

	Report	Technology
---	---------------	-------------------

Title: TECHNICAL EVALUATION STANDARD FOR OVERHEAD PHASE CONDUCTOR
Unique Identifier: 240-130900871
Alternative Reference Number: N/A
Area of Applicability: Engineering
Documentation Type: Report
Revision: 2
Total Pages: 60
Next Review Date: September 2022
Disclosure Classification: Confidential

Compiled by	Functional Responsibility	Authorized by
		
Prashant Mathuradas Senior Engineer	Ravi Singh Chief Engineer	Riaz Vajeth Senior Manager – Line Engineering Services
Date: 23/07/2018	Date: 25/7/2018	Date: 25/7/2018

Content

	Page
1. Introduction.....	3
2. Supporting clauses	3
2.1 Scope	3
2.1.1 Purpose	3
2.1.2 Applicability.....	3
2.2 Normative/informative references	3
2.2.1 Normative	3
2.2.2 Informative.....	3
2.3 Definitions.....	4
2.3.1 General.....	4
2.3.2 Disclosure classification.....	4
2.4 Abbreviations.....	4
2.5 Roles and responsibilities	4
2.6 Process for monitoring	4
2.7 Related/supporting documents	4
3. Technical Tender Evaluation Procedure	4
3.1 Desktop Evaluation.....	5
3.1.1 Conductor Evaluation – the tenderers will be scored according to score sheets in Annexures A, B, C and D once they meet the Gatekeeper requirements, also found in the Annexures.	5
3.1.2 Phase conductor contract returnable list and gatekeepers	6
3.2 Factory assessment.....	7
3.2.1 Scope	7
3.2.2 Purpose	7
3.2.3 Confidentiality	7
3.2.4 Assessment Methodology.....	7
4. Authorization.....	8
5. Revisions	8
6. Development team.....	8
7. Acknowledgements.....	9
Annex A – Phase Conductor Gatekeepers	10
Annex B – Conductor Schedule Summary (confirms which tests were submitted for different phase conductor types)	11
Annex C - Analysis sheet of ACSR and AAAC manufacturers.....	14
Annex D – Generic Phase Conductor A/B Schedules.....	16

1. Introduction

This document aims to describe the criteria which will govern the evaluation of tender submissions by external contractors intending to supply overhead phase conductors. The criteria for each phase conductor type are tabulated in the annexures at the end of this document.

The criteria necessary to perform both the desktop and factory evaluations are outlined. This document is meant as an assistive document for new conductor contracts and does not replace the existing phase conductor specification (240-75521456).

2. Supporting clauses

2.1 Scope

This document explains the technical evaluation process and criteria associated with overhead phase conductors.

2.1.1 Purpose

The purpose of this document is to describe the criteria which are to be used when evaluating tender submissions for the supply of overhead phase conductors.

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions.

2.2 Normative/informative references

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] 32-1034 - Eskom Procurement and Supply Management Procedure.

[2] ISO 9001 Quality Management Systems.

2.2.2 Informative

[3] 32-9: Definition of Eskom documents.

[4] 32-644: Eskom documentation management standard.

[5] 474-65: Operating manual of the Steering Committee of Technologies (SCOT).

2.3 Definitions

2.3.1 General

None

2.3.2 Disclosure classification

Controlled disclosure: Controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

Abbreviation	Description
ACSR	Aluminium Conductor Steel Reinforced
ACCC	Aluminium Conductor Composite Core
AAC	All Aluminium Conductor
PLS-CADD	Power Line Systems - Computer Assisted Design and Drawing

2.5 Roles and responsibilities

Not applicable.

2.6 Process for monitoring

Not applicable.

2.7 Related/supporting documents

- [1] SANS IEC 61089: 1991, Round wire concentric lay overhead electrical stranded conductors
- [2] IEC 888: 1987, Zinc-coated steel wires for stranded conductors
- [3] IEC 889: 1987, Hard-drawn aluminium wire for overhead line conductors
- [4] IEC 61394: 2011, Requirements for greases for aluminium, aluminium alloy and steel bare conductors
- [5] 240-75521456: Phase Conductor for Eskom Overhead Lines
- [6] TB 13TB-015: Standard Greases for use on Overhead Lines

3. Technical Tender Evaluation Procedure

The technical evaluation procedure is specific to each item type. The items include ACSR, ACCC and AAC conductors.

The complete evaluation of any potential supplier would involve a desktop evaluation as well as a factory evaluation. The factory evaluation is necessary to verify if the supplier possesses the capabilities which they have documented in their tender submissions.

3.1 Desktop Evaluation

The desktop evaluation forms the first aspect of the assessment. During this process, the tender documentation submitted by potential suppliers is evaluated against the criteria listed in the attached ANNEXURES from page 10 to 60 in this document. Generic A/B schedules are provided in the document, but the full schedules and tick sheets will be available in excel format with the tender enquiry package. The Eskom evaluating representatives will go through the details of the returnable submissions that are required and will ensure that the Gatekeeper criteria are met. Submissions that receive a “No” on any of the Gatekeeper criteria, the supplier will not be able to proceed to the Desktop Evaluation and therefore will fail the technical evaluation.

From a technical perspective, the submitted documentations should consist of but not be limited to:

3.1.1 Conductor Evaluation – the tenderers will be scored according to score sheets in Annexures A, B, C and D once they meet the Gatekeeper requirements, also found in the Annexures.

- a) Specifications of the various phase conductors which the supplier is able to manufacture. Tenderers need to populate the relevant A/B schedules (found in Annexure D) submitted for all phase conductors that can be manufactured. A minimum or nearest equivalent (to be approved by Line Engineering Services) to the greased and/or ungreased options of phase conductors shall be submitted.
- b) The contractors shall also submit a type test report indicating as part of this report when the most recent type test was completed, remaining conductors to be type tested and when the next test will be completed.
- c) The phase conductor information for PLS-CADD with the co-efficient and sag and tension data shall be included.
- d) An indication of the manufacturing capacity of the factory and lead times. Tenderers to submit details of manufacturing premises, location, staff and equipment, testing facilities, manufacturing lead times.
- e) Tenderers shall ensure that they cater for the manufacture of previously unsupplied conductors that may be requested during the contract lifetime. Tenderers shall also produce all the above mentioned information for each of the unsupplied conductors they wish to supply as part of the contract.
- f) The phase conductor technical tender returnable shall have the following deliverables:

3.1.2 Phase conductor contract returnable list and gatekeepers

Item	Criteria	Number	Submitted	Scoring	Gatekeepers
1.1	Completed A/B schedules for all conductors in Eskom spec.	46 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	✓
1.2	Conductor Schedule Summary	46 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	✓
1.3	Type test report summary	46 (1 point per completed conductor schedule)		Tenderer to fill in the list of conductors where a valid type test report is available and when the remaining will be done.	✓
1.4	Submission of file containing information for: Analysis of ACSR and AAAC manufacturers.	90 (as per analysis table in Annexure C)		A file must be submitted by the tenderer with requested information.	✓
1.5	Inclusion of ACSR trapezoidal conductor	3 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	

3.2 Factory assessment

The assessments are performed to assess the tenderer's capability to enter into a contract with Eskom with respect to a specific product or service and meet Eskom's requirements.

