

# MARBLECLEANING.ORG

*The Only Consumer Portal to the Stone Industry Establishment*

This article was kindly donated to marblecleaning.org by



The Educational Division of  
MB STONE RESTORATION & SUPPLY, INC.  
[www.mbstone.com](http://www.mbstone.com)

---

## THE MYSTERIOUS CASE OF THE WATER STAIN/RING

By

*“The Lord of The Ring!”*

Maurizio Bertoli

*Master Stone Processor ... “In the Finest Italian Tradition!”*

---

### Focusing on the problem

One of the most common problems related to glossy marble or other calcareous rock surfaces is represented by "water stains", or "water rings". The only possible way to solve a problem is to thoroughly understand its nature, or else no intelligent solution can be found.

The definition of a "water stain" or a "water ring" is a dull mark showing on the otherwise glossy surface of Marble (or any other calcite-based stone), which can appear in the form of a drop, or a streak, or a ring, or a splatter, etc. By looking at it, one gets the feeling that it can come out by just buffing it with a cloth or something, but when one attempts to do so, no matter how hard and how long the buffing procedure is implemented, the "water stain" or "water ring" won't go away. It won't even begin to fade, actually! And even by using a cleaner of some sort, one is not going to accomplish the disappearance of that stubborn "water stain."

Why?

Because it is not a "water stain", that's why! Clean water may actually stain marble by being absorbed by it and making it appear of a darker colour, but it will never dull its surface. Further, a real water stain will disappear by itself by evaporation in a matter of time, if the stain was generated by absorption from above (i.e.: if a puddle of water is left sitting a long time on a marble surface, it will take from a few minutes to a few hours to disappear, depending on the porosity of the stone and how deeply the water was absorbed by it). In other instances, if some water is left sit on the surface of the stone until it evaporates completely, it will leave behind some mineral deposits that make the glossy stone look dull. A damp cloth, followed by a dry one will take care of that very easily. However, the "water stains" object of this analysis are those defined in the preceding paragraph, and they are neither generated by water, nor are they stains to begin with, no matter what they look like.

All dull spots, or rings, or whatever shape, on a polished marble surface are generated by acidic substances (and, sometimes, some alkaline salts) which came in contact with the surface of the stone. The main component of any stone geologically classified as Marble, Limestone, Travertine, Onyx, etc. is Calcium Carbonate (also referred to as Calcite) and the molecule of Calcium Carbonate is broken (destroyed, actually) by pH active substances, mostly acids. The destruction of the molecules of Calcium Carbonate on the part of the surface of the stone that comes in contact with the alien acidic substance produces that dullness that is generally (and wrongly) referred to as a "water stain". Such damage has nothing to do with the porosity of the stone, because, as I said, it is not a stain.

**It is a mark of corrosion, which is permanently etched on the surface of the stone.**

Moreover, it was certainly not generated by water. Rather by other liquids such as orange or lemon juice, tomato sauce, salad dressing, wine, champagne, liquor, perfume, vinegar, harsh generic cleaning agents, and so on through a virtually endless list of common household products. Once more, remember, **these acidic liquids were not absorbed by the stone; they damaged its surface by contact.** This is the very reason why penetrating stone sealers (a.k.a. impregnators) are totally useless at preventing these kinds of damage.

It is popular understanding that to polish something dull some topical finish should be applied onto the dullness and buffed up to a shine. But if someone tries to eliminate the "water stain" by coating it with a "marble polish" or some other wax and then buff it vigorously, this someone is going to be in for a surprise: once more, the stubborn "water stain" won't even begin to disappear! Why? Because Marble – like any other stone that can take a polish – was not originally polished by applying some wax onto it, but by abrasion and friction, like gemstone. The acidic, alien substance did not damage some sort of topical finish, but actually etched the stone itself. As a consequence, if some sort of wax is applied on the dull spot, it will be still gloriously visible through the transparency of the wax itself (it would be like putting a sheet of clear glass over the "stain". The glass would not certainly fix the damage, nor hide it).

## **Finding a solution**

It should be clear by now that the real problem is not to clean a surface stain, but to repair a mark of corrosion, a.k.a. etch or etch-mark. Now that we understood the problem we can try to find the solution by looking in the right direction: no more a Marble Cleaner (whatever that means!...) or a Marble Polish (that does not polish marble), but a Marble Polishing Compound, more or less of the same kind used by the factory to polish the slab or the tile. Polishing Compounds for stone used the world over are mainly made of Aluminium Oxide, or Tin Oxide. Is it a problem finding such chemicals (that come in a powdery form)? No, to find them it isn't. The problem is how to use them, because no human being I know of can apply a pressure of 2,000 lb. while spinning his wrist at 2,000 RPM! To make things possible at human level, some other component is added to the Aluminium or Tin Oxide, the most popular of which being Oxalic Acid. This kind of additive – catalyst better defines it – if used properly has the task of temporarily "softening" the very surface of the stone, thus making the polishing task of the actual abrasive (Aluminium or Tin Oxide) possible at a pressure and a speed much lower than those available in an automated polishing line.

