



WORK GUIDELINE No. 2

Cleaning of steel reinforcement

Wet-blasting, sand-blasting and manual cleaning

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1 Purpose and scope

In areas where concrete has been removed by high-pressure water-jet, mechanically powered or hand operating tools, the exposed corroded reinforcement shall be cleaned to SA 2 ½ degree (commercial blast) by sand-blasting, water-jet technology or manually.

2 Reference documents

Technical Data Sheet Coat/6 for S PRIMER (Epoxy Zinc Chromate Primer)
Technical Data Sheet Adh/3 for L.A. 2S (Epoxy Liquid Adhesive 2S)

3 Cleaning of steel reinforcement

On principle, removal of loose concrete and rust from reinforcement shall be carried out by the same Contractor. However, these 2 operations should be carried out at separate times.

After loose concrete is removed by water-jet or mechanically powered tools, the cleaning of steel reinforcement can start. Two main systems can be used:

- 1) Sand-blasting
- 2) Water-jet with chloride free water with adduction of quartz sand up to 0.8 mm size

3.1 Manual cleaning of steel reinforcement

In areas of minor corrosion centres where concrete has been removed manually or by mechanical hammers, it is allowed to carry out a mechanical manual cleaning of steel reinforcement to ST 2 degree.

4 Inspection of cleaned steel reinforcement

The required SA 2 ½ degree of cleaning shall be inspected by both contractor's Engineer and Supervisor on the basis of the Swedish Standard 05 5900 (comparative method).

5 Identification of deep corrosion cuts in steel reinforcement

After cleaning, steel reinforcement shall be inspected to detect the presence of deep corrosion cuts in the reinforcing bars. The depth of cuts shall be measured and the maximum depth recorded. Reduction of reinforcement bar diameter shall be also established. All the relevant data shall be entered in the reinforcement record sheet and the structural design Engineer shall be informed accordingly, in order to decide the necessary measures such as the replacement of damaged reinforcement by new ones. Structural design Engineer shall also indicate the method statement.

6 Special requirements

Steel reinforcement shall be primed, as soon as possible, but not later than 4 hours, after sand-blasting with S PRIMER (Epoxy Zinc Chromate Primer) or L.A. 2S (epoxy liquid adhesive 2S) to prevent the formation of new corrosion. In case of wet sand-blasting steel bars and

surrounding concrete must be dried up with clean compressed air before application of L.A. 2S.

The freshly applied S PRIMER or L.A. 2S shall be strewed with dry silica sand (0.3 – 0.8 mm) to improve the adhesion of the cement mortar to be applied later on.

For L.A. 2S application, see Work Guideline no. 4

7 Instructions for protective coat preparation and application

Before the application of S PRIMER or L.A. 2S, the condition of steel reinforcement and eventual deep corrosion cuts in the bars and reduction of their cross-section shall be inspected by both client's supervisor (Engineer) and contractor's representative.

7.1 Technical information

See SINIT Technical Data Sheet Coat/6 for S PRIMER (Epoxy Zinc Chromate Primer)

See SINIT Technical Data Sheet Adh/3 for L.A. 2S (Epoxy Liquid Adhesive 2S)

7.2 Material preparation

See SINIT Technical Data Sheet Coat/6 for S PRIMER (Epoxy Zinc Chromate Primer)

See SINIT Technical Data Sheet Adh/3 for L.A. 2S (Epoxy Liquid Adhesive 2S)

7.3 Application

See SINIT Technical Data Sheet Coat/6 for S PRIMER (Epoxy Zinc Chromate Primer)

See SINIT Technical Data Sheet Adh/3 for L.A. 2S (Epoxy Liquid Adhesive 2S)

The prepared protective coat shall be applied to clean and dry reinforcement by brush or spray. Special attention shall be paid to a thorough and complete protective coat application behind the steel reinforcement.

Remove by brush any sagging.

Overcoating between 1 and 12 hours, depending on temperature.

All the protective coats shall be applied in uniform thicknesses.

The protective coat can be applied, in a uniform thickness, by brush, roller or spray techniques with a consumption varying from 0.150 to 0.200 kg/m² for S PRIMER, and from 0.250 to 0.450 kg/m² for L.A.2S depending on surface conditions.