

HOLDING OUR WORK TO A

## HIGHER STANDARD

# WITHIN EVERY DISCIPLINE THERE ARE THOSE WHOSE SKILL, STANDARDS AND SPIRIT DISTINGUISH THEM FROM THEIR PEERS.

Those who truly understand the underlying science behind their trade. Those whose work transcends mere industry to become actual artistry. And in the discipline of industrial brick lining systems, that group is called SOUTHWEST REFRACTORY.

Our name is synonymous with the world's highest quality refractory, acid proofing, industrial masonry and fireproofing—delivered in a timely manner and with meticulous attention to detail. New-build or turnaround, we ensure that every project is a true work of art by consistently bringing customers:



#### ADVANCED ENGINEERING

Our in-depth engineering support goes well beyond conventional refractory providers, including advanced thermo-mechanical studies.



## METICULOUS PLANNING

Long before the job commences, we plan out even the smallest details relating to your job—ensuring a smooth execution.



#### RIGOROUS TRAINING

Our intensive training isn't for everyone. But those who make the cut stand among the best worldwide, without exception.



### MASTER CRAFTSMANSHIP

We consider every project to be a personal reflection of our own people, and representative of our organization as a whole.



#### QUALITY EQUIPMENT

No matter where your facility, our crew always has the tools it needs to get the job done right and in accordance to your schedule.



#### RELENTLESS DRIVE

Skill without hard work is useless; we push hard 24/7 to bring the job home the right way, on time and on budget.

#### EXPECT THE BEST IN

### EVERYTHING WE DO



#### REFRACTORY

Southwest Refractory designs and installs highintensity, heat-resistant lining systems using intricate brick construction, custom castables, applied gunite and ceramic fiber applications.

From specifying the best possible brick composition to performing complete thermomechanical studies and tech specs, we offer specialized engineering support you can't find anywhere else. With some of the world's leading materials suppliers, we pair engineering expertise with advanced materials to bring unprecedented levels of production and protection to industrial operations worldwide.

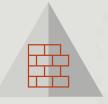


#### ACID PROOFING

No matter how caustic the application, we help acid-proof any operating environment with higher quality and more confidence.

Our experts understand your facility's processes and how to specify high-silica, silicon carbide and other bricks for the best possible protection. This includes anti-corrosive mortar and coatings. And we work closely with your team and other project partners to provide end-to-end stewardship from design to in-the-field brickwork. We've proven our skills time and again in some of the world's most demanding industries including acid, chemical and pharmaceutical manufacturing.

Let Southwest Refractory turn your industrial brick lining system into a work of art—no matter what the operating conditions.



#### INDUSTRIAL MASONRY

Let us bring more confidence and convenience to your next masonry job.

We approach the most modest, straightforward of these projects with the same professionalism, planning, precision and project management with which we approach large-scale, complex refractory installations. From in-plant blast walls and firewalls for facilities of all kinds to other heavy-duty structural or process-related masonry—Southwest Refractory can handle all of your project's masonry demands on new construction or remodels.



#### FIREPROOFING

We can apply proper fireproofing to any industrial operating environment or equipment.

Of course, many contractors can do this type of work. But when you choose Southwest Refractory to perform this crucial safety function, you know that not only will your unit's fireproofing be applied the right way—but that it will also be applied with total insight into the thermal engineering of the system as a whole. We understand these vessels and their surrounding environment down to their base materials and detailed thermal profiles; meaning no detail will be overlooked.





#### ADVANCED MATERIALS SPECIFICATION

Lining materials such as brick, mortar and coatings play a huge role in refractory performance. That's why we partner with the world's leading manufacturers of heat-and corrosion-resistant vessel lining materials—sharing technical insights and leveraging ongoing relationships in a way that lets us specify the perfect material every time. Our decades of collaboration between manufacturers and project stakeholders means no detail of your materials specification goes unexamined.

