

	Unit ID: 2294
Domain	TELECOMMUNICATION AND WIRELESS TECHNOLOGY
Title:	Splice fibre optic cables in telecommunications installation
Level: 5	Credits: 6

Purpose

This unit standard is intended for those who Splice fibre optic cables in telecommunications installation. People credited with this unit standard are able to plan and prepare for work, set-up work area for optical fibre cable splicing, install optical fibre connectors for direct termination, conduct fusion splicing, join optical fibre mechanically and test cable joint.

This unit standard is intended for those who work in the telecommunication and wireless technology environment.

Special notes

1. Entry information:

Prerequisites:

- None

2. This unit standard is to be delivered and assessed in the context of information and communication technology.

3. Assessment evidence may be collected from a real or a simulated workplace in which telecommunication and wireless technology operations are carried out.

4. Tools and equipment may include but are not limited to computer, external devices, storage devices and other and basic computer applications.

5. Performance of all elements in this unit standard must comply with industry standards.

6. Glossary of terms

- '*isolation and lockout procedures*' refer to isolating an electrical circuit from the source of supply
- '*specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
- '*ISO*' refers to International Organization for Standards
- '*SANS*' refers South African National Standards.

7. Regulations and legislation relevant to this unit standard include the following:

- Labour Act No. 11, 2007
- Petroleum Products and Energy Amendment Act, 2000

- Occupational Health and Safety Regulations No. 18, 1997 and all subsequent amendments
- ISO 14001 (Environmental Management Standard)
- Petroleum (Exploration and Production) Amendment Act 1993 (Act 2 of 1993)
- Electricity Act, 2000 (Act No. 2 of 2000)

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions, which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Planning and preparation is to include but is not limited to worksite inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and applied.
- 1.2 Safety requirements are followed in accordance with safety plans and policies.
- 1.3 Sign and barricade requirements are identified and adhered to.
- 1.4 Tools and equipment are selected according to requirements of the job.
- 1.5 Faulty tools and equipment are checked for serviceability.
- 1.6 Required material quantities to the work application are identified, obtained, prepared, safely handled and located ready for use.
- 1.7 Environmental protection requirements are identified and applied.

Element 2: Set-up work area for optical fibre cable splicing

Performance Criteria

- 2.1 Lightings are set up to ensure work is carried out

- 2.1 Secure methods are carried out to avoid damage to cable and/or sheath according to manufacturers' instructions.

Element 3: Install optical fibre connectors for direct termination

Performance Criteria

- 3.1 Connector is selected to match terminating frame to design specifications.
- 3.2 Cable end is stripped and sheath removed to expose optical fibres in accordance with connector type in use and workplace procedures.
- 3.3 Optical fibre cable is handled in a safe manner to avoid risk of injury
- 3.4 Coatings are removed from exposed optical fibre to remove all possible contaminants.
- 3.5 Connector is fitted and crimped without damage to fibre or thread according to workplace procedures.
- 3.6 Adhesive is applied and cured according to manufacturers' specifications.
- 3.7 Direct termination is tested for signal strength to manufacturers and design requirements.
- 3.8 Connection end is polished to a smooth flat surface to ensure no optical path redirection after connection is made according to workplace procedures.

Element 4: Conduct fusion splicing

Performance Criteria

- 4.1 Cable end is stripped and sheath removed to expose optical fibres in accordance with splicing method in use.
- 4.2 Coatings are removed from exposed optical fibre to remove all possible contaminants according to workplace procedures.
- 4.3 Cleaver is applied to ensure a clean flat surface.
- 4.4 Fusion tool is set to required heat levels according to standards.
- 4.5 Fused fibres are aligned in a straight line and avoiding bubbles and cracks in joint.
- 4.6 Joint is tested for signal strength to manufacturers and design requirements.

Element 5: Join optical fibre mechanically

Performance Criteria

- 5.1 Cable is stripped and sheath removed to expose optical fibres in accordance with mechanical joining requirements.
- 5.2 Coatings are removed from exposed optical fibre to remove possible contaminants.
- 5.3 Cleaver is applied to ensure a clean flat surface.
- 5.4 Index matching gel is utilised at join to reduce variation in refractive index according to industry standards.
- 5.5 Splicing jig is used in accordance with manufacturers' specification.
- 5.6 Joint is tested for signal strength to manufacturers and design requirements.
- 5.7 Joined fibre is housed and supported in a suitable container in accordance with workplace procedures.

Element 6: Test cable joint

Performance Criteria

- 6.1 Test instruments are referenced and calibration current induced according to workplace procedures.
- 6.2 Different cable tests are performed to ensure joint complies with site specifications, manufacturers and industry standards.
- 6.3 Visual inspection of joint is undertaken to confirm soundness and completeness according to workplace procedures.

Element 7: Complete work and clean up

Performance Criteria

- 7.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 7.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures.
- 7.3 Reusable material is collected and stored in accordance with workplace procedures.
- 7.4 Tools and equipment are cleaned, checked and maintained in accordance with workplace procedures.
- 7.5 Work completion details are finalised in accordance with workplace procedures

Registration Data

Subfield:	Information and Communication Technology
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Body responsible for review:	NTA