



UNDERSTANDING CONCRETE CURING



www.curetec-china.com

**YOUR GUIDE TO EFFICIENT
CONCRETE CURING**

UNDERSTANDING CONCRETE CURING

EXPERTS IN CONCRETE CURING



ABOUT US

Curetec Shanghai New Energy Co. Ltd. was established in early 2020 to cater for the domestic Chinese market as well as to cover demand in the Asia Pacific region.

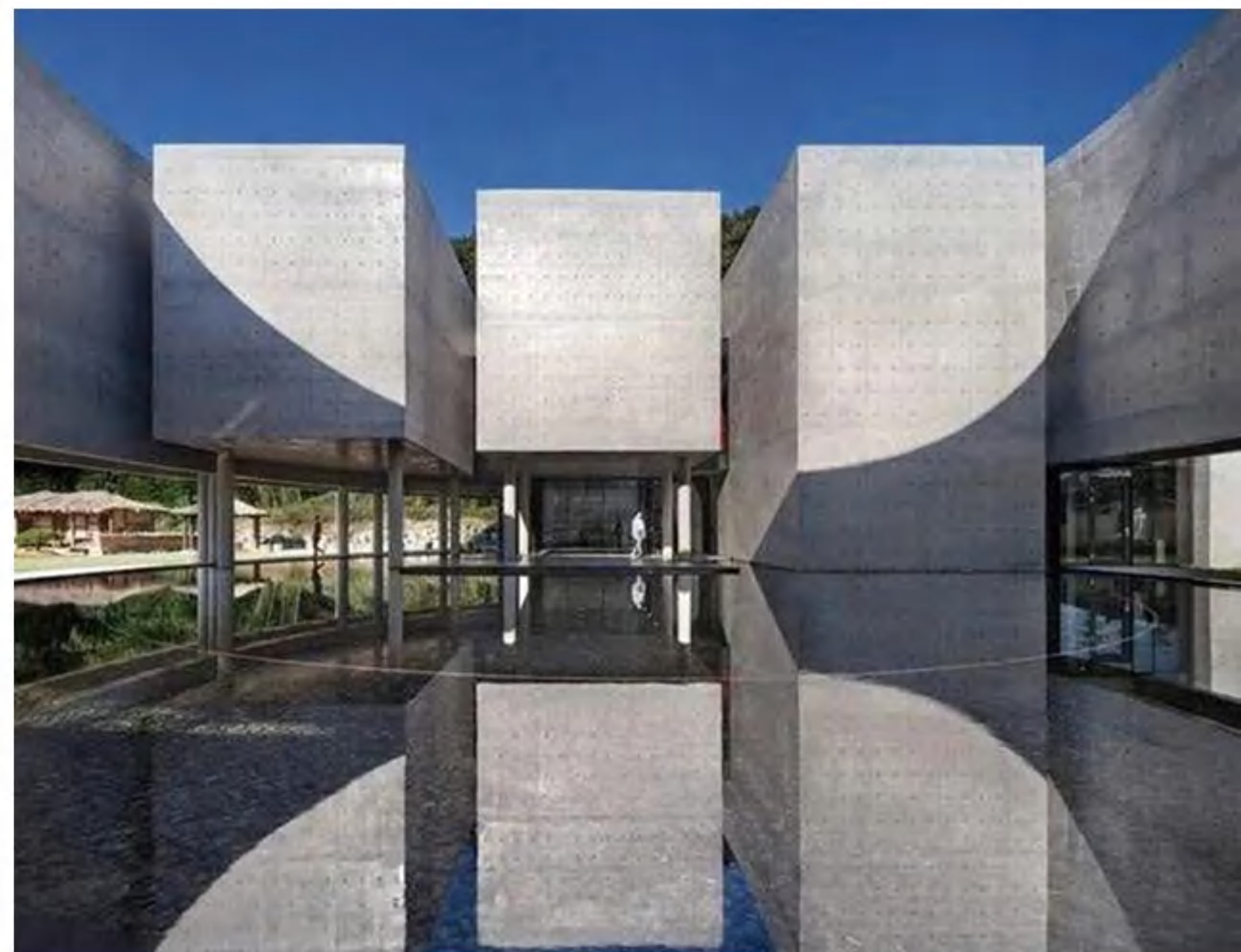
The original technology of our partner and world market leader Curetec Energietechnik GmbH Germany was transferred and adapted to Asian markets to better serve our clients in the area and to provide high-tech efficient curing solutions at affordable investment levels.

