

## EOS COC 1042 AMD 3 RAI 10.1

(PUBLIC)

02-01-22

**Response part 2:** The terms of flaw height and width are relative to the orientation of the flaw from an end-view of the weld.

In general, planar flaws have width and but little to no height while flaws such as lack of fusion and inclusions generally have more height than width. The flaw size in its respective orientation is relative to the referenced reflector amplitude.

**Response part 3:** The default acceptance criteria is the engineering calculated assessment currently approved for DSC OTCP welds where a critical flaw height of [ ] inches is acceptable assured progressive PT inspections between controlled deposits.

The HA-GTAW process is expected to be less prone to flaws of such height and the application of PA-AUT is a much more sensitive assessment process, therefore a more stringent acceptance criteria is targeted. Over time and development, it is expected that the HA-GTAW process, coupled with PA-AUT will meet the acceptance criteria set forth in NB-5331.

NB-5331 references section V article 4 where the reference reflectors are a 3/32" dia. side drilled hole. PA-AUT will be capable of providing enough resolution that flaws representing a 20% of an equivalent reference reflection can be adequately investigated.

1. PA-AUT will utilize a mockup (figure 1) representing the same joint design as used in closure welding. All appropriate reflectors are to be machined into the mockup to create a realistic calibration block. The PA-AUT system will be validated by successfully demonstrating accurately measuring area of interest of each reflector in the mockup calibration block. The mockup calibration block will have, at a minimum, the fourteen (14) reflectors machined into the relevant inspection area and their respective areas of interest as shown in figures 2-9. To accommodate various sound paths (see figures 10-13), the orientation of the cutting path used to create the reflector may altered, so long as the it does not interfere with assessing the reflectors area of interest. Since the PA-AUT procedure will need to be approved by an ASTN Level III, additional reflectors may be required per their request.
2. No post-welding surface preparation will be necessary
3. There are multiple techniques (joint design and probe configurations) that can be employed to successfully scan the OTCP weld so long as they are proven to accurately detect the described reflectors in the mockup calibration block.

4. The PA-AUT process will be validated by a utilizing a mockup joint design where known flaws sizes will be employed to verify the appropriate reflector response is detected and displayed.

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