

FIRE Compendium Series Vol. 2C

Corrosion of Refractories - The Impact of Corrosion

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Wear by corrosion of refractory materials remain a major concern for plant operators, manufacturers of refractories, installers and refractory engineers involved in R&D and Education in this field of expertise. This third volume on the theme of corrosion is focused on the modes of degradation met in practical situations, for a better understanding of the corrosion processes.

Once characterization of corroded samples has been achieved, from micro-, meso-, and macro- scale, it is essential to integrate all the data, taking on account the lining construction and lining maintenance schedule, the operation process fluctuations, the dismantling and sampling procedures, with the cost consideration.

The volume is divided into three chapters. Chapter I is about the definition of the context in which refractories wear down to be able further to distinguish between the notion of continuous and discontinuous wear, authored by T.Vert and M.Rigaud.. Chapter II is to illustrate how to benefit from post-mortem analysis, and case studies considering a total of 14 different applications, in Steelmaking (BOF; EAF; Ladles; Continuous Casting; Vacuum Degasser) in specific cases of the Aluminum, Non-Ferrous, Cement, Glass Industries, as well as in Incinerators, Boilers, Gasifiers and Induction furnaces. Principal authorship is by T. Vert; P. Prigent; In-Ho Jung; J. Poirier; R. Telle; G. Pacheco; T. Tonnesen; A. Villaba-Weinberg; J. Bennett; J. Soudier with several other collaborators. Chapter III is on the impacts of corrosion on 1- Quality of the products, in Steemaking, authored by by P.Galliano et al. and in Glass Melting. 2- Refractory Management in Steel- Plants by T. Vert 3- on New Processes at Ultra High Temperatures and Ultra-Low Partial Pressures, by A. Maître.

The content of the book has been outlined and reviewed by 14 fellow experts (industrials and academics). It represents a major contribution to understand corrosion of refractories and to appreciate its impact on the plant availability and quality of products.

Table of Contents

Foreword	vii
Preface	viii
List of the Editorial Review Board Members	x
The Authors	xi
F.I.R.E.	xvii
The impacts of corrosion	1

Chapter 1

Corrosion damage and post-mortem analysis

1. Introduction	2
2. Sampling on industrial sites	2
3. What about lining constructions?	6
3.1. Zoning and construction procedure	6
3.2. Tracking industrial records	8
4. Key variable standard operating procedure (KVSOP)	11
5. The cost evaluation	11
5.1. Refractory material cost – working lining, safety lining, etc.	12
5.2. Transportation and storage costs	13
5.3. Administration costs	13
5.4. Quality assurance costs	13
5.5. Foreign exchange costs	14
5.6. Installation costs	14
5.7. Repair costs	14
5.8. Demolition and disposal costs	16
5.9. Energy costs	16

5.10. Refractory operational impact	17
6. Concluding remarks	18
7. References	19

Chapter 2

A selection of industrial case studies

1. The iron and steel industry	21
1.1. Basic Oxygen Furnace (BOF) converter	21
1.2. Electric Arc Furnace (EAF) delta roof	26
1.2.1. Introduction	26
1.2.2. An overview on wear mechanisms	26
1.2.3. Thermal measurements and post mortem analyses of EAF roofs	31
1.2.4. Thermomechanical numerical simulation	42
1.2.5. Interpretation and new developments	44
1.2.6. Conclusion	48
1.2.7. References	49
1.3. Ladles	50
1.3.1. Corrosion of slag-line refractory by molten slag	51
1.3.2. Corrosion of refractory wall by ladle glaze	55
1.3.3. Corrosion of refractory by molten steel	57
1.3.4. Corrosion of ladle purging plug by Fe_2O_3 slag	59
1.3.5. Corrosion of nozzle refractory by non-metallic inclusions	61
1.3.6. References	64
1.4. Continuous casting	66
1.4.1. Thermal interaction between steel and refractory	68
1.4.2. Chemical interactions between steel and refractory	69
1.4.3. Summary	81
1.5. Vacuum degasser	82
1.5.1. Introduction	82
1.5.2. Functions of secondary steelmaking and RH/OB process	83
1.5.3. The RH/OB refractory lining	87
1.5.4. Effects of iron oxides and basic slags on corrosion refractories in RH/OB facilities	91

1.5.5. Choice of magnesia chrome refractories adapted to RH and RH/OB solicitations	97
1.5.6. Mechanisms of corrosion of the magnesia-chrome refractories in RH/OB installations	100
1.5.7. Kinetic process model	108
1.5.8. To conclude: actions to improve the refractory lining performance	110
1.5.9. References	112
2. The aluminium industry	114
2.1. Corrosion of alumina-silicate bricks for anode baking furnace	117
2.1.1. Examining the refractory degradations and corrosion mechanisms in the anode baking furnace	120
2.1.2. Laboratory corrosion testing methods of alumina-silicate refractories by Na and F gas	128
2.1.3. Conclusion	145
2.2. Corrosion of SiC slabs used in electrolysis cell	145
2.2.1. Post-mortem analysis on SiC-Si ₃ N ₄ slabs in industrial electrolysis cells	149
2.2.2. Laboratory corrosion tests of SiC-Si ₃ N ₄ in molten cryolithe	152
2.2.3. Conclusion	161
2.2.4. References	161
2.2.5. Further reading	164
2.3. Corrosion of alumina-silica bricks by molten aluminium alloys in holding and remelting furnaces	164
2.3.1. Introduction	164
2.3.2. Liquid metal corrosion	166
2.3.3. Non-wetting temporary binder systems	170
2.3.4. Model experiments for slag and gas corrosion during dross treatment	173
2.3.5. Fundamental background	180
2.3.6. Conclusion and summary	185
2.3.7. References	187
3. The non-ferrous industry	189
3.1. Pyrometallurgical treatment for platinum group metal recovery	189
3.1.1. Introduction	189