Continual research and development combined with local production based on German quality standards enable us to supply all systems in high quality, lower cost, yet shortest delivery time possible.

Our location in Shanghai puts us into the center of the prevailing time zones in the region, hence our team of online and offline service technicians are always at your disposal during your own worktime.

This guide has been developed to showcase different system applications in concrete curing however, our engineering team is always at your disposal to discuss your specific needs and engineer your tailor-made Curetec accelerated curing solution.

- ▶ **German technology, specializing in concrete curing for nearly 20 years**
- ▶ **Serving 50 countries worldwide with more than 1000 production line solutions**
- ▶ **German Engineering – Made in China**





ADVANTAGES OF ACCELERATED CONCRETE CURING WITH CURETEC

BENEFITS OF ACCELERATED CONCRETE CURING

Accelerated curing uses heat, or a combination of heat and moisture, in the early stages of the curing process to increase the rate of cement hydration. This expedites concrete's early-age strength development.

▶ **Accelerated curing is used for many reasons**

such as counteracting slow strength gain during cold-weather concreting, providing an optimum curing environment for dry-cast concrete or helping ensure precast products reach a desired stripping strength quickly

The conditions fresh concrete is exposed to throughout the curing process directly impact its hardened properties. Ensuring concrete is allowed sufficient time to cure in an appropriately warm and humid environment will help optimize the concrete's properties and ensure the product is as strong and durable as possible. Heat causes cement hydration reactions to occur at an expedited rate, which causes concrete to develop strength faster.

Conversely, reactions occur at a slower rate when the fresh concrete or the surrounding environment is cooler.

Depending on which concrete product is being produced, Curetec deploys different combinations of heat and humidity to provide optimal accelerated hardening conditions and thereby ensures that the product turns out perfectly independent of ambient weather conditions.

▶ **High early strength**

For precast and prestressed elements increasing productivity by up to 100%.

▶ **Better appearance**

Especially important for decorative products like Block & Paver elements as well as external facade elements.

▶ **Higher durability**

All elements cured with Curetec technology will gain higher lifespan by increased strength due to optimal curing conditions.

▶ **Reduction of cement consumption**

Often cement content can be reduced up to 20% when Curetec curing technology is deployed and thereby contribute to ROI as well as general operational savings.

▶ **Reduction of damages, breakage etc**

Curetec curing technology reduced occurrence of damages in the production and following processes significantly.

Application:

NDG

Vapor/Steam Generator

The CureTec NDG steam generators are direct fired systems that deliver steam within seconds. steam is produced directly in the combustion chamber.



