



# Introducing ATI 642™

Our customers rely on materials that can withstand the toughest of environments — like ATI 642™ alloy, which has the corrosion resistance, weldability, and toughness of more well-known alloys, with a better fit and price for many applications.

## ATI Energy: Exploring New Depths

The world's need for energy is taking oil and gas producers to places that are more remote and more challenging than ever before. In these extreme environments, our materials provide the strength and corrosion resistance required for today's downhole drilling tools and completion equipment, subsea flow lines and risers, control lines, and well maintenance equipment.

## Why ATI 642™ Alloy?

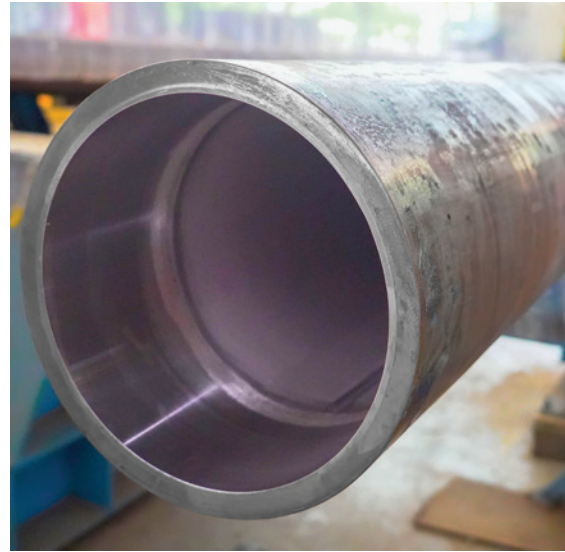
- Nickel-based alloy developed specifically to meet the requirements for subsea clad lined pipe applications
- Properties rival those of traditionally used ATI 625™ at a more cost-effective price
- More versatility in manufacturing = shorter lead times

## Composition of ATI 642™ Alloy

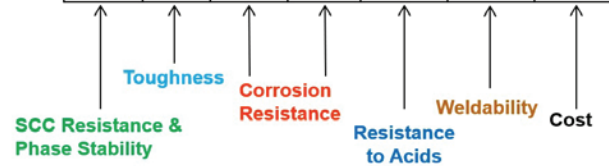
The chemistry of ATI 642™ alloy has been carefully balanced to optimize phase stability, corrosion resistance, sour service performance and mechanical properties, while making efficient use of expensive alloying elements like Ni and Mo.

## Phase Stability

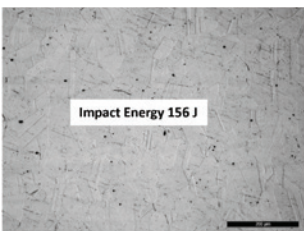
ATI 642™ alloy was designed to resist the formation of deleterious phases such as sigma and carbides during heat treatment and welding. Samples of ATI 642™ plate and a 6% Mo alloy plate were given a two-step sensitization heat treatment at 1750°F and 1100°F. Following this heat treatment, a deleterious phase precipitated at the grain boundaries of the 6% Mo alloy, which reduced its Charpy impact energy by nearly 50%, while ATI 642™ alloy was virtually unaffected by the heat treatment.



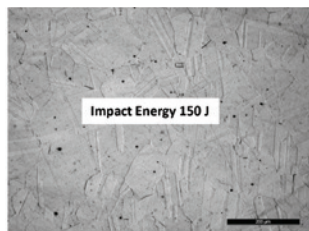
Ni	Co	Mo	Cr	Cu	C	Fe
42 min	2	5.7	22	1	0.015 max	Bal (~25)



