

2.7 SURFACE ROUGHENING



Figure 2.19. Surface roughening by disking (Source: Iowa DOT)

Overview

Description: A rough finish on the soil surface with clods three in. across or larger, made by operating a rock disc or other tillage equipment on the contour.

Problem identification: During winter months when the soils do not support vegetation, other erosion control measures must be considered.

Design purpose: Surface roughening reduces runoff velocity, reduces dust, increases infiltration, reduces erosion, traps sediment, and aids in the establishment of vegetative cover with seed. When a finished, graded area cannot be seeded within 14 days, or if finish grading is completed outside the seeding dates, the area should receive a surface roughening treatment. This method should only be used during the late fall or winter months when seeding cannot be done.

Associated practices: Used with slope protection, seedbed preparation, and grading.

Installation: All exposed soil areas should be roughened to a depth of four to six in. when the above conditions are present. All equipment movement must be on the contour. It is important that the tillage depth be achieved with one pass of the equipment: it is important not to overwork the soil. Rough surfaces with uneven soil may appear unattractive or unfinished; however, the rough finish encourages water infiltration, speeds the establishment of vegetation, and decreases runoff velocity. This method should be used in clay soils. Areas on which surface roughening has been used should be seeded as soon as weather conditions permit in the next seeding period.

Maintenance/inspection: Inspect for erosion damage after severe rainstorms. Look for rivulets and small gullies. Areas of damage may be retilled, or the soil may be reworked and mulched.

Design life: Two months in nonfreezing weather; six months in freezing weather.

Estimated cost: Tillage: \$49.00 per acre.