



SmartSet Curing Systems



Advanced Curing Technologies

- Direct-fired steam generators
- Controls and airflow systems
- Misting and drying components
- Kilns, piping, moving floors
- Dedicated tech team and service

At Afinitas our mission is to provide producers with all the tools and expertise necessary for success. In many markets, a key to the production of the highest-quality concrete products is to ensure the products being produced are able to cure in a heat and humidity-controlled environment.

That's why we developed our SmartSet Curing Systems to ensure the proper hydration of the cement and result in the strongest concrete possible. Our SmartSet Systems include:

- Advanced and basic model direct-fired steam generators
- Kiln control systems
- Air circulation and exhaust systems
- Installation and turnkey services
- Misting and dry burners
- Piping and equipment installation
- Kilns
- Moving floors
- Retrofits and upgrades
- Troubleshooting and preventative maintenance
- Vast parts inventory
- Dedicated technical team and service van

We serve a wide variety of customers and industries.

Block



Precast



Prestressed



Pipe



Roof Tile



Afinitas is your source
for CurePak curing products.

Contact the SmartSet Curing Team at
+1 833-4CURING (833-428-7464)
or email info@afinitas.com

Why Direct-Fired Steam Generation?

As energy costs continue to rise and profit margins get tighter, concrete pipe and precast producers are seeking more ways to run leaner operations. One of the biggest offenders in energy consumption is the boiler that sends steam to the curing area. Whether it is a kiln or curing tents and blankets, the steam generated by old-fashioned boilers is sending money down the drain and literally up the stack!

No More Wasted Energy

SmartSet combines direct-firing with our uniquely designed combustion system to dramatically reduce costs. With SmartSet, you will have:

- No intermittent firing losses
- No unnecessary (and costly) preheating of water
- No heating of excess water

Cost Savings

SmartSet makes steam directly downstream of the combustion process, which eliminates the need for boiler tubes and associated high maintenance, insurance and inspection costs. There is no pressure vessel or possibility of a pressure build up.

When replacing a boiler with a direct-fired steam generator, the cost savings are immediate. Customers typically save up to 50% on their gas bill from the day we turn it on.

Instant Steam When You Need It

SmartSet operates automatically with a push of a button and produces volumes of steam vapor within seconds of activation. This quick start/stop operation is ideal for jobs requiring both intermittent steam and continuous steam production. It also cuts costs on small curing jobs.

Compact — Easy to Install

Our system is totally self-contained for easy installation. Starter, disconnect, gas regulator and water regulator are all included. It is simple to move from job site to job site and can be placed anywhere near the kiln or on the kiln roof — eliminating costly steam lines and boiler rooms. A simple hookup to utilities is all that is required.



When **"ON"**, SmartSet instantly produces the cure steam you need at near 100% thermal efficiency. (The best a boiler can do is 50%.)

When **"OFF"**, it's OFF! No stand-by heat needed, no wasted energy.



SmartSet Intelligent Curing Solutions

System Features

SmartSet is extremely versatile and can automatically produce steam in an infinite variety of temperatures, humidities and quantities to match a producer's changing production requirements and load demands.



1 Reliable Operation

Operators or automatic controls are continuously changing which valves are open and shut to curing areas to meet production requirements. This changes the load needed for the curing system. SmartSet adjusts the firing rate for the curing load automatically to avoid disruptions and lost production. It automatically adjusts the burner to compensate for upstream changes in water pressure changes.

2 Automated Temperature Control

The accurate control of SmartSet's outlet temperature is critical to curing a wide variety of concrete products. A very small change in the water flow results in a large change in outlet temperature. Our system automatically anticipates thermocouple reaction time during outlet temperature changes. SmartSet also automatically compensates for any changes in upstream water pressures or water delivery.

- Ensures accurate viable control over the quality of the cure steam
- Avoids head losses caused by excess water common in low output-temperature curing systems

3 Combustion-Engineered Burner

The heart of the combustion system is the precision burner assembly. The burner is engineered to provide positive flame propagation and flame retention under a wide variety of gas/air ratios and line pressures. Because of this, SmartSet starts and burns consistently under varying operating pressures.

4 Large Combustion Chamber

The chamber provides the three "T's" of proper combustion: TIME, TEMPERATURE and TURBULENCE:

- Large enough to provide the TIME to ensure completion of combustion prior to the admission of water.
- Lined with refractory, this assures flame TEMPERATURE for proper combustion.
- Produces the desired TURBULENCE for a clean burn.

5 Auto-Controlled Water Inlet Chamber

Water is introduced in a separate chamber down-stream from the combustion chamber. This eliminates any possibility of water coming into contact with the flame which could cause incomplete combustion and produce dangerous carbon monoxide. The variable, automatically controlled, water supply allows the operator to select and change steam temperature (180° F to 600° F) and humidity (wet fog to dry vapor) to match any curing job with complete reliability.



