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Title: **TUBULAR AND STRANDED
CONDUCTOR CLAMPS
ADDITIONAL TO THE EXISTING
STANDARDS**

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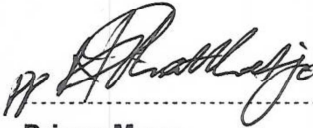
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Revision history

This revision cancels and replaces revision number of document number

Date	Rev.	Compiled by	Clause	Remarks
Sept 2014	1	TJ Marais	N/A	Original issue

Acceptance

This document has been seen and accepted by the following substation products work group members:

Name	Designation
Athelene Gouws	Standards Implementation, NWOU
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1. Normative reference

240-53113923 Specification for Substation Clamps for Tube Aluminium Conductors

474-218 Specification for Substation Clamps for Stranded Aluminium Conductors

SANS 62271-301 Dimensional standardisation of high-voltage terminals

2. Introduction

The following substation clamps are needed and will be added to the respective standards at the next revisions.

3. Additional clamps for tube aluminium conductors

3.1 Type ESC-PI-F: 80mm – 120mm tubes

These post insulator mounted clamps are used to support tubular conductors ranging between 80mm and 120mm in diameter.

Table 1: Type ESC-PI-F (80mm – 120mm)

Type	Tube diameter (A) (mm)	PCD (mm)	Minimum Rated Current @ 90°C (A)	Maximum Voltage [Um] (kV rms)
ESC-PI-F-A	80	76	2,000	145
ESC-PI-F-B	80	127	2,000	145
ESC-PI-F-C	100	76	2,500	145
ESC-PI-F-D	100	127	2,500	145
ESC-PI-F-E	120	76	3,150	145
ESC-PI-F-F	120	127	3,150	145

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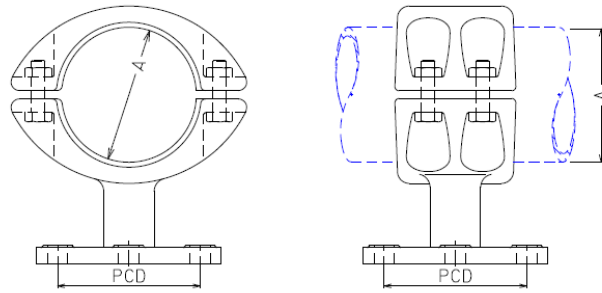


Figure 1: ESC-PI-F: Post insulator mounted fixed support clamp (80mm – 120mm)

3.2 Type ESC-PI-F: 150mm – 250mm tubes

These post insulator mounted clamps are used to support tubular conductors ranging between 150mm and 250mm in diameter.

Table 2: Type ESC-PI-F (150mm – 250mm)

Type	Tube diameter (A) (mm)	PCD (mm)	Minimum Rated Current @ 90 °C (A)	Maximum Voltage [Um] (kV rms)
ESC-PI-F-G	150	127	3,150	300
ESC-PI-F-H	160	127	3,150	300
ESC-PI-F-J	200	127	4,000	800
ESC-PI-F-K	200	225	4,000	800
ESC-PI-F-L	250	225	4,000	800

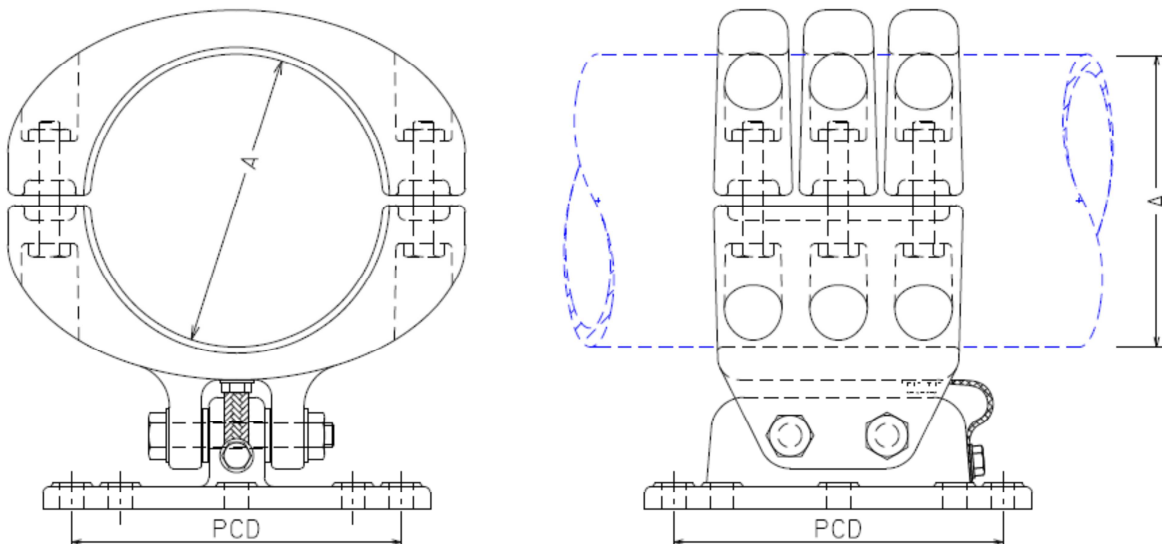


Figure 2: ESC-PI-F: Post insulator mounted fixed support clamp (150mm – 250mm)

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4. Additional clamps for stranded aluminium conductors

4.1 Type EPTT2

These twisted bolted-type clamps are used mainly for connecting twin stranded conductor bundles to in-line (also called transverse) isolators with 8-hole pad terminals.