So, there we have it: let's mix some Aluminium Oxide with some Oxalic Acid and . . . Bingo! One, two, three, the marble is polished back to its original splendour!! Not so fast . . . I hate to burst the bubble, but polishing compounds for Marble have never been user-friendly. As seen before, all acids destroy the molecules of Calcite, therefore the handling of an acid (such as Oxalic Acid) for the purpose of restoring marble is better left to a professional, otherwise somebody with no experience could generate more damage than he or she is trying to repair!

This reality generates another problem: the consumer of marble products has to depend on expensive professional interventions for every single little problem. And nobody likes that! It doesn't take a marketing guru to realize that a customer who comes to dislike a product because of the problems related to it, is not a happy customer and, as such, not a repeat customer. Now let's draw a first picture: Mr. Homeowner with a "water stain" on his marble goes back to the outfit where he originally bought his stone to find a solution to his problem. Mr. Not-so-knowledgeable Stone Dealer sells a "marble cleaner" and / or a "marble polish" to Mr. Homeowner. Both products will turn out to be totally useless. Mr. Homeowner is not happy and, to top it all, he gets to realize that the Mr. Stone Dealer doesn't know what is doing. Mr. Not-so-knowledgeable Stone Dealer is far from being a happy camper! Drawing now a second picture, Mr. Knowledgeable Stone Dealer breaks the news that it is not a "water stain" and that the solution to the problem lies in the hands of a professional stone refinisher. Sounds better, doesn't it? It is better . . . but it's just the beginning! . . . Mr. Homeowner calls Mr. Honest Stone Refinisher and learns that the "cleaning" of the "water stain" will set him back, say, a week worth of mortgage payment! Mr. Homeowner is certainly not happy. Mr. Knowledgeable Stone Dealer is not happy, either, because he doesn't want Mr. Homeowner to be unhappy. So, it seems that the only happy one is Mr. Honest Stone Refinisher, right? . . . Wrong again! I am that Mr. Honest Stone Refinisher, and believe you me, although I can hardly blame Mr. Homeowner for feeling robbed big time, it is no bargain charging, say \$350 to send out a worker with a van, drive an average of an hour to reach Mr. Homeowner's place (if Mr. Honest Stone Refinisher operates in major metropolitan area that average has to be dramatically re-evaluated!!), spend 10 minutes to take the equipment off the van and get set to work, spend another "big" 15 minutes to actually do the job, plus another half an hour to load the equipment back in the van, collect the money, write up the receipt, explain to upset Mr. Homeowner that there is absolutely nothing that he can do to prevent such occurrences from happening again – other than being careful – and finally drive another hour to come back to the shop. I know of several contractors who just won't bother with such a losing proposition. I would go anyway, because I feel I have to carry my share of the load and service the industry, at least as far as my backyard is concerned. But when some little job like that comes along, happy I am certainly not!

So, the bottom line is that nobody's happy. Is there any real solution then? I believe so. Lately a few polishing compounds for Marble which indeed are user-friendly made their appearance on the marketplace. They are relatively inexpensive, they do work on the majority of marbles, and they are so easy to use that can be safely used by Mr. Homeowner himself with no particular training and no particular equipment. (To the best of my knowledge, my company was the first to introduce one such product, namely **MB-11**. Always lead – never follow! It's available at: <http://www.thestonedoctor.com.au>) Now it's up to Mr. Knowledgeable Stone Dealer to carry such a product in his store, thus making it available to Mr. Homeowner, thus creating happiness and, last but not least, making a little money in the process!

© Maurizio Bertoli, 1993-2008

The article above was written back in 1993 by the founder of **MB Stone Restoration & Supply, Inc.**, Maurizio Bertoli. It was then and still is now a real eye-opener. It also goes to prove once more that sealers for stone have limited and very specific features. In fact, no sealer this side of a sheet of glass could even begin to prevent "water stains" on polished marble (and other calcite-based) surface. On the other hand, true stains on polished marble (coffee, cooking oil, etc.) – which are the only problem that sealers help preventing – are indeed a rare occurrence. You draw your own conclusions now.

**WARNING!** All publications are copyrighted material. The reader automatically acknowledges to have read and fully understood this notice, and hereby agrees that each and every one of the publications read can not be reproduced, edited, or re-sold without prior written authorization by an authorized agent, in this case: **The Stone Doctor**. Any breach of this agreement **SHALL** be prosecuted.