Common Cable Design Standards Used in Australia / NZ

The following standards represent most of the common cable design standards used in Australia and New Zealand. They cover cables that you are likely to see or use on a daily basis. **General Cable** has the capability to manufacture cables to a very broad range of international design specifications and standards, including special purpose constructions to meet customer specialist and specific needs.

Flat TPS:

AS/NZS 5000.2

This is the standard used for most General Cable Flat TPS products. It has been used for Australian products for several years and now applies to New Zealand products (which have recently changed from NZS 6401). The principal differences from NZS 6401 are 450/750V designation, higher temperature rated PVC (90° as opposed to 75°C) and the option to use XLPE and crosslinked PVC materials.
This standard is generally used for 1mm^2 – 16mm^2 products.

AS/NZS 5000.1

This standard replaces AS 3147, and covers Flat TPS cables rated to 600/1000V. These designs have a much thicker sheath (still rated to 90°C) than cables to the standards listed above and are generally used for cables above 25mm^2.

Circular TPS / Multicore

NZS 6401
AS/NZS 5000.1
AS/NZS 5000.2
AS/NZS 5000.3
BS 6346
BS 5467
IEC 60502.1

There are many standards covering low voltage power distribution cables, but they all generally offer a similar cable in most respects. Some key points that users should be aware of are:

- NZS 6401 cables are expected to be phased out and replaced with equivalents to AS/NZS 5000.1, AS/NZS 5000.2 and AS/NZS 5000.3 standards.
- BS 5467and BS 6346 permit lower insulation radials on some conductors below 10mm².
- IEC 60502.1 and AS/NZS 5000.1 have a calculated sheath radial based on the diameter of the cable with minimum of 1.8mm for multicore cables; BS standards use tabulated dimensions with a minimum of 1.4mm.
- Australasia have moved to white as a phase colour (to avoid possible confusion with green/yellow earths), some BS standards still allow a yellow phase colour.

Neutral Screen:

AS/NZS 4961

This standard supersedes both NZS 6401 and AS/NZS 3155. Worth noting that in NZ a neutral screen cable with a 3.2mm sheath can be direct buried without further mechanical protection. This is not the case however in Australia.

Medium Voltage Cables: 1.9/3.3, 3.8/6.6, 6.35/11, 12.7/22, 19/33kV

AS/NZS 1429.1
BS 6622
IEC 60502.2

AS/NZS 1429.1 is the most commonly used standard in Australasia for XLPE cables, but there are only minor differences between the above three standards.

AS/NZS 1026
BS 6480

Paper Lead cables are a very well proven technology, and as such have not changed for many years. These two standards are virtually interchangeable.

AS/NZS 4026

AS/NZS 4026 is a standard that was developed in Australia to standardise on a set of cables for use in underground residential distribution systems (URD). The set of cables is taken from AS/NS 1429.1, AS/NZS 1026 and AS/NZS 5000.1, and also includes a unique design called a “service” cable.

Installation Practice/Cable ratings:

AS/NZS 3000
AS/NZS 3008.1
AS/NZS 3008.2

AS/NZS 3008 specifies acceptable cable loadings in various installation conditions, and AS/NZS 3000 covers minimum requirements for the design, construction and testing of electrical installations. All installers of mains rated electrical cable should be very familiar with these standards.

Flexible Cords:

AS/NZS 3191

This standard is commonly used for domestic applications: extension leads, connections to appliances, and multiboxes, and now includes copper braided flexible cord frequently used in New Zealand as an industrial flex.

Pilot / Control Cables:

AS/NZS 2373, 600/1000V

This standard can be used when the customer, usually a Power Board, Utility, or lines company, has no in-house specification.

LAN Cables:

EIA/TIA 568B
AS/NZS 3080

These are the Commercial Building Telecommunications Cabling Standards, which cover the specifications for categories 3, 4, and 5 Unshielded Twisted-Pair (UTP) cables and connecting hardware. EIA/TIA 568B also incorporates additional specifications for categories 5e and 150Ω Shielded Twisted-Pair (STP-A) cables and connectors. New specifications for 62.5/125μm optical fibre and single-mode optical fibre cables, connectors and cabling practices have also been included.

Instrumentation / Supervisory Cables:

BS 5308, 300/500V.

This standard has been used with IEC 60502.1 as the basis for MESC specifications in the petrochemical industry. It includes specifications for polyethylene, PVC, multipair, multicore, unarmoured, lead covered and armoured cable constructions.

If you have any questions regarding appropriate design standards for cable or cable related installation and practice, please contact your local **General Cable** representative.

10.5.1.2

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