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SUBJECT: NO MORE '300 VOLTS' IN PLTC PRINT LEGEND

BELDEN has put this information together to inform the market of the modifications to the **2002 NEC**[®] concerning 300 volt marking on PLTC type cables.

“Why isn't '300 volts' printed on PLTC cable anymore?”

The **2002 NEC** modified the printing requirements that were allowed on the jacket of PLTC type cables. The use of “300 volts” or “300 v” in the print legend was disallowed because the voltage marking on the cable may be misinterpreted to suggest that the cable may be suitable for Class 1 electric light and power applications. See *NEC* clause **725.71 (H) Marking** below.

PLTC type cables will still have the same applications use as before. PLTC cables are still rated 300 volts but cannot be so marked after May 25, 2003.

On February 25, 2003 UL issued revisions to UL 13, Standard for Power-Limited Circuit Cables, which governs the listing and marking requirements of PLTC cable. One of those revisions was the removal of the “300 volts” or “300 v” marking on the cable in accordance with the **2002 NEC**. This removal becomes effective May 25, 2003 for all cable manufacturers. Any existing cable that is in stock or anywhere in the industry pipeline which has the “300 volts” or “300 v” marking will still be an acceptable cable for use. On May 25, 2003 and after cable manufacturers will not be allowed to mark the “300 volts” or “300 v” marking on PLTC cable or on any label attached to the product.

The *NEC* does allow an exception to allow voltage markings for cables with multiple listings where a voltage marking for one or more listings is required. See *NEC* clause **725.71 (H) Exception**.

KEY POINTS

- **The use of '300 volts' or '300 v' in the print legend of PLTC type cables is disallowed by the *NEC* for all cable manufacturers.**
- **The effective date for the discontinued use of the '300 volts' or '300 v' in the jacket print legend or on any label attached to the product is May 25, 2003.**
- **All cables produced with '300 volts' or '300 v' markings before May 25, 2003 are acceptable. This covers all inventories in the industry pipeline including manufacturers, distributors, installers, and end users.**
- **There is no change in the use application of these cables.**
- **A voltage marking exception is permitted on multiple listed cables when required by the other listing.**

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725.71 Listing and Marking of Class 2, Class 3, and Type PLTC Cables.

Class 2, Class 3, and Type PLTC cables installed as wiring within buildings shall be listed as being resistant to the spread of fire and other criteria in accordance with 725.71(A) through (G) and shall be marked in accordance with 725.71(H).

(A) Types CL2P and CL3P. Types CL2P and CL3P plenum cables shall be listed as being suitable for use in ducts, plenums, and other space used for environmental air and shall also be listed as having adequate fire-resistant and low smoke-producing characteristics.

FPN: One method of defining low smoke-producing cable is by establishing an acceptable value of the smoke produced when tested in accordance with NFPA 262-1999, Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces, to a maximum peak optical density of 0.5 and a maximum average optical density of 0.15. Similarly, one method of defining fire-resistant cables is by establishing a maximum allowable flame travel distance of 1.52 m (5 ft) when tested in accordance with the same test.

(B) Types CL2R and CL3R. Types CL2R and CL3R riser cables shall be listed as being suitable for use in a vertical run in a shaft or from floor to floor and shall also be listed as having fire-resistant characteristics capable of preventing the carrying of fire from floor to floor.

FPN: One method of defining fire-resistant characteristics capable of preventing the carrying of fire from floor to floor is that the cables pass the requirements of ANSI/UL 1666-1997, Test for Flame Propagation Height of Electrical and Optical-Fiber Cable Installed Vertically in Shafts.

(C) Types CL2 and CL3. Types CL2 and CL3 cables shall be listed as being suitable for general-purpose use, with the exception of risers, ducts, plenums, and other space used for environmental air and shall also be listed as being resistant to the spread of fire.

FPN: One method of defining resistant to the spread of fire is that the cables do not spread fire to the top of the tray in the vertical tray flame test in ANSI/UL 1581-1991, Reference Standard for Electrical Wires, Cables and Flexible Cords.

Another method of defining resistant to the spread of fire is for the damage (char length) not to exceed 1.5 m (4 ft 11 in.) when performing the CSA vertical flame test for cables in cable trays, as described in CSA C22.2 No. 0.3-M-1985, Test Methods for Electrical Wires and Cables.

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(D) Types CL2X and CL3X. Types CL2X and CL3X limited-use cables shall be listed as being suitable for use in dwellings and for use in raceway and shall also be listed as being resistant to flame spread.

FPN: One method of determining that cable is resistant to flame spread is by testing the cable to the VW-1 (vertical-wire) flame test in ANSI/UL 1581-1991, Reference Standard for Electrical Wires, Cables and Flexible Cords.

