

REINFORCING TECHNIQUE WITH BSt 500

The networking of all parties to reduce costs and improve quality

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Summary

Reinforcement is the soul of reinforced concrete construction and holds together the concrete. It is embedded in concrete, invisible and usually badly paid. This paper will focus on the necessity of forming a network of all parties involved. It will point out various possibilities of improving quality and of minimizing costs as well as ways of further developing the reinforcing technique. This paper will mainly consider high-strength steel BSt 500 (yield strength 500 MPa) as used in bars, rings or welded fabrics.

1 Introduction

Today's state of the art is based on German/European experiences that are also applicable to China. In Germany, 4 million tons of reinforcing steel are installed per year, which amounts to 50 kg per citizen and year.

Fig. 1 illustrates the annual consumption over the past years. Steel grade BSt 420 was still predominantly used in Germany 20 years ago. Today this grade has been almost exclusively replaced by the steel grade BSt 500. The price / performance ratio improves with increasing steel strength (price per 1 Mp and per m).

Reinforcing steel BSt 420	$\frac{\text{price per ton of steel}}{\text{yield strength}}$	$\times 0.0785 = \frac{27500}{420} \times 0.0785 =$
5.1 Cent/Mp·m		
Reinforcing steel BSt 500		$= \frac{28500}{500} \times 0.0785 =$
4.4 Cent/Mp·m		
Prestressing wire strand 1860/1600		$= \frac{65000}{1600} \times 0.0785 =$
3.2 Cent/Mp·m		