



# National Marine Electronics Association

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For Immediate Release

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## **An Update on the NMEA 2000 22 AWG Light Cable Communications Backbone**

The National Marine Electronics Association has been working with the U.S Coast Guard regarding the current interpretation of the Title 33 CFR Part 183 Subpart I Regulations regarding the use of 22AWG for power conductors in the NMEA 2000 bundled communication backbone, NMEA 2000 Light Cable. The 33 CFR 183.425 specifically relates to the manufacturing of recreational inboard gasoline engine vessels in the United States and is more than 30 years old.

The NMEA and its NMEA 2000 Standards Committee have pioneered new technology in the marine industry. NMEA 2000, the industry standard for marine electronics, developed the cabling standard from the robust industrial and robotic industry referencing their standards from the Open Device Net Vendor Association. The NMEA 2000 Light Cable has been in use for more than 10 years with tens of thousands of installations with only positive reports.

The NMEA through independent third party engineering testing has proven that the so called "NMEA 2000 Light Cable Backbone" exceeds the safety requirements as per the 33CFR 183.425. This empirical data had been provided to the U.S. Coast Guard Office of Ship Design and Engineering Standards, Systems Engineering Division and to the Office of Auxiliary and Boating Safety. The NMEA 2000 Light Cable meets the requirements in the 46 CFR but did not meet the now thirty year old requirements in the 33 CFR.

NMEA has received a memorandum from the USCG Office of Ship Design and Engineering Standards, Systems Engineering Division. The NMEA 2000 Light Cable meets the Title Code 46 Code of Federal Regulations Chapter 1 Subchapter T Part C Regulation 183.340 "Cable and Wiring Requirements" and 183.130 "Alternative Standards." The memo states: "...*cables constructed to NMEA 2000 are acceptable for use in certain applications on small passenger vessels subject to 46 CFR 175.110. Cable constructed under NMEA 2000 (Light Cable) may only be used in direct current applications under 5 amps. It must be used only in integrated power supply applications for networking, control and communications systems designed to NMEA 2000.*"

In a letter to NMEA, the USCG Office of Auxiliary and Boating Safety writes the following; "...*even though there may be no significant safety risk associated with the use of cabling that employs 22AWG conductor under these circumstances the recreational boat manufacturing standards and regulations provide no flexibility for interpretation. 33CFR 183.425, explicitly prohibits power conductors that are not at least 18AWG. In the interim, a boat manufacturer who wishes to utilize the NMEA light cable in a boat to which this standard (33CFR183.425) applies may apply to this office for an exemption.*"

One of NMEA's key objectives is to assure the safe operation of electronic equipment for the boating public assuring safe passage for the recreational and commercial boater. Although NMEA has proven that the NMEA 2000 Light Cable is safe and that it has been in the field for many years now, NMEA will be working with American Boat and Yacht Council (ABYC) in conjunction with the Auxiliary Office of Boating Safety to update the more than 30 year old 33 CFR. All parties are confident that this current interpretation will change in the future.

In the meantime, NMEA is recommending to those boat manufacturers who build gasoline inboard vessels to use the NMEA 2000 Heavy Cable (18AWG power conductors) when installing an NMEA 2000 Backbone until the 33CFR is updated. The Heavy Cable meets all of the requirements of the 33 CFR. The 33 CFR applies only to the backbone cable and does not apply to the drop cable.

Alternatively, a boat builder who builds gasoline inboard boats may apply for an exemption to this rule and assistance will be provided by the NMEA to anyone who would like to file for this exemption.

Any further questions, comments, or requests for the empirical data can be requested to NMEA.

Founded in 1957, the NMEA has led the way in establishing technical standards for data exchange in marine electronics, with the widely accepted NMEA 0183 data protocol, NMEA 2000® and certification standards for marine electronics technicians. NMEA standards and programs focus on insuring that the boating consumer is provided reliable products and professional service. For more information, visit the NMEA Web site at [www.nmea.org](http://www.nmea.org) or call (410) 975-9425.

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