

# Article 382 Nonmetallic Extensions

## Analysis and Effect

Nonmetallic extensions addressed in Article 382 traditionally have been the exposed types and the rules contained in the article addressed those methods accordingly. Article 382 has been revised and expanded to provide requirements for a new type of *concealable nonmetallic extension* wiring method suitable for use on existing walls and ceilings of offices and residential occupancies. New technologies, consumer electronics devices such as flat panel televisions and custom audio systems, along with ever-changing lifestyles have increased the need for additional power outlets and the desire to place power or lighting outlets where needed to obtain an functionality as well as an aesthetically pleasing environment. Often these changes are poorly accommodated by using extension cords that are easily damaged, misused and can lead to electrical hazards. This new type of concealable nonmetallic extension incorporated into Article 382 provides a safe and reliable alternative for existing occupancies that can reduce the misuse of extension cords, overload power taps, and so forth. Concealable nonmetallic extensions are inherently safe because of their design and construction features, which are detailed in the new Part III of the article. Because the concealable wire nonmetallic extension is inherently safe, requirements for mechanical protection are not necessary to insure the practical safeguarding of persons and property in the event of physical damage to the cable. Section 382.6 requires a multiple protection features as follows:

The starting/source tap device for the extension shall contain and provide the following protection for all load-side extensions and devices:

- (1) Supplementary overcurrent protection
- (2) Level of protection equivalent to a Class A GFCI
- (3) Level of protection equivalent to a portable GFCI
- (4) Line and load-side miswire protection
- (5) Effects of arc faults

The conductors of the concealable wire nonmetallic extensions are flat and layered in a manner that insures practical safeguarding of persons or property. The flat wire cable is a multi-layer flat conductor design consisting of a center ungrounded conductor enclosed by a sectioned grounded conductor, and an overall equipment grounding conductor. The cable itself is a symmetrical design providing two levels of protection on both sides of the flat wire cable via the outer equipment grounding conductor layers and inner-grounded (neutral) conductor layers. This design insures that if the cable is damaged, punctured or penetrated, it will trip the overcurrent protection device (OCPD) and safely open the circuit. If the OCPD is reset, the circuit will trip and continue to do so upon subsequent resets. Evaluation and fact-finding studies by Underwriters Laboratories have been performed to ensure product safety.

## Summary of Change

Article 382 has been revised to incorporate provisions for concealed nonmetallic extensions. A new definition of this type of *concealable nonmetallic extensions* has been added in 382.2. The article has been expanded to include specific product listing requirements in 382.6. Section 382.10 and 382.12 covering Uses Permitted and Uses Not Permitted have been revised and expanded to incorporate requirements and restrictions for concealable nonmetallic extensions. A new Part III has been added to provide specific construction specifications for concealable nonmetallic extensions.

*Source: Analysis of Changes NEC-2008, p. 210-211*

