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To: [zzMSHA-Standards - Comments to Fed Reg Group](#)
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Subject: IN 1219-AB93 or Docket No. MSHA2020-0018 in the subject line of the message.
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Attachments: [image013.png](#)
[2020-22589.pdf](#)
[IECEX SIR 09.0011X Iss 3 \(1\).pdf](#)

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MSHA Team,

Firstly, I appreciate your efforts in releasing this for comment. I am a US Expert on the IEC and US standards for Flameproof and General Requirements, I work for a manufacturer of electric motors used in underground mining motors, domestically and internationally. We have motors approved for use in the US, Europe, South Africa, Australia and China, using these IEC based standards. I am including in my comments, the US based Convenors the IEC60079-0 (William Lawrence) and IEC60079-1 standards (Paul Kelly) as well as the US Chair for the UL Standards Technical Panel responsible for the US adoptions for these use standards (Brad Zimmerman), in the event that you are able to reach out with any questions regarding the standards content or correct interpretation. Mr. Kelly also has experience in the Optical Radiation standard and participates as a US expert on the IEC Maintenance committee for IEC 60079-28, along with Mr Thomas H Dubaniewicz of NIOSH, who I have also included in this discussion.

Start of comment:

Referring to the referenced Notice for Public Information and flameproof equipment in particular, I believe that there is an error in the specified protection levels-

Was the intent to limit the scope to EPL Ma only ("da", op for Ma" and so on.... For 60079-28 the added text refers to "(Group I, Equipment Protection Level 'Ma') by referring to the EPL, is this really meant to limit this to "op is" and "op sh"?

I will expand on this regarding flameproof as that is my competence area:

ANSI/UL 60079-1 Ed. 7, Standard for Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d" (Group I, Level of Protection 'da') (2015). This standard contains specific requirements for the construction and testing of electrical equipment, with the Type of Protection flameproof (FP) enclosure designated "d" intended for use in explosive gas atmospheres.

IEC 60079-1 Ed. 7, Standard for Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d" (Group I, Level of Protection 'da') (2014). This standard contains specific requirements for the construction and testing of electrical equipment, with the Type of Protection flameproof (FP) enclosure designated "d" intended for use in explosive gas atmospheres.

In this reference, Group I, Level of Protection 'da' is noted. Ex da I Ma is not typically used for underground mining, except for the catalytic sensors of portable gas detectors. The three tiered system of Equipment Protection Level based protection concepts such as "da", "db" and "dc" were explained in Table D.2 of IEC60079-0:2007 including the planned introduction of those protection levels in D.4 Implementation into the IEC60079-1 flameproof standard.

Reviewing this table for Group I, EPL Ma, the Performance of protection is described as "Two independent means of protection or safe even when two malfunctions occur independently of each other." The Condition of operation is described as "Equipment remains functioning when explosive atmosphere is present"

This EPL Ma is what you would find in Ex ia sensors, where they are designed and intended for operation in two faults.

Motors and electrical equipment for underground mining globally are typically Ex db I Mb, not considering faults as is the case for intrinsic safety.

As an example of this, I am including a certificate to these standards, which is in the public domain IECEx SIR 09.0011X which includes EPL Ma.

Beyond this, if you were to look into the current flameproof standard referenced, IEC60079-1 7th Edition, Clause 4.2 which explains the requirements for Ex da, the power is limited to 3,3 W.

I would appreciate your consideration in correcting this error to make your regulation usable.

Best Regards,



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