



SL PUR Slot Filler Installation Guide

Quarterhill road-traffic products,
fiber-optic sensors



Purpose

Embedding a SL PUR sensor strip into an asphalt or concrete road using SL PUR Slot Filler compound.

Before You Start

- Do not use SL PUR Slot Filler below 5 °C.
- Below 10 °C, keep both components warm until just before mixing.
- Keep all contact surfaces dry and clean during and immediately after installation.
- For roads with a gradient, order the optional Thickening Agent to raise the compound's viscosity so it does not flow.

Tools and Equipment

- Road saw with a narrow blade
- Electric or pneumatic jackhammer
- Hammer drill with bits, and an electric screwdriver
- Heavy-duty slow-speed electric drill with mixing paddle
- Textile tape compatible with asphalt and concrete
- Spatulas
- Conduit with at least 20 mm inner diameter
- Screws and dowels, or weights, to fix the hanger bars
- Vacuum cleaner

Materials

- Hanger Bars
- SL PUR Slot Filler: 5 kg POL plus 1 kg ISO per batch, about 2.2 kg per meter of sensor
- Optional Thickening Agent: 25 g per batch

Installation Procedure

- 1. Assemble all tools and materials.** Confirm safety equipment is available and operators are trained on the power tools.
- 2. Mark the sensor location** at least 55 mm wide and 30 mm longer than the strip. Mark the conduit location.
- 3. Cut the opening** at least 35 mm deep across the whole area, and use the jackhammer to bring the full length to at least 30 mm depth. The finished slot is at least 55 mm wide, at least 30 mm deep, and 30 mm longer than the strip.
- 4. Remove** all rubble and vacuum all dust thoroughly.
- 5. Make sure** the asphalt or concrete surface, walls and bottom, is absolutely dry and clean.
- 6. Tape all sides of the slot.** Every SL PUR sensor ships from the factory already covered with tape.
- 7. Position** the SL PUR sensor beside the slot.
- 8. Run** the conduit to its location and pull the passive cables through carefully, without pulling by the end connectors. Test integrity: remove both end caps, point one connector toward the sun or another bright light source, and confirm light appears at the opposite end.
- 9. Clip** Hanger Bars to the sensor strip for positioning over the opening, one at the beginning, one at the end, and at least one every 25 to 30 cm, to keep it level and prevent floating. Confirm every bar is clipped correctly.
- 10. Lower** the sensor strip into the slot at an even height throughout. Fix the hanger bars to the road with screws or weights.
- 11. Set** the cable in its final position and seal the slot or conduit with assembly foam or another sealing material so the SL PUR Slot Filler cannot seep out.
- 12. Fill in two phases:** first to the halfway point, then, after that has cured, completely to the road surface. Total consumption is about 2.2 kg per meter of sensor.
- 13. Prepare the first-phase batch:** 5 kg POL (Component 1) plus 1 kg ISO (Component 2), plus 25 g Thickening Agent (Component 3) if used. Mix in this order:
 - Hand-mix the POL first with a scraper if it has solid deposits.
 - Mix the POL for at least 2 minutes with the heavy-duty slow-speed drill and paddle until homogeneous.
 - Add the Thickening Agent if used and stir about 1 minute.
 - Add the ISO hardener and mix about 2 minutes total.
 - Keep the rotary speed appropriate to avoid trapping air.

- 14. Pour the mixed material** into the slot so it flows beneath the strip and fills the space below completely, until the strip's wider base is nearly covered.
- 15. Wait** until the material has cured but is still tacky at the surface, then remove the hanger bars.
- 16. Mix the second-phase PUR Slot Filler** and fill immediately to the road surface, spreading with a spatula. The material can be poured for about 10 minutes and worked with the spatula for about 20 minutes at 20 °C. Bring the filler up to the road surface without exceeding the height of the sensor strip surface.
- 17. Once the material has gone from liquid to semi-hardened**, remove the tape from the road and the sensor.
- 18. Full cure takes about 60 minutes, temperature dependent.** The lane may reopen after about 120 minutes.

Safety and Handling Notes

- Do not use SL PUR Slot Filler below 5 °C, and keep both components warm below 10 °C until just before mixing.
- Keep all contact surfaces dry and clean during and immediately after installation.
- Do not pull the fiber cable by its end connectors.
- Keep the rotary speed appropriate while mixing to avoid trapping air.
- Use the optional Thickening Agent on graded roads to keep the compound from flowing before it cures.