This report and any actions that are listed or recommended as a result of this assessment, is by no means a confirmation or guarantee that any contract will be entered into by Eskom and the supplier or that post contract performance has been achieved.

Any actions undertaken by the tenderer as a consequence of this report is for the tenderer's account. Any liability for the said actions undertaken by the tenderer is not transferrable to Eskom in any way.

The assessment team has no authority or responsibility in the decision taken by Eskom with respect to contracting for a product or service.

Any statements, intentions and/or actions expressed by the assessment team during the assessment and after the assessment should not be interpreted as the awarding of a contract and does not constitute any liability to Eskom with regards to contract placement or post-contract performance guarantees.

3.2.1 Scope

Eskom will do factory assessments to assess the ability and readiness of the tenderer for supplying/manufacturing of phase conductors for Eskom should the need arise. Eskom assessment representative(s) will arrange visits to the factories that have qualified for factory evaluations.

At the factory, the Eskom assessment representative(s) will conduct the assessment through the use of checklists. A generic checklist is provided in Annexure C and may serve as a guide on the aspects which the Eskom representative(s) will look to assess. The checklists are used to verify capability of the factory to supply the required products and to comply with the relevant specifications and tender submission documents.

3.2.2 Purpose

Assessments are performed as part of the standard practice within Eskom to determine whether a supplier has the capability and capacity to manufacture the required products, from a business, technical and quality perspective. The assessment also confirms the supplier's compliance to the governing specifications and tender submission documents. This document is intended to formalise the factory assessment procedure followed for phase conductors.

3.2.3 Confidentiality

All information reviewed, observed, recorded during and reported as a result of the assessments will be treated as, and will remain highly confidential. The procurement team and the supplier team will be the only parties included in the distribution list.

3.2.4 Assessment Methodology

A factory assessment will only be conducted if a minimum score of 70% is achieved for the desktop assessment. In the event that a factory assessment is conducted, the tenderer will still be required to achieve a minimum score of 70% to meet the technical requirements threshold.

Eskom performs these factory assessments to assess the ability and readiness of the tenderer for supplying/manufacturing of phase conductors for Eskom should the need arise and to verify the information submitted in the tender responses.

Criteria (Technical)				
Item	Final scoring - desktop	Scoring	Final score	Criteria
A/B schedules	Acceptable submitted/submitted	100%	50% of item score	must meet 70% threshold here to go further
Conductor schedules summary	Verify number of conductors	N/A		Used to verify number of products that the tenderer can manufacture.
Type test reports	Acceptable submitted/submitted	N/A		Used to verify the status of type testing for products tendered for.
Analysis of ACSR and AAAC conductor information submitted.	Inspection of file submitted as requested.	100%	50% of item score	must meet 70% threshold here to go further
Total			100%	
Overall minimum threshold for qualification(s)			70%	

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Ravi Singh	Chief Engineer Line Engineering Services
B Haridass	Senior Consultant Line Engineering Services
R Vajeth	Senior Manager Line Engineering Services
Prashant Mathuradas	Senior Engineer Line Engineering Services

5. Revisions

Date	Rev	Compiler	Remarks
Sept 2017	1	P. Mathuradas	New document for the evaluation of the phase conductor contract to be issued in 2017.

6. Development team

The following people were involved in the development of this document:

- Prashant Mathuradas
- Bharat Haridass
- Ravi Singh

7. Acknowledgements

Not applicable.

Annex A – Phase Conductor Gatekeepers

Item	Criteria	Number (total)	Submitted	Scoring	Gatekeepers
1.1	Completed A/B schedules for all conductors in Eskom spec.	46 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	✓
1.2	Conductor Schedule summary	46 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	✓
1.3	Type test report summary	46 (1 point per completed conductor schedule)		Tenderer to fill in the list of conductors where a valid type test report is available and when the remaining will be done.	✓
1.4	Submission of file containing information for: Analysis of ACSR and AAAC manufacturers.	90 (as per analysis table in Annexure C)		A file must be submitted by the tenderer with requested information.	✓
1.5	Inclusion of ACSR trapezoidal conductor	3 (1 point per completed conductor schedule)		Will be done based on number of schedules and conductor that can be made by tenderer.	

Annex B – Conductor Schedule Summary (confirms which tests were submitted for different phase conductor types)

Conductor	Greased	Ungreased	Type Test	Next type test date	Schedules submitted
Kingbird	x	x			
Tern	x	x			
Bersfort	x	x			
Tiger	x	x			
Panther	x	x			
IEC315-A1/S1A-45/2,99/7/1,99	x	x			
IEC450-A1/S1A-45/3,57/7/2,38	x	x			
IEC500-A1/S1A-45/3,76/7/2,51	x	x			
IEC560-A1/S1A-45/3,98/7/2,65	x	x			
IEC630-A1/S1A-45/4,22/7/2,81	x	x			
IEC800-A1/S1A-72/3,76/7/2,51	x	x			
Pine	x	x			
Oak	x	x			
IEC160-A2-19(17.6mm)	x	x			
IEC315-A2-37(24.7mm)	x	x			
IEC400-A2-37(27.9mm)	x	x			
IEC450-A2-37(29.6mm)	x	x			
IEC500-A2-37(31.2mm)	x	x			
IEC560-A2-61(33mm)	x	x			
IEC630-A2-61(35mm)	x	x			
IEC710-A2-61(37.2mm)	x	x			
IEC800-A2-61(39.5mm)	x	x			
SQUIRREL		x			
MAGPIE		x			
FOX		x			
MINK	x	x			
HARE	x	x			
WOLF	x	x			
BEAR	x	x			
GOAT		x			
ZEBRA		x			
CHICADEE	x	x			
DINOSAUR	x	x			

WOLF	x	x			
BEAR	x	x			
GOAT		x			
ZEBRA		x			
CHICADEE	x	x			
DINOSAUR	x	x			

ACACIA	x			
CODE 35	x			
HORNET		x		
HORNET (INS)		x		
CENTIPEDE	x	x		
BULL		x		
BULL (INS)		x		
ACSS Tern equivalent	For the Aluminium Conductor Steel Supported (ACSS) and Aluminium Conductor Composite Core (ACCC) listed to the left, technical specifications/schedules and costing is required. Equivalent conductor refers to a ACSS and ACCC conductor with equivalent sectional area as the ASCR conductor stated (i.e. Kingbird, Bersfort). Information must be provided if special construction and installation practices are required for the ACSS and ACCC proposed e conductors (e.g. special joints, special manufacturing processes, disposal of waste etc.).			
ACSS Kingbird equivalent				
ACSS Bersfort equivalent				
ACCC Tern equivalent				
ACCC Kingbird equivalent				
ACCC Bersfort equivalent				
IEC 315 ACSR Trapezoidal equivalent	For the ACSR trapezoidal equivalents listed to the left, technical specifications and costing is required. Equivalent conductor refers to an ACSR conductor that has trapezoidal stranding instead of concentric stranding. These equivalents can either be equivalent to the existing conductor with respect to diameter or Aluminium area. The equivalency must be specified as part of the submission. Information must be provided if special construction and installation practices are required for the ACSS and ACCC proposed e conductors (e.g. special joints, special manufacturing processes, disposal of waste etc.).			
Tern ACSR Trapezoidal equivalent				
Bersfort ACSR Trapezoidal equivalent				

