

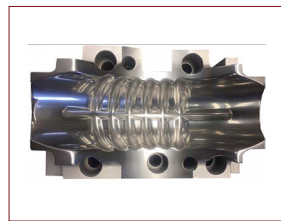
FEATURED COATINGS



XCELL ROSE DUPLEX

Co-efficient Friction = 0.3
Thickness = 7-9 um
Micro-Hardness = 3500 Vickers

Therm Limit = 1450°F
Application = High Strength Steel,
Stainless Steel



CROMAXX DUPLEX

Co-efficient Friction = 0.3
Thickness = 7-9 um
Micro-Hardness = 3100 Vickers

Therm Limit = 1550°F
Application = Aluminum Die Cast,
Forming Aluminum



MATRIX DUPLEX

Co-efficient Friction = 0.2
Thickness = 9-11 um
Micro-Hardness = 3500 Vickers

Therm Limit = 1500°F
Application = High Strength Steel,
Stainless Steel and Forming Aluminum

- All Coatings above show the latest DUPLEX TECHNOLOGY (in chamber Nitride & PVD).
- All Coatings above are also available as "PVD Only" instead of Duplex, if specified.
- All coatings above will keep tooling under 900°F

COATING CHAMBER SIZE FOR PART CONSIDERATION

- Up to 32" diameter x 40" tall

TOOLING CONCEPTS INC.

TCI
PVD COATINGS

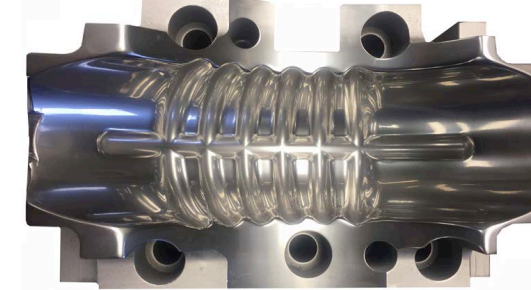
Pickup &
Delivery Service
Available ...
Call for Details

6612 Marshall Rd., Olivet, MI 49076
ph: 269-280-6007

5237 Nashville Rd, Bldg 5, Bowling Green, KY 42101
main: 270-715-5812 direct: 616-460-8797
www.tci coatings.com

TOOLING CONCEPTS INC.

TCI
PVD COATINGS



Cromaxx Duplex



Matrix Duplex



XCell Rose Duplex - Layered

**Longer Die Life & Better Performance
On All Metal Forming Dies**

**TCI Coatings Two Step Process is different ...
Combining Polishing & The Most Advanced
Duplex Coating Technology .. Get Real Results!**

Step #1: POLISH:

We pre-polish every die, every time. Our experienced "in-house" polishers are industry experts, who understand the critical areas of tooling. Our trade secrets are utilized on every job, to maximize performance & reduce galling. This level of skill & industry "know how" is not available at any other coating facility.

Step #2: DUPLEX COATING TECHNOLOGY:

The latest coating technology available combines two proven tool treatments and completes both in one chamber, in one coating cycle.

- **NITRIDE:** plasma hardening of your substrate without the "white layer". This is the first step of the duplex coating process.
- **PVD:** top coating metallurgically bonds to nitrided substrate, increasing surface hardness, lowering coefficient of friction and improving wear/heat resistance. Our Technical Team will help you select the right PVD coating for your application.

The Advantages of Our Two Step Process:

- Everything takes place under our roof ... **Fast Delivery!**
- Polishing is included in our Coating Price ... **Excellent Value!**
- Same process on every die, every time ... **Consistent Results!**
- Tooling kept under 900°F ... **No Distortion! No Stress!**
- Production Ready Dies ... **Guaranteed!**

Full Service Coating Support:

- Coating Removal for all coatings
- Micro-Polishing (3 Micron)
- Experienced Sales / Engineering Support

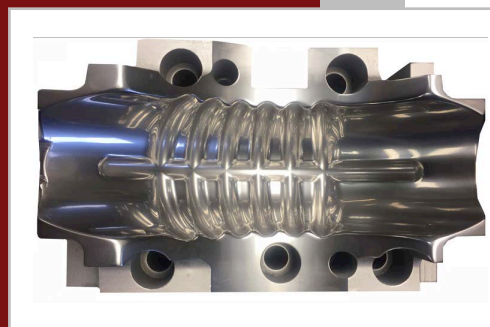
*Call for Details

Pickup &
Delivery Service
Available ...
Call for Details

6612 Marshall Rd., Olivet, MI 49076 • ph: 269-280-6007
5237 Nashville Rd, Bldg 5, Bowling Green, KY 42101
main: 270-715-5812 • direct: 616-460-8797



XCell Rose Duplex - Layered



Cromaxx Duplex

**We listen, we care ...
you save time and money!
Bigger is not always better!**

TCI coatings is dedicated to quality, fast service and honest answers. We have the technical knowledge, the latest machine technology and the commitment to bring you consistent longer lasting tooling.

Bigger is not always better! A commitment to customer service is the driving factor for our family-owned business.

- Careful part handling
- Highly skilled polishing
- Fast, friendly, honest communication

All tooling is micro polished to assure superior coating adhesion and reduced galling.

TCI Coating Technology Delivers Results.

- High strength or dual phase material.
- Normal CVD or TD Coatings would cause distortion that is unacceptable on thin walled dies. Our PVD/Duplex coats at > 900°F, eliminating part distortion during the coating process.
- Dies can be stripped and recoated without carbon depletion caused by high temperature processes.
- The substrate is improved with each recoating process.

Irregular Shapes - No Problem!

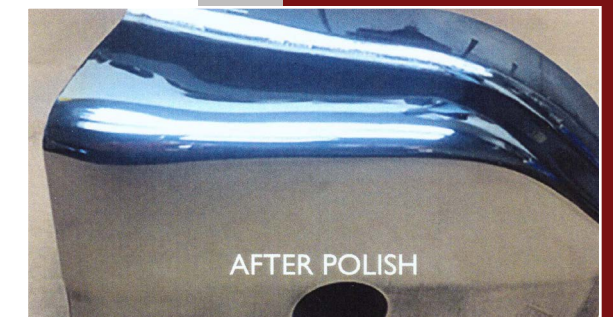
**Damaged Dies Can Be Restored,
Polished and PVD Coated!**

Polishing Spotlight:

PVD coatings require a high level of polish prior to the coating process for maximum performance.

At TCI Coatings we have the ability to remove machining marks and die imperfections without changing part tolerances. Stamping dies are micro polished in all critical areas.

At TCI Coatings, stamping dies are evaluated upon receipt and given the attention that they need.



**Coating Spotlight:
XCell ROSE DUPLEX (XRD):**

This low temperature, multi-layer coating has been developed specifically for extreme metal stamping. Our XRD processing is simple and fast, giving you the ultimate bond strength and coating toughness to guarantee longer tool life.

XRD replaces many costly TD, TRD, and other high temperature coatings that require many steps and re-heat treatments that often distort and anneal your tool steel if not properly processed.



6612 Marshall Rd., Olivet, MI 49076
ph: 269-280-6007
www.tcicoatings.com

5237 Nashville Rd, Bldg 5, Bowling Green, KY 42101
main: 270-715-5812 • direct: 616-460-8797
www.tcicoatings.com