Wet Abrasive Blast Cleaning

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Foreword

Wet abrasive blast (WAB) cleaning is performed using a mixture of water, air, and abrasives. The water wets the abrasive and helps to substantially reduce dispersion of fine particulates (dust) resulting from the breakup of abrasive media, surface corrosion products, and existing coatings. WAB cleaning is an alternative to dry abrasive blast or waterjet[1] cleaning.

Other generic or manufacturer-specific terms used to describe specific WAB cleaning systems are: fluidized abrasive blast cleaning, water shroud, wet-head blasting, water-enclosed abrasive blasting, wet blasting, low volume water abrasive blasting, slurry blasting, abrasive waterjetting (AWJ), or abrasive injected waterjetting/blasting (AIWJ).

Scope

This technical report discusses equipment, procedures, materials, and the resulting substrate conditions involved in a variety of WAB cleaning methods currently available for commercial use. It also discusses the effect that the water present with these wet cleaning methods has on achieving the defined degree of cleaning of steel surfaces in accordance with the wet abrasive blast cleaning standards found in the list of Referenced Standards and Other Consensus Documents. It is intended for use primarily by specifiers, owners, painting contractors, inspectors, and others involved in surface preparation of industrial structures.

Rationale

This report was originally issued in 1998 and has been revised to include additional configurations of equipment setup as well as current (2022) developments in the design of wet abrasive blast cleaning systems and nozzles. This TR provides a foundation to assist users to determine the quantity and quality of water, abrasive, and air.

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Referenced Standards and Other Consensus Documents

The latest edition, revision, or amendment of the referenced documents in effect shall govern unless otherwise dated.

AMPP/NACE/SSPC, www.ampp.org:	
SSPC-AB 1	Mineral and Slag Abrasives
SSPC-AB 3	Ferrous Metallic Abrasive
SSPC-Guide 15	Field Methods for Extraction and Analysis of Soluble Salts on Steel and Other Nonporous Substrates
SSPC-SP 5 (WAB)/NACE WAB-1	White Metal Wet Abrasive Blast Cleaning
SSPC-SP 6 (WAB)/NACE WAB-3	Commercial Wet Abrasive Blast Cleaning
SSPC-SP 7 (WAB)/NACE WAB-4	Brush-Off Wet Abrasive Blast Cleaning
SSPC-SP 14 (WAB)/NACE WAB-8	Industrial Wet Abrasive Blast Cleaning
SSPC-SP 10 (WAB)/NACE WAB-2	Near-White Metal Wet Abrasive Blast Cleaning
SSPC-VIS 1	Guide and Color Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning

[1] Waterjetting is defined as "use of standard jetting water discharged from a nozzle at pressures of 70 MPa (10,000 psig) or greater to prepare a surface for coating or inspection."[3] Standard jetting water does not contain sediments or abrasive media.