Annex C - Analysis sheet of ACSR and AAAC manufacturers

	Criteria for ACSR manufacturers- Technical	Total score achievable
1	Manufacturing Methods/Product Conformance	
1,1	Ability to draw down raw aluminium material to required strand sizes .	1
1,2	Ability to produce complete stranded ACSR conductor	2
1,3	Manufacturing to which standards, licenses etc. IEC, eskom spec etc.	2
1,4	How much of the items do you actually produce in-house.	2
1,5	Design Capabilities of supplier- In house experts etc.	2
1,6	Affiliations with any international organisation/ experts in the field.	1
1,7	Ability to supply technical drawings indicating ACSR technical data	2
1,8	History and list of external customers that you have supplied similar products to.	1
1,9	Type of testing facilities.	3
1,10	Show evidence of Type testing on each individual product. In accordance eto IEC and Eskom specs. Latest type test report to be submitted.	3
1,11	Show evidence of Sample testing on each individual product. In accordance eto IEC and Eskom spec. Sample test format to be submitted.	3
1,12	Show evidence of Production testing on each individual product. In accordance eto IEC and Eskom spec. Production test format to be submitted.	3
1,13	Show evidence of material checking and verification from raw to final product stages.	2
1,14	Zinc coating application method for steel core	2
1,15	Can provide typical packaging details of items after manufacture, treatment of wooden crates etc. if applicable.	3
1,16	Ability and process to be used to mark aluminium strands as per Eskom requirements.	2
1,17	Packaging requirements- drum details ect	3
1,18	Packaging of drums into containers- for international suppliers	2
1,19	Marking on drums as per Eskom requirements	3
1.20.	Handling and storage requirements of product.	2
2	Workshop Practice	
2,1	Housekeeping	1
2,1	Tool control, application and calibration	3
2,3	Calibration of instrumentation	2

ESKOM COPYRIGHT PROTECTED

When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the WEB.

2,4	Dust control	1
2,5	Environmental Controls	1
2,6	Control of scrap material	2
2,7	Material / component storage & handling	2
3	Design Practices and Application	
3,1	Design criteria basis and guidelines	1
3,2	Design process flow	1
3,3	Interface with procurement and manufacturing	2
3,4	Design tools and competence	1
3,5	Design Technology Backup	1
3,6	Last design review/process	1
3,7	Research and Development capabilities	1
4	Testing Facility and Practices	
4,1	Calibration of testing equipment	3
4,2	Test capabilities	3
4,3	Competence of technicians	3
4,4	Testing procedures alignment with IEC	3
4,5	Quality and availability of test reports	3
5	Raw material Procurement, Storage and Sub-Contractor Practices	
5,1	Supplier and subcontractor assessments and reviews process	2
5,2	Supplier and subcontractor classification	2
5,3	Materials and services sourcing/procurement process & governance	2
5,4	Spot check / inspections on materials and subcontractors	3
5,5	Control Systems and customer participation/notification / transparency	2
		90

Annex D – Generic Phase Conductor A/B Schedules

Kingbird

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0,0891
- Conductor diameter (mm) ≈ 23.90
- Ultimate Tensile Strength (kN) ≥ 71.32
- Conductor linear mass (kg/km) ≈ 1038
- Modulus of elasticity final (MPa) ≈ 66200
- Coefficient of linear expansion, β , (1/°C) ≈ 21.69 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	323.01-A1/S1A-18/1/4.78	
Conductor Overall Diameter (mm)	23.90	
Area Aluminium (mm ²)	323.01	
Area Total (mm ²)	340.96	
Aluminium wires (number off) / (diameter mm)	18/4.78	
Steel wires (number off) / (diameter mm)	1/4.78	
Conductor linear mass (kg/km)	1038	
Ultimate Tensile Strength (kN)	71.32	
Resistance DC @ 20°C (ohms/km)	0,0891	
Modulus Elasticity Final (MPa)	66200	
Coefficient of Linear Expansion, β , (1/°C)	21.69 * 10 ⁻⁶	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol Rustilo 450 or equivalent. Equivalent products subject to Eskom’s approval).	Greased and ungreased.	

Tern

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0,0718
- Conductor diameter (mm) ≈ 27.00
- Ultimate Tensile Strength (kN) ≥ 98.70
- Conductor linear mass (kg/km) ≈ 1340
- Modulus of elasticity final (MPa) ≈ 66600
- Coefficient of linear expansion, β, (1/°C) ≈ 21.12 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	403.77-A1/S1A-45/3.38+7/2.25	
Conductor Overall Diameter (mm)	27.00	
Area Aluminium (mm ²)	403.77	
Area Total (mm ²)	431.60	
Aluminium wires (number off) / (diameter mm)	45/3.38	
Steel wires (number off) / (diameter mm)	7/2.25	
Conductor linear mass (kg/km)	1340	
Ultimate Tensile Strength (kN)	98.70	
Resistance DC @ 20°C (ohms/km)	0,0718	
Modulus Elasticity Final (MPa)	66600	
Coefficient of Linear Expansion, β, (1/°C)	21.12 * 10 ⁻⁶	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

Bersfort

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0,0420
- Conductor diameter (mm) ≈ 35.58
- Ultimate Tensile Strength (kN) ≥ 177.65
- Conductor linear mass (kg/km) ≈ 2386
- Modulus of elasticity final (MPa) ≈ 68800
- Coefficient of linear expansion, β, (1/°C) ≈ 20.68 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	687.36-A1/S1A-48/4.27+7/3.32	
Conductor Overall Diameter (mm)	35.58	
Area Aluminium (mm ²)	687.36	
Area Total (mm ²)	747.96	
Aluminium wires (number off) / (diameter mm)	48/4.27	
Steel wires (number off) / (diameter mm)	7/3.32	
Conductor linear mass (kg/km)	2386	
Ultimate Tensile Strength (kN)	177.65	
Resistance DC @ 20°C (ohms/km)	0,0420	
Modulus Elasticity Final (MPa)	68800	
Coefficient of Linear Expansion, β, (1/°C)	20.68 * 10 ⁻⁶	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

Tiger

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.2202
- Conductor diameter (mm) ≈ 16.52
- Ultimate Tensile Strength (kN) ≥ 58.70
- Conductor linear mass (kg/km) ≈ 606
- Modulus of elasticity final (MPa) ≈ 83400
- Coefficient of linear expansion, β , ($1/^{\circ}\text{C}$) ≈ 18.43×10^{-6}

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	131.23-A1/S1A-30/7/2.36	
Conductor Overall Diameter (mm)	16.52	
Area Aluminium (mm ²)	131.23	
Area Total (mm ²)	161.85	
Aluminium wires (number off) / (diameter mm)	30/2.36	
Steel wires (number off) / (diameter mm)	7/2.36	
Conductor linear mass (kg/km)	606	
Ultimate Tensile Strength (kN)	58.70	
Resistance DC @ 20°C (ohms/km)	0.2202	
Modulus Elasticity Final (MPa)	83400	
Coefficient of Linear Expansion, β , ($1/^{\circ}\text{C}$)	18.43×10^{-6}	
Drum Length(m)	2000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased.	

