Australian Standard®

Insulators—Composite for overhead power lines—Voltages greater than 1000 V a.c.

Part 4: Definitions, test methods and acceptance criteria for post insulator units

This Australian Standard was prepared by Committee EL/10, Overhead Lines. It was approved on behalf of the Council of Standards Australia on 28 January 1997 and published on 5 May 1997.

The following interests are represented on Committee EL/10:

Australasian Railway Association

Australian Chamber of Commerce and Industry

Australian Electrical and Electronic Manufacturers Association

Australian Porcelain Insulators Association

Electricity Supply Association of Australia

Electricity Supply Engineers Association of New Zealand

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/10 on Overhead Lines.

This Standard is the result of a consensus among Australian and New Zealand representatives to produce it as an Australian Standard.

The objective of this Standard is to provide users and manufacturers of composite insulators with definitions of terms, test methods and acceptance criteria to facilitate the specification of insulators.

This Standard is one of a five-part series to cover composite insulators for overhead lines, which when complete will comprise the following:

Part 1: Definitions, test methods and acceptance criteria for string insulator units.

Part 2: Standard strength classes and end fittings for string insulator units.

Part 3: Dimensional and electrical characteristics for string insulator units.

Part 4: Definitions, test methods and acceptance criteria for post insulator units.

Part 5: Standard strength classes and end fittings for post insulator units.

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1 SCOPE AND APPLICATION This Standard is applicable to composite line post insulators. Composite post insulators designed primarily to work in tension applications are not included in the scope of this Standard.

This Standard deals with those composite post insulators which include a 'core' and a 'housing'. The core is usually made of resin-impregnated glass fibres. The housing can be manufactured from a variety of materials including elastomers (e.g. silicone, ethylene-propylene), resins (e.g. cycloaliphatic epoxy), or fluorocarbons (e.g. polytetrafluoroethylene).

2 REFERENCED DOCUMENTS The documents below are referred to in this Standard.

AS
1650 Hot-dipped galvanized coatings on ferrous articles

1931 High-voltage test techniques
1931.1 General definitions and test requirements

2947 Insulators—Porcelain and glass for overhead power lines—Voltages greater than 1000 V a.c.
2947.1 Part 1: Test methods

4435 Insulators—Composite for overhead power lines—Voltages greater than 1000 V a.c.
4435.1 Part 1: Definitions, test methods and acceptance criteria for string insulator units

4436 Guide for the selection of insulators in respect of polluted conditions

IEC
707 Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source

ASTM
2863-77 Flammability of plastics using the oxygen index method

3 DEFINITIONS For the purpose of this Standard, the definitions below apply:

3.1 Chalking (flouring)—the appearance of some particles of the filler of the housing material forming a rough or powdery surface.

3.2 Composite post insulator—a post insulator made of at least two insulating parts, namely a core and a housing. It is equipped with metal end fittings which transfer the load to the core. Load is primarily applied in cantilever however both tensile and compression loads may result.