Visual weld check

The Laser Welding Manual, Book 1 · Chapters 7, 8 and 9 · face and root before the customer gate

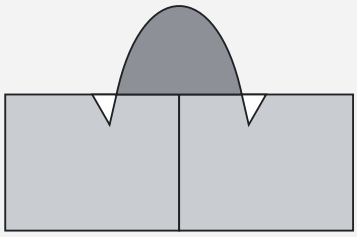
VISUAL CHECK ONLY — NOT A CODED INSPECTION

This card is a visual check, not a coded inspection. It is not a welding procedure, not an ISO 9606 substitute and not a certificate. Safety-critical, coded or unknown structural duty is not this book's ticket: escalate.

What "pass" means for this job (finish, continuity, flatness, agreed with the customer)

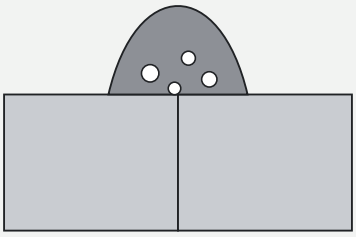
WHAT TO LOOK FOR

Undercut



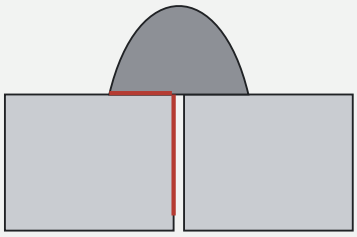
A groove melted into the parent metal at the toe, left unfilled.

Porosity



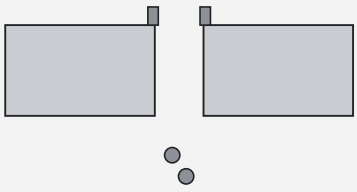
Pin holes or bubbles: contamination, coating, gas or an unstable keyhole.

Lack of fusion



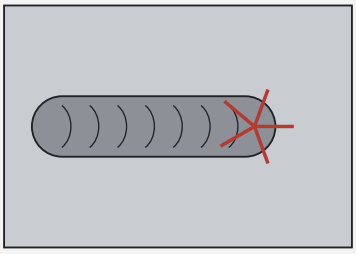
Shiny face, cold root: the bead sits on a member without melting into it.

Burn-through



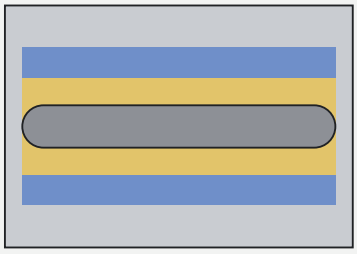
Hole or drop-through where metal used to be. Thin sheet, slow-hot, gap.

Crater crack



Star or line crack at the stop, often on aluminium. Look at every end.

Tint band



Straw and blue bands on stainless. Width tells you about heat input.

Sketches are simplified. Cut, bend or chisel tests on coupons only — never on the customer's part.

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Visual weld check — by metal

Talk about welds in inspectable terms, not vibes

Metal	Look at	OK?	Notes
Mild steel	Fusion to both members · undercut · porosity · warp out of flat · burn-through	☐	
Stainless	As mild, plus tint band width · root condition if visible · rust tracks on a rain-exposed test piece	☐	
Aluminium	Wetting · soot · crater cracks at stops · drop-through · wire inclusions	☐	

SEEN IT? FIRST MOVE

You see	Usually means	Do first
Hole, loud plume	Travel too slow or power too high for the thickness; keyhole on thin sheet	Beam off; new coupon, decisive travel, mapped-down heat
Pretty face, dead root	Racing cold, dirty joint, wrong aim, autogenous across a gap	Grind out; fix prep; re-coupon; wire if bridging is needed
Wide blue / straw bands	Slow-hot heat input; contaminated brushes	Lower heat; dedicated stainless abrasives; agree the finish
Black, dry aluminium	Oxide left on, damp wire, mild-steel habits	Stop; re-clean to bright; aluminium-only coupon
Champagne porosity outdoors	Wind stripping the shield; hose leak; empty cylinder	Windbreak or reschedule; leak check; verify flow

RECORD

Date	Job / coupon ref	Metal + thickness	Face	Root	Result (pass / adjust / stop)	Initials
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		

Not pass? Write “STOPPED — reason — date” in the log. Do not paint more face weld on top and invoice.

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