Panther

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1363
- Conductor diameter (mm) ≈ 21.00
- Ultimate Tensile Strength (kN) ≥ 90.80
- Conductor linear mass (kg/km) ≈ 970
- Modulus of elasticity final (MPa) ≈ 83400
- Coefficient of linear expansion, β , ($1/^\circ\text{C}$) ≈ 18.43×10^{-6}

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	212.06-A1/S1A-30/7/3.00	
Conductor Overall Diameter (mm)	21.00	
Area Aluminium (mm ²)	212.06	
Area Total (mm ²)	261.54	
Aluminium wires (number off) / (diameter mm)	30/3.00	
Steel wires (number off) / (diameter mm)	7/3.00	
Conductor linear mass (kg/km)	970	
Ultimate Tensile Strength (kN)	90.80	
Resistance DC @ 20°C (ohms/km)	0.1363	
Modulus Elasticity Final (MPa)	83400	
Coefficient of Linear Expansion, β , ($1/^\circ\text{C}$)	18.43×10^{-6}	
Drum Length(m)	2000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC315-A1/S1A-45/2,99/7/1,99

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0,0917
- Conductor diameter (mm) ≈ 23.9
- Ultimate Tensile Strength (kN) ≥ 79.03
- Conductor linear mass (kg/km) ≈ 1039.6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	315-A1/S1A-45/2.99+7/1.99	
Conductor Overall Diameter (mm)	23.9	
Area Aluminium (mm ²)	315	
Area Total (mm ²)	337	
Aluminium wires (number off) / (diameter mm)	45/2.99	
Steel wires (number off) / (diameter mm)	7/1.99	
Conductor linear mass (kg/km)	1039.6	
Ultimate Tensile Strength (kN)	79.03	
Resistance DC @ 20°C (ohms/km)	0,0917	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC450-A1/S1A-45/3,57/ 7/2,38

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0642
- Conductor diameter (mm) ≈ 28.5
- Ultimate Tensile Strength (kN) ≥ 107.47
- Conductor linear mass (kg/km) ≈ 1485.2

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	450-A1/S1A-45/3.57+7/2.38	
Conductor Overall Diameter (mm)	28.5	
Area Aluminium (mm ²)	450	
Area Total (mm ²)	481	
Aluminium wires (number off) / (diameter mm)	45/3.57	
Steel wires (number off) / (diameter mm)	7/2.38	
Conductor linear mass (kg/km)	1485.2	
Ultimate Tensile Strength (kN)	107.47	
Resistance DC @ 20°C (ohms/km)	0.0642	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC500-A1/S1A-45/3,76/ 7/2,51

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0578
- Conductor diameter (mm) ≈ 30.1
- Ultimate Tensile Strength (kN) ≥ 119.41
- Conductor linear mass (kg/km) ≈ 1650.2

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	500-A1/S1A-45/3.76+7/2.51	
Conductor Overall Diameter (mm)	30.1	
Area Aluminium (mm ²)	500	
Area Total (mm ²)	535	
Aluminium wires (number off) / (diameter mm)	45/3.76	
Steel wires (number off) / (diameter mm)	7/2.51	
Conductor linear mass (kg/km)	1650.2	
Ultimate Tensile Strength (kN)	119.41	
Resistance DC @ 20°C (ohms/km)	0.0578	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC560-A1/S1A-45/3,98/ 7/2,65

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0516
- Conductor diameter (mm) ≈ 31.8
- Ultimate Tensile Strength (kN) ≥ 133.74
- Conductor linear mass (kg/km) ≈ 1848.2

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	560-A1/S1A-45/3.98+7/2.65	
Conductor Overall Diameter (mm)	31.8	
Area Aluminium (mm ²)	560	
Area Total (mm ²)	599	
Aluminium wires (number off) / (diameter mm)	45/3.98	
Steel wires (number off) / (diameter mm)	7/2.65	
Conductor linear mass (kg/km)	1848.2	
Ultimate Tensile Strength (kN)	133.74	
Resistance DC @ 20°C (ohms/km)	0.0516	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC630-A1/S1A-45/4,22/ 7/2,81

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0459
- Conductor diameter (mm) ≈ 33.8
- Ultimate Tensile Strength (kN) ≥ 150.45
- Conductor linear mass (kg/km) ≈ 2079.2

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	630-A1/S1A-45/4.22+7/2.81	
Conductor Overall Diameter (mm)	33.8	
Area Aluminium (mm ²)	630	
Area Total (mm ²)	674	
Aluminium wires (number off) / (diameter mm)	45/4.22	
Steel wires (number off) / (diameter mm)	7/2.81	
Conductor linear mass (kg/km)	2079.2	
Ultimate Tensile Strength (kN)	150.45	
Resistance DC @ 20°C (ohms/km)	0.0459	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC800-A1/S1A-72/3,76/ 7/2,51

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0361
- Conductor diameter (mm) ≈ 37.6
- Ultimate Tensile Strength (kN) ≥ 167.41
- Conductor linear mass (kg/km) ≈ 2480.2

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	800-A1/S1A-72/7/3.48	
Conductor Overall Diameter (mm)	37.6	
Area Aluminium (mm ²)	800	
Area Total (mm ²)	835	
Aluminium wires (number off) / (diameter mm)	72/3.76	
Steel wires (number off) / (diameter mm)	7/2.51	
Conductor linear mass (kg/km)	2480.2	
Ultimate Tensile Strength (kN)	167.41	
Resistance DC @ 20°C (ohms/km)	0.0361	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	3000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased.	

