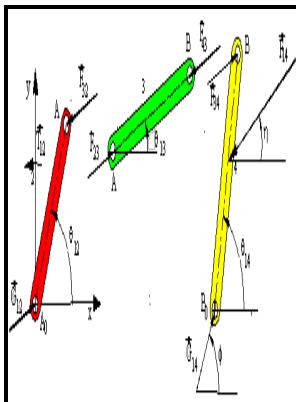


# Simplified calculation of roll force and torque

British Iron and Steel Institute - Calculating Torque With Examples



Description: -

-Simplified calculation of roll force and torque

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Translation -- No.5300.Simplified calculation of roll force and torque

Notes: Translated from Stahl und Eisen, 86, October 6 1966.

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## Bolt Torque, Axial Clamp Force, Bolt Diameter Calculator

At entry to the roll gap the thermocouple C , closest to the surface, indicates a fairly large temperature drop, the magnitude of which depends on the true contact area, the pressure distribution, the temperature of the roll surface, the relative velocity, the interfacial shear stress, the development of scales and finally, on the interfacial heat transfer coefficient.

## Designing Unwind Tension Control

While the data for 20 and 160 rpm were plotted separately, the lower forces at the higher speeds are clearly observable.

## Roll force, torque, lever arm coefficient, and strain distribution in edge rolling

In these cases either a pneumatic pressure or electrical power is applied to the brake assembly to generate the required torque. Additionally, if multiple materials, thicknesses and web widths are to be unwound, then the braking system must be able to compensate in order to deliver the required forces throughout the range of products.

## Technical FAQ: Calculating chain tension

The classical theories of rolling continue to be widely used in practice although finite element methods can provide a more detailed analysis of the deformation during rolling. However, for the purpose of this presentation we will consider brakes that are either pneumatic or electric in nature. Finally, brakes do not lend themselves well to applications where the roll of material needs to be accelerated prior to unwinding, such as in automatic splicing systems.

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