



National Electrical Manufacturers Association

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Mr. Cesar Santos
European Commission
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

NEMA Comments on Draft Ecodesign Requirements for Welding Equipment Products

Reference Number: EU G/TBT/N/EU/622

Enclosure A: ISO 15614-1 Industrial Weld Procedure Example
Enclosure B: Typical Industrial Weld Gas Distribution Example

Dear Mr. Santos,

On behalf of its Members, The National Electrical Manufacturers Association (NEMA) submits these comments on the draft European Union Ecodesign Requirements for Welding Equipment Products, circulated on November 23, 2018. These comments are submitted on behalf of NEMA Arc Welding Product Section Member companies.

NEMA represents nearly 350 North American electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems. Our combined industries account for 360,000 American jobs in more than 7,000 facilities covering every U.S. State and many Provinces and States in Canada and Mexico. Our industry produces \$106 billion shipments of electrical equipment and medical imaging technologies per year with \$36 billion exports.

If you have any questions on this submission, please contact Alex Boesenberg of NEMA at 703-841-3268 or alex.boesenberg@nema.org

Sincerely,

A handwritten signature in black ink that reads 'Philip A. Squair'. The signature is written in a cursive, flowing style.

Philip Squair
Vice President, Government Relations
National Electrical Manufacturers Association

NEMA Comments on Draft Ecodesign Requirements for Welding Equipment Products

NEMA and its members actively promote and enable energy efficiency and good stewardship in many products throughout our manufacturing membership, including welding equipment. We support the establishment and enforcement of fair, economically and technologically feasible energy efficiency requirements, developed through open, transparent, data-driven processes.

The draft energy efficiency requirements for welding equipment products are for the most part feasible and reasonable. However, several of the proposed points are not feasible or have been proposed without clear understanding of welding equipment products, welding procedures, or cost-benefit. We address these shortcomings below.

1. Annex II, items 2.5, 2.6, 3.1h and 3.1i: the proposed requirement that welding equipment display the rate and quantity of shielding gas and welding wire use should be struck.

Numerous international and regional standards or best practices dictate the processes by which an industrial welding operation must develop and apply welding procedures, for example *ISO 15614-1: Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*. These procedures dictate, among other things, the amount of shielding gas and welding wire to be used. These procedures are carefully developed for each welding application, process or job and must be *strictly* adhered to in order to assure a proper weld. Verification of these procedures is handled by third party auditors and controlled at the supervisory/plant level, and they are not subject to alteration by the welder at the point of service.

Welding equipment today already has sufficient display or demonstration of wire feed and gas flow so that technicians can properly configure the equipment to assure conformance to the dictates of each Welding Procedure Specification. Additional metering and display is redundant and unnecessary to this process.

The parameters to specify a weld are described by the Welding Procedure Specification and are not within the equipment manufacturer's responsibility. It is impractical and unnecessary for the equipment manufacturer to convey whether shielding gas or welding wire or filler material utilization rates are normal or excessive. This is due to the wide scope of user applications. The Welding Procedure Specification is used for this purpose.

As per ISO 15614-1, the mechanical design of the structure(s) being joined determines the weld size which then determines the gas and wire consumption needed to create the necessary welds. Once the mechanical design is established a Procedure Qualification Record is created per the relevant governing standard. The Procedure Qualification Record is a record of previously performed and tested weld, used to ensure the procedure will produce a good weld. Though electrical parameters are often listed in a Welding Procedure Specification, wire and gas have a direct alignment into the mechanical design and do not share transfer efficiency concerns similar to power supply or welding machine design in operation or in idle. For this reason, there is no direct correlation between gas and wire and the energy efficiency of the power source and no corresponding need to track it at the power source level. For a written illustration of a typical Welding Procedure Specification please see enclosure A.

Furthermore, it is typical for welding gas in industrial settings to be distributed from a central source/tank – see enclosure B. The biggest issue to manage with shielding gas and plants is gas line leaks from gas piping system connections, therefore compressed gas suppliers already perform gas audits at the plant level. An attempt to provide an indication of the use of shielding gas in the welding equipment will not yield accurate results in gas consumption used due to other factors such as piping leaks.

We cannot stress highly enough the importance of strict adherence to Welding Procedure Specifications, which are developed with careful regard for the needs of the weld(s) being accomplished. Consumption rates of shielding gas and welding electrode, travel speed, shielding gas composition, electrode composition, electrode size, welding position, number of passes, amps, volts and polarity are specified by the Welding Procedure Specification and are NOT within the purview of the individual welding technician or welding equipment.

It follows that in deleting draft requirements 2.5 and 2.6, one should also strike related items 3.1h and 3.1i.

2. The intent behind the proposal to track shielding gas and welding wire consumption appears to be aimed at reducing unnecessary use, but as we illustrate above this is already accommodated in the field by proper Welding Procedures Specifications. Welding facilities today already track consumption rates and other logistical needs through review of buying patterns in their plants.

In summary, consumption of shielding gas and welding wire/filler material are already tracked for economic reasons and due to these economic concerns they are actively reviewed to reduce or eliminate excess consumption beyond the dictate of the Welding Procedure Specification. Any EU regulation to track this consumption at the welding power source would be either infeasible, redundant, or both.

3. In addition to the preceding concerns, we note that the flow of shielding gas is set by a regulator/flowmeter. The shielding gas is routed through a wire feeder to the welding torch. The wire feeder has a simple gas valve, which can only open to allow shielding gas to flow or close to prevent shielding gas from flowing. The wire feeder has no means of measuring the consumption of shielding gas. Additionally, the use of welding wire is set as a wire feed speed (length of wire per time) per the Welding Procedure Specification and not as mass per time in grams per minute. The necessary modifications to measure and display the use of shielding gas and welding wire on a welding equipment product causes conflict with statement 12 of the draft regulations¹ that claims “The preparatory study has concluded that the proposed ecodesign requirements do not affect the functionality or affordability of welding equipment from the end-user’s perspective and do not negatively affect health, safety or the environment.”
4. The European Commission has not offered proper justification that welding material consumption is an ecodesign concern. We ask the Commission to more fully justify this concept, and submit that analysis for public review before proceeding with further

¹ https://ec.europa.eu/info/law/better-regulation/initiative/1605/publication/341570/attachment/090166e5bffe73ca_en

consideration of tracking of consumables expenditure. Until such time as this has been accomplished, related provisions should be tabled.

5. Liability: By attempting to impact consumption of shielding gas and welding wire at the point of application, the Commission is treading into matters of liability and is obliging users to share that liability. This is because deviation from the aforementioned Welding Procedure Specifications cannot guarantee a proper weld, which could in the course of business subject a welding facility to loss of accreditation, loss of certification, and/or product failure lawsuits. There is insufficient justification in the draft Regulation and Annexes for any requirements that might increase risk to safety and liability.