Tunnel Segments



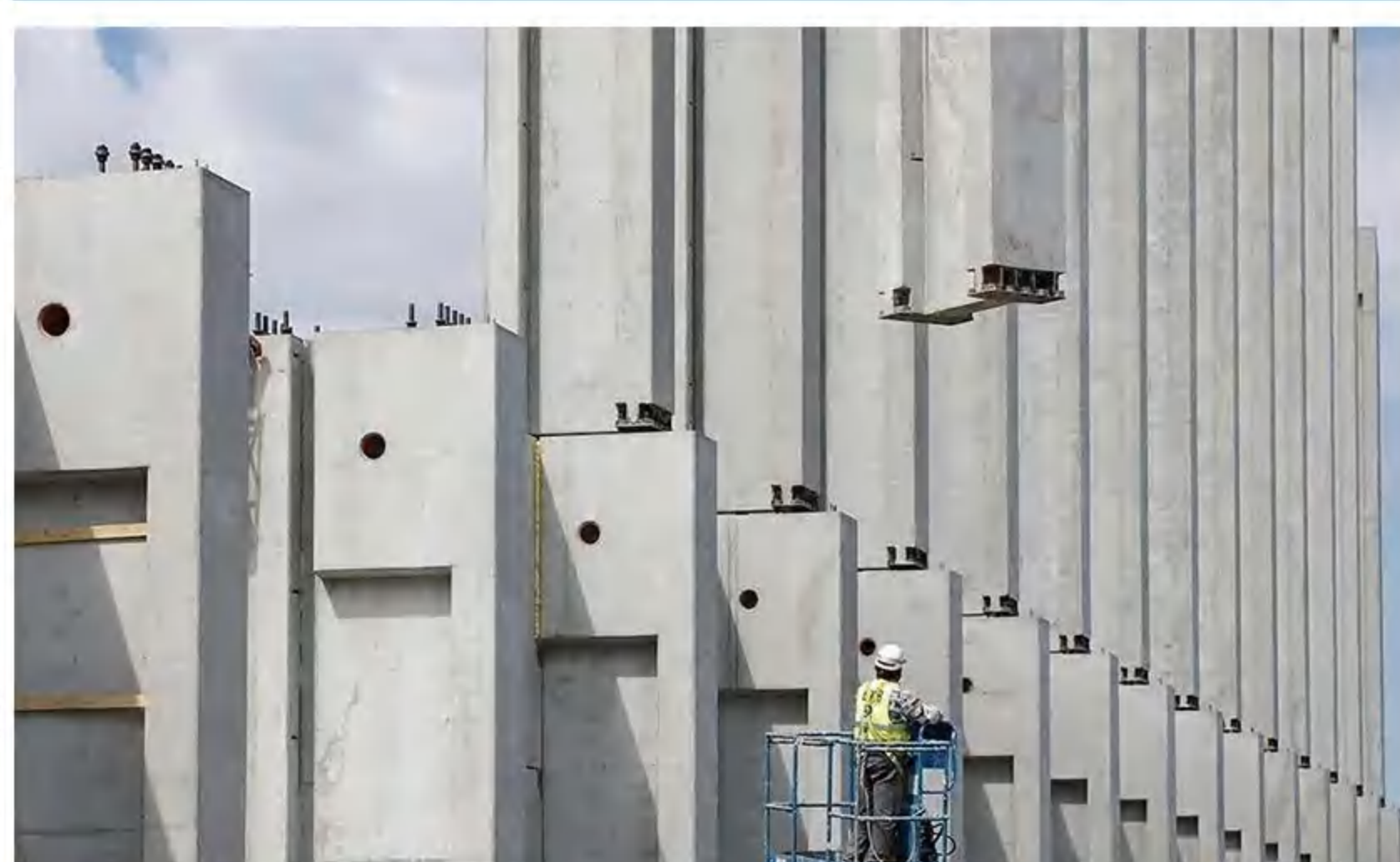
Railway Sleepers



Piles & Poles



Pipes & Manholes



Precast Concrete



Pre-stressed Concrete



Blocks and Pavers

Vapor curing poses the most efficient energy transfer of all systems. >95% rel. humidity and various temperature levels offer a vast variety of applications. Aside of fixed installed systems, NDG can also be deployed on construction sites and other non-permanent projects.



Application:

CURECAST

Hot Air Heating System

We offer intelligent temperature control systems for a wide range of concrete products.

Typical applications



Double Walls



Soli Walls & Slabs



System on Curing Chamber



Element slabs

CureCast System are deploying Hot-Air with controlled circulation in closed environment.