Fog Control System

This kiln control panel is designed to “steam” and “hold” a kiln to a selected target temperature, or to intermittently “fog” a kiln. It also has the logic for intermittent control of a misting system. It can do any of these three functions during each “PRE-SET” or “CURE” cycle. A dual setpoint temperature controller displays and controls the kiln temperature during each cycle if the “steam” option is selected. If “FOG” or “MIST” is selected, the on and delay times are programmable to achieve a desired kiln humidity for winter or “hot summer day” curing.



Circulation System

Our revolutionary circulation system creates even circulation of heat and moisture throughout the kiln which ensures that every pipe is properly cured to achieve optimal strength. The accurate control of the SmartSet outlet temperature is critical to curing a wide variety of concrete products. A very small change in the water flow results in a large change in outlet temperature. Our control system automatically anticipates thermocouple reaction time during outlet temperature changes. The system also automatically compensates for any changes in upstream water pressures or water delivery. This exclusive outlet temperature control system assures accurate variable control over the quality of the cure steam and avoids the heat losses caused by excess water common in low-output-temperature curing systems.



Drying for Block Systems

When your customer requires product that is classified as dry block, our drying system is the solution you need. The depth of dryness is determined by the amount of time the block is cured. As a component of our overall curing system, this versatile dryer will achieve optimal surface dryness without re-handling the block to move it into a separate drying system.



Alternatively, our dryer can be used as a standalone system. It is ideal for producing block that is going to be treated with an epoxy coating, ensuring a perfectly dry surface for optimal bonding properties.

Misting System

Our misting system ensures that your product stays moist before curing. We offer multiple types of misters, based on how much automation and ease of maintenance your process requires.



A Series Burner

This unique curing system is comprised of a wide variety of solutions that can be customized for any concrete product. We start with our proven burner and add the components that best fit your product and curing requirements.

For example, our equipment for block production is designed with our A-series burner, an A-series vaporizer, fog control system, circulation system and misting system. It can also be equipped with an exhaust system to eliminate moisture from the kiln before it is opened, to prevent it from being released into your plant.

Our A Series System can also be equipped with a fog kiln control panel. During summer or in a desert climate when a reduced amount of energy is needed for curing, you still need the right amount of moisture during the precast step to avoid cracks that can occur when the pipe gets too dry. The fog kiln control panel allows you to easily adjust time and temperature parameters to ensure the highest product strength possible.



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We offer several kiln curing systems specifically designed for various pipe and manhole applications. These innovative systems include a range of designs for plants with simple open-floor curing to fully-automatic plants with continuous curing. All curing system components, including the steam generating equipment, piping, and other supplementary equipment, are provided turnkey.

Type	Operation	System Benefits
<h2 data-bbox="105 541 293 590">AutoKiln</h2> <p data-bbox="105 604 406 703">The most advanced pipe and manhole curing system on the market.</p>	<p data-bbox="443 537 1120 674">The AutoKiln is tailored to work together with a moving-floor system. The AutoKiln can be configured for simple, in-out batch curing or with computer controls for automatic multi-shift, continuous curing applications.</p> <p data-bbox="443 686 1144 785">AutoKiln allows for precise, zoned computer-control of the temperature and humidity throughout the entire curing process, including pre-cure and post-cure processes.</p> <p data-bbox="443 798 1136 968">In addition to its ability to fully control the curing process, AutoKiln uses high R-Value, insulated walls and doors to reduce energy usage and prevent steam or humidity from leaking out of the system and affecting the rest of the factory.</p>	<ul data-bbox="1177 537 1526 793" style="list-style-type: none"> • Allows 24-hour continuous production • Complete control of curing process • Independent temperature and humidity control • Fully automatic operation
<h2 data-bbox="105 1045 277 1094">TeleKiln</h2> <p data-bbox="105 1108 365 1241">The simple and quick method for covering concrete pipe and manholes.</p>	<p data-bbox="443 1041 1112 1173">The TeleKiln is an accordion-style curtain kiln system that advances over the products in the kiln as they are produced, covering them and keeping the wind and external environment from affecting the curing process.</p> <p data-bbox="443 1186 1117 1255">The TeleKiln has the added benefit of operating without tying up the use of the plant overhead crane.</p> <p data-bbox="443 1268 1101 1367">The TeleKiln can be remote controlled and includes an optional misting system to keep the concrete products properly hydrated.</p>	<ul data-bbox="1177 1041 1510 1310" style="list-style-type: none"> • Immediately covers the pipe • Automatic misting system • Remote controlled operation • Adaptable to any plant layout
<h2 data-bbox="105 1549 367 1598">Canopy Kiln</h2> <p data-bbox="105 1612 386 1711">The traditional solution for curing various concrete products.</p>	<p data-bbox="443 1539 1079 1608">The Canopy Kiln system folds up against the kiln wall throughout the production process.</p> <p data-bbox="443 1621 1105 1719">When the kilns are full, the overhead crane is used to deploy the curtains and cover the pipes, at which point steam may or may not be introduced into the system.</p> <p data-bbox="443 1732 1105 1831">Manually operated, the Canopy Kiln is simple to use and even simpler to maintain, with minimal moving and wearing parts.</p>	<ul data-bbox="1177 1539 1425 1745" style="list-style-type: none"> • Economical • Simple to operate • Simple to maintain • Adaptable to any plant layout

AutoKiln



TeleKiln



Canopy Kiln



One-Stop Curing Resource

At Afinitas our goal is to ensure you that you have the curing solutions that are best suited to your needs to produce durable, quality products with high efficiency and minimal downtime. Our skilled technicians are available to assist onsite, by phone or via remote-in technology to troubleshoot, repair, install, consult and provide guidance on the most effective curing processes.