(E) Type PLTC. Type PLTC nonmetallic-sheathed, power-limited tray cable shall be listed as being suitable for cable trays and shall consist of a factory assembly of two or more insulated conductors under a nonmetallic jacket. The insulated conductors shall be 22 AWG through 12 AWG. The conductor material shall be copper (solid or stranded). Insulation on conductors shall be suitable for 300 volts. The cable core shall be either (1) two or more parallel conductors, (2) one or more group assemblies of twisted or parallel conductors, or (3) a combination thereof. A metallic shield or a metallized foil shield with drain wire(s) shall be permitted to be applied either over the cable core, over groups of conductors, or both. The cable shall be listed as being resistant to the spread of fire. The outer jacket shall be a sunlight- and moisture-resistant nonmetallic material.

Exception No. 1: Where a smooth metallic sheath, continuous corrugated metallic sheath, or interlocking tape armor is applied over the nonmetallic jacket, an overall nonmetallic jacket shall not be required. On metallic-sheathed cable without an overall nonmetallic jacket, the information required in 310.11 shall be located on the nonmetallic jacket under the sheath.

Exception No. 2: Conductors in PLTC cables used for Class 2 thermocouple circuits shall be permitted to be any of the materials used for thermocouple extension wire.

FPN: One method of defining resistant to the spread of fire is that the cables do not spread fire to the top of the tray in the vertical tray flame test in ANSI/UL 1581-1991, Reference Standard for Electrical Wires, Cables and Flexible Cords.

Another method of defining resistant to the spread of fire is for the damage (char length) not to exceed 1.5 m (4 ft 11 in.) when performing the CSA vertical flame test for cables in cable trays, as described in CSA C22.2 No. 0.3-M-1985, Test Methods for Electrical Wires and Cables.

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(F) Class 2 and Class 3 Cable Voltage Ratings. Class 2 cables shall have a voltage rating of not less than 150 volts. Class 3 cables shall have a voltage rating of not less than 300 volts.

(G) Class 3 Single Conductors. Class 3 single conductors used as other wiring within buildings shall not be smaller than 18 AWG and shall be Type CL3. Conductor types described in 725.27(B) that are also listed as Type CL3 shall be permitted.

FPN: One method of defining resistant to the spread of fire is that the cables do not spread fire to the top of the tray in the vertical tray flame test in ANSI/UL 1581-1991, Reference Standard for Electrical Wires, Cables and Flexible Cords.

Another method of defining resistant to the spread of fire is for the damage (char length) not to exceed 1.5 m (4 ft 11 in.) when performing the CSA vertical flame test for cables in cable trays as described in CSA C22.2 No. 0.3-M-1985, Test Methods for Electrical Wires and Cables.

(H) Marking. Cables shall be marked in accordance with 310.11(A)(2), (3), (4), and (5) and Table 725.71. Voltage ratings shall not be marked on the cables.

FPN: Voltage markings on cables may be misinterpreted to suggest that the cables may be suitable for Class 1 electric light and power applications.

Exception: Voltage markings shall be permitted where the cable has multiple listings and a voltage marking is required for one or more of the listings.

FPN: Class 2 and Class 3 cable types are listed in descending order of fire resistance rating, and Class 3 cables are listed above Class 2 cables, because Class 3 cables can substitute for Class 2 cables.

Table 725.71 Cable Markings

<u>Cable Marking</u>	<u>Type</u>	<u>Listing References</u>
CL3P	Class 3 plenum cable	725.71(A), (F), and (H)
CL2P	Class 2 plenum cable	725.71(A) and (H)
CL3R	Class 3 riser cable	725.71(B), (F), and (H)
CL2R	Class 2 riser cable	725.71(B) and (H)
PLTC	Power-limited tray cable	725.71(E) and (H)
CL3	Class 3 cable	725.71(C), (F), and (H)
CL2	Class 2 cable	725.71(C), (F), and (H)
CL3X	Class 3 cable, limited use	725.71(D), (F), and (H)
CL2X	Class 2 cable, limited use	725.71(D), (F), and (H)

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*February 25, 2003
Superseded requirements for
the Standard for
Power-Limited Circuit Cables
UL 13, Second Edition*

The requirements shown are the current requirements that have been superseded by requirements in revisions issued for this Standard. To retain the current requirements, do not discard the following requirements until the future effective dates are reached.

1.2 (1.2) Type PLTC cable is rated for 300 volts and is so marked. Cables for Class 3 circuits are rated for 300 volts but are not so marked. Cables for Class 2 circuits do not have a voltage rating. See 40.1 (h).

1.2 effective until May 25, 2003

Here is the new wording that becomes effective May 25, 2003

1.2 Cables for Class 3 circuits are rated for 300 volts but are not so marked. Cables for Class 2 circuits do not have a voltage rating. See 40.1 (h).

Revised 1.2 effective May 25, 2003

Sincerely,

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April 15, 2003