#### TOTAL FACILITY AWARENESS

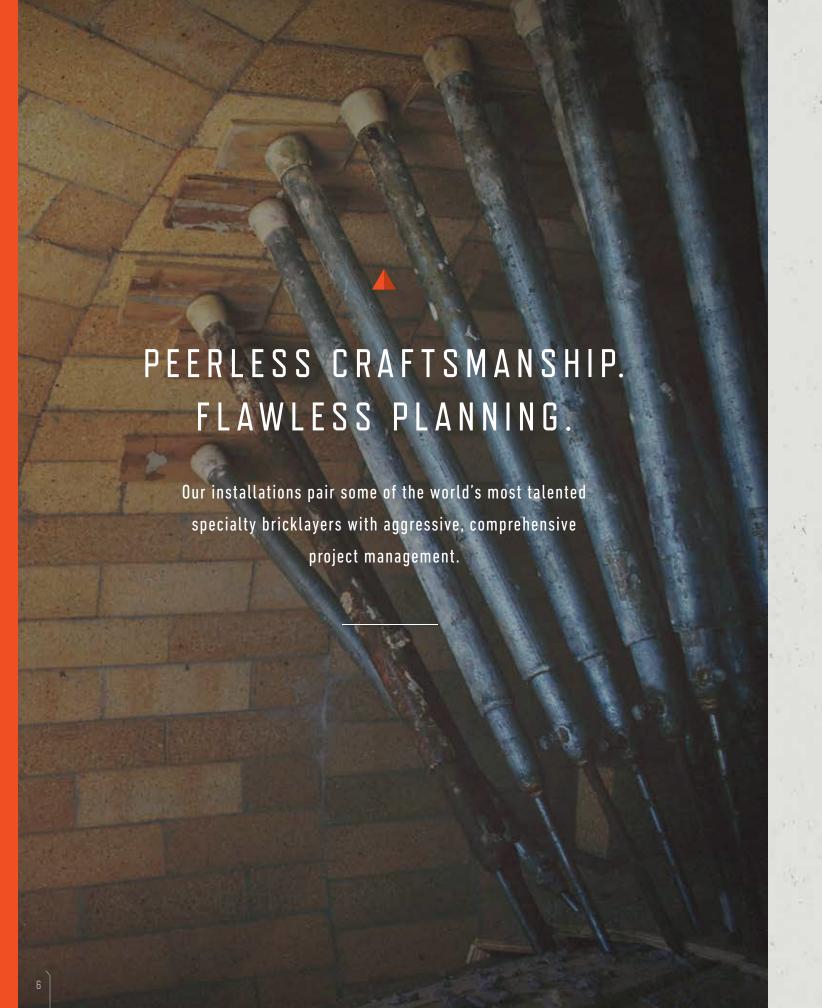
A big part of our business is knowing yours—maintaining familiarity with the process particulars of your facility as they pertain to heat and corrosion dynamics. This includes understanding the specific steps in your process train, the corresponding vessels and their thermal/acid profiles, and how to prevent complexities in refractory systems that are common to your process. This knowledge helps us deliver both a better service experience, and a superior end product.

#### EXCEPTIONAL DOCUMENTATION

We also arm your team with an engineering package that goes far above and beyond industry standards. This will include everything from detailed drawings of system components such as the lining, expansion joint and support shelf designs—as well as a comprehensive bill of materials, spare parts list and tech specs covering all aspects of the system.

# SWR ENGINEERING AND DESIGN PACKAGE

- + Detailed drawings of the lining, expansion joint and support shelf design
- + Thermomechanical studies
- + Thermal expansion calculations
- + Thermal profiles under various conditions
- + Bill of materials and spare parts list
- + Technical specifications, including:
- / Material specifications and testing
- / Refractory models
- / Refractory installation
- / Technical bid evaluation
- / Refractory guidelines
- / Inspection and maintenance
- / Refractory waste handling plans
- / Material handling protocols
- / QA/QC documentation
- / Project schedules





#### **EXHAUSTIVE PREPAREDNESS**

From crew logistics to permitting to equipment preparation, refractory projects have many moving parts. And everything must work together with zero room for error. Southwest Refractory takes great care in performing extensive pre-project planning—then keeping your installation on track 24/7 with real-time project management support. We also ensure you stay well informed, providing whatever frequency/format of status updates or reporting that makes you comfortable.

#### DEMANDING CONSTRUCTION STANDARDS

When it comes to those responsible for actual field installation, only the very best live up to our exacting standards. In fact, only FOUR PERCENT of participants make the cut from our rigorous training program. Southwest Refractory field supervisors are also experienced bricklayers, able to enforce superior craftsmanship on the front line. In addition to strict quality control, we insist all work spaces, equipment, tools and vehicles be kept clean and orderly at all times—making everyone's project experience more positive.

