

BASETEK
L L C

CUSTOM POLYMER CASTINGS



Zanite® Plus polymer castings, ideal for today's modern machine designs.

ZANITE® PLUS POLYMER COMPOSITE
A base you can build on.

www.basetek.com
877.712.BASE (2273)

ABOUT THE COMPANY

BaseTek, LLC, founded in 2001, **specializes in** the design and build of proven **polymer composite bases** and **filled weldments** for a broad range of industries. We are the market leader in



polymer concrete base-plates for the rotating equipment industry. BaseTek offers a complete line of pre-engineered and custom baseplates, along

with accessories for all types of process pumps and specialty rotating equipment.

BaseTek's **company owned facility** custom built in 2012 is specifically for the manufacture of **polymer castings**. We are staffed with industry experts offering some of the most combined years of **polymer casting experience** in the USA



today. Balanced vertical integration allows **for efficient designing, manufacturing, and inspection** of castings to match any size and shape most applications demand. **Computer controlled** batch mixing systems, precision tooling and CMM inspection equipment insure **consistent quality and reliable castings**.



MATERIAL TESTING

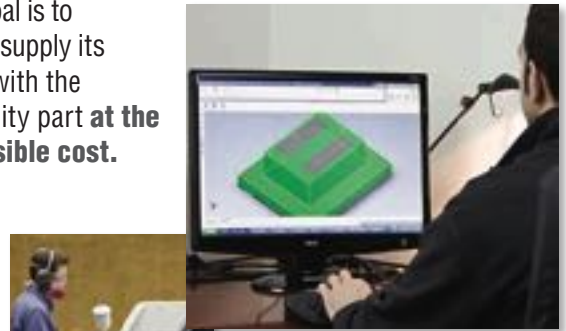
- 26,000+ square foot manufacturing facility
- CNC inspection and paint capabilities
- Material traceability with manufacturing routers
- In-house material verification capability



Bases are manufactured of Zanite® Plus, a **proprietary polymer concrete** material also referred to as a **mineral casting**. Parts are cast to finished tolerances while offering mechanical properties that in many applications replace traditional materials such as iron, aluminum, and steel. Zanite® Plus is **corrosion resistance**, environmentally friendly, and offers **short production times**.

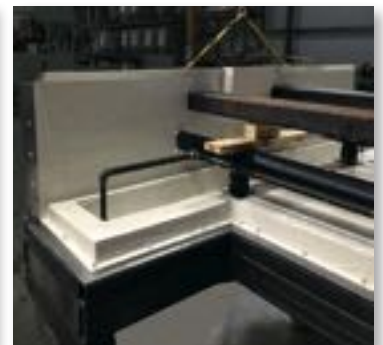
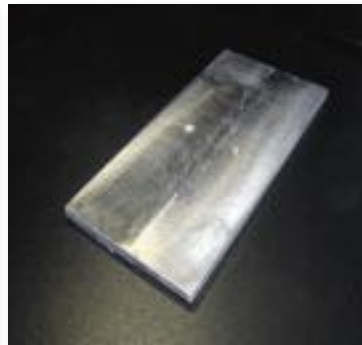
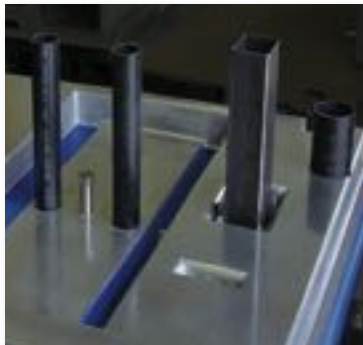
BaseTek incorporates the **latest casting technologies** and can aid in the development of tooling and part design thru modern CAD capability including Solid Modeling and sophisticated Finite Element Analysis software.

BaseTek's goal is to consistently supply its customers with the highest quality part **at the lowest possible cost**.



STANDARD AND CUSTOM DESIGNED INSERTS:

- **Cast-in** custom designed **threaded inserts** for mounting equipment.
- Pipe/tubing **lines cast in place** to provide coolant, lubrication, air & wire ways.
- Steel plates can be used to create long and **extremely flat** mounting surfaces.
- Internal bed wash, wire way, and fork tubes.



WHAT IS ZANITE® PLUS?

Zanite® Plus polymer composite is a blend of pure silicon dioxide ceramic (99.8%) quartz aggregate, specially formulated high strength epoxy resin and proprietary additives. The natural elliptical shape of quartz is ideal for casting intricate structures. Often this material is referred to as polymer concrete or mineral casting.

