

Name _____

WHAT DOES WELD INSPECTION HAVE TO DO WITH MATH?

GET REAL
MATH!



Northeast
Wisconsin Technical College

Video Link: <https://www.youtube.com/watch?v=n-aFi7kbg-M>

Summary: When the strength of a weld is inspected, the measurements of discontinuities need to be added. In this video, you will look at the criteria for passing a weld inspection test and combine fractional inch measurements to determine if the specimen being tested would pass.

NWTC Information: Northeast Wisconsin Technical College is a nationally-ranked, two-year public college where students prepare for high-tech careers and begin their bachelor's degrees. NWTC is one of 16 colleges in the Wisconsin Technical College System. The College has three campuses in Green Bay, Marinette, and Sturgeon Bay; five regional learning centers in Crivitz, Luxemburg, Niagara, Oconto Falls, and Shawano; and several additional sites.

Part 1 (0:00-0:57)

- Play video (0:00-0:21), pause at (0:22) to answer the discussion questions
- What do you think some of the technical terms used so far mean – “vertical”, “bend”?
- Play video (0:23-0:52), pause at prompt (0:53-0:57) at “Break 1” for class discussion
- What does it mean to take two specimens – the face and the root and bend them 180°?
- When and why do you think weld specimens are tested?

Part 2 (0:58-1:58)

- Play video (0:58-1:53), pause at prompt (1:54-1:58) at “Break 2” to answer the discussion questions
- What are discontinuities?
- Describe in your own words what the criteria of this test are?
- Give an example of a set of discontinuities that would pass the test. Give an example of a set of discontinuities that would not pass.

Part 3 (1:59-2:34)

- Play video (1:59-2:29), pause at prompt (2:30-2:34) at “Break 3” for class discussion
- Based on the lengths of the discontinuities John had measured in Austin’s specimen being $\frac{1}{32}$, $\frac{3}{64}$, $\frac{3}{32}$ ", and $\frac{1}{16}$ ", what are the total discontinuities that count?
- Does Austin's weld pass the test?

Part 4 (2:35-4:04)

- Play video (2:35-4:04) and verify that you got the same total of the discontinuities and compared correctly to determine that Austin does pass the weld inspection test.

This material is based on work supported by the National Science Foundation under Grant No. DUE-1406857. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.