

**Manual of  
Protective Linings  
for Flue Gas  
Desulfurization Systems**



**STP 837**

# MANUAL OF PROTECTIVE LININGS FOR FLUE GAS DESULFURIZATION SYSTEMS

A manual  
sponsored by ASTM  
Committee D-33 on  
Protective Coating and Lining Work  
for Power Generation Facilities

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## Foreword

This publication was sponsored by ASTM Committee D-33 on Protective Coating and Lining Work for Power Generation Facilities. Its creation and maintenance is the responsibility of Subcommittee D33.09 on Protective Linings for Flue Gas Desulfurization Systems. This subcommittee is composed of representatives from various organizations involved with corrosion mitigation of flue gas desulfurization (FGD) systems. Subcommittee members include individuals from utilities, architect-engineer-constructors, FGD system and component suppliers, lining manufacturers and installers, and other interested parties. The information presented herein reflects a consensus of the subcommittee.

This manual was prepared to address a need perceived by ASTM Committee D-33 for guidance in selecting and applying FGD system linings. In addition to serving as that source, this document has the equally necessary role of acting as a focal point for a rapidly changing technology. While the subcommittee considers the information contained in this manual to be state of the art, this emerging FGD technology offers limited historical data upon which to establish detailed requirements or methodologies. Accordingly, the user will find this first edition rather general. It is intended

that revisions be made as more specific information becomes available.

It is particularly important to determine the operating characteristics for a given installation and to accurately translate these into specific design criteria. This manual provides a guide for the lining design requirements applicable to a particular FGD project. All parties to the lining work should be cognizant of the anticipated performance criteria and attendant responsibilities.

The guidance offered in this manual presupposes a "wet" type scrubber, that is, one in which the medium for removing sulfur oxides entrained in the flue gas is an alkali suspended or dissolved in water which is injected into the gas stream. This mechanism can be inherently quite corrosive or erosive to the surfaces contacting the scrubbed gas and scrubbing liquor. Other FGD systems are available, including "dry" processes, where the sulfur removal media are recognized as being less corrosive than wet scrubbing media. Nevertheless, this manual will still provide meaningful background to individuals charged with assuring that corrosion concerns in other systems have been adequately addressed.

## **Related ASTM Publications**

**Permanence of Organic Coatings, STP 781 (1982), 04-781000-14**

**Cold Cleaning with Halogenated Solvents, STP 403A (1981), 04-403010-15**

**Manual of Coating Work for Light-Water Nuclear Power Primary Containment and  
Other Safety-Related Facilities, 1979, 03-401079-14**

**Compilation of ASTM Standards in Building Codes, 21st edition, 1983, 03-002183-10**

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# Contents

<b>Chapter 1—General Considerations</b>	<b>1</b>
<b>Chapter 2—Operating and Service Conditions</b>	<b>7</b>
<b>Chapter 3—Generic Organic and Inorganic Linings</b>	<b>11</b>
<b>Chapter 4—Design and Fabrication of System Components</b>	<b>16</b>
<b>Chapter 5—Suggested Tests for Evaluating Lining Materials</b>	<b>18</b>
<b>Chapter 6—Lining Material Data</b>	<b>25</b>
<b>Chapter 7—Installation</b>	<b>27</b>
<b>Bibliography</b>	<b>34</b>



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