Pine

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.462
- Conductor diameter (mm) ≈ 10.83
- Ultimate Tensile Strength (kN) ≥ 20.2
- Conductor linear mass (kg/km) ≈ 196
- Modulus of elasticity final (MPa) ≈ 61000
- Coefficient of linear expansion, β, (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	62.3-A2-7	
Conductor Overall Diameter (mm)	10.83	
Area Aluminium (mm ²)	71.65	
Area Total (mm ²)	71.65	
Aluminium wires (number off) / (diameter mm)	7/3.61	
Conductor linear mass (kg/km)	196	
Ultimate Tensile Strength (kN)	20.2	
Resistance DC @ 20°C (ohms/km)	0.462	
Modulus Elasticity Final (MPa)	61000	
Coefficient of Linear Expansion, β, (1/°C)	23 * 10 ⁻⁶	
Drum Length(m)	2500	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

Oak

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.279
- Conductor diameter (mm) ≈ 13.95
- Ultimate Tensile Strength (kN) ≥ 33.33
- Conductor linear mass (kg/km) ≈ 325
- Modulus of elasticity final (MPa) ≈ 61000
- Coefficient of linear expansion, β, (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	103.4-A2-7	
Conductor Overall Diameter (mm)	13.95	
Area Aluminium (mm ²)	118.9	
Area Total (mm ²)	118.9	
Aluminium wires (number off) / (diameter mm)	7/4.65	
Conductor linear mass (kg/km)	325	
Ultimate Tensile Strength (kN)	33.33	
Resistance DC @ 20°C (ohms/km)	0.279	
Modulus Elasticity Final (MPa)	61000	
Coefficient of Linear Expansion, β, (1/°C)	23 * 10 ⁻⁶	
Drum Length(m)	1000	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC160-A2-19 (17.6mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1798
- Conductor diameter (mm) ≈ 17.6
- Ultimate Tensile Strength (kN) ≥ 54.32
- Conductor linear mass (kg/km) ≈ 506.1

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	160-A2-19	
Conductor Overall Diameter (mm)	17.6	
Area Aluminium (mm ²)	184	
Area Total (mm ²)	184	
Aluminium wires (number off) / (diameter mm)	19/3.51	
Conductor linear mass (kg/km)	506.1	
Ultimate Tensile Strength (kN)	54.32	
Resistance DC @ 20°C (ohms/km)	0.1798	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC315-A2-37 (24.7mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0916
- Conductor diameter (mm) ≈ 24.7
- Ultimate Tensile Strength (kN) ≥ 106.95
- Conductor linear mass (kg/km) ≈ 998.9

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	315-A2-37	
Conductor Overall Diameter (mm)	24.7	
Area Aluminium (mm ²)	363	
Area Total (mm ²)	363	
Aluminium wires (number off) / (diameter mm)	37/3.53	
Conductor linear mass (kg/km)	998.9	
Ultimate Tensile Strength (kN)	106.95	
Resistance DC @ 20°C (ohms/km)	0.0916	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC400-A2-37 (27.9mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0721
- Conductor diameter (mm) ≈ 27.9
- Ultimate Tensile Strength (kN) ≥ 135.81
- Conductor linear mass (kg/km) ≈ 1268.4

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	400-A2-37	
Conductor Overall Diameter (mm)	27.9	
Area Aluminium (mm ²)	460	
Area Total (mm ²)	460	
Aluminium wires (number off) / (diameter mm)	37/3.98	
Conductor linear mass (kg/km)	1268.4	
Ultimate Tensile Strength (kN)	135.81	
Resistance DC @ 20°C (ohms/km)	0.0721	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC450-A2-37 (29.6mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0641
- Conductor diameter (mm) ≈ 29.6
- Ultimate Tensile Strength (kN) ≥ 152.79
- Conductor linear mass (kg/km) ≈ 1426.9

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	450-A2-37	
Conductor Overall Diameter (mm)	29.6	
Area Aluminium (mm ²)	518	
Area Total (mm ²)	518	
Aluminium wires (number off) / (diameter mm)	37/4.22	
Conductor linear mass (kg/km)	1426.9	
Ultimate Tensile Strength (kN)	152.79	
Resistance DC @ 20°C (ohms/km)	0.0641	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC500-A2-37 (31.2mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0577
- Conductor diameter (mm) ≈ 31.2
- Ultimate Tensile Strength (kN) ≥ 169.76
- Conductor linear mass (kg/km) ≈ 1585.5

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	500-A2-37	
Conductor Overall Diameter (mm)	31.2	
Area Aluminium (mm ²)	575	
Area Total (mm ²)	575	
Aluminium wires (number off) / (diameter mm)	37/4.45	
Conductor linear mass (kg/km)	1585.5	
Ultimate Tensile Strength (kN)	169.76	
Resistance DC @ 20°C (ohms/km)	0.0577	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC560-A2-61 (33mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0516
- Conductor diameter (mm) ≈ 33,0
- Ultimate Tensile Strength (kN) ≥ 190.14
- Conductor linear mass (kg/km) ≈ 1778.4

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	560-A2-61	
Conductor Overall Diameter (mm)	33,0	
Area Aluminium (mm ²)	645	
Area Total (mm ²)	645	
Aluminium wires (number off) / (diameter mm)	61/3.67	
Conductor linear mass (kg/km)	1778.4	
Ultimate Tensile Strength (kN)	190.14	
Resistance DC @ 20°C (ohms/km)	0.0516	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC630-A2-61 (35mm)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0458
- Conductor diameter (mm) ≈ 35.0
- Ultimate Tensile Strength (kN) ≥ 213.9
- Conductor linear mass (kg/km) ≈ 2000.7

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	630-A2-61	
Conductor Overall Diameter (mm)	35.0	
Area Aluminium (mm ²)	725	
Area Total (mm ²)	725	
Aluminium wires (number off) / (diameter mm)	61/3.89	
Conductor linear mass (kg/km)	2000.7	
Ultimate Tensile Strength (kN)	213.9	
Resistance DC @ 20°C (ohms/km)	0.0458	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC710-A2-61 (37.2MM)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0407
- Conductor diameter (mm) ≈ 37.2
- Ultimate Tensile Strength (kN) ≥ 241.07
- Conductor linear mass (kg/km) ≈ 2254.8

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	710-A2-61	
Conductor Overall Diameter (mm)	37.2	
Area Aluminium (mm ²)	817	
Area Total (mm ²)	817	
Aluminium wires (number off) / (diameter mm)	61/4.13	
Conductor linear mass (kg/km)	2254.8	
Ultimate Tensile Strength (kN)	241.07	
Resistance DC @ 20°C (ohms/km)	0.0407	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased.	

IEC800-A2-61 (39.5MM)

ALTERNATIVE phase conductor

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0361
- Conductor diameter (mm) ≈ 39.5
- Ultimate Tensile Strength (kN) ≥ 271.62
- Conductor linear mass (kg/km) ≈ 2540.6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER’S SPECIFIC REQUIREMENTS
SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	800-A2-61	
Conductor Overall Diameter (mm)	39.5	
Area Aluminium (mm ²)	921	
Area Total (mm ²)	921	
Aluminium wires (number off) / (diameter mm)	61/4.38	
Conductor linear mass (kg/km)	2540.6	
Ultimate Tensile Strength (kN)	271.62	
Resistance DC @ 20°C (ohms/km)	0.0361	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β, (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	YES	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom’s approval. All layers must be greased except the outside)	Greased and ungreased.	

