardens and then I slide the paper clip slightly buccal in order to create two handles with which to remove the copper band from around the tooth. With incisally directed pressure, parallel to the long axis of the preparation, I then remove the copper band impression and examine it for accuracy or voids.

At this time, I like to redefine my bevels and then reline the first impression with another very small amount of Blu-Mousse. This material usually fills the entire aspect of the previously hardened material. I reseat the copper band and then after it hardens, I remove the vacuum-tight copper band from the prep and Whola! There you have it! A terrific impression of the prep! (Fig. 9 + 10)

By the way, the color of the Blu-Mousse makes it very easy to read and discern all of the fine detail of the prep and its impression- especially under 4.5x magnification! (Fig. 11 + 12)



Now that I have my working die impression, I still have to relate this to the adjacent and opposing teeth. I now can either take a full upper/full lower impression using stock trays, or a triple type tray, which will not only capture the upper and lower quadrants, but will also capture an accurate bite registration for me.

After I've completed my impressions, bite registrations and such, my instructions for my laboratory go as follows:

- 1) Pour up the copper band impression with either epoxy or die stone and ditch the die under magnification.
- 2) Pour up the tri-purposed (triple tray), or the upper and lower single impressions that I've taken and articulate these using the bite registration that I've provided.
- 3) Ditch the die of the prepped tooth and also use this as a hard tissue model for proximal contacts.
- 4) Place the copper band die carefully in the master impression and re-pour and re-articulate.
- 5) Use ONLY the copper band die for the wax-up (or for scanning, depending on your preference).

Assuming that your laboratory can follow your instructions or RX, I guarantee that you'll never be told that your impression isn't clear or accurate enough to be used for crown fabrication.

Try the copper band technique for yourself! I think once you do, you'll be hooked!

If you have any questions and would like to reach me, I can be found at 718-377-8346.

Happy Impressioning!