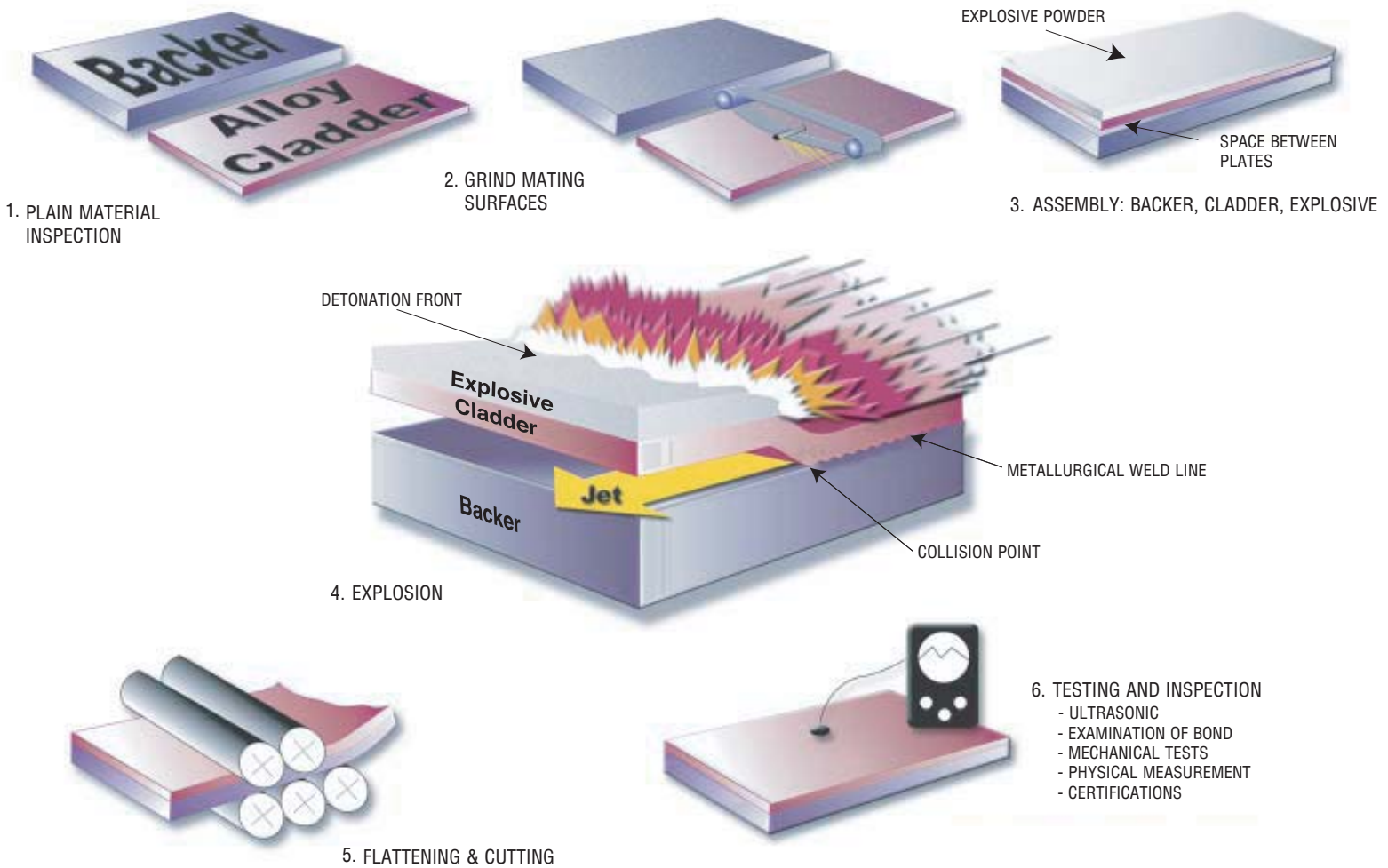


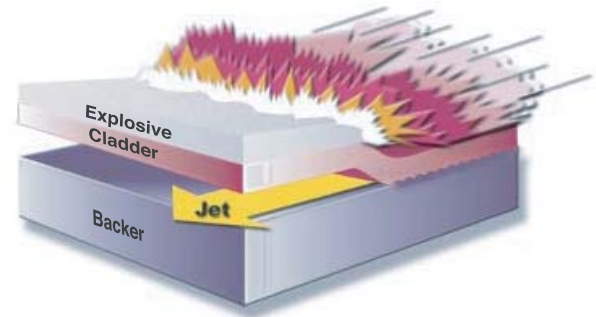
EXPLOSION CLAD PLATE MANUFACTURING



DETACLAD® EXPLOSION WELDING PROCESS

Detaclad® process uses high energy from explosive detonation to produce a metallurgical weld between metal plates.

1. Metals' surfaces are ground and fixtured parallel.
2. Special formulated explosive powder is placed on the cladder surface.
3. Detonation front travels uniformly across the cladder surface from the initiator.
4. Cladding metal collides with backer at a specific velocity and impact angle.
5. Momentum exchange causes a thin layer of the mating surfaces to be spalled away as a jet.
6. Jet carries spalled metal and oxides from the surfaces ahead of the collision point.
7. Thin layer of "Micro-fusion" 10^{-5} inch thick is formed at the characteristic wavy weld line.
8. Force of several million psi forces metals into intimate contact while metallurgical weld solidifies across the complete surface.
9. Speed of the explosive detonation does not allow time for bulk heating of metals.
10. Detaclad® process assures that the backer materials retain specified physical properties and the cladding material retains the specified corrosion resistance properties.



Explosion Welding



Photomicrograph of a typical explosion weld