SQUIRREL

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 1.3677
- Conductor diameter (mm) ≈ 6.33
- Ultimate Tensile Strength (kN) ≥ 8.02
- Conductor linear mass (kg/km) ≈ 85.2
- Modulus of elasticity final (MPa) ≈ 80400
- Coefficient of linear expansion, β , (1/°C) ≈ 19.31* 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	20.98-A1/S1A-6/2.11-1/2.11	
Conductor Overall Diameter (mm)	6.33	
Area Aluminium (mm ²)	20.98	
Area Total (mm ²)	24.48	
Aluminium wires (number off) / (diameter mm)	6/2.11	
Steel wires (number off) / (diameter mm)	1/2.11	
Conductor linear mass (kg/km)	85.2	
Ultimate Tensile Strength (kN)	8.02	
Resistance DC @ 20°C (ohms/km)	1.3677	
Modulus Elasticity Final (MPa)	80400	
Coefficient of Linear Expansion, β , (1/°C)	19.31 * 10 ⁻⁶	
Drum Length(m)	3000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased.	

MAGPIE

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 2.707
- Conductor diameter (mm) ≈ 6.55
- Ultimate Tensile Strength (kN) ≥ 139.7
- Conductor linear mass (kg/km) ≈ 149
- Modulus of elasticity final (MPa) ≈ 133760
- Coefficient of linear expansion, β , (1/°C) ≈ 13.68* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 10.58-A1/S1A-3/2.12-4/2.12	
Conductor Overall Diameter (mm)	6.55	
Area Aluminium (mm ²)	10.58	
Area Total (mm ²)	24.71	
Aluminium wires (number off) / (diameter mm)	3/2.12	
Steel wires (number off) / (diameter mm)	4/2.12	
Conductor linear mass (kg/km)	139.7	
Ultimate Tensile Strength (kN)	18.573	
Resistance DC @ 20°C (ohms/km)	2.707	
Modulus Elasticity Final (MPa)	133760	
Coefficient of Linear Expansion, β , (1/°C)	13.68 * 10-6	
Drum Length(m)	3000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased.	

FOX

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.7822
- Conductor diameter (mm) ≈ 10.98
- Ultimate Tensile Strength (kN) ≥ 13.1
- Conductor linear mass (kg/km) ≈ 149
- Modulus of elasticity final (MPa) ≈ 80400
- Coefficient of linear expansion, β , (1/°C) ≈ 19.31 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	36.68-A1/S1A-6/2.79-1/2.79	
Conductor Overall Diameter (mm)	8.37	
Area Aluminium (mm ²)	36.68	
Area Total (mm ²)	42.8	
Aluminium wires (number off) / (diameter mm)	6/2.79	
Steel wires (number off) / (diameter mm)	1/2.79	
Conductor linear mass (kg/km)	149	
Ultimate Tensile Strength (kN)	13.1	
Resistance DC @ 20°C (ohms/km)	0.7822	
Modulus Elasticity Final (MPa)	80400	
Coefficient of Linear Expansion, β , (1/°C)	19.31 * 10 ⁻⁶	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased.	

MINK (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.4546
- Conductor diameter (mm) ≈ 10.98
- Ultimate Tensile Strength (kN) ≥ 21.9
- Conductor linear mass (kg/km) ≈ 427
- Modulus of elasticity final (MPa) ≈ 80400
- Coefficient of linear expansion, β , (1/°C) ≈ 19.31* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	63.13-A1/S1A-6/3.66-1/3.66	
Conductor Overall Diameter (mm)	10.98	
Area Aluminium (mm ²)	63.13	
Area Total (mm ²)	73.65	
Aluminium wires (number off) / (diameter mm)	6/3.66	
Steel wires (number off) / (diameter mm)	1/3.66	
Conductor linear mass (kg/km)	257	
Ultimate Tensile Strength (kN)	21.9	
Resistance DC @ 20°C (ohms/km)	0.4546	
Modulus Elasticity Final (MPa)	80400	
Coefficient of Linear Expansion, β , (1/°C)	19.31 * 10-6	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased	

HARE

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.2733
- Conductor diameter (mm) ≈ 14.16
- Ultimate Tensile Strength (kN) ≥ 36
- Conductor linear mass (kg/km) ≈ 427
- Modulus of elasticity final (MPa) ≈ 80400
- Coefficient of linear expansion, β , (1/°C) ≈ 19.31* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 104.98-A1/S1A-6/4.72-1/4.72	
Conductor Overall Diameter (mm)	14.16	
Area Aluminium (mm ²)	104.98	
Area Total (mm ²)	122.48	
Aluminium wires (number off) / (diameter mm)	6/4.72	
Steel wires (number off) / (diameter mm)	1/4.72	
Conductor linear mass (kg/km)	427	
Ultimate Tensile Strength (kN)	36	
Resistance DC @ 20°C (ohms/km)	0.2733	
Modulus Elasticity Final (MPa)	80400	
Coefficient of Linear Expansion, β , (1/°C)	19.31 * 10-6	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	No	

HARE (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.2733
- Conductor diameter (mm) ≈ 14.16
- Ultimate Tensile Strength (kN) ≥ 36
- Conductor linear mass (kg/km) ≈ 427
- Modulus of elasticity final (MPa) ≈ 80400
- Coefficient of linear expansion, β , (1/°C) ≈ 19.31* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 104.98-A1/S1A-6/4.72-1/4.72	
Conductor Overall Diameter (mm)	14.16	
Area Aluminium (mm ²)	104.98	
Area Total (mm ²)	122.48	
Aluminium wires (number off) / (diameter mm)	6/4.72	
Steel wires (number off) / (diameter mm)	1/4.72	
Conductor linear mass (kg/km)	427	
Ultimate Tensile Strength (kN)	36	
Resistance DC @ 20°C (ohms/km)	0.2733	
Modulus Elasticity Final (MPa)	80400	
Coefficient of Linear Expansion, β , (1/°C)	19.31 * 10-6	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased	

WOLF (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1828
- Conductor diameter (mm) ≈ 18.13
- Ultimate Tensile Strength (kN) ≥ 69.2
- Conductor linear mass (kg/km) ≈ 730
- Modulus of elasticity final (MPa) ≈ 83400
- Coefficient of linear expansion, β , (1/°C) ≈ 18.43* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 158.06-A1/S1A-30/2.59-7/2.59	
Conductor Overall Diameter (mm)	18.13	
Area Aluminium (mm ²)	158.06	
Area Total (mm ²)	194.94	
Aluminium wires (number off) / (diameter mm)	30/2.59	
Steel wires (number off) / (diameter mm)	7/2.59	
Conductor linear mass (kg/km)	730	
Ultimate Tensile Strength (kN)	69.2	
Resistance DC @ 20°C (ohms/km)	0.1828	
Modulus Elasticity Final (MPa)	83400	
Coefficient of Linear Expansion, β , (1/°C)	18.43 * 10-6	
Drum Length(m)	1500/3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased and ungreased	

BEAR (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1093
- Conductor diameter (mm) ≈ 23.45
- Ultimate Tensile Strength (kN) ≥ 112
- Conductor linear mass (kg/km) ≈ 1220
- Modulus of elasticity final (MPa) ≈ 83400
- Coefficient of linear expansion, β , (1/°C) ≈ 18.43* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 264.42-A1/S1A-30/3.35-7/3.35	
Conductor Overall Diameter (mm)	23.45	
Area Aluminium (mm ²)	264.42	
Area Total (mm ²)	326.12	
Aluminium wires (number off) / (diameter mm)	30/3.35	
Steel wires (number off) / (diameter mm)	7/3.35	
Conductor linear mass (kg/km)	1220	
Ultimate Tensile Strength (kN)	112	
Resistance DC @ 20°C (ohms/km)	0.1093	
Modulus Elasticity Final (MPa)	83400	
Coefficient of Linear Expansion, β , (1/°C)	18.43 * 10-6	
Drum Length(m)	1500/3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased and greased	

