

# Cold Spray Technology

Cold spray is one of the fastest metal additive manufacturing (AM) production techniques in the world. It offers an effective method for applying unique coatings and making repairs with similar or dissimilar metals. It minimizes heat affected zones when joining, while increasing strength of repairs and minimizing environmental impact, particularly when compared to electroplating.

The process employs supersonic particle deposition, directing powder via an accelerated heated carrier gas through a nozzle to bind to a receiving surface. In contrast to other AM processes, there is little-to-no melting of the material or receiving surface. Cold spray is applied primarily with metals, metal alloys, and metal blends, but there are also ceramics, polymer and composites use cases.



## EWI's Cold Spray Center of Excellence

EWI, a leader in applied R&D for AM, has established a new center of excellence to advance cold spray capabilities and accelerate its successful application throughout manufacturing. Our lab features state-of-the-art cold spray systems, including WARP SPEE3D, VRC Raptor, and Centerline SST PX.



EWI's AM expertise and broad industry experience will position the cold spray center to serve as an unbiased innovation hub for this groundbreaking technology.

## Why Choose EWI for Cold Spray R&D?

EWI has been at the forefront of AM development, joining technology, and process integration for more than three decades. Cold spray technology, an extension of both conventional joining processes and AM, is natural outgrowth of our core areas of expertise. Our team includes experienced specialists in welding and joining, materials science, process sensing and controls, nondestructive evaluation, modeling, structural mechanics, and automation. As a result, we're more than just problem solvers; we offer extensive services to advance manufacturing technology:

- *Material and process development*
- *Post-process inspection*
- *Tooling and equipment development*
- *Material database development*
- *In-process sensing and monitoring*



*Cold Spray Repair, before and after. Source: Navy*

## The EWI Advantage

EWI empowers manufacturers to overcome complex manufacturing challenges and integrate new processes to bring products to market more quickly and efficiently. Our specialists offer comprehensive engineering services to help companies identify, develop, and implement the best options for their specific applications. With unmatched expertise, state-of-the-art lab facilities, and technology resources, we offer customized solutions that deliver game-changing results.



### EWI WORLD HEADQUARTERS

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## Cold Spray Center Focus Areas

- *New Materials and Parameter Development*
- *Advanced Coatings/Repairs (e.g., tantalum, tungsten, chromium, stainless steel, etc.)*
- *Joining of Dissimilar Materials*
- *Rapid Metal Additive Manufacturing*
- *Advanced Applications Development (Coatings for Fusion or Molten Salt Reactors, Hypersonics)*
- *Chrome & Nickel Electroplating Replacement*

## Get Started

To find out how EWI can help you develop, qualify, and apply cold spray technology, please contact Howie Marotto, AM Business Director, at

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For more information regarding our capabilities and services, visit [EWI.org](http://EWI.org)

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