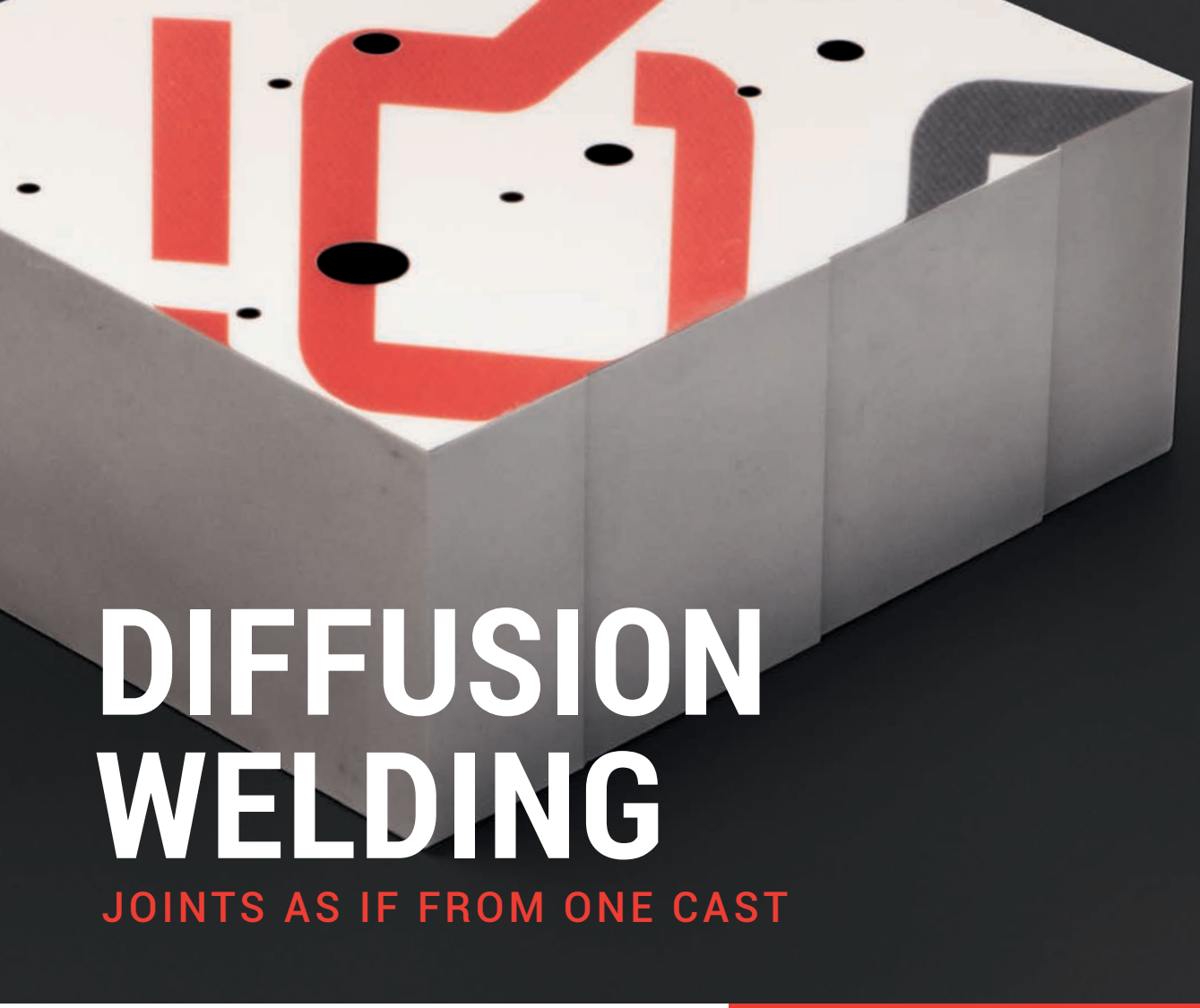
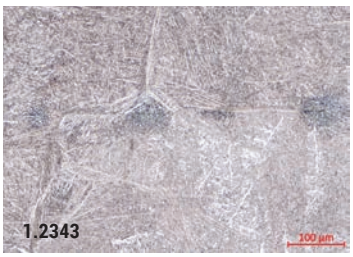
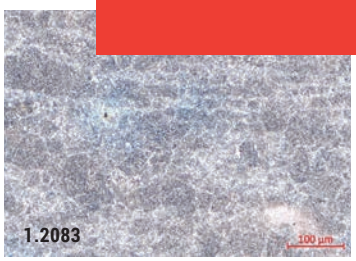
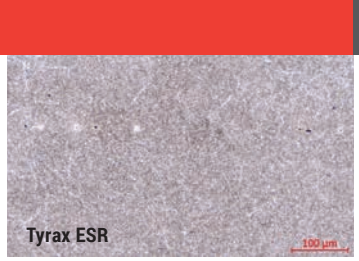