GOAT

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0891
- Conductor diameter (mm) ≈ 25.97
- Ultimate Tensile Strength (kN) ≥ 136
- Conductor linear mass (kg/km) ≈ 1500
- Modulus of elasticity final (MPa) ≈ 83400
- Coefficient of linear expansion, β , (1/°C) ≈ 18.43* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 324.31-A1/S1A-30/3.71-7/3.71	
Conductor Overall Diameter (mm)	25.97	
Area Aluminium (mm ²)	324.31	
Area Total (mm ²)	399.98	
Aluminium wires (number off) / (diameter mm)	30/3.71	
Steel wires (number off) / (diameter mm)	7/3.71	
Conductor linear mass (kg/km)	1500	
Ultimate Tensile Strength (kN)	136	
Resistance DC @ 20°C (ohms/km)	0.0891	
Modulus Elasticity Final (MPa)	83400	
Coefficient of Linear Expansion, β , (1/°C)	18.43 * 10-6	
Drum Length(m)	1500/3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased.	

ZEBRA

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0674
- Conductor diameter (mm) ≈ 28.62
- Ultimate Tensile Strength (kN) ≥ 133
- Conductor linear mass (kg/km) ≈ 1630
- Modulus of elasticity final (MPa) ≈ 73200
- Coefficient of linear expansion, β , (1/°C) ≈ 19.91* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 428.88-A1/S1A-54/3.18-7/3.18	
Conductor Overall Diameter (mm)	28.62	
Area Aluminium (mm ²)	428.88	
Area Total (mm ²)	484.48	
Aluminium wires (number off) / (diameter mm)	54/3.18	
Steel wires (number off) / (diameter mm)	7/3.18	
Conductor linear mass (kg/km)	1630	
Ultimate Tensile Strength (kN)	133	
Resistance DC @ 20°C (ohms/km)	0.0674	
Modulus Elasticity Final (MPa)	73200	
Coefficient of Linear Expansion, β , (1/°C)	19.91* 10-6	
Drum Length(m)	3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	

CHICADEE

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1427
- Conductor diameter (mm) ≈ 18.87
- Ultimate Tensile Strength (kN) ≥ 44.9
- Conductor linear mass (kg/km) ≈ 643
- Modulus of elasticity final (MPa) ≈ 66200
- Coefficient of linear expansion, β , (1/°C) ≈ 21.44 * 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 200.93-A1/S1A-18/3.77-1/3.77	
Conductor Overall Diameter (mm)	18.87	
Area Aluminium (mm ²)	200.93	
Area Total (mm ²)	212.09	
Aluminium wires (number off) / (diameter mm)	18/3.77	
Steel wires (number off) / (diameter mm)	1/3.77	
Conductor linear mass (kg/km)	643	
Ultimate Tensile Strength (kN)	44.9	
Resistance DC @ 20°C (ohms/km)	0.1427	
Modulus Elasticity Final (MPa)	66200	
Coefficient of Linear Expansion, β , (1/°C)	21.44 * 10-6	
Drum Length(m)	3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased and greased	

ESKOM COPYRIGHT PROTECTED

DINOSAUR

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0437
- Conductor diameter (mm) ≈ 35.55
- Ultimate Tensile Strength (kN) ≥ 203.66
- Conductor linear mass (kg/km) ≈ 2483
- Modulus of elasticity final (MPa) ≈ 72300
- Coefficient of linear expansion, β , (1/°C) ≈ 19.89* 10-6

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 661.72-A1/S1A-54/3.95-19/2.37	
Conductor Overall Diameter (mm)	35.55	
Area Aluminium (mm ²)	661.72	
Area Total (mm ²)	745.54	
Aluminium wires (number off) / (diameter mm)	54/3.95	
Steel wires (number off) / (diameter mm)	19/2.37	
Conductor linear mass (kg/km)	2483	
Ultimate Tensile Strength (kN)	203.66	
Resistance DC @ 20°C (ohms/km)	0.0437	
Modulus Elasticity Final (MPa)	72300	
Coefficient of Linear Expansion, β , (1/°C)	19.89* 10-6	
Drum Length(m)	3000	
Matched Sets	Yes	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased and greased	

ESKOM COPYRIGHT PROTECTED

ACACIA (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 1.39
- Conductor diameter (mm) ≈ 6.24
- Ultimate Tensile Strength (kN) ≥ 6.69
- Conductor linear mass (kg/km) ≈ 65
- Modulus of elasticity final (MPa) ≈ 61000
- Coefficient of linear expansion, β, (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 23.79-A2-7/2.08	
Conductor Overall Diameter (mm)	6.24	
Area Aluminium (mm ²)	23.79	
Area Total (mm ²)	23.79	
Aluminium wires (number off) / (diameter mm)	7/2.08	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	65	
Ultimate Tensile Strength (kN)	6.69	
Resistance DC @ 20°C (ohms/km)	1.39	
Modulus Elasticity Final (MPa)	61000	
Coefficient of Linear Expansion, β, (1/°C)	23* 10-6	
Drum Length(m)	3000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased	

CODE 35 (GRS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.785
- Conductor diameter (mm) ≈ 8.35
- Ultimate Tensile Strength (kN) ≥ 11.86
- Conductor linear mass (kg/km) ≈ 115
- Modulus of elasticity final (MPa) ≈ 61000
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 42.18-A2-7/2.77	
Conductor Overall Diameter (mm)	8.31	
Area Aluminium (mm ²)	42.18	
Area Total (mm ²)	42.18	
Aluminium wires (number off) / (diameter mm)	7/2.77	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	115	
Ultimate Tensile Strength (kN)	11.86	
Resistance DC @ 20°C (ohms/km)	0.785	
Modulus Elasticity Final (MPa)	61000	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	3000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Greased	

HORNET

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1825
- Conductor diameter (mm) ≈ 16.25
- Ultimate Tensile Strength (kN) ≥ 26
- Conductor linear mass (kg/km) ≈ 435
- Modulus of elasticity final (MPa) ≈ 59650
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 157.62-A1-19/3.25	
Conductor Overall Diameter (mm)	16.25	
Area Aluminium (mm ²)	157.62	
Area Total (mm ²)	157.62	
Aluminium wires (number off) / (diameter mm)	19/3.25	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	435	
Ultimate Tensile Strength (kN)	26	
Resistance DC @ 20°C (ohms/km)	0.1825	
Modulus Elasticity Final (MPa)	59650	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	

