

Material Verification Program for New and Existing Assets

API RECOMMENDED PRACTICE 578
FOURTH EDITION, FEBRUARY 2023



American
Petroleum
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Material Verification Program for New and Existing Assets

1 Scope

1.1 Purpose

The purpose of this document is to provide recommended practices for an owner/operator to develop and implement a material verification program (MVP) as part of an asset integrity program. The MVP uses positive material identification (PMI) and other testing and administrative methods to verify that the nominal composition of an asset, an asset component, or weldment (or any other tested item) is consistent with the selected or specified construction materials.

A well-designed and well-implemented MVP is an important management system used to minimize the potential for release of hazardous substances due to nonconforming materials of construction.

1.2 About This Document

This recommended practice addresses MVPs involving ferrous and nonferrous alloys during the construction, installation, maintenance, and inspection of new and existing process equipment. It applies to metallic materials purchased for use either directly by the owner/operator or indirectly, through distributors, fabricators, or contractors, and includes the supply, fabrication, and installation of these materials.

This recommended practice is applicable to all refining and petrochemical industries and may be applied in other industries and or businesses at the discretion of the owner/operator. It is intended to be applied by any owner/operator wishing to verify and/or validate that the materials of construction received, fabricated, and/or installed are in accordance with purchase documents and/or company specification(s).

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda/errata) applies.

API Recommended Practice 571, *Damaging Mechanisms Affecting Fixed Equipment in the Refining Industry*

API Recommended Practice 580, *Risk Based Inspection*

API Recommended Practice 753, *Safe Operation of Hydrofluoric Acid Alkylation Units*

API Recommended Practice 939-C, *Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil Refineries*

ASME¹ Boiler and Pressure Vessel Code (BPVC), *Section II: Materials (Part A: Ferrous Material Specifications; Part B: Nonferrous Material Specifications; Part C: Specifications for Welding Rods, Electrodes, and Filler Metals; Part D: Properties)*

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

¹ American Society of Mechanical Engineers, Two Park Avenue, New York, New York 10016, www.asme.org.