



TITLE	SPECIFICATION FOR INSULATING PUTTY AND SELF-FUSING TAPE	REFERENCE CP_TSSPEC_047	REV 2
		DATE:	FEBRUARY 2019
		PAGE: 1	OF 14

TABLE OF CONTENTS

	Page
FOREWORD	3
INTRODUCTION	4
1 SCOPE	4
2 NORMATIVE REFERENCES	4
3 TYPES	4
3.1 Rubber self-fusing tape	4
3.1.4 Dimensions	4
3.1.5 Breaking strength and elongation	5
3.1.6 Adhesion strength.....	5
3.2 Insulation putty	5
3.2.1 Requirements	5
3.2.2 Finish	5
3.2.3 Colour	5
3.2.4 Dimensions	5
3.2.5 Elongation.....	5
3.2.6 Insulation resistance	6
3 Shelf life	6
4 Test	6
5 MARKING, PACKING AND DOCUMENTATION	6
6 TRAINING	7
7 QUALITY MANAGEMENT	7
8 ENVIRONMENTAL MANAGEMENT	7
9 HEALTH AND SAFETY	7
ANNEX A - Bibliography	8
ANNEX B - Revision information	9

**SPECIFICATION FOR INSULATING PUTTY
AND SELF-FUSING TAPE**

REFERENCE REV
CP_TSSPEC_047 **2**
PAGE **2** OF **14**

ANNEX C - Technical schedules A and B: TAPE SELF-FUSING (SAP 5512)..... 10
ANNEX C - Technical schedules A and B: INSULATING PUTY (SAP 5748)..... 12
ANNEX D – Stock Items 14

FOREWORD

Recommendations for corrections, additions or deletions should be addressed to the:

Technology Services General Manager

City Power Johannesburg (SOC) Ltd

P O Box 38766

Booyens

2016

INTRODUCTION

To achieve standardisation and rationalisation for the technique used for insulating busbars, cable ends and low voltage splicing, insulating putty and self-fusing tape, which have excellent electrical properties, will be introduced.

1 SCOPE

This specification covers City Power's requirements for rubber self-fusing tape and insulating putty for holding, binding and insulating purposes required for insulating busbars, cable ends and low voltage splicing.

2 NORMATIVE REFERENCES

The following documents contain provisions that, through reference in the text, constitute requirements of this specification. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this specification are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

IEC 60243-1: Electric strength of insulating materials- Test methods

BS EN 62631-3-2:2016: Dielectric and resistive properties of solid insulating materials.

3 TYPES

3.1 Rubber self-fusing tape

3.1.1 Requirements

The rubber self-fusing tape shall be:

- 1.) According to IEC 60243 and IEC 62631
- 2.) Highly conformable based self-fusing Ethylene Propylene Rubber.
- 3.) Non-vulcanizing.
- 4.) Suitable for use where the continuous working temperature does not exceed 90°C.
- 5.) Compatible with dielectric cable insulations not exceeding 24 kV.
- 6.) Oil based rubber that is water resistant up to boiling point, corrosive atmosphere and diluted acidic and alkaline solutions.

3.1.2 Finish

The tape shall have a special polyester liner that shall not stick to the tape when the tape is unwound.

3.1.3 Colour

The colour of the rubber self-fusing tape shall be black.

3.1.4 Dimensions

3.1.4.1 The nominal width of the tape shall be 25mm.

3.1.4.2 The tape shall have a nominal length of 9m.

3.1.4.3 The nominal thickness of the tape shall be approximately 0,75mm.

3.1.5 Breaking strength and elongation

The tape shall have a minimum breaking strength of 1,4kN/m of the width, having a 1000% elongation of the original length of tape under standard test conditions.

3.1.6 Adhesion strength

3.1.6.1 The tape shall be self-amalgamating and adhere to, but not fuse with rubber, plastics and metals.

3.1.6.2 The self-fusing tape shall not corrode copper or aluminium.

3.2 Insulation putty

3.2.1 Requirements

The insulating putty shall:

- 1.) According to IEC 60243-1 or IEC 62631-3-1
- 2.) Be of synthetic rubber compound in a tape form.
- 3.) Be non-corrosive.
- 4.) Be suitable for working temperatures up to 80°C.
- 4.) Have a dielectric strength of at least 22kV/mm.

3.2.2 Finish

The putty tape shall have a special polyester liner which will not stick to the tape when the tape is unwound.

3.2.3 Colour

The colour of the putty tape shall be black.

3.2.4 Dimensions

3.2.4.1 The nominal width of the putty tape shall be 38mm.

3.2.4.2 The putty tape shall have a nominal length of 1,5m.

3.2.4.3 The nominal thickness of the tape shall be approximately 3,18mm.

3.2.4.4 The overall diameter of the roll shall be approximately 75mm.

3.2.5 Elongation

The elongation of the putty tape shall be 1000% of the original length of tape under standard test conditions.

3.2.6 Insulation resistance

The insulation resistance shall be not less than 1 MΩ per width under standard test conditions.

3 Shelf life

The putty tape shall have a 5 year shelf life from date of manufacture.

4 Test

An accredited independent laboratory type test certificate shall be supplied.

a) The rubber self-fusing shall be according to IEC 60243 or 62631. The following test shall be conducted.