Contents

3.1.2.	Refractory materials for PGM smelting	194
3.1.3.	Refractory wear in the converter	205
3.1.4.	Conclusions	206
3.1.5.	References	206
4.	The cement industry	211
4.1.	Magnesia-spinel bricks in cement-lime kilns	211
4.1.1.	Alkaline salt phase infiltration	213
4.1.2.	Liquid phase infiltration	217
4.1.3.	Thermal overload	220
4.1.4.	Mechanical stresses	221
4.1.5.	References	222
5.	The glass industry	224
5.1.	Melt corrosion in glass tank linings	224
5.1.1.	Introduction	224
5.1.2.	Situation	225
5.1.3.	Fundamental background	230
5.1.4.	Conclusion and summary	236
5.1.5.	References	237
6.	The incineration industry	238
6.1.	Household waste incinerators	238
6.1.1.	Introduction and state of the art	238
6.1.2.	Operating conditions and refractory solicitations	241
6.1.3.	Failure mode of SiC refractories in household waste incinerator	244
6.1.4.	Mechanism of SiC refractory degradation	250
6.1.5.	Conclusion	252
6.1.6.	References	252
6.2.	Hazardous waste incinerator	255
6.2.1.	Introduction	255
6.2.2.	The rotary kiln	256
6.2.3.	The secondary combustion chamber	268
6.2.4.	Conclusions	275
6.2.5.	References	276
7.	The gasification industry	280
7.1.	Coal and/or petcoke gasifier	280
7.1.1.	Gasification background	280

7.1.2.	Hexavalent chrome oxide formation in gasifier refractories	285
7.1.3.	Improved performance refractory liner material through phosphate additions	286
7.1.4.	Slag management to reduce refractory wear	289
7.1.5.	Control of vanadium oxide valance during gasification	295
7.1.6.	Gasifier brick installation and misfit	299
7.1.7.	Temperature monitoring of the gasification process	301
7.1.8.	References	305
7.2.	Biomass Combustion	307
7.2.1.	Introduction	307
7.2.2.	Corrosion of refractory lining in biomass combustion plant	310
7.2.3.	Post-mortem analysis	312
7.2.4.	References	323
8.	The foundry industry	326
8.1.	Channel induction furnaces	326
8.1.1.	Introduction	326
8.1.2.	Damaged inductors	328
8.1.3.	Damaged vessel bottom mouth	335
8.1.4.	References	342

Chapter 3

The impacts of corrosion damage

1.	The impacts on the quality of products	343
1.1.	Effect of ladle lining refractory on steel quality	343
1.1.1.	Introduction	343
1.1.2.	Ladle preheating	346
1.1.3.	Interaction of refractories with liquid steel	350
1.1.4.	A case study: effect of ladle preheating on industrial operation	360
1.1.5.	Concluding remarks	365
1.1.6.	References	365
1.2.	How fused cast refractory corrosion induces glass defect	374
1.2.1.	Introduction	374
1.2.2.	Fused cast product properties	375
1.2.3.	Glass furnace refractory corrosion and defect formation	377
1.2.4.	Glass furnace superstructure refractory corrosion	382

1.2.5. Impact of refractory quality	385
1.2.6. Conclusion	388
1.2.7. References	389
2. The impacts on refractory wear management	391
2.1. Introduction	391
2.2. Initial selection	391
2.3. Consumption/Process monitoring	393
2.4. On-line inspection/measurement	395
2.5. On and/or off-line repairs	396
2.6. Demolition and possible recycling	397
2.7. References	398
3. The impacts of new processes	399
3.1. Need for high temperatures	399
3.2. Ultra high refractory ceramic materials	400
3.3. Development of ultra high refractory ceramics	403
3.3.1. Powder synthesis	403
3.3.2. Sintering	405
3.4. Performances of ultra high refractory ceramics in severe environments	408
3.4.1. Oxidation and diffusion at high temperatures: thermodynamic and kinetic fundamental aspects	409
3.4.2. Characterization methods applied to corrosion and diffusion	417
3.5. Applications of ultra high refractory ceramics	419
3.5.1. Applications as advanced refractories	419
3.5.2. Aerospace applications	420
3.5.3. Nuclear applications: fission and fusion components	422
3.6. Summary and future prospects	423
3.7. References	424
General conclusion	429
Index	433