Zanite® Plus replaces traditional materials such as iron, aluminum, and steel used in the manufacture of many structural components. Castings are manufactured to finish tolerances that minimize the need for secondary finishing operations. Our polymer composite is accepted by design engineers throughout the world as an alternative material due to its excellent design flexibility, mechanical properties, and short production time.

The epoxy based mineral casting or polymer concrete castings used for machine bases originated in Europe in the mid 1970's.

The technology migrated to the USA in the early 1980's with machine tool builders. In 2009, BaseTek, LLC purchased the technology and was assigned the legal marketing rights to the trade name Zanite® from Illinois Tool Works, Inc. (ITW) Pre-cast division located in Chardon, OH.

Beginning in 2013 BaseTek began a program to study and enhance the Zanite® formulation previously acquired. BaseTek utilized a combination of internal resources along with outside consultants to facilitate a reformulation of the Zanite® polymer blend. Well over a year was spent evaluating each component and processing methodology.

In early 2015 we re-branded our material Zanite® Plus. Through documented testing we can certify Zanite® Plus meets or exceeds the original inherited Zanite® formulation in every category. BaseTek utilizes our own in-house testing equipment along with outside testing labs to verify the material properties. Specific properties are listed below.

ADVANTAGES OF ZANITE® PLUS

- **CAST TO FINISH TOLERANCES** Zanite® Plus precisely replicates tooling eliminating the need for many secondary machining operations. Cost effective alternative to traditional materials such as iron, aluminum and steel which typically require secondary machining or grinding operations.
- **VIBRATION DAMPING** Tests prove our polymer composite provides over 24X the damping of an equal geometry of steel. In addition, Zanite® Plus can easily be cast in many complex solid geometries resulting in significant damping over a conventional hollow cast frame or welded assembly. Vibration reduction leads to improved system performance and tool life. Zanite® Plus also deadens sound.
- **DESIGN FLEXIBILITY** It is easy to integrate conduit piping, custom linear rails, cutting fluid trays, hydraulic fluid tanks and threaded inserts. Wall thickness can vary and multiple components can be combined into a single casting. The process easily allows plastic and metals to merge in the same casting.
- **COST EFFECTIVE** Most post-casting operations such as machining, heat treating, stress relieving and even painting can be eliminated. Quick deliveries reduce inventory. In-house material blending and controlled batch mixing allows for precise, consistent quality from casting to casting.

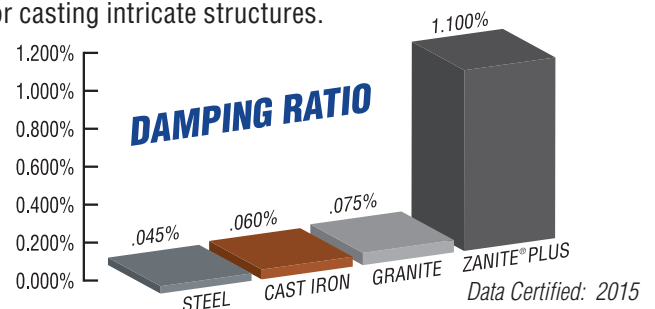
- **FAST DELIVERY** Our polymer bases can be cast and shipped within days of receiving an order. Bases are delivered ready to assemble final equipment. Short lead times reduce planning, inventory and help speed your product to market. Wood tooling provides a fast proof of concept for rapid prototyping and new product development.
- **CORROSION RESISTANT** Zanite® Plus offers enhanced chemical and corrosion resistance to most common acids, alkalis, solvents, oils, and cutting fluids. Zanite® Plus eliminates the need for painting or expensive protective coatings.
- **ENVIRONMENTALLY FRIENDLY** Castings are created using a cold casting process requiring a minimal amount of energy consumption. Old castings are landfill friendly and require no special disposal requirements.
- **RELIABLE LONGEVITY** Zanite® Plus castings are designed in conjunction with the life of the machine, if not longer. Improved thermal stability, high compressive strength, and minimal moisture absorption make Zanite® Plus an excellent option.