1.) Dielectric breakdown

2.) Breakdown strength

3.) Volume resistivity

4.) Surface resistivity

5.) Thickness

6.) Elongation at breaking

b) The Insulation putty tape shall be tested according to IEC 60243-1 or IEC 62631-3-1. The following test shall be conducted:

1.) Thickness

2.) Dielectric strength

3.) Volume resistivity and

4.) Elongation at breaking

5 MARKING, PACKING AND DOCUMENTATION

5.1 Marking

Each roll of tape or its container shall be clearly and indelibly marked with the following:

1.) Brand name or trade mark.

2.) Catalogue number.

3.) Thickness, width, and length.

4.) Colour.

e) Date of manufacture.

f) City Power's SAP number.

5.2 Packing

The rolls of tape shall be so packed, in acceptable containers, that they are adequately protected from damage during normal transit, and from deterioration due to dust, light and normal atmospheric moisture. Rolls shall be so protected that they will not adhere to the container in individual containers and shall be so stacked on their cut edges.

5.3 Documentation

- 5.3.1 Documentation shall be submitted in a technical catalogue format.
- 5.3.2 The technical catalogue shall specify the sizes, dimensions, reference numbers, and if applicable, the complete range of other products and accessories available.

6 TRAINING

- 6.1 Certified training courses shall be offered for City Power’s field staff to teach the correct installation techniques, methods and various applications for the insulation putty and self-fusing tape.
- 6.2 The associated costs for the certified training courses in 8.1 shall be given per person and shall be fixed for the period of the contract.

7 QUALITY MANAGEMENT

A quality management plan shall be set up in order to assure the proper quality management of the insulation putty and self-fusing tape during design, development, production, installation and servicing phases. Guidance on the requirements for a quality management plan may be found in the SANS ISO 9001. The details shall be subject to agreement between City Power and the Supplier.

8 ENVIRONMENTAL MANAGEMENT

An environmental management plan shall be set up in order to assure the proper environmental management of the insulation putty and self-fusing tape throughout its entire life cycle (i.e. during design, development, production, installation, operation and maintenance, decommissioning and disposal phases). Guidance on the requirements for an environmental management system may be found in SANS ISO 14001 standards. The details shall be subject to agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHEQ Policy.

9 HEALTH AND SAFETY

A health and safety plan shall be set up in order to ensure proper management of insulation putty and self-fusing tape and compliance of the queuing system during installation, operation, maintenance, and decommissioning phases. Guidance on the requirements of a health and safety plan may be found in OHSAS 18001 standards. This is to ensure that the asset conforms to standard operating procedures and City Power SHERQ Policy. The details shall be subject to agreement between City Power and the Supplier.

ANNEX A - Bibliography

UL 510:1994 Standard for Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape.

ANNEX B - Revision information

DATE	REV. NO.	NOTES
Feb 2003	0	First issue
Jan. 2006	1	Foreword: New list of members
Feb.2019	2	Added new study committee Added Normative references Added Health and Safety

ANNEX C - Technical schedules A and B: TAPE SELF-FUSING (SAP 5512)

Schedule A: Purchaser's specific requirements

Schedule B: Guarantees and technical particulars of equipment offered

Item	Subclause of CP_TSSPEC_047	Description	Schedule A	Schedule B
		Self-fusing tape	xxxxx	xxxxx
1		Manufacturer	xxxxx	
2	3.1.4.1	Width mm	25	
3	3.1.4.2	Length m	9	
4	3.1.4.3	Thickness mm	0,75	
5	3.1.4.4	Elongation %	1000	
6	3.1.5	Breaking strength kN/m	1,4	
7	3.	Comply to IEC 60243 or 62631	Yes	Yes
8	4	Certified copy of type test to be provided with tender documentation	Yes	Yes
9	5	Catalogue to be provided with tender Documentation	Yes	Yes

Note: Ticks, Cross [√, X], Astrick [*], Word [Noted] or TBA ["To Be Advice"] will not be accepted

Tender Number: _____

Tenderer's Authorised Signatory: _____
Name in block letters Signature

Full name of company: _____

Technical schedules A and B

Deviation schedule

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

Item	Subclause of CP_TSSPEC_047	Proposed deviation

Tender Number: _____

Tenderer's Authorised Signatory: _____
Name in block letters Signature

Full name of company: _____

Technical schedules A and B

Deviation schedule

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.

Item	Subclause of CP_TSSPEC_047	Proposed deviation

Tender Number: _____

Tenderer's Authorised Signatory: _____
Name in block letters Signature

Full name of company: _____

ANNEX D – Stock Items

Material Group: CONT-TAPE

Item	SAP No.	SAP Short Description	SAP Long Description
1	5512	TAPE SELF-FUSING 9M X 25MM	TAPE, INSULATING, SELF-FUSING, ETHYLENE PROPYLENE RUBBER, 9M X 25MM, BLACK. ITEM SPECIFICATION NO.CP_TSSPEC_047
2	5748	TAPE PUTTY 1,5M X 38MM	TAPE, INSULATING, ELECTRICAL PUTTY, SYNTHETIC RUBBER, 1,5M X 38MM, BLACK. ITEM SPECIFICATION NO.CP_TSSPEC_047