Table 3: Type EPTT2

Type	Conductor Diameter (A) (mm)	Conductor Centre Spacing (mm)	Equipment Terminal	Normal Rated Current @ 90 °C (A rms)	Maximum Voltage [Um] (kV rms)
EPTT2-A	2 x 26.5	150	8 Bolt Pad to SANS 62271-301	1,700	145
EPTT2-B	2 x 38.3	150	8 Bolt Pad to SANS 62271-301	2,700	420

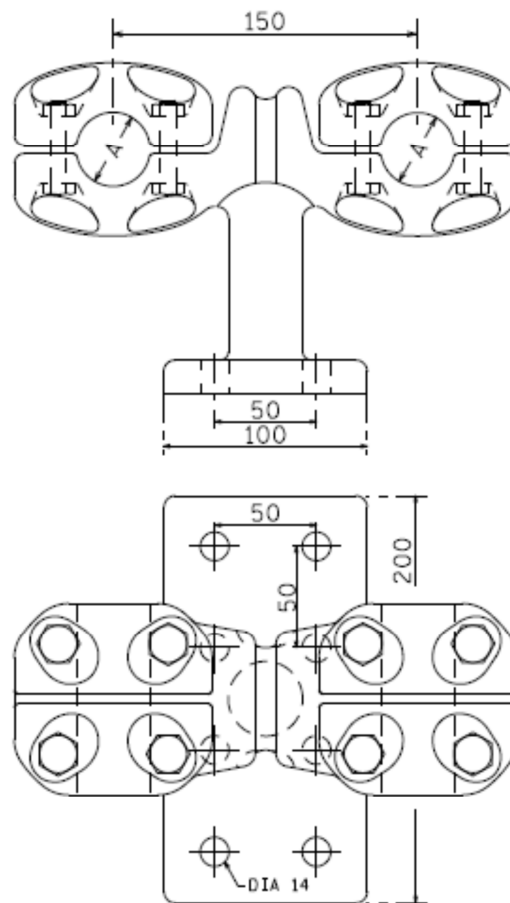


Figure 3: EPTT2: Twin conductor bolted support clamp on eight hole pad to fit 8 hole terminal

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4.2 Type EXCP2

These pedestal mounted bolted clamps are used to support twin conductor bundles on post insulators.

Table 4: Type EXCP2

Type	Conductor Diameter (A) (mm)	PCD (mm)	Normal Rated Current @ 90 °C (A rms)	Maximum Voltage [Um] (kV rms)
EXCP2-A	2 x 26.5	76	1,700	145
EXCP2-B	2 x 26.5	127	1,700	145
EXCP2-C	2 x 38.3	76	2,700	145
EXCP2-D	2 x 38.3	127	2,700	420
EXCP2-E	2 x 38.3	225	2,700	420