PROPERTIES	U.S. UNITS	S.I. (Metric)
COMPRESSIVE STRENGTH	18,000 psi	124 N/mm ²
DENSITY	0.081 lb/in ³	2.2 kg/dm ³
FLEXURE STRENGTH	4,700 psi	13.1 N/mm ²
MODULUS OF ELASTICITY	4.5 x 10 ⁶ psi	31 KN/mm ²
POISSON RATIO	0.25	0.25
OPTIMAL TEMPERATURE LIMITS	-20°F to 200°F	-29°C to 93°C
TENSILE STRENGTH	1,900 psi	13.1 N/mm ²
WATER ABSORPTION	0.01%	0.01%
THERMAL EXPANSION	7.9 x 10 ⁻⁶ °F	14.2 x 10 ⁻⁶ °C
CHEMICAL RESISTANCE	Excellent	Excellent
FLAME SPREAD INDEX	Class A (Class I) 25 or under flame spread per ASTM E84	

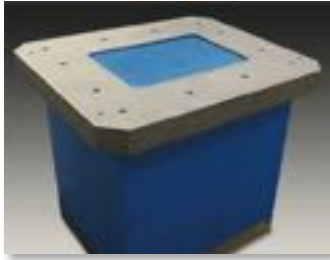
WHAT ARE THE PROPERTIES OF ZANITE?

Zanite® Plus polymer composite is a blend of pure silicon dioxide ceramic (99.8%) quartz aggregate, specially formulated high strength epoxy resin and selected additives. The natural elliptical shape of quartz is ideal for casting intricate structures.



MACHINE TOOL APPLICATIONS:

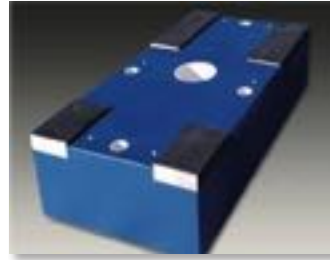
Typical applications include: high speed machining cells, turning centers, CNC knee mills, milling machines, waterjet cutting machines, laser cutting machines, grinders and industrial measurement & testing equipment.



1,900 lb. base for Automotive NVH test equipment.



4,300 lb. Base for Precision Cutting Tool Grinder

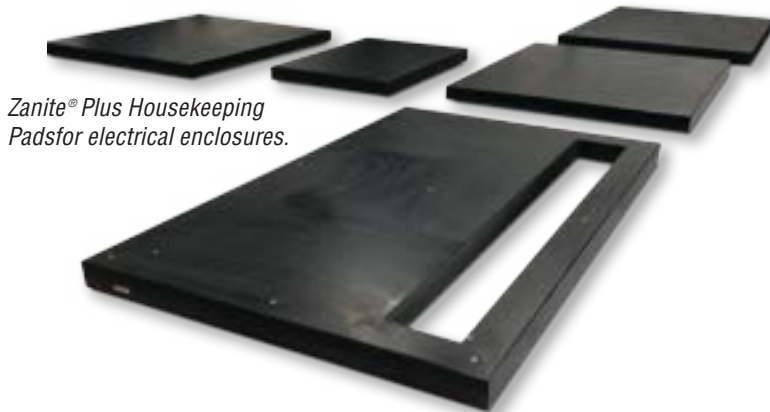


2,300 lb. base for hybrid engine testing station.

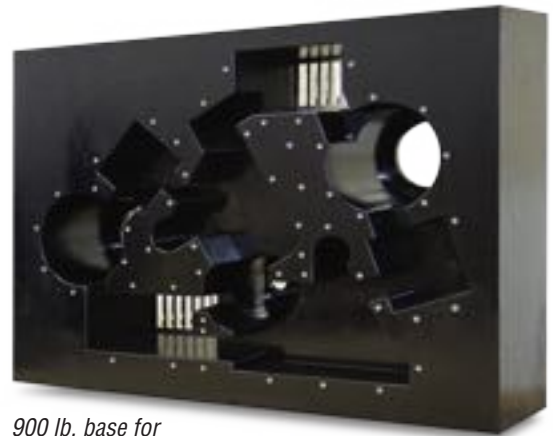


2,700 lb. base for a precision grinder.

Machine tool bases and support structures made with Zanite® Plus offer quieter operation, no deterioration from cutting fluids, improved machined surfaces and improved cutting tool life.



Zanite® Plus Housekeeping Pads for electrical enclosures.



900 lb. base for automated capacitor winding machine.

ZANITE® PLUS POLYMER COMPOSITE FILLED WELDMENTS AND IRON CASTINGS:

- Excellent for **low volume and custom applications**.
- Offers the benefit of polymer for **vibration damping** without the cost of a mold.
- Quick turnaround and **low cost** compared to cast iron, cast aluminum.

