



SURFACE PREPARATION STANDARDS

General Information

Steel Structures Painting COUNCIL STANDARD

DESCRIPTION

SSPC-SP 1

Solvent Cleaning – A method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants from steel surfaces. It is intended that solvent cleaning be used prior to the application of paint and in conjunction with surface preparation methods specified for the removal of rust, mill scale, or paint.

SSPC-SP 2 (St 2)

Hand Tool Cleaning – A method of preparing steel surfaces by the use of non-power hand tools. Hand tool cleaning removes all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter. It is not intended that this process remove adherent mill scale, rust, and paint. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.

SSPC-SP 3 (St 3)

Power Tool Cleaning – A method of preparing steel surfaces by the use of power assisted hand tools. Power tool cleaning removes all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter. It is not intended that this process remove adherent mill scale, rust, and paint. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.

SSPC-SP 5 /NACE No.1 (Sa 3)

White Metal Blast Cleaning – A white metal blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter.

SSPC-SP 6 /NACE No.3 (Sa 2)

Commercial Blast Cleaning – A commercial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter, except for staining. Random staining shall be limited to no more than 33 percent of each unit area of surface and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings.

SSPC-SP 7 /NACE No.4 (Sa 1)

Brush-Off Blast Cleaning – A brush-off blast cleaned surface shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife after abrasive blast cleaning has been performed. The entire surface shall be subjected to the abrasive blast. The remaining mill scale, rust, or coating shall be tight. Flecks of the underlying steel need not be exposed whenever the original substrate consists of intact coating.

SSPC-SP 10 /NACE No.2 (Sa 2 1/2)

Near-White Blast Cleaning – A near-white metal blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter, except for staining. Random staining shall be limited to no more than 5 percent of each unit area of surface and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coating.

SSPC-SP 11

Power Tool Cleaning to Bare Metal - Metallic surfaces which are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide, corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portion of pits if the original surface is pitted. When painting is specified, the surface shall be roughened to a degree suitable for the specified paint system. The surface profile shall not be less than 1 mil (25 micrometers.)

SSPC-SP 12 /NACE No.5**Visual Surface Preparation Definitions**

WJ-1 Surface shall be free of all previously existing visible rust, coatings, mill scale, and foreign matter and have a matte metal finish.

WJ-2 Surface shall be cleaned to a matte finish with at least 95% of the surface area free of all previously existing visible residues and the remaining 5% containing only randomly dispersed stains of rust, coatings, and foreign matter.

WJ-3 Surface shall be cleaned to a matte finish with at least two-thirds of the surface free of all visible residues (except mill scale), and the remaining one-third containing only randomly dispersed stains of previously existing rust, coatings, and foreign matter.

WJ-4 Surface shall have all loose rust, loose mill scale, and loose coatings uniformly removed.

Nonvisual Surface Preparation Definitions

SC-1 Surface shall be free of all detectable levels of contaminants as determined using available field test equipment with sensitivity approximating laboratory test equipment. For purposes of this standard, contaminants are water-soluble chlorides, iron-soluble salts, and sulfates.

SC-2 Surface shall have less than $7\mu\text{g}/\text{cm}^2$ chloride contaminants, less than $10\mu\text{g}/\text{cm}^2$ of soluble ferrous ion levels, and less than $17\mu\text{g}/\text{cm}^2$ of sulfate contaminants as verified by field or laboratory analysis using reliable, reproducible test equipment.

SC-3 Surface shall have less than $50\mu\text{g}/\text{cm}^2$ chloride and sulfate contaminants as verified by field or laboratory analysis using reliable, reproducible test equipment.

SSPC-14 /NACE No.8

Industrial Blast Cleaning – when viewed without magnification, surfaces shall be free of all visible oil, grease, dust, and dirt. Traces of tightly adherent mill scale, rust and coating residues are permitted to remain on 10% of each unit area of the surface if they are evenly distributed. The traces of mill scale, rust, and coating shall be considered tightly adherent if they cannot be lifted with a dull putty knife. Shadows, streaks, and discolorations caused by stains of rust, stains of mill scale, and stains of previously applied coating