IEEE 802.3 Ethernet Working Group
Liaison Communication

Source:	IEEE 802.3 Working Group[1]	
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Subject: Power delivery over communications cabling

Approval: Agreed to at IEEE 802.3 Plenary meeting, San Diego, CA, USA, 28th July 2016

Dear Dr Oehler,

We would like to bring to your attention that the USA 2017 National Electrical Code® revisions in Table 725.144 have effectively created a “new” class of communication cables for operating temperatures greater than 60°C with designated ampacity limits (current capacity) for powering, without consideration for the transmission characteristics related to the application usage.

At this time, no known IEEE 802.3 communications and/or power delivery have been specified for operation on data center or enterprise Ethernet based communications circuits at 90°C conductor temperature. IEEE 802.3 references TIA and ISO/IEC cabling functionally specified over the temperature range from -10°C to +60°C. Cabling transmission characteristics beyond 60°C are not specified, therefore IEEE 802.3 operation may not be supported. This is independent of whether the cabling itself may survive exposure to such temperatures.

The Table 725.144 2017 National Electrical Code revision applies to communication cables carrying power and data with the implication of applicability to balanced twisted pair structured cabling. IEEE 802.3 would value any observations you may have on this subject.

Sincerely,
David Law
Chair, IEEE 802.3 Ethernet Working Group

[1] This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802.