1 / 12 · Welding Inspection and Discontinuities

Leg end of a fillet gauge on a convex fillet: what does a good fit look like?

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2 / 12 · Welding Inspection and Discontinuities

Concave end of a fillet gauge: you see light between the center point and the weld face. What does that mean?

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3 / 12 · Welding Inspection and Discontinuities

Why is a concave fillet checked with the throat end, not the leg end?

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4 / 12 · Welding Inspection and Discontinuities

Before you pick a fillet gauge end, what do you check?

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5 / 12 · Welding Inspection and Discontinuities

The drawing gives a fillet two different leg sizes. How do you check it?

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6 / 12 · Welding Inspection and Discontinuities

A fillet gauges undersize. Besides by how much, what else do you measure?

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The throat is thinner than that blade. Step down one blade at a time until the point touches the face.

AWS B1.11, Guide for the Visual Examination of Welds, fillet weld gauges

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The blade lies flat on one member and the notch meets the toe on the other with no gap. Too big a blade stands off the toe; too small a blade passes under it.

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The face shape, by eye or with a straight edge. A face that bulges out takes the leg end; a face that dips in takes the throat end.

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Its legs can look full while the throat is thin. The leg end reads it big, so an undersized weld gets accepted.

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How long the undersize run is and where it starts, with the rule or caliper. The structural tolerance in clause 2.4 needs both numbers.

AWS CWI Part B Book of Specifications (2017), clause 2.4

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Leg by leg against the drawing. The shorter-leg rule is for a fillet called out with a single size.

AWS CWI Part B Book of Specifications (2017), clause 2.4

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7 / 12 · Welding Inspection and Discontinuities

Measuring undercut with a V-WAC style pointer: the steps?

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Where along a run of undercut do you take the reading?

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9 / 12 · Welding Inspection and Discontinuities

How do you size a surface pore with the circles on a V-WAC style gauge?

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10 / 12 · Welding Inspection and Discontinuities

What does the reinforcement step on a V-WAC style gauge read?

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11 / 12 · Welding Inspection and Discontinuities

Hi-lo gauge on a pipe replica: for root misalignment, do you read the inside step or the outside step?

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Why does an inside step at the root of a pipe joint matter?

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At its deepest point, found by moving along it. The first spot you touch is rarely the worst.

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Zero the pointer on flat base metal beside the undercut, move the tip into the groove, and read the depth.

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How high the weld face stands above the base metal surface next to it.

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Find the smallest circle that fully covers the pore. That circle gives its diameter.

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It can trap slag and leave part of the root unfused.

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The inside step. Put one finger on the inside surface of each member and read the offset.

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