



Brought to you by  
**Gema**

# Ask Joe Powder

Dear Readers,

*My column is meant to be informative, hopefully a little entertaining, and occasionally provocative. You, the readers, are a bright bunch of people and I always appreciate your input and feedback. In the September/October issue I offered my perspective on galvanizing plus topcoat vs. zinc primer/topcoat. I was heartened to receive a very cogent reply from a gentleman who faces this issue on a daily basis. His analysis is excellent and hence I am sharing it with you.*

— Joe Powder

**Editor's Note:** Readers should keep in mind while some of the content below may appear to be commercial in nature, the author fairly points out pros and cons throughout his letter.

Dear Joe,

I read a recent article, I Don't Zinc It's Necessary, in the September issue of the *Powder Coated Tough* magazine, where Allison L. was inquiring about the pros and cons of powder coating with zinc primer as a base vs. HDG (hot dipped galvanized) as a base. Our companies have been a mainstay in the duplex coating business for decades, and I wanted to give you our insight into the question posed.

We have customers that bring us these types of projects on a regular basis, not knowing which way is best for their application. We prequalify our customers' needs upon first look to verify if their end product (normally commercial steel) is going to be exposed to the outdoor climate or will be indoors. If outdoors, we suggest (strongly) that they have us proceed with HDG then powder coat. We do this with strong conviction and confidence because we can offer a 20-year rust-through warranty on any material HDG and powder coated. You won't find that anywhere in the industry with zinc primer as the initial base on top of bare steel.

As you are well aware, there is a lot of hands-on surface conditioning that is performed on the HDG material before we can even think about applying the powder coat finish. This is a huge *con* for an untrained job shop (possibly like Allison L.). We have certain steps and procedures we perform in addition to certain pretreatment steps that the average job shop would not be accustomed to, nor willing to

invest in—not to mention the outgassing temperature and dwell time involved. This is a slow process from start to finish. Pricing these jobs has to take into consideration the steps involved and the slow pace through the shop.

Prepping bare steel (specifically commercial steel) via conventional methods often involves media blasting, which can be a *con* for most job shops. As you are aware, before any material gets powder coated in a bare steel situation, there are steps involved: Oil-dirt-grease remediation > media blasting > surface wash-etch-sealant-rinse > dry off > and then the powder coat process. Depending on the steel substrate condition, there may be an abundance of rust oxide impregnated in the metal that, as you know very well, may eventually work its way through the powder coated surface. Exaggerated pre-finishing steps may be required, which involves time and materials, which in turn equals \$\$\$\$.

Comparing the two processes, oftentimes HDG is not much more expensive than the steps needed to bring the same metal to powder coat ready via media blasting and such.

The pros of HDG/Powder Coating:

- Zinc protection under the powder coat finish
- Cost effective method to achieve desired results
- 20 year rust through warranty
- Extended durability in the event there is a breach in the powder coat finish

The cons of HDG/Powder Coating:

- Hand conditioning of metal after galvanizing
- High outgas temps/times
- Must use powder with adequate OGF additive
- Slow process

The pros of Zinc Primer base:

- Quick application
- Compatible with almost all polyester powder top coats

The cons of Zinc Primer base:

- Cost of preparing the bare steel
- Strong possibility of oxide remaining under the zinc primer
- Nominal warranty
- Severe degradation once the top coat has been breached

There is no real 100% method for all customers; it's all based on what the material is intended to do and for how long. For large volume parts, small parts, inexpensive parts, etc., HDG/PC may not be justifiable. For small volume/larger parts that have a perceived value/worth, HDG/PC may be the more likely choice.

I would suggest to any job shop not to get too involved in processing HDG parts without first having someone on staff that has prior experience. If not, they should be prepared for poor results and a loss in revenue. I hope this helps answer some questions.

Regards,

John A. DelMonte, Division Manager Fortress Fusion  
Powder Coating  
Facility Manager Hubbell Galvanizing

*Joe Powder is our technical editor, Kevin Biller. Please send your questions and comments to Joe Powder at askjoe powder@yahoo.com.*

**Editor's Note:** Letters to and responses from Joe Powder have been edited for space and style.

# Gema

## The Global Leader in Powder Coating Technology

[www.gemapowdercoating.com](http://www.gemapowdercoating.com)