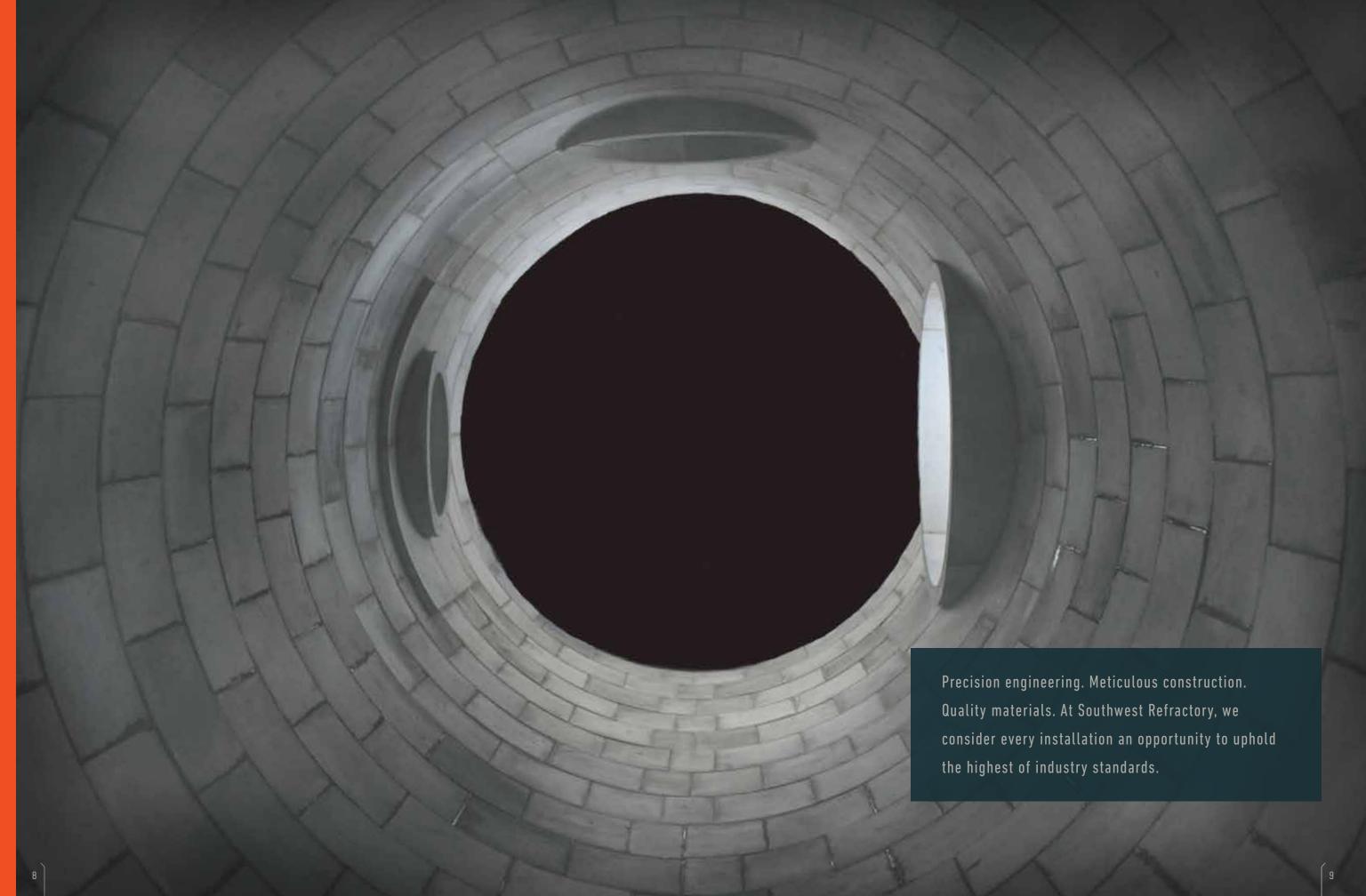
#### ON THE JOB ARTISANSHIP

There's another quality you'll find in every Southwest Refractory field installation professional; and it's not the kind of thing you teach. Each installation starts with clear-cut design and vision.

