

Letter Codes for Portable Cords

Defining cable characteristics

“Portable cords” (portable electric power cables) are used in a very wide range of temporary and semi-permanent electric power applications. Portable cords are equipped with attachment plugs – a male plug which connects and receives power from a receptacle and a female plug which connects and supplies power to a device. They are not a substitute for fixed wiring and are not installed within structural elements like walls or ceilings. The characteristics of flexible cables are designed for the type of use or location. For example, a job site that frequently uses toxic chemicals has different requirements for cable construction when compared to a wet marine environment.

In the USA, the National Electric Code designates letter codes to define the various types of portable cord (NEC Article 400). The Canadian Standards Association (CSA) have also adopted similar codes, with very minimal differences. The lettering code identification system help specifiers understand what portable cord is suitable for specific applications.

Cable anatomy

There are predominantly three types of compounds used cable construction in North America:

Thermoset	Heavy-duty grade rubber jackets designated SJO, SO, SOOW, SJOOW, etc. Flexible, durable, extreme temperature resistant, oil-resistant, water-resistant or submersible when marked
Thermoplastic Elastomer	Medium-duty TPE jackets designated SEO, SJEOW, SEOW, etc. lighter-weight, performs well in elements, especially colder temps, unsuitable for extreme heat or hot oil
Thermoplastic	Light-duty plastic jacket designated STOW, SJTW, etc. Least flexible in cold, most popular with consumer equipment, minimal exposure to elements and chemicals

Common Portable Cords in North American Live Events

- | | |
|---------------------------------------|--|
| S Extra-hard usage cord - 600V | O Oil-resistant outer jacket |
| SJ Hard usage cord - 300V | OO Oil-resistant outer jacket and conductor insulation |
| T Thermoplastic | W Approved for indoor and outdoor use (Weather resistant) |
| E Thermoplastic Elastomer | |

SJO	Hard Usage Cord with Oil Resistant Jacket	300V
SJOO	SJO with Oil Resistant Insulation	300V
SJOOW	SJOO with Weather Resistant Jacket	300V
SJT	Hard Usage Cord w/ Thermoplastic Jacket	300V

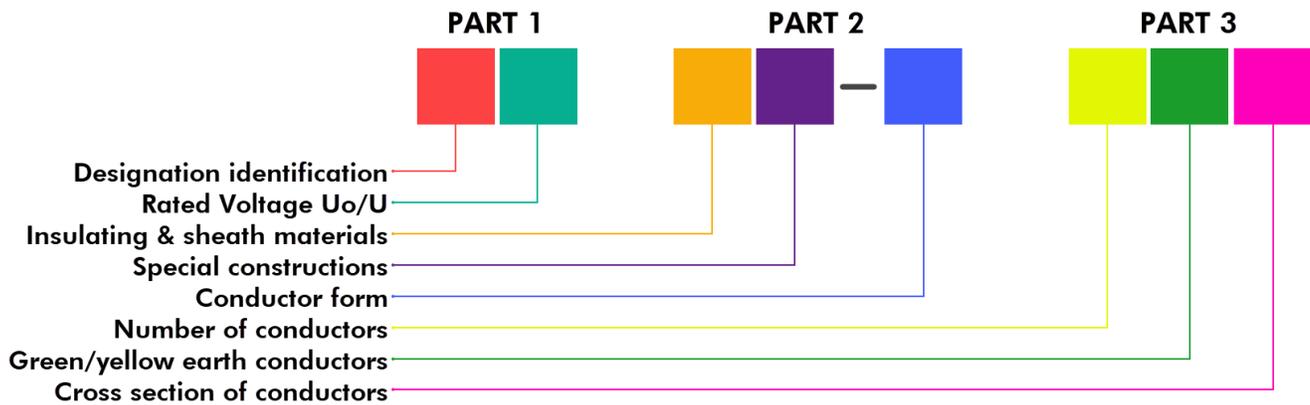
SO	Extra-hard Usage Cord with Oil Resistant Jacket	600V
SOO	SO with Oil Resistant Insulation	600V
SOOW	SOO with Weather Resistant Jacket	600V
SEO	Extra-hard Usage Cord with Oil Resistant Elastomeric Jacket	600V

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HAR cables in Europe

CENELEC is the leading European standardization organization that sets common guidelines for cable construction between European countries, which are identified as Harmonised European standard cables. HAR cables use a 3 part designation code system that help manufacturers classify several elements of cable construction such as cable voltage, insulation material, conductor type and more.



Common Portable Cables in European Live Events

Because European cable standards are far more ranging in scope, we will briefly cover some of the most common cables codes we encounter and their definitions:

H05 Harmonised standard cable with Voltage rating 300/500V

H07 Harmonised standard cable with Voltage rating 450/750V

VV-F PVC Conductor insulation, PVC Outer Jacket, Flexible class 5.

RN-F EPR (Ethylene Propylene Rubber) Conductor insulation, PCP (Polychloroprene) Outer Jacket, Flexible class 5

RN-8-F As per RN-F but suitable for submersion in fresh water up to 10m depth

H05VV-F Ordinary duty PVC insulated, PVC jacketed Harmonised cable for indoor use only

H07RN-F Heavy duty EPR insulated, PCP jacketed harmonised cable for indoor or outdoor use and particularly suited for use in stage and studio application

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