



zandleven coatings

Purity levels:

Zandleven indicates the recommended purity level of the steel surface before applying the coating systems according to the ISO norm 8501-1:2007

This norm defines purity levels with the help of photographs.

This standard has been recognized internationally.

Other important standards are:

- ◆ Steel Structure Painting Council, USA: Surface Preparation Specifications (SSPC-SP);
- ◆ British Standards Institution (BS 4232);
- ◆ Deutsche Institut für Normalisation (DIN 55 928 teil 4);
- ◆ Svensk standard (SIS 05 5900).

The ISO-norm 8501-1:1988 is equal to the Swedish standard SIS 05 5900-1967. This contains the following rust levels:

- Steel which is totally covered with well attaching mill scale and on which no or little rust is growing.
- Steel which is partially covered with mill scale and on which rusting has started.
- Steel which is hardly covered with mill scale because of rusting or of which mill scale can easily be scraped off, a little pit corrosion is already visible.
- Steel from which mill scale has been totally rusted and which contains evident put corrosion.

A comparison between the different norms has been written down in the following table.

Swedish SIS 05 5900	English BS 4232	German DIN 55 928	American SSPC-SP	International ISO-norm 8501-1
Sa 3	First quality	Sa 3	SP5 white metal blast cleaning	Sa 3
Sa 2½	Second quality	Sa 2½	SP 10 near white metal blast cleaning	Sa 2½
Sa 2	Third quality	Sa 2	SP 6 commercial blast cleaning	Sa 2
St 3	—	St 3	SP 3 powertool cleaning	St 3
St 2	—	St 2	SP 2 hand tool cleaning	St 2

Blasting Sa

Surface treatment through blasting is indicated with the code 'Sa'.

Before blasting possibly present thick rustlayers must be removed. Oil, grease and dirt, as far as it is visible, must also be removed. After blasting loose dust and grit should be removed.

Sa 3 Blasting to silver blank

Observed with the naked eye the surface seems to be free from visible oil, grease and dirt, as well as free from mill scale, rust, paint layers and strange materials.

The surface should have an even metal colour.

Sa 2½ Very carefully blasting

Observed with the naked eye the surface seems to be free from visible oil, grease and dirt, as well as free from mill scale, rust, paint layers and strange materials.

Possibly present traces of pollution should only be visible as slightly faded stains and stripes.

Sa 2 Carefully blasting

Observed with the naked eye the surface seems to be free from visible oil, grease and dirt, as well as free the largest part needs to be free from mill scale, rust, paint layers and strange materials.

Possibly present pollutions should be stuck thoroughly (not removable with a blunt (filling) knife).



St 3 Very carefully rinsing (hand/machine)

Observed with the naked eye the surface seems to be free from visible oil, grease and dirt, as well as free from loose parts of mill scale, rust, paint layers and strange materials, so that a metal glossy surface will be obtained.

St 2 Carefully rinsing (hand/machine)

Observed with the naked eye the surface seems to be free from visible oil, grease and dirt, as well as free from loose parts of mill scale, rust, paint layers and strange materials.

If oxidation has occurred between blasting and application, the surface should be reblasted to the specified visual standard.

Roughness

Blasting of steel causes a certain roughness on the surface. This roughness is in general important for the attaching behaviour of the applicable coating system.

To specify the roughness, different values are used:

Ra = average distance to the imaginary centreline which can be drawn between the tops and dales)
Ra is equal to the C.L.A. (Centre Line Average ISO 3274)

Rz = average height from top to dale (blasting profile)

Rt = maximum height from top to dale

Blasting profile (Rz) is on average 5 times Ra
Ra 10-12 μm = Rz 50-60 μm

The measurement of the dry film thickness' on blasted steel up to a thickness of 50 micrometer is inaccurate. At a Ra value of 10-12 μm and a dry film thickness of 40 micrometer the thickness of the layers on the tops will be on average 20 micrometers less.

Correction values

The roughness of the surface must be measured and to be corrected regarding the nominal dry film thickness according to the table below, unless otherwise agreed.

If the surface profile is know and conforms to ISO 8503-1, corrections values given in the table below.

Surface profile in accordance with ISO 8503-1	Correction value
Fine	10
Medium	25
Coarse	40

Sharp edges, corners and weld seams must be stripe coated in order to achieve the specified dry film thickness.