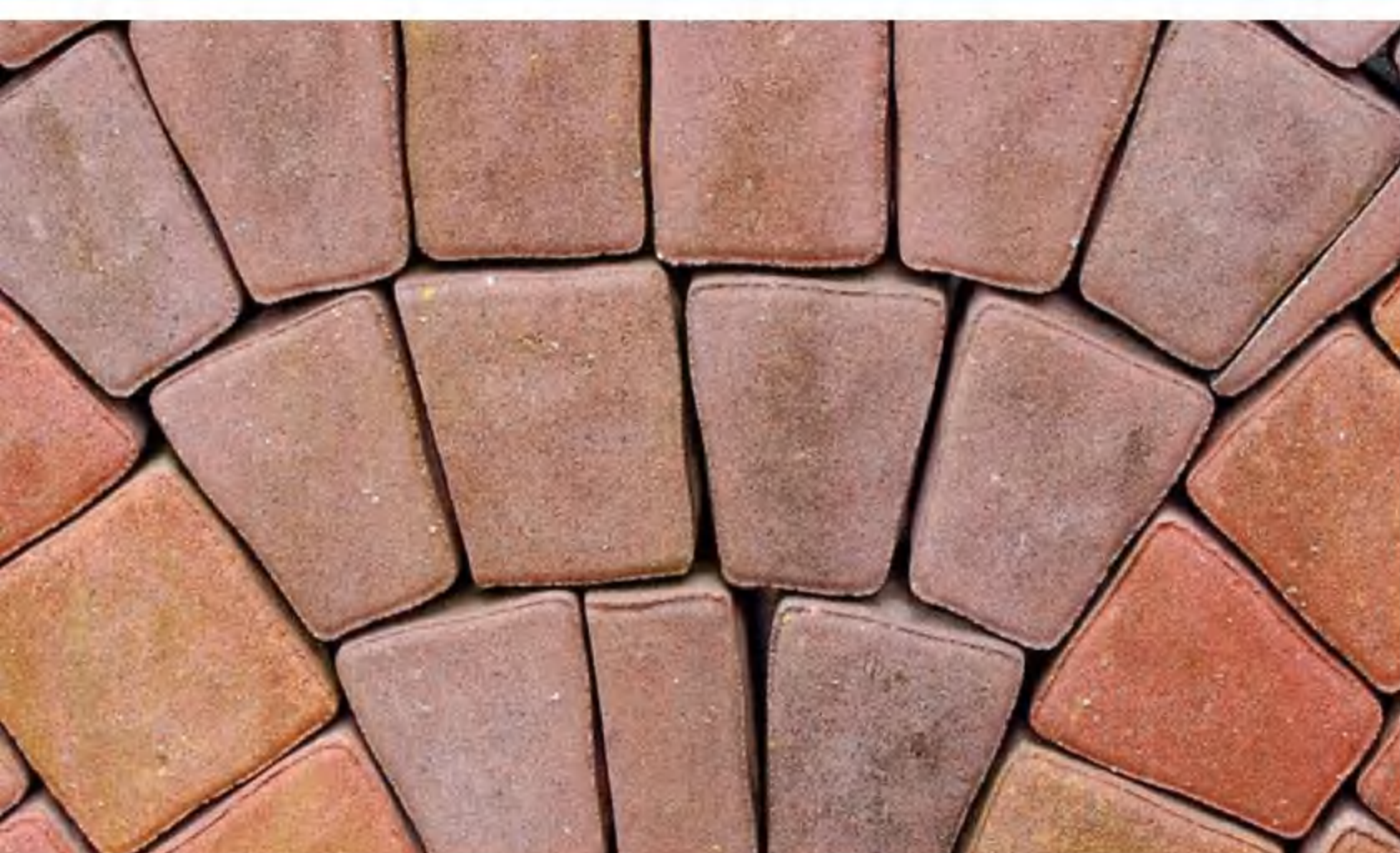
This system is most efficient for precast concrete production in carousel plants and closed curing chambers with 24 hour operations.

Application:

CURECOMPLETE

Complete System

The CureComplete system combines all important elements of concrete curing. The symbiosis of warmth, humidity and air circulation can be used for big chamber systems as well as individual single atmosphere chambers.



Block & Paver



Wetcast products



Railway sleepers



With CureComplete you gain access to fully controlled temperature, humidity and circulation at perfect levels for sensitive products. Our sophisticated fully automated control system ensure best results with lowest possible energy consumption all year round.