Technical Support and Training

We are proud to have some of the industry's foremost curing experts on our team. Combined they have decades of experience and have assisted customers worldwide with curing solutions. If you have an existing system or are interested in a completely new system, you can count on their advice to ensure your systems are running safely and efficiently.

And once your system is up and running, our service program is just beginning. We are there to assist with technical guidance, documentation and instruction for your curing operations teams and ongoing support throughout the life of your system.

Installation/Turnkey Services Retrofit

We know that curing is critical to your concrete product production and having the right equipment for your specific applications is key. In many cases, a cost-effective way to optimize performance is to upgrade your existing equipment. At Afinitas, we have the engineering expertise to consult on any upgrade. After an extensive review of your facility's equipment, our team will develop a comprehensive plan that will allow you to extend the life of your existing equipment while making it more efficient. Many times, a retrofit can be done at a fraction of the cost of purchasing new equipment and in a much shorter timeframe.

Retrofit program includes:

- Engineering services
- Modifications on existing systems
- Integration of controls systems, piping, moving floors
- Training and documentation

Repairs

No matter what type of system you have, at some point you will experience a break down due to wear and tear, age, dirt, or lack of proper maintenance. When this happens and your system is down, you need a technician who can quickly identify the problem and have the parts in-stock to fix it. That's where our onsite service van program comes in.

Our 24-ft., fully stocked service van will come onsite and quickly provide the parts and services to get you back up and running quickly.

Our Repair program includes:

- Technical service
- Repair service
- Spart parts
- Replacement parts

Start Up Service

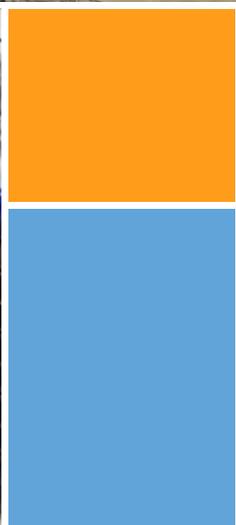
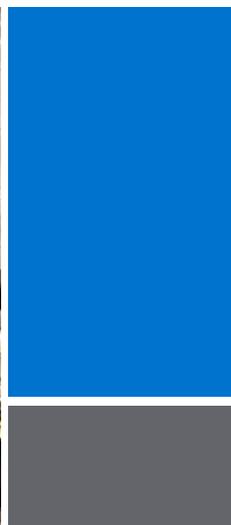
For new plants or those producers simply looking to enhance operations, we will perform a comprehensive equipment analysis based on the performance metrics you are targeting. Whether a new system is needed or just replacement parts, our goal will be to avoid costly downtime for your plant. Our team of experienced designers and manufacturers of concrete products equipment can provide everything from a direct-fired steam generator to controls, piping, kilns, moving floors and many other parts to ensure you have the perfect curing system for your needs.

Our Replacement Services include:

- Changing out old/outdated equipment
- Custom design new system
- Fully integrate system components
- Configuration, Calibration, Testing
- Training, documentation

Maintain Your Equipment with SmartSet Service Plans

We can help you preserve the life of your curing equipment with our Annual Service/Preventative Maintenance Programs. When you enroll in one of our plans, we'll make scheduled visits to your site to inspect your equipment and identify parts that are showing signs of wear. While onsite, we will repair/replace them on the spot before they fail and cause unplanned downtime. We also will provide training and technical support.





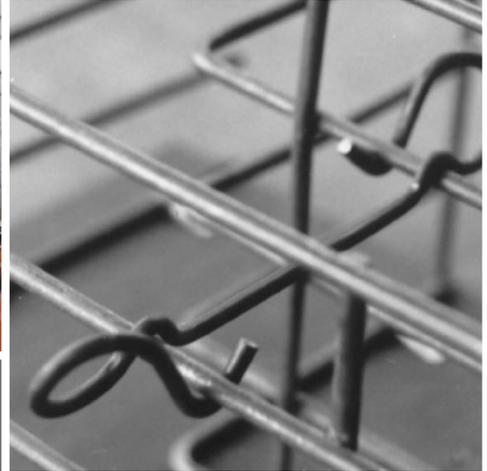
SmartSet Curing Systems

Equipment & Automation



Forming Systems

Concrete Accessories



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Intelligent
Infrastructure
Solutions

Afinitas is a global, comprehensive and customer-oriented infrastructure equipment and services platform that brings together the expertise of HawkeyePedershaab, BFS, New Hampton Metal Fabrication, Spillman, and CAM Products.

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