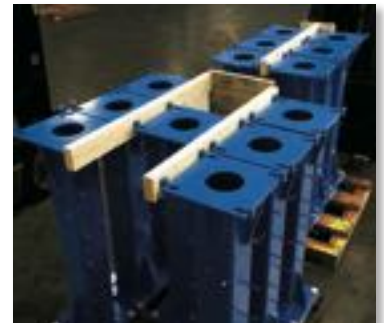
We offer in-house service or can provide composite for field applications.



Large steel weldments filled with Zanite® Plus polymer composite. Dampen both noise and vibration.

WE HAVE FILLED WELDMENTS WITH A FEW HUNDRED POUNDS OF POLYMER TO WELDMENTS REQUIRING SEVERAL THOUSAND POUNDS:

- Basetek offers proper weldment preparation and **quick turnaround** for your application.
- Delivery can be a few days with proper notice and account setup.

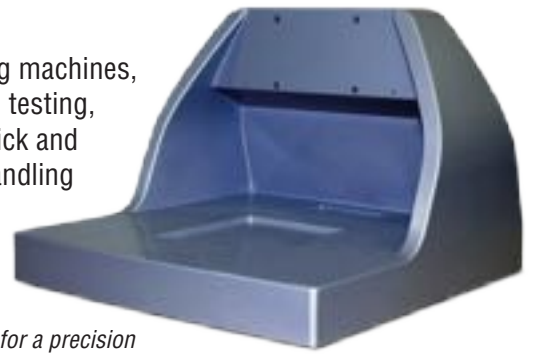




2,700 lbs. base for automated precision fluid dispensing system.

SEMICONDUCTOR APPLICATIONS:

Typical applications include: screen printing machines, wire and die bonding, wafer inspection and testing, lithography, laser PCB drilling machines, pick and place machines, surface profilers, wafer handling and storage, dicing machines, flip-chip, and dispensing equipment.



460 lb. base for a precision non-contact wafer profiler.

METROLOGY AND PHARMACEUTICAL APPLICATIONS:

Typical applications include: CMMs, surface, form, roundness and contour testing instruments. As well as nanometer-scale manufacturing and



115 lb. base for a nanolithography machine.

testing platforms for life sciences, pharmaceutical, and engineering applications.

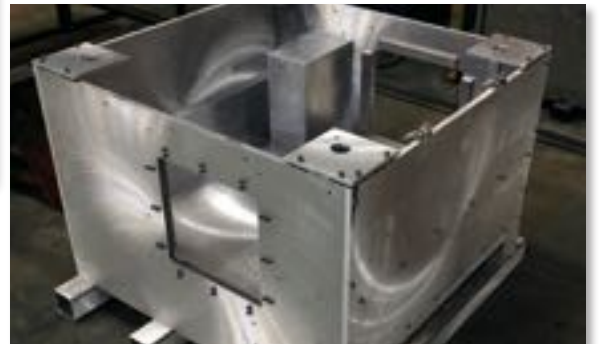
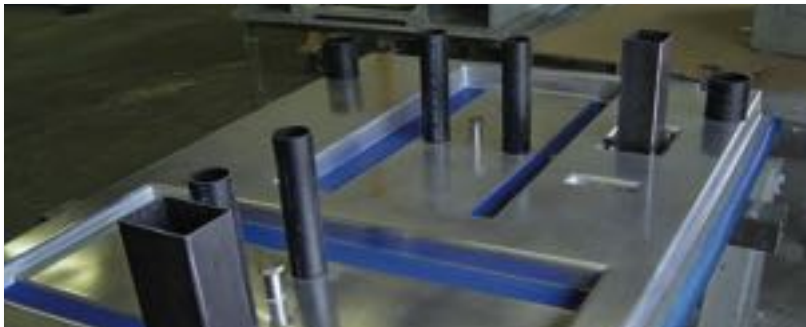
Demands for metrology equipment to perform in multiple environments allow design engineers to take advantage of Zanite® Plus' many features. Inspection equipment must be able handle a temperature controlled lab as well as the harsh environment of a typical shop floor. Zanite® Plus' thermal stability, design flexibility, and virtually zero moisture absorption rate help OEM's achieve their goals.



2,500 lbs. base for precision microscope.

MOLDS AND TOOLING:

- Molds can be made from wood, fiberglass, aluminum, steel, or any combination depending on the application & design.