But as any engineer knows, things in the field are sometimes less than perfect. Our bricklayers have an eye for cuts and installation quality; an in-the-field discretion that helps them bridge the gap between the perfect-world of CAD drawings and the real-world challenge of imperfect surfaces and shapes. It's that level of commitment to quality that makes every Southwest Refractory installation a true work of art: API 936 inspection-ready every time.

## THE SWR

- + 24/7 project management support
- + Rigorous field training program
- + Skilled on-site superintendents
- Well maintained equipment and tools
- + Clean and organized work sites
- + API 936 inspection-ready quality level work





#### WORLD CLASS FACILITIES

Located just south of Houston, Texas, Southwest Refractory's campus can facilitate the largest of in-shop jobs. With state-of-the-art construction equipment and installation infrastructure, the facility was designed and engineered specifically for the rapid install of our brick-lined refractory and acid-proofing systems. And, true to Southwest Refractory's values, the facility and its equipment is cleaned, organized and maintained with an eye toward redefining industry standards. We encourage project stakeholders to tour our facility, one of the most impressive of its kind in the United States, and see the difference for themselves.

MAINTAINING EXEMPLARY
STANDARDS TAKES
EXCEPTIONAL SUPPORT,
INCLUDING ONE OF
THE NATION'S LEADING
REFRACTORY FACILITIES.

#### ON-SITE MATERIALS STORAGE

The long lead-times associated with refractory and acidproofing construction materials can be major bottleneck. That's
why our facility also provides large-scale refractory material
storage—keeping specialized bricks and other critical system
components on hand from manufacturers around the world.
When needed, SWR customers can access their materials
without the stress and delay that comes with long lead-times.
All materials are carefully stored to preserve original integrity,
and we can even help specify and facilitate orders through
our many global strategic manufacturing partnerships.

50 TON

CRANE CAPACITY

200+

SWR DESIGNED
REFRACTORY SYSTEMS
CURRENTLY IN OPERATION

30+

YEARS OF SERVICE

ZERO
MISSED PROJECT
DEADLINES

Southwest Refractory makes sure that the superintendents, supervisors, engineers, bricklayers, welders, workers and project managers on your job have proven experience on projects like yours.



#### CHEMICAL MANUFACTURING

Southwest Refractory has an extensive track record of project success with some of the top chemical manufacturers in the nation. From heaters, reactors and reformers to boilers or basic stacks or flares, we can help you streamline lining system design and construction and put a true work of art into your facility.



#### PETROLEUM REFINING

Leading refineries nationwide have entrusted their refractory work to Southwest Refractory. Whether leading a new-build project overseas or helping keep a vessel revamp on track during a tight turnaround, we know what you need and help deliver the higher standards your unit deserves.



#### ACID MANUFACTURING

For sulfuric, nitric or other acid manufacturing facilities we have specialized expertise in bricklined systems that fight corrosion and help protect your process. New build or turnaround, trust Southwest Refractory to line high-performance sulfur burners, towers, hot gas filters or other extreme acid or temp process environments.



#### PRECIOUS METAL PROCESSING

For work on gold processing autoclaves, as well as processing environments for copper, zinc and nickel and other precious metals, Southwest Refractory offers proven industry knowledge and a strong track record of exceptional work. Our precious metal customers know that SWR vessels help bring maximum protection and uptime, every time.

# INSTILLING SAFETY WHILE INSTALLING SYSTEMS

Maintaining the highest standards of quality and service also means taking care of the people who make it all possible. That's why SWR brings world-class safety performance to every job.



With specialists often working 24/7 during deployment, strong safety performance takes total vigilance from all parties involved in the project. As demanding as we are about the quality of our workmanship, we value the personal health and safety of our employees, partners, customers and vendors above all else.

On site or at the shop, our commitment to safety starts long before the job. Those who make the cut to become Southwest Refractory employees are given extensive safety training that covers every aspect of the field operation, including actual installation protocols, practices and procedures—as well as other aspects that may apply to the work including safe vehicle operation.

Prior to every project, the company undergoes a 360-degree safety planning and preparation that includes double-checking safety certifications, planning all of the required facility-specific training and undergoing a rigorous check of all personal and project equipment to ensure that it will be safe on the job. We also work closely with all partner and facility safety departments to identify and communicate any potentially unsafe conditions throughout the project's lifecycle.



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281.824.9342 2443 NORTH GORDON ST. ALVIN, TX 77511

WWW.SWR-US.COM INFO@SWR-US.COM