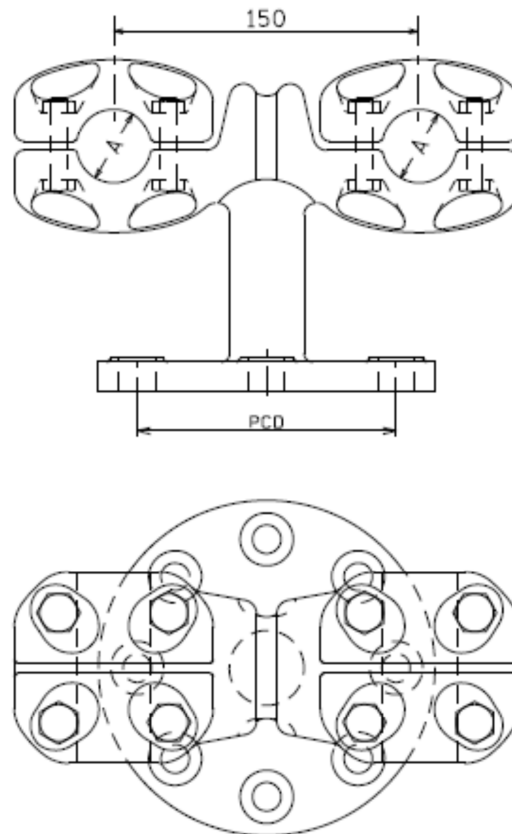


Figure 4: EXCP2: Post insulator mounted twin conductor support clamp

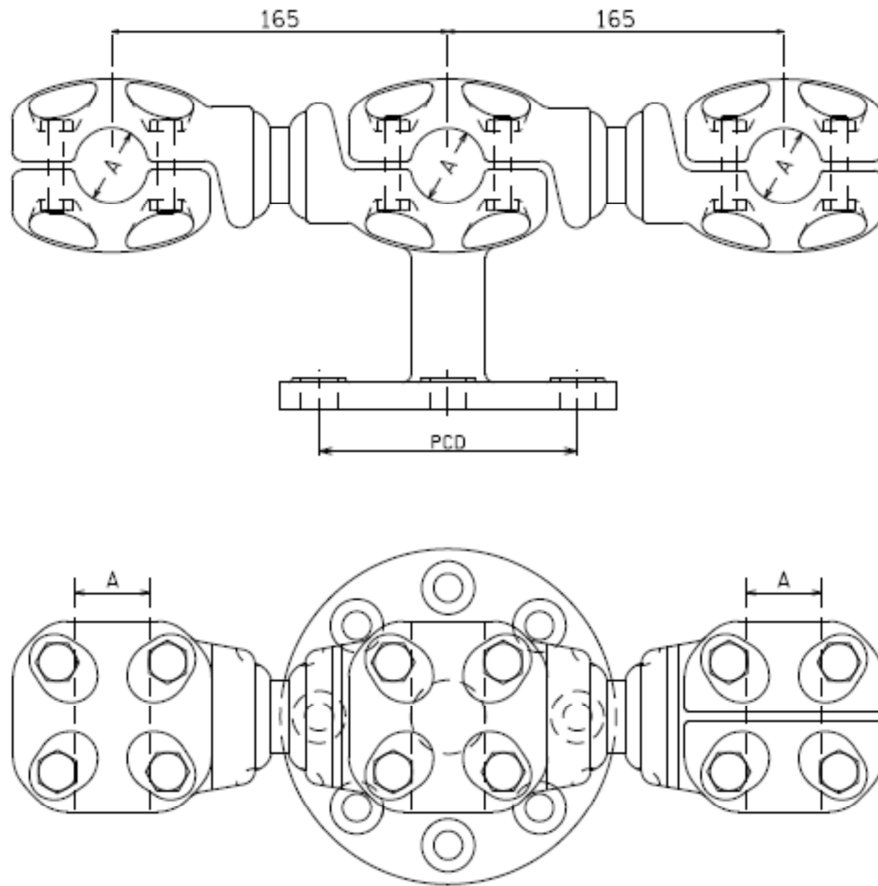
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4.3 Type EXCP3

These pedestal mounted bolted clamps are used to support triple conductor bundles on post insulators.

Table 5: Type EXCP3

Type	Conductor Diameter (A) (mm)	PCD (mm)	Normal Rated Current @ 90 °C (A rms)	Maximum Voltage [Um] (kV rms)
EXCP3-A	3 x 26.5	127	1,700	145
EXCP3-B	3 x 38.3	127	2,700	420
EXCP3-C	3 x 38.3	225	2,700	420

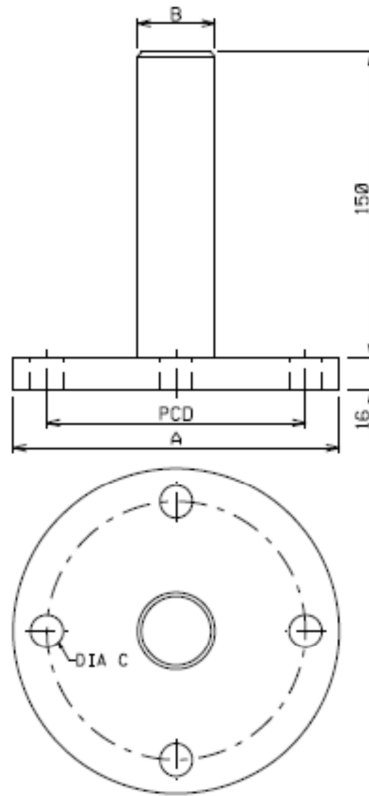
**Figure 5: EXCP3: Post insulator mounted triple conductor support clamp****ESKOM COPYRIGHT PROTECTED**

4.4 Type EPISF

These post insulator stem fittings are used to provide for clamp connections on post insulators where needed.

Table 6: Type EPISF

Type	Overall Diameter (A) (mm)	Stem Diameter (B) (mm)	PCD (mm)	Hole Diameter (C) (mm)
EPISF-A	110	38	76	12
EPISF-B	160	38	127	16
EPISF-C	265	38	225	18

**Figure 6: EPISF: Post insulator stem fitting**