DIFFUSION WELDING

JOINTS AS IF FROM ONE CAST







Diffusion welding is a material-locking joining process that does not require the use of any filler material. The welded joint is visually undetectable, even when polished. The welded joints have comparable properties to the base material.

THE AREAS OF APPLICATION FOR THIS MANUFACTURING TECHNOLOGY ARE MANIFOLD, INCLUDING:

- **temperature-controlled injection moulds and hot runner manifolds**
- **temperature-controlled die-casting tools**
- **cooling plates for semiconductor technology**
- **Plate heat exchanger for power electronics**

iQ temp

Intelligence + quality for moulds and dies

KONTURNAHE TEMPERIERUNG
PAR EXCELLENCE

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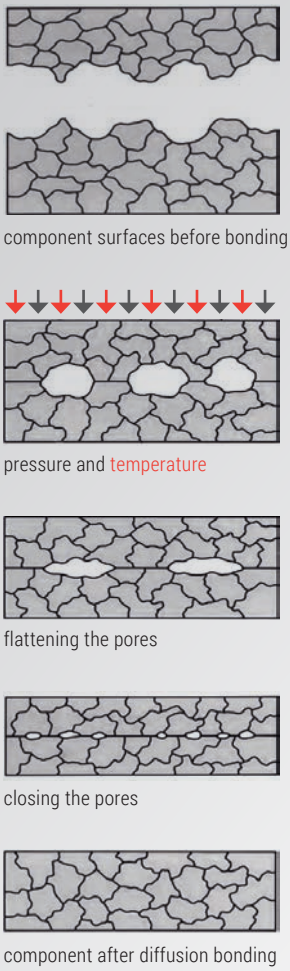
centre of excellence for conformal cooling of the hotset group

hotset

PRESSURE, TEMPERATURE AND KNOW-HOW

Joints for highest requirements

Whether electronic chip or power plant: IQtemp offers material innovation for product and manufacturing in the fields of aerospace, energy and environmental technology, mechanical engineering as well as tool and mould making, among others. Other demanding industries such as semiconductor or medical technology also benefit from our services. Our thermal manufacturing technologies enable components to be produced more efficiently and their service life to be extended. This is how we secure competitive advantages for our customers.



COMPETENCE:

Specialised applications also require special component properties that can often only be guaranteed with special technologies. IQtemp offers the universally applicable joining technology diffusion bonding as a service. This enables joints to be produced that are comparable to the properties of the base material in terms of strength, corrosion resistance and machinability.

CUSTOMER BENEFIT:

- **Materially bonded and thus highly durable and temperature-resistant joints.**
- **Low-porosity and low-distortion joints.**
- **High polishability of the components, as no joining zone is visible. Therefore also suitable for injection moulding of highly transparent parts.**
- **No oxidation of the components, as the process takes place in a high vacuum.**
- **Various material combinations from different materials possible.**

PROPERTIES:

The components to be joined are pressed together under high vacuum, at high temperatures, with high pressure load. This results in a material exchange in the solid state and thus in a high-strength welded joint. In most cases, no filler material is used, which is why no joint zone is visible.
Diffusion bonding can be used for joining materials of the same type (steels, aluminium, copper, titanium and nickel alloys) as well as for material combinations.

APPLICATIONS:

Tool, die and mould making, food and pharmaceutical industry, mechanical engineering, semiconductor technology.

OUR SERVICE:

- **Consultation on the selection of materials and structural design**
- **Performing test welds**
- **Diffusion bonding of series components**
- **Heat treatment of the welded components according to customer specifications**

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