Application:

CUREBED

Convection Heating System

The system technology is used for prestressed concrete products or long production lines, etc., using heat radiation to heat the concrete product



Precast Beam



Hollow Core Components



Railway Sleepers



The hot water circulates in a sealed system under the concrete product and transfers heat energy to the product.

The hot water transfers the temperature/heat to the concrete product and directs the remaining warm water back to the heating unit for reheating, making it recyclable.

Application:

CUREFOG

Moisturisation System

TheCureFog humidification system adds atomised water to the curing process as required, facilitating the controlled inflow of steam



Colorful Paver



Paving Stones



Colorful Paver



We use the positive properties of fog and apply them to the concrete industry. The principle here: In order to adjust the humidity to the respective requirements, water is very finely atomised by special nozzles and sprayed into the concrete curing chamber through a pipe system.



CONTAINER SOLUTIONS

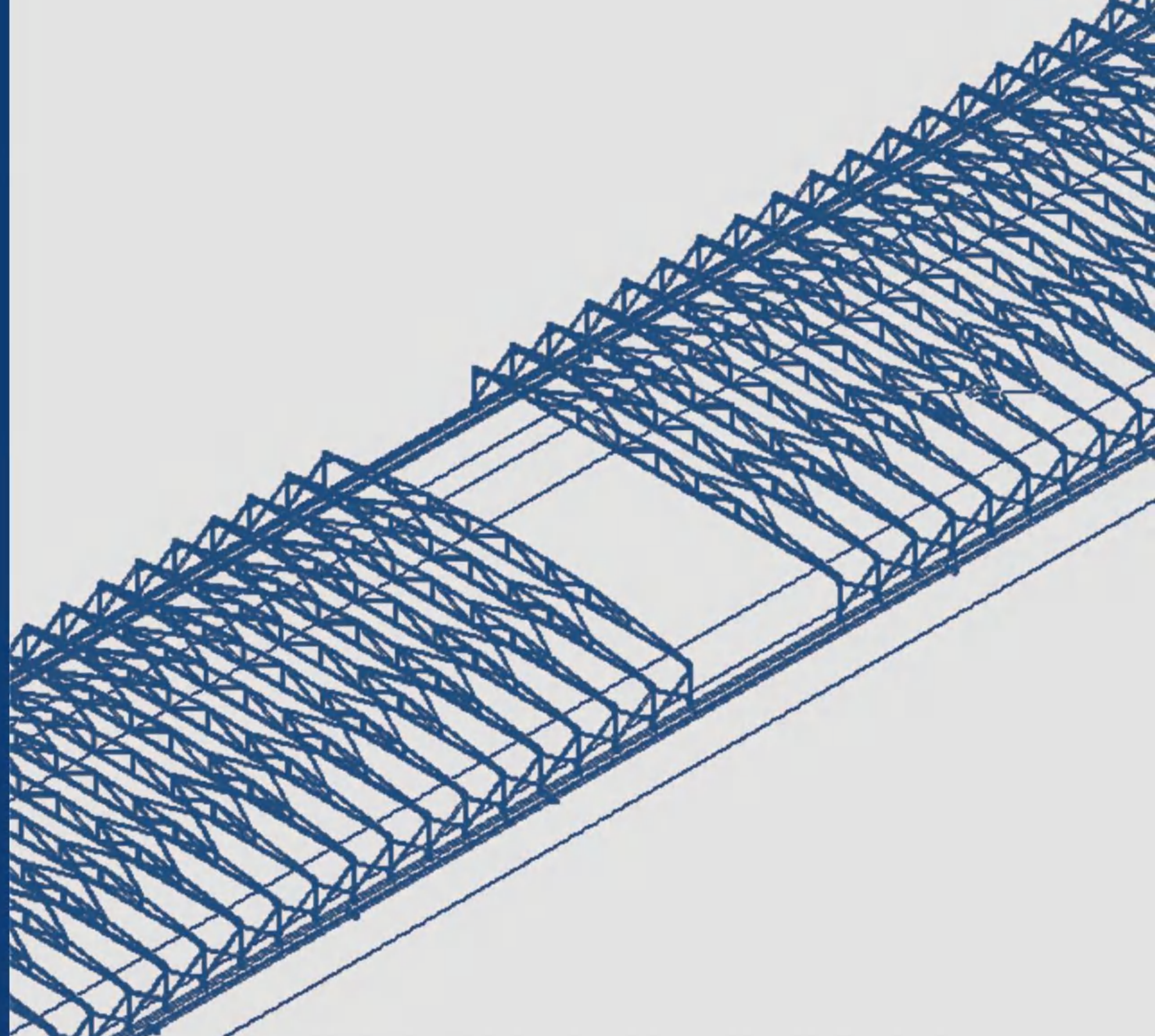
We install our systems into high-performance containers, which can be used as operation rooms.



