

# Reducing Splice Failures at the Source

## Installer-Forgiving MV Splice Systems for Fast-Track Grid Projects

### Summary

In real-world projects, splice reliability is often determined during installation. Traditional splice technologies can be sensitive to small deviations. Heat-shrink systems depend on consistent heating and proper bonding, while cold-shrink systems maintained under radial tension can fail following even minor surface damage.

This paper explains why **installer-forgiving splice systems** reduce the likelihood of failure in accelerated grid deployment projects and multi-contractor environments, and how utilities can specify solutions that are less dependent on perfect installation practices.

### Section 1 — Why Traditional Systems Fail Under Real-World Conditions

**Heat-Shrink Systems:** Inconsistent shrinkage or incomplete bonding can leave small voids that allow water and contaminants to enter the splice.

**Cold-Shrink Systems:** Because these systems remain under constant radial tension, even minor cuts or abrasions can initiate tearing and compromise the sealing system.

#### Long-Term Effects

- Mechanical pressure may decrease over time.
- Adhesives can lose adhesion or create air pockets that may initiate partial discharge activity.

### Section 2 — What “Installer-Forgiving” Really Means

An installer-forgiving splice system helps reduce risk when installation conditions are less than ideal. Key characteristics include:

- Reduced dependence on perfect heating or precise tension control.
- Components that conform to cable geometry and reduce sensitivity to minor installation errors.
- Sealing systems that remain reliable under moisture exposure and mechanical stress.

## Section 3 — The Practical Impact on Risk Reduction

Field failure investigations indicate that a significant portion of splice failures can be attributed to installation errors and moisture- or mechanically induced damage—the very failure categories that installer-forgiving designs are intended to mitigate.

### Evaluation Checklist

Use the following checklist to help reduce installation-related splice failures:

- Is there variability risk associated with multiple contractors?
- Is installation likely to take place under schedule pressure or in locations with restricted access?
- Will splices be installed in saturated soils or areas with fluctuating groundwater levels?
- Is mechanical damage from debris, rocks, or abrasion a realistic concern?
- Are documentation and traceability required for each splice installation?
- Are training and certification included early in the project lifecycle?

### Recommended Next Step

Plan a training session or pilot installation for your renewable energy project through the Lovink Academy.

For additional guidance, visit the [Training & Support](#) section within the Renewables resource area.