Uddeholms AB:

Uddeholms AB is a tool steel manufacturing company located in Hagfors, Sweden. Founded in 1668 and today it has around 900 employees, and produce ca. 70000 tons of steel every year to customers world over. It has more than 300 active patents, which demonstrates its strong focus on research and development. Uddeholm steels are widely used in application segments such as automotive, packaging, consumer goods, general engineering and appliances.

Problem definition:

Toughness is an important property of a material, used in the process of selecting suitable material for a given application. Property of a material in turn depends on many aspects and among them; dimension of the steel ingot (ingot is a block of steel) produced is an important one. As the dimension of the steel ingots increases, toughness (material property) goes down. However, steel factories produce ingots of the same material in different dimensions to satisfy the market demands. Therefore, the testing (toughness) of samples from all different dimensions of the same material will be very expensive for the steel companies. **Therefore, the task is to figure out how the toughness will vary for the intermediate dimension**.