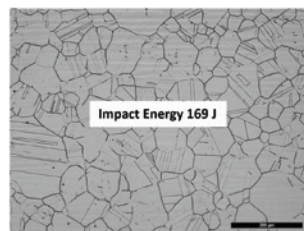
ATI 642™ – Solution Annealed



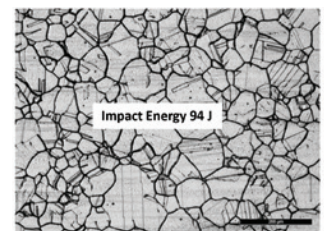
ATI 642™ – Sensitized



6% Mo Alloy – Solution Annealed

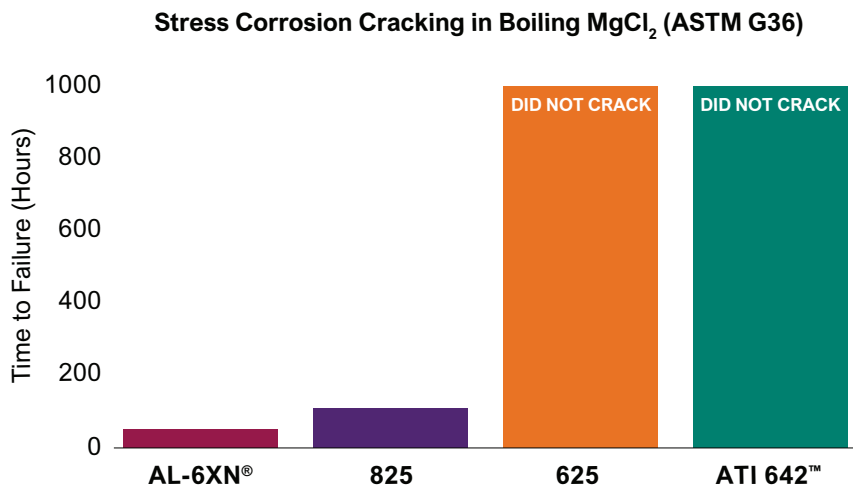
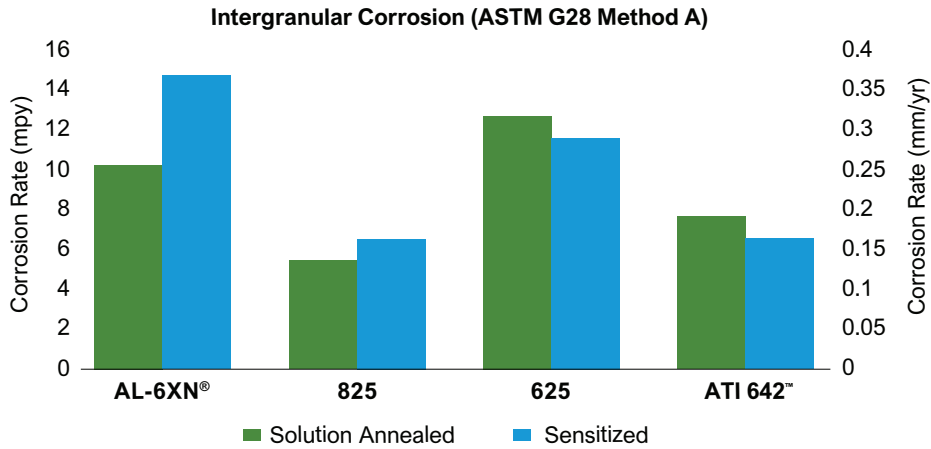


6% Mo Alloy – Sensitized



## Corrosion Resistance

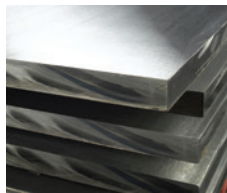
ATI 642™ alloy has excellent resistance to chloride stress corrosion cracking and intergranular corrosion, even after a sensitizing heat treatment. With a PREN value of 42, it has good resistance to localized corrosion in high-chloride environments such as seawater. ATI 642™ alloy also passed slow strain rate tests under NACE level VII conditions.



## Bring on Your Toughest Challenges

The world's essential industries rely on solutions made from advanced specialty materials. We're solving our customers' toughest challenges through materials science. ATI 642™ alloy stands up to the extreme pressure, stress, and corrosion that subsea pipelines face every day.

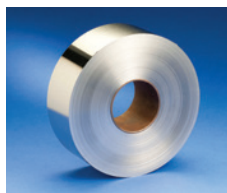
### Product Forms Available



Plate



Sheet



Precision Rolled Strip®



Coil

## ATI Core Values

### Integrity

We do the right things the right way; it's the cornerstone of our relationship with every stakeholder.

### Safety & Sustainability

We are committed to a Zero Injury Culture, protecting our people and the planet through our products and the way we operate.

### Accountability

We do what we say we are going to do. We set a standard for excellence and hold ourselves and our team accountable for our actions, results and delivering value for our customers.

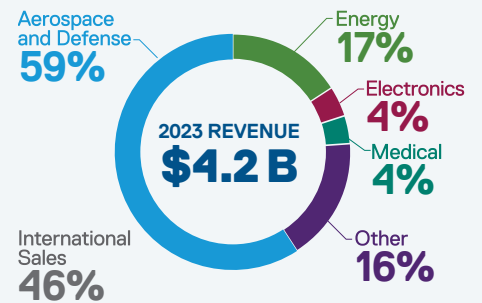
### Teamwork & Respect

We seek and celebrate diverse views, capabilities and experiences to power our collaborative work environment.

### Innovation

We embrace change and unique perspectives to create sustainable value, acting with urgency and taking calculated risks to learn and continuously improve.

## ATI at a Glance



ATI is an international company with **more than 6,000 employees** across nearly 20 locations in Europe and Asia, and more than 30 in the United States.



ATI touches **more than 50% of the naturally occurring elements on the periodic table** by managing in, managing out, or through our processes.