Workers must be trained/competent and aware of associated hazards. Use the “Take Ten” tool if needed. Trainees must work under supervision.

This SOP describes; single or tandem grader blading, spot blading, pulling side slope, machine patching and changing blades/teeth.

**Potential Injuries:** Bumps, Bruises, Scrapes, Burns, Cuts, Eye, Hand, Muscle Pull/Strain, Pinch Points, Slip, Trip and Fall, and Fatigue.

**Potential P&E Incidents:** Struck-by, Unit Striking Stationary Objects (bridges, curbs, rocks, soft spots), Visibility, Weather, Flying Debris, and Exposure.

**Mandatory PPE:** Hardhat, Footwear, Hi Vis Apparel.

**Recommended PPE:** Coveralls, Eyewear, Hand Wear, and Hearing Protection.

**Tools & Equipment:** Appropriate to the task.

### Blading

**Single & Tandem Blading**
- Activate warning lights.
- Position grader to blade in direction of travel.
- Place cone in center of road directly behind grader to forewarn motorists approaching from the rear.
- Place windrow as close to center of road as possible.
- Ensure sufficient space for traffic in both lanes.
- Blade right side of the road with traffic direction.
- Be aware of hazards higher than road surface (bridges, stones, etc).
- Yield to traffic when around or crossing a bridge.
- Make frequent visual checks rearward for any large rocks or hazardous objects placed in the windrow or on the driving surface.
- To exit unit lower mouldboard to ground, set park brake and exits cab using 3 point contact. Be aware of traffic and do not exit cab until dust clears.
- Care must be taken when removing an object with the grader, ensure adequate line of sight before commencing removal.
- Ensure windrow does not exceed 10 Km.
- Be aware that road may be narrow so if meeting traffic yield right of way - as possible. Also, if shoulders are soft or if the road is narrow motor graders may have to pull off the road to let traffic pass (e.g. big trucks or wide loads).
- Pick a safe location to terminate windrow.

**Tandem Blading**
- Once lead grader has traveled approximately 300 metres, the second grader positions mouldboard and blades windrow across road.
- Distance between motor graders should be between 300-500 meters.
- Maintain visual contact.
- Maintain communications to ensure traffic accommodation.
- If lead grader is forced to stop, communicate with the second grader to advise him of the situation.
- In adverse conditions, rear grader may have to stop to allow traffic to pass.
- In extremely dry conditions, blading operations may need to be suspended, dust control operations may be required.
- Continue tandem blading process until completed, until end of shift or blading suspension due to adverse weather.

**Spot Blading**
- Spot blading gravel operations may require the grader to work in the lane of oncoming traffic.
- Take great care in areas with limited visibility due to hills, curves and bridges.
Workers must be trained/competent and aware of associated hazards. Use the “Take Ten” tool if needed. Trainees must work under supervision.

- Operator should be prepared at all times to exit the road in the event of traffic approaching from both directions simultaneously.

- If grade is too steep to allow safe exit from the road surface, operator should pull over as far as safely possible and stop grader.

Pulling Side Slope

- Blade with the flow of traffic.
- Extra care must be taken at culverts and big stones that may be close to surface.
- Material near bridge wings or railway crossings should not be disturbed, lift mouldboard when approaching bridges or railway crossings.

- Where possible the grader should be operated on the road surface, if the grader must operate on the side slope extra caution must be exercised to maintain control of the grader.

Machine Patching

- Set up work zone and prepare road surface.
- Dump truck dumps or spreads material as required. Caution spreading with truck in reverse. (Temperature of product, visibility, depressions)

- Equipment or workers level material in surface defect area, followed by packer or steel roller at a safe distance.
- Work in one lane at a time.
- Care and caution should be taken because use of several related work practices during operation.

Blade/Teeth Changing

Coveralls, Eyewear, Hand Wear, and Hearing Protection must be worn

Changing Blades

- Use appropriate wrenches or bolts on end holes to hold blade on mouldboard while installing new bolts.
- Pound bolts with ball peen hammer on head while tightening nuts to ensure nuts are tight.
- Never put feet or legs under mouldboard.

- If possible complete in shop to utilize stands and safety equipment.
- Task involves awkward positioning and heavy lifting.
- Pull unit into shop or an approach at least 10 meters from the road surface – never complete on the road surface.
- Apply parking brake.
- Do not trust hydraulics. Ensure that mouldboard is secure by either safety chains or safety stands.
- Ensure work area is safe and clear of hazards and use two people – if possible.
- Remove nuts and hammer out bolts one at a time till blade falls.

Changing Teeth

- Pound out old teeth out with hammer and extended handled punch.
- Use vice-grip or pliers to squeeze ring on new teeth and pound new tooth into hole on blade.
- Never put feet or legs under mouldboard.

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Related SOP’s & Manuals


SOP’s: General Safe Use of Hand Tools, Work Zone Signing, Safe Lifting, Communication While Driving, Machine Patching

Training: Work Zone Traffic Accommodation