



Technical Information Sheet

Does the 2008 NEC have new requirements for protection of electrical conductors for fire pump and emergency systems?

Yes. One of the issues with the use of gypsum board enclosures for fire protection of electrical conductors is that other materials are commonly run in the same enclosure. The 2008 National Electrical Code addresses this shortcoming:

ARTICLE 700: EMERGENCY SYSTEMS

Section 700.9(D)(1)(4) requires that these assemblies be *dedicated to the emergency conductors*. This is a significant change. The change will come into effect rapidly as adoption of more recent codes has become the norm across the US (consider that 90% of states are on the 2005 code).

The options for fire protection of these conductors in the 2008 code are:

- (1) Be installed in spaces or areas that are fully protected by an approved automatic fire suppression system
- (2) Be a listed electrical circuit protective system with a minimum 1-hour fire rating
- (3) Be protected by a listed thermal barrier system for electrical system components
- (4) Be protected by a listed fire-rated assembly that has a minimum fire rating of 1-hour, and *contains only emergency wiring circuits*
- (5) Be embedded in not less than 50 mm (2 in) of concrete
- (6) Be a cable listed to maintain circuit integrity for not less than 1 hour when installed in accordance with the listing requirements

Note that "thermal barrier" systems must be listed for protection of "electrical system components," whereas there are no fire-rated assemblies (gypsum enclosures) listed for electrical cable protection.

ARTICLE 695: FIRE PUMPS

Section 695.6(B)(2) now requires that these gypsum board assemblies be *2-hour fire rated*. The options for fire protection of fire pump feeders in the 2008 code are:

They shall be permitted to be routed through a building(s) using one of the following methods:

- (1) Be encased in a minimum 50 mm (2 in) of concrete
- (2) Be protected by a fire-rated assembly listed to achieve a minimum fire rating of 2-hours and dedicated to the fire pump circuit(s)
- (3) Be a listed electrical circuit protective system with a minimum 2-hour fire rating

The code does not address the fact that gypsum enclosures such as shaft wall assemblies are listed for protection of structural members, not for electrical conductors.

Worldwide Headquarters
Tyco Thermal Controls
307 Constitution Drive
Menlo Park, CA 94025-1164
USA
Tel: (800) 545-6258
Tel: (650) 216-1526
Fax: (800) 527-5703
Fax: (650) 474-7711
info@tycothermal.com
www.tycothermal.com

Canada
Tyco Thermal Controls
250 West St.
Trenton, Ontario
Canada K8V 5S2
Tel: (800) 545-6258
Fax: (800) 527-5703

Latin America
Tyco Thermal Controls
7433 Harwin Drive
Houston, TX 77036
United States
Tel: (713) 868-4800
Tel: (713) 735-8645
Fax: (713) 868-2333

Europe, Middle East, Africa (EMEA)
Tyco Thermal Controls
Romeinse Straat 14
3001 Leuven
België / Belgique
Tel: +32 16 213 511
Fax: +32 16 213 603

Asia Pacific
Tyco Thermal Controls
20F, Innovation Building,
1009 Yi Shan Rd,
Shanghai 200233,
P.R.China
Tel: +86 21 2412 1688
Fax: +86 21 5426 2937 / 5426 3167

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