SSPC: The Society for Protective Coatings

Guide to SSPC-VIS 5/NACE VIS 9

Guide and Reference Photographs for Steel Surfaces Prepared by Wet Abrasive Blast Cleaning

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1. Scope

1.1 This Guide describes the use of Reference Photographs depicting the appearance of unpainted, rusted carbon steel prior to and after cleaning by wet abrasive blast cleaning (WAB) (slurry blasting). The wet abrasive blast cleaning techniques and equipment are described in the SSPC-TR 2/NACE 6G198[1] and the visual conditions are defined in SSPC-SP10/NACE No. 2,[2] SSPC-SP 6/NACE No. 3,[3] and ISO[(1)] 8501-1:1988 (E).[4] SSPC and NACE International Reference Photographs are intended to supplement the written standards SSPC-SP10/NACE No. 2, SSPC-SP 6/NACE No. 3, and ISO 8501-1:1988 (E). Pictures and descriptions of flash rusting are included for illustrative purposes. The written standards are the primary means to determine conformance with cleaning requirements. The photographs should not be used as a substitute for these standards.

2. Description

2.1 The Reference Photographs consist of a series of 1:1 (actual size) color photographs that represent various conditions of unpainted steel surfaces prior to and after surface preparation by wet abrasive blast cleaning (see Sections A.1 and A.2).

2.1.1 This Guide is applicable to surfaces produced by a variety of wet abrasive blast cleaning techniques. Wet Abrasive Blast Cleaning (WAB) is performed using a mixture of fresh water and abrasive where the elimination or control of abrasive dust is required. The abrasive is the primary cleaning mechanism. Two systems for wet abrasive blast cleaning are commonly encountered: air/water/abrasive blast cleaning, which uses compressed air to propel the abrasive; and pressurized water/abrasive blast cleaning, which uses water to propel the abrasive. Although prepared from unpainted steel, the photographs are also suitable for depicting the appearance

(1) International Organization for Standardization (ISO), 1 rue de Varembe, Case Postale 56, CH 1121 Geneva 20, Switzerland. ISO standards are available from the American National Standards Institute, 11 W. 42nd Street, New York, NY 10036.

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of painted steel after wet abrasive blast cleaning to the degree of cleanliness indicated.

2.1.2 The user of this Guide should designate the degree of cleaning as WAB 10 "Wet Near-White Blast Cleaning," or WAB 6 "Wet Commercial Blast Cleaning." (See Section 4.2.)

2.1.3 This Guide can be used to clarify the acceptable level of flash rusting allowed prior to the application of protective coatings. The coating manufacturer should be contacted to verify that the coating material selected is suitable for application over the degree of flash rusting that has been specified (see Sections A.1, A.2, and A.3).

2.1.4 The user of this Guide should designate the maximum degree of flash rust permissible as None (the condition immediately after cleaning), Light (L), Moderate (M), or Heavy (H) Flash Rust (see Section 4.4).

2.2 DEFINITIONS

2.2.1 Air/water/abrasive blast cleaning is a cleaning method in which water is injected into the air/abrasive stream generated by conventional air-pressurized abrasive blast cleaning equipment.

2.2.2 Water/abrasive blast cleaning is a cleaning method in which abrasive is injected into the water stream generated by conventional fluid pumps.

2.3 GENERIC TERMS: In the following sections of this Guide, the term "wet abrasive blast cleaning" (WAB) covers air/water/abrasive blast cleaning and water/abrasive blast cleaning without differentiation.

2.3.1 Descriptive Terms: Other generic terms to describe specific air/water/abrasive blast cleaning methods are: water shroud or wet-head blasting; wet blasting; low-volume water abrasive blasting; and slurry blasting. Other generic terms to describe specific water/abrasive blast cleaning methods are: slurry blasting; abrasive waterjetting (AWJ); or abrasive-injected waterjetting/blasting (AIWJ).

3. Referenced Publications

3.1SSPC AND SSPC/NACE INTERNATIONAL JOINT PUBLICATIONS:

SSPC-TR 2/NACE 6G198	Wet Abrasive BlastCleaning
SSPC-SP 5/NACE No. 1	White Metal Blast Cleaning
SSPC-SP 6/NACE No. 3	Commercial Blast Cleaning
SSPC-SP 10/NACE No. 2	Near-White Blast Cleaning
SSPC-SP 14/NACE No. 8	Industrial Blast Cleaning
SSPC-SP 7/NACE No. 4	Brush-Off Blast Cleaning
SSPC-SP 1	Solvent Cleaning
SSPC-VIS 1[5]	Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
SSPC-VIS 4/NACE VIS 7[6]	Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting

3.4 INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO) STANDARD:

ISO 8501-1 Preparation of steel substrates before application of paints and related products (visual assessment of surface cleanliness–Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings.

4. Conditions Depicted

4.1 INITIAL CONDITIONS: The Reference Photographs illustrate two initial conditions of previously unpainted, rusted carbon steel before surface preparation.

Condition C: Steel surface completely covered with rust, little or no pitting visible (SSPC-VIS 1).

Condition D: Steel surface completely covered with rust, pitting visible (SSPC-VIS 1).

4.2 END CONDITION: The Reference Photographs illustrate surfaces prepared by wet abrasive blast cleaning using one abrasive. The various degrees of cleaning represented are:
SSPC-SP 6/NACE No. 3 Commercial Blast Cleaning
SSPC-SP 10/NACE No. 2 Near-White Blast Cleaning

The Reference Photographs (C WAB-10, C WAB-6, D WAB-10, and D WAB-6) depict the appearance immediately after wet abrasive blast cleaning. The photographs of initial condition and the photographs after cleaning depict different areas of the steel plate.

Note: The WAB-6 Reference Photographs are comparable to the degree of staining permitted in C Sa 2 and D Sa 2 of ISO 8501-1. The WAB-10 Reference Photographs are comparable to the degree of staining permitted in C Sa 2-1/2 and D Sa 2-1/2 of ISO 8501-1. Also see SSPC-VIS 1 and Section 4.5 below.

Illustrative photos for all cases of cleaning, flash rust, and Conditions A and B (Rust Grades A and B) are not included. Wet abrasive blast cleaning can be used to produce SSPC-SP 5/NACE No. 1[7], SSPC-SP 10/NACE No. 2, SSPC-SP 6/NACE No. 3, SSPC-SP 7/NACE No. 4[8] and SSPC-SP 14/NACE No. 8[9] on all steel conditions - A, B, C, and D.

4.3 Variations in texture, shade, color, tone, pitting, flaking, etc., of steel surfaces should be considered when comparing with the reference photographs.

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