GATI

CEMENT MANUFACTURING

Refractories from the Chemical Point of View

DURATION	CONTACT HOURS	LEVEL	FEE PER DELEGATE
5 days	30	Intermediate	US$1,500

Refractory selection and failure understood chemically, not just as a materials catalogue.

Refractory lining is one of the largest maintenance costs in cement and most premature failure is chemical rather than mechanical. This week approaches it from the chemistry: refractory mineralogy and phase behaviour, the attack mechanisms by alkalis, sulphur and chloride, redox effects in a reducing atmosphere, and what alternative fuels change about all of it. Selection by zone and installation practice follow, so that the material choice and the way it is installed are treated as one decision.

Available as classroom, live online, in house.

Who it is for

Refractory engineers and specialists, kiln and maintenance engineers, process engineers whose operation affects lining life, and procurement staff specifying refractories.

What you will be able to do

- Describe refractory classes and their chemical behaviour.
- Explain alkali, sulphur and chloride attack mechanisms.
- Account for redox and atmosphere effects on lining life.
- Select materials by zone and by the conditions actually present.
- Diagnose a failure from the evidence in the removed lining.

The outline

DAY 1

Materials

Basic, high alumina and insulating refractories · Phase composition and thermal behaviour · Bricks, castables and their different failure modes

DAY 2

Chemical attack

Alkali attack and alkali bursting · Sulphur and chloride infiltration · Clinker liquid penetration

DAY 3

Atmosphere

Reducing conditions and redox damage · Alternative fuels and the species they introduce · Thermal cycling and spalling

DAY 4

Selection

Zone by zone requirements · Coating behaviour and its interaction with the lining · Cost against expected life

DAY 5

Installation and diagnosis

Installation quality and heat up schedules · Anchoring and expansion allowance · Reading a removed lining for the cause of failure

What you leave with

- A zone by zone refractory specification.
- A failure diagnosis from a real case.
- An installation and heat up specification.

Published dates

DATES	WHERE	FEE
23 to 27 November 2026	Dubai, United Arab Emirates	**US$1,500**
30 November 2026 to 4 December 2026	Cairo, Egypt	**US$1,500**
7 to 11 December 2026	Nicosia, Cyprus	**US$1,500**
14 to 18 December 2026	Dar es Salaam, Tanzania	**US$1,500**

Fees are per delegate and co
arranged by the delegate. Reg

Register or ask a question

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