ROTATING EQUIPMENT BASEPLATES

Keeping rotating equipment level is essential. BaseTek Zanite® Plus Polymer Concrete Baseplates outperform steel baseplates in every way. The difference is Zanite® Plus.

Using Poxystand with Zanite® Plus guarantees you **unmatched surface flatness** compared to Conventional Steel designs and common Vinyl Ester Concrete materials. Zanite® Plus provides **significant vibration damping**, greater thermal

stability, more resistance to twisting and diaphraming and superior corrosion resistance. It is easier and **less costly to install**, plus requires no maintenance.

Benefit: your **equipment lasts longer** and operates more efficiently for a healthier bottom line.

BASETEK— WE'RE ON THE LEVEL.

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CUSTOM QUICKBASE®
DESIGN A CUSTOM HOLE PATTERN

Include your custom hole pattern on our existing footprints with a quick-approval drawing process, and short production time.



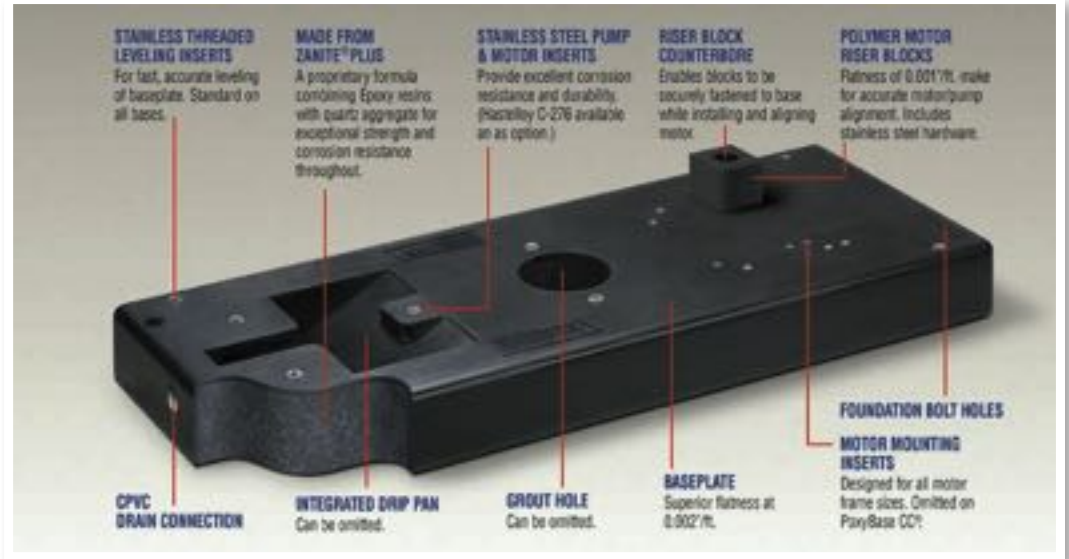
COMPLETE CUSTOM
CUSTOM CONFIGURATIONS MADE EASY

Design flexibility accommodates most pump applications.



POXYSTAND™
COMPLETE PUMP PEDESTALS

Rugged cost effective foundation that is quick and easy to install. Up to 52" (132cm) tall.



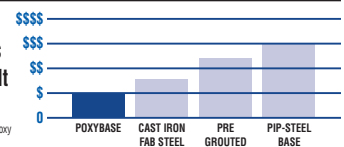
- Available in pre-engineered **ANSI/ASME** configurations
- Excellent **corrosion resistance** — will not rust or corrode
- **Flat surface** — save time on critical shaft alignment
- **Thermal stability** — eliminates diaphraming for longer equipment life
- Superior **vibration damping** and **resistance to twisting**
- Great appearance — no peeling paint, **eliminates regular maintenance**
- Much **lower installed cost** — less grout, easier to align, level, and straighten (less \$)

FLATNESS	✓	0.002" PER FOOT
COMPRESSIVE STRENGTH	✓	18,000 PSI
CORROSION RESISTANCE	✓	EXCELLENT
DEFLECTION	✓	RIGID — WILL NOT BEND
VIBRATION DAMPING	✓	HIGHEST

COMPARE TYPICAL INSTALLATIONS COSTS*

Using Zanite® Plus baseplates instead of conventional steel bases with comparable features will result in significant installation savings.

* Comparative costs include baseplate, 316SS drip pan, sandblast and 2-part epoxy system which would yield a product with similar properties as the Poxystand.



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