

Planning and Conducting Surface Preparation and Coating Operations for Oil and Natural Gas Drilling and Production Facilities in a Marine Environment

API BULLETIN 91
FIRST EDITION, JUNE 2007

Planning and Conducting Surface Preparation and Coating Operations for Oil and Natural Gas Drilling and Production Facilities in a Marine Environment

Upstream Segment

API BULLETIN 91
FIRST EDITION, JUNE 2007

SPECIAL NOTES

API publications necessarily address problems of a general nature. With respect to particular circumstances, local, state, and federal laws and regulations should be reviewed.

Neither API nor any of API's employees, subcontractors, consultants, committees, or other assignees make any warranty or representation, either express or implied, with respect to the accuracy, completeness, or usefulness of the information contained herein, or assume any liability or responsibility for any use, or the results of such use, of any information or process disclosed in this publication. Neither API nor any of API's employees, subcontractors, consultants, or other assignees represent that use of this publication would not infringe upon privately owned rights.

Classified areas may vary depending on the location, conditions, equipment, and substances involved in any given situation. Users of this Bulletin should consult with the appropriate authorities having jurisdiction.

Users of this Bulletin should not rely exclusively on the information contained in this document. Sound business, scientific, engineering, and safety judgment should be used in employing the information contained herein.

API is not undertaking to meet the duties of employers, manufacturers, or suppliers to warn and properly train and equip their employees, and others exposed, concerning health and safety risks and precautions, nor undertaking their obligations to comply with authorities having jurisdiction.

Information concerning safety and health risks and proper precautions with respect to particular materials and conditions should be obtained from the employer, the manufacturer or supplier of that material, or the material safety data sheet.

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any authorities having jurisdiction with which this publication may conflict.

API publications are published to facilitate the broad availability of proven, sound engineering and operating practices. These publications are not intended to obviate the need for applying sound engineering judgment regarding when and where these publications should be utilized. The formulation and publication of API publications is not intended in any way to inhibit anyone from using any other practices.

Any manufacturer marking equipment or materials in conformance with the marking requirements of an API standard is solely responsible for complying with all the applicable requirements of that standard. API does not represent, warrant, or guarantee that such products do in fact conform to the applicable API standard.

All rights reserved. No part of this work may be reproduced, stored in a retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher. Contact the Publisher, API Publishing Services, 1220 L Street, N.W., Washington, D.C. 20005.

Copyright © 2007 American Petroleum Institute

FOREWORD

This publication is under the jurisdiction of the API Upstream Executive Committee on Drilling and Production Operations (ECDPO) and was developed with broad-based industry representation including guidance from and in cooperation with the Offshore Operators Committee's (OOC) Environmental Subcommittee.

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use of any method, apparatus, or product covered by letters patent. Neither should anything contained in the publication be construed as insuring anyone against liability for infringement of letters patent.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C., 20005. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone 202-682-8000. A catalog of API publications and materials is published annually and updated quarterly by API, 1220 L Street, NW, Washington, D.C. 20005.

Suggested revisions are invited and should be submitted to the Standards and Publications Department, API, 1220 L Street, NW, Washington, D.C. 20005, standards@api.org.

IMPORTANT INFORMATION CONCERNING USE OF ASBESTOS OR ALTERNATIVE MATERIALS

Asbestos is specified or referenced for certain components of the equipment described in some API standards. It has been of extreme usefulness in minimizing fire hazards associated with petroleum processing. It has also been a universal sealing material, compatible with most refining fluid services.

Certain serious adverse health effects are associated with asbestos, among them the serious and often fatal diseases of lung cancer, asbestosis, and mesothelioma (a cancer of the chest and abdominal linings). The degree of exposure to asbestos varies with the product and the work practices involved.

Consult the most recent edition of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, Occupational Safety and Health Standard for Asbestos, Tremolite, Anthophyllite, and Actinolite, 29 *Code of Federal Regulations* Section 1910.1001; the U.S. Environmental Protection Agency, National Emission Standard for Asbestos, 40 *Code of Federal Regulations* Sections 61.140 through 61.156; and the U.S. Environmental Protection Agency (EPA) rule on labeling requirements and phased banning of asbestos products (Sections 763.160-179).

There are currently in use and under development a number of substitute materials to replace asbestos in certain applications. Manufacturers and users are encouraged to develop and use effective substitute materials that can meet the specifications for, and operating requirements of, the equipment to which they would apply.

SAFETY AND HEALTH INFORMATION WITH RESPECT TO PARTICULAR PRODUCTS OR MATERIALS CAN BE OBTAINED FROM THE EMPLOYER, THE MANUFACTURER OR SUPPLIER OF THAT PRODUCT OR MATERIAL, OR THE MATERIAL SAFETY DATA SHEET.