HORNET (INS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.1825
- Conductor diameter (mm) ≈ 16.25
- Ultimate Tensile Strength (kN) ≥ 26
- Conductor linear mass (kg/km) ≈ 435
- Modulus of elasticity final (MPa) ≈ 59650
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 157.62-A1-19/3.25	
Conductor Overall Diameter (mm)	16.25	
Area Aluminium (mm ²)	157.62	
Area Total (mm ²)	157.62	
Aluminium wires (number off) / (diameter mm)	19/3.25	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	435	
Ultimate Tensile Strength (kN)	26	
Resistance DC @ 20°C (ohms/km)	0.1825	
Modulus Elasticity Final (MPa)	59650	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1500	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	
Insulated (Specification) material, thickness	Insulated	

ESKOM COPYRIGHT PROTECTED

CENTIPEDE

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0694
- Conductor diameter (mm) ≈ 26.46
- Ultimate Tensile Strength (kN) ≥ 67.2
- Conductor linear mass (kg/km) ≈ 1150
- Modulus of elasticity final (MPa) ≈ 58600
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 415.22-A1-37/3.78	
Conductor Overall Diameter (mm)	26.46	
Area Aluminium (mm ²)	415.22	
Area Total (mm ²)	415.22	
Aluminium wires (number off) / (diameter mm)	37/3.78	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	1150	
Ultimate Tensile Strength (kN)	67.2	
Resistance DC @ 20°C (ohms/km)	0.0694	
Modulus Elasticity Final (MPa)	58600	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased and greased	

CENTIPEDE (INS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0694
- Conductor diameter (mm) ≈ 26.46
- Ultimate Tensile Strength (kN) ≥ 67.2
- Conductor linear mass (kg/km) ≈ 1150
- Modulus of elasticity final (MPa) ≈ 58600
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 415.22-A1-37/3.78	
Conductor Overall Diameter (mm)	26.46	
Area Aluminium (mm ²)	415.22	
Area Total (mm ²)	415.22	
Aluminium wires (number off) / (diameter mm)	37/3.78	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	1150	
Ultimate Tensile Strength (kN)	67.2	
Resistance DC @ 20°C (ohms/km)	0.0694	
Modulus Elasticity Final (MPa)	58600	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	
Insulated (Specification) material, thickness	Insulated	

ESKOM COPYRIGHT PROTECTED

BULL

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0334
- Conductor diameter (mm) ≈ 38.25
- Ultimate Tensile Strength (kN) ≥ 139
- Conductor linear mass (kg/km) ≈ 2400
- Modulus of elasticity final (MPa) ≈ 61000
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code IEC Code 865.36-A1-61/4.25	
Conductor Overall Diameter (mm)	38.25	
Area Aluminium (mm ²)	865.36	
Area Total (mm ²)	865.36	
Aluminium wires (number off) / (diameter mm)	61/4.25	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	2400	
Ultimate Tensile Strength (kN)	139	
Resistance DC @ 20°C (ohms/km)	0.0334	
Modulus Elasticity Final (MPa)	57570	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	

BULL (INS)

ALTERNATIVE PHASE CONDUCTOR

If an alternative conductor is offered, the following electrical and mechanical properties shall be observed:

- Resistance (ohms/km) ≤ 0.0334
- Conductor diameter (mm) ≈ 38.25
- Ultimate Tensile Strength (kN) ≥ 139
- Conductor linear mass (kg/km) ≈ 2400
- Modulus of elasticity final (MPa) ≈ 59650
- Coefficient of linear expansion, β , (1/°C) ≈ 23 * 10⁻⁶

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	IEC Code 865.36-A1-61/4.25	
Conductor Overall Diameter (mm)	38.25	
Area Aluminium (mm ²)	865.36	
Area Total (mm ²)	865.36	
Aluminium wires (number off) / (diameter mm)	61/4.25	
Steel wires (number off) / (diameter mm)	N/A	
Conductor linear mass (kg/km)	2400	
Ultimate Tensile Strength (kN)	139	
Resistance DC @ 20°C (ohms/km)	0.0334	
Modulus Elasticity Final (MPa)	57570	
Coefficient of Linear Expansion, β , (1/°C)	23* 10-6	
Drum Length(m)	1000	
Matched Sets	No	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Ungreased	
Insulated (Specification) material, thickness	Insulated	

ESKOM COPYRIGHT PROTECTED

IEC 315 ACSR Trapezoidal conductor (equivalent in diameter or Aluminium area)

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	Supplier to specify	
Conductor Overall Diameter (mm)	Supplier to specify	
Area Aluminium (mm ²)	Supplier to specify	
Area Total (mm ²)	Supplier to specify	
Aluminium wires (number off) / (diameter mm)	Supplier to specify	
Steel wires (number off) / (diameter mm)	Supplier to specify	
Conductor linear mass (kg/km)	Supplier to specify	
Ultimate Tensile Strength (kN)	Supplier to specify	
Resistance DC @ 20°C (ohms/km)	Supplier to specify	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β , (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	Supplier to specify	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Supplier to specify	
Insulated (Specification) material, thickness	Supplier to specify	

Tern ACSR Trapezoidal conductor (equivalent in diameter or Aluminium area)

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	Supplier to specify	
Conductor Overall Diameter (mm)	Supplier to specify	
Area Aluminium (mm ²)	Supplier to specify	
Area Total (mm ²)	Supplier to specify	
Aluminium wires (number off) / (diameter mm)	Supplier to specify	
Steel wires (number off) / (diameter mm)	Supplier to specify	
Conductor linear mass (kg/km)	Supplier to specify	
Ultimate Tensile Strength (kN)	Supplier to specify	
Resistance DC @ 20°C (ohms/km)	Supplier to specify	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β , (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	Supplier to specify	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Supplier to specify	
Insulated (Specification) material, thickness	Supplier to specify	

Bersfort ACSR Trapezoidal conductor (equivalent in diameter or Aluminium area)

A/B SCHEDULES phase conductor Specification Sheets

SCHEDULE A: PURCHASER'S SPECIFIC REQUIREMENTS

SCHEDULE B: PARTICULARS OF EQUIPMENT TO BE SUPPLIED

Conductor Type

DESCRIPTION	SCHEDULE A	SCHEDULE B
IEC Code	Supplier to specify	
Conductor Overall Diameter (mm)	Supplier to specify	
Area Aluminium (mm ²)	Supplier to specify	
Area Total (mm ²)	Supplier to specify	
Aluminium wires (number off) / (diameter mm)	Supplier to specify	
Steel wires (number off) / (diameter mm)	Supplier to specify	
Conductor linear mass (kg/km)	Supplier to specify	
Ultimate Tensile Strength (kN)	Supplier to specify	
Resistance DC @ 20°C (ohms/km)	Supplier to specify	
Modulus Elasticity Final (MPa)	Supplier to specify	
Coefficient of Linear Expansion, β , (1/°C)	Supplier to specify	
Drum Length(m)	Supplier to specify	
Matched Sets	Supplier to specify	
Greased (Castrol BJ20 or equivalent. Equivalent products subject to Eskom's approval. All layers must be greased except the outside)	Supplier to specify	
Insulated (Specification) material, thickness	Supplier to specify	