

Testing of Reinforcement




Structural Guide

Why Test Reinforcement

Construction is done as per the design documents such as drawings and specifications.
It is required to make sure the used materials are up to the standards

We do testing to know if the specified requirements have been met



Types of Reinforcement Tests

Tensile Strength

Rebend Test

Chemical Analysis

Geometry of the rebar



Tensile Strength Test

The most common type of test.

The tensile strength of the rebar and its yield strength is very important in designs.

Rebar should have the characteristic strength assumed in the design.

During the construction, the strength of the rebar was checked from the samples taken randomly.

One test piece per each 30t with at least three test pieces per nominal diameter is the sample criteria specified in the BS 4449:2005.

Characteristic yield strength of the reinforcement

Tensile strength of the reinforcements

Percentage of elongation

Mass per meter



Rebend Test

The possibility of forming surface cracks in the reinforcement when they are bending is checked in this test.

Rebar is bent twisted and sees whether there are cracks in the surface.

Bend the test pieces through an angle of 90° , around a mandrel with a diameter not exceeding those specified in the standard, age the test piece and then bend back by at least 20° .

The specimen can be accepted if no sign of fracture or cracks is visible.



Chemical Analysis

Chemical composition will be checked

The carbon equivalent value will be checked

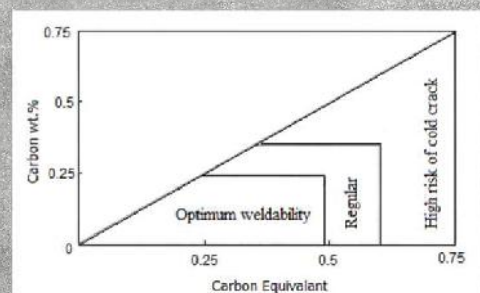
Carbon

Silicon

Sulphur

Phosphorus

Manganese, etc.



Rebar Rib – Surface Geometry

Surface geometry reinforcement bars are discussed with reference to the following

Dimensions of Ribs

Number of Ribs

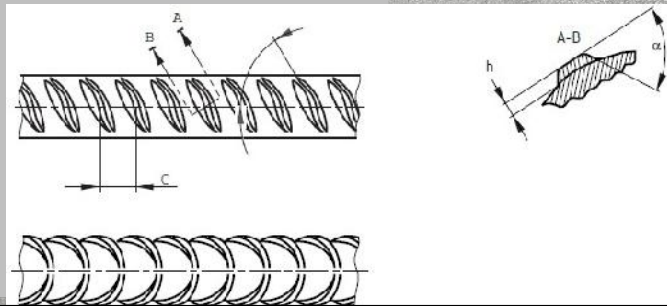
Configuration of transverse and longitudinal ribs.

The following information or parameters/dimensions are considered to specify the rib geometry.

Rib Height

Rib Spacing

Rib Inclination



Thank you



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Civil & Structural Engineering Knowledge Base