CONTENTS

	Page
1 SCOPE	1
1.1 Definitions	1
2 WASTE MINIMIZATION PRACTICES	2
3 CONTRACTUAL OBLIGATIONS	2
4 GENERAL	3
5 PREPARATORY CONSIDERATIONS	3
5.1 Permits Required	3
5.2 Safety Practices	4
6 GUIDELINES FOR ABRASIVE BLASTING	4
6.1 Overview	4
6.2 Recommendations and Operational Controls	4
7 GUIDELINES FOR WATER BLASTING	5
7.1 Overview	5
7.2 Recommendations and Operational Controls	5
8 GUIDELINES FOR MECHANICAL PREPARATION	6
8.1 Overview	6
8.2 Recommendations and Operational Controls	6
9 HOUSEKEEPING AND WORK COMPLETION	6
10 ZONE DESCRIPTIONS AND CONTAINMENT/CONTROL OPTIONS	7
APPENDIX A REFERENCED DOCUMENTS	9
APPENDIX B ZONES OF OFFSHORE FACILITIES	11
Figures	
1 Zones of a Platform	11
2 Zones of a Jackup Drilling Rig	12
3 Zones of a Semi-submersible Drilling Rig	13
4 Zones of a Drill Ship	14
5 Zones of a FPSO	14
6 Zones of a SPAR	15
7 Zones of a TLP	16

Planning and Conducting Surface Preparation and Coating Operations for Oil and Natural Gas Drilling and Production Facilities in a Marine Environment

1 Scope

Worldwide, marine exploration, production, development and decommissioning operations are conducted from a variety of structures (installations, as defined herein). These installations must be inspected periodically and maintained in order to assure structural integrity and minimize pollution risks. Maintenance of an offshore structure, regardless of its classification, necessarily includes blasting and coating activities. The purpose of this publication is to establish practices and procedures that should be followed to minimize the discharge of spent blast abrasive, and paint overspray to the surrounding waters during these activities, to meet the spirit of MARPOL Annex V. Additionally, any maintenance waste which is captured must be properly packaged and shipped to shore for disposal. This publication also addresses procedures to contain and capture maintenance waste, including, but not limited to, spent blast abrasive and associated materials, during such maintenance activities on marine structures. The safety of personnel is the most important consideration for all work activities. Consequently, any blasting and coating work conducted shall consider the safety of personnel as paramount. Other types of discharges that may be permitted by various regulatory authorities, are outside the scope of this document. These would include (1) discharges in compliance with a relevant governmental permit (e.g., the applicable provisions of the U.S. Clean Water Act or the applicable sections of European Community [EC] Dangerous Substances Directives), (2) discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified and subject to a condition in such permit, and (3) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application which are caused by events occurring within the scope of relevant operating or treatment systems.

Additionally, containment issues for operations below the water line are outside the scope of this document.

1.1 DEFINITIONS

The following definitions are provided to help clarify and explain the use of certain terms in this publication. Users should recognize that certain terms utilized in this publication may have a different meaning than in other API publications.

1.1.1 abrasive blasting: The operation of cleaning or preparing a surface by forcibly propelling a stream of abrasive material against the surface.

1.1.2 barrier: Items so placed as to prevent movement of personnel or material from one area to another.

1.1.3 coating operations: The operation of placing or replacing the coating, which is generally paint, on a surface that has been appropriately cleaned.

1.1.4 containment system: The cover panels, screens, tarps, scaffolds, plywood, supports, and shrouds used to enclose a work area or coating removal tool. The purpose is to minimize or prevent the abrasive coating preparation materials generated during surface preparation from entering into the environment, and to facilitate the controlled collection of the abrasive materials, as applicable, for recycling or disposal.

1.1.5 contractor: Any person or company that contracts or subcontracts to provide services to the owner/operator.

1.1.6 discharge: For the purpose of this document, a discharge is any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of spent blast abrasive, paint overspray, or other materials associated with surface preparation and coating operations.

1.1.7 installation: For the purpose of this publication, a vessel or structure of any type, operating in the marine environment, including any facility, vessel, rig, platform, or other vehicle or structure, domestic or foreign, such as fixed and floating facilities and MODUs, used for offshore minerals exploration, production, development and decommissioning operations.

1.1.8 maintenance waste: Materials collected while maintaining and operating the installation, including, but not limited to, soot, machinery deposits, scraped paint, deck sweepings, wiping wastes, and rags.

1.1.9 MARPOL 73/78: The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating to that Convention.