Curetec provides tailormade container solutions for different curing system types. For our international clients these systems are based on standard sea container sizes, equipped with sound and thermal insulation, overhead lighting, ventilation and Air conditioning in warmer climates. At the same time the containers can be used as operating room and easily moved from project to project.

CURING TENTS

Cost efficient and durable solutions to generate controlled curing rooms.



For many applications closed curing chambers are not feasible. If you produce long span beams, volumetric columns or 3D rooms we have the perfect tailor-made solutions for you.

Durable structure, UV resistant and fireretardant tarpaulin covers, manually or electrically opening mechanism and more.

Ask our specialists for a techno-commercial proposal.



INTELLIGENT CONTROL SYSTEM

In our workshop we make all kind of control arrangements for energy distribution and control of machines.

We accommodate the high demands of the concrete and other industries.

CONTROL SYSTEM INTERACTION



Curing System

Continuous exchange of data



Curetec Temperature & Humidity Sensor

Temperature & Humidity
Data transfer



Process Control Unit

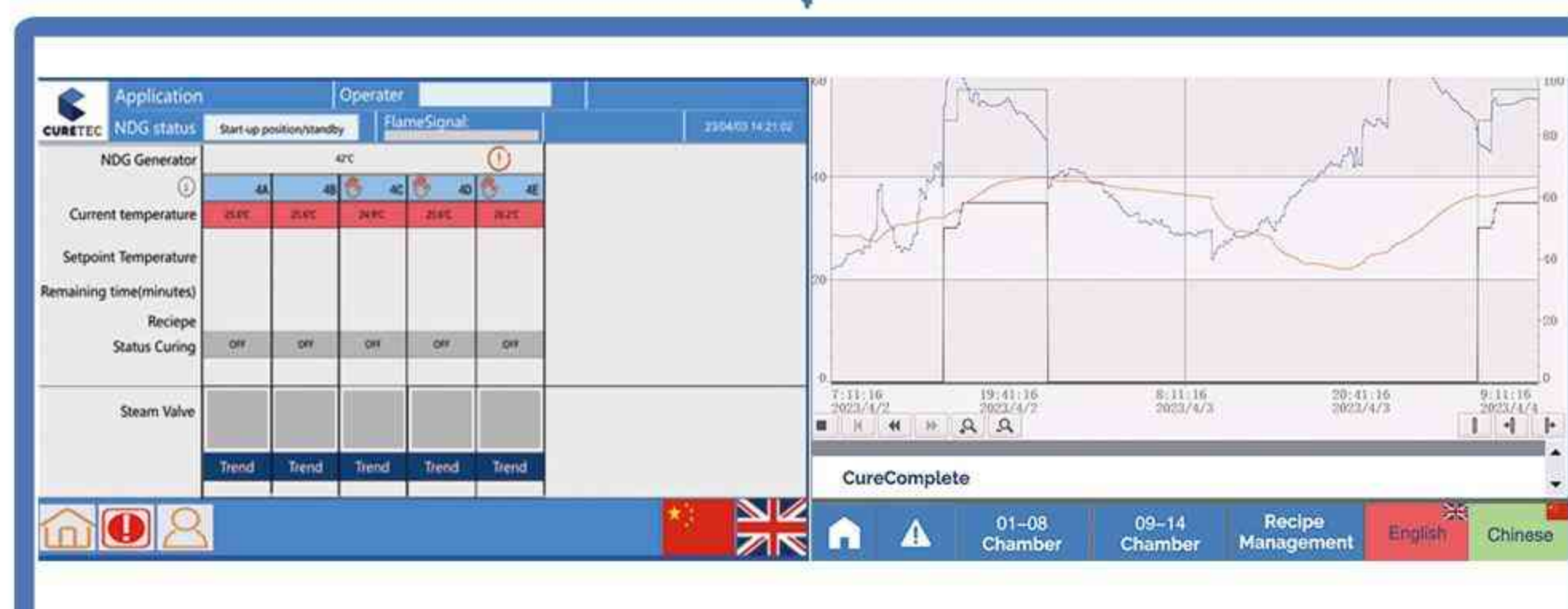
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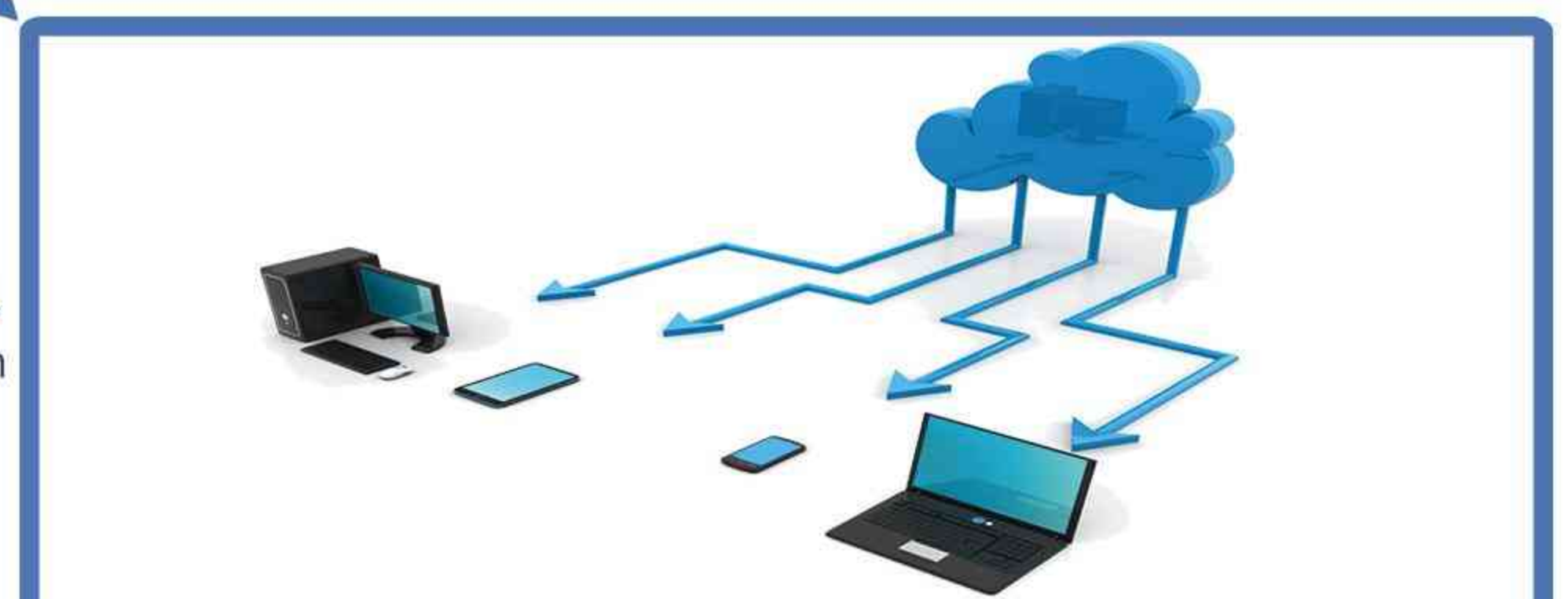
High-speed data transmission Network

Real time
Data transfer

Online communication



Curing data Display and Record



Remote maintenance solution

Online
communication

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