

14 Abrasive cutting

Abrasive cutting is a grinding procedure which is exclusively intended for parting off material, as in sawing.

This method is applied to part off solid material, profiles and tubes.

For cutting-off wheels, corundum or silicon carbide is used as the tool material. Artificial resin or rubber is the binder for the cutting-off wheels.

Material loss due to cutting off is kept low, since the cutting-off width B (B approximately 1% of the wheel diameter) is low.

During abrasive cutting, the cutting speed ranges from 45 to 80 m/s.

Maximal cutting-off diameter d_{\max} should not exceed $1/10$ of the grinding wheel diameter.

$$d_{\max} = 1/10 D$$

d_{\max} in mm maximally feasible cutting-off diameter

D in mm grinding wheel diameter

The cutting-off wheel diameters range from 100 to 500 mm, and wheel thickness values from 2 to 5 mm.