

PROJECT EXPERIENCE CASE STUDIES

Manufacturing, sourcing, testing and delivery for critical tubing applications

22 YEARS OF EXECUTION

CASE STUDY

TUBING CENTER

g.

Relationship
Year Program |
ngoing Monthly
Shipments

C12200
DATA CENTER

C71500
NUCLEAR

C71500 CuNi
COPPER NICKEL A

FOR DEFENSE

led production and documented release fo
ervice.

deliveries

MATERIAL
UNS C70600 /90-10 Cu-Ni

C70600
MARINE lification through
final delivery

SA179
U-BENDS

COPPER | COPPER-NICKEL | BRASS | CARBON STEEL | STAINLESS | DUPLEX

ABOUT THIS COLLECTION

REPRESENTATIVE EXPERIENCE ACROSS CRITICAL INDUSTRIAL MARKETS

22 YEARS OF EXPERIENCE

6 CORE CASE STUDIES

1 HISTORICAL PROJECT PROFILE

For more than 22 years, Ameritube has helped customers solve tubing challenges where material selection, dimensional control, documentation and delivery execution all matter. This collection brings together representative case studies from power generation, nuclear service, data center cooling, marine and defense, petrochemical processing and industrial heat-exchanger applications. The projects span copper, copper-nickel, admiralty brass, carbon steel, austenitic stainless steel and duplex stainless steel, but they share one important characteristic: each required more than a standard catalog transaction.

The purpose of these case studies is to give prospective customers a clear view of how Ameritube approaches demanding work. Every project begins with the application and the governing requirements. Ameritube reviews specifications, drawings, product form, dimensions, testing, documentation, packaging and delivery expectations, then builds a practical execution path around them. Depending on the project, that path may include domestic manufacturing, qualified global sourcing, drawing, pilgering, annealing, straightening, U-bending, finning, nondestructive examination, mechanical testing, third-party inspection, supplier surveillance and coordinated logistics.

The individual studies show this approach in different operating environments. C12200 copper tubing supported recurring data-center cooling production. C44300 admiralty brass served condenser retube programs in power generation. C71500 copper-nickel tubing required disciplined process control and extensive testing for nuclear service. C70600 copper-nickel pipe and tube supported marine and defense applications where corrosion resistance, traceability and specification compliance are essential. Carbon-steel SA179 and duplex SA789 bundle projects demonstrate Ameritube's ability to manage long-length fabrication, complex bending, heat treatment, inspection and complete quality packages.

The historical project profile broadens that picture by documenting stainless U-bend requirements for an industrial-gas application. Together with the modern case studies, it reinforces Ameritube's experience with one-time engineered orders, repeat monthly supply programs, large retube packages and long-duration projects requiring coordination among mills, fabricators, laboratories, inspectors, logistics providers and end users. The collection remains intentionally representative rather than exhaustive; Ameritube has completed many additional jobs during its 22-year operating history.

Across these examples, the measure of success is not simply whether tubing shipped. It is whether material identity was preserved, critical processes were controlled, required examinations were completed, records were organized and the customer received a usable package on schedule. That discipline is especially important in heat-exchanger, condenser, seawater, nuclear and process-service applications, where a minor deviation can affect installation, inspection, equipment availability or long-term performance. Ameritube's project history reflects repeated experience translating written requirements into practical production and quality-control steps. It also reflects the flexibility to support both standard products and highly engineered configurations.

This brochure is not intended to replace a customer specification, engineering review or project quality plan. Its goal is to show the depth of Ameritube's experience and the disciplined way that experience is applied. Prospective customers can use these examples to identify relevant capabilities, discuss comparable requirements and begin a technical conversation with Ameritube. Whether the need is a recurring production program, a difficult alloy, a special dimensional range, a critical test requirement or a complete bundle package, Ameritube's role is the same: understand the requirement, control the execution, document the result and deliver a product ready for its intended application.

THE COMMON THREAD

Understand the requirement. Control the execution. Document the result. Deliver application-ready product.

CONTENTS

A portfolio of representative Ameritube programs and technical execution

COPPER & COPPER ALLOYS

- | | | |
|-----------|---|----------|
| 01 | C12200 Copper Tubing for Data Center Cooling
Recurring domestic supply and monthly production support | 4 |
| 02 | C44300 Admiralty Brass Condenser Retubes
Power-plant condenser retube programs | 5 |
| 03 | C71500 CuNi 70/30 Seamless Tubing
Nuclear-service manufacturing, testing and quality control | 6 |
| 04 | C70600 CuNi 90/10 Pipe & Tube
Marine and defense supply with documented traceability | 8 |

STEEL & STAINLESS

- | | | |
|-----------|---|-----------|
| 05 | SA179 Carbon Steel U-Bend Bundles
Large, long-length bundle sourcing and delivery | 10 |
| 06 | SA789 Duplex Stainless U-Bend Bundles
Complex heat treatment, testing and corrosion control | 12 |
| 07 | SA249 316/316L U-Bend Bundles
Solution annealing, NDE and per-heat testing | 14 |

HOW TO USE THIS BROCHURE

Select the alloy, market or execution model closest to your requirement, then contact Ameritube for a project review.



C12200 COPPER TUBING FOR DATA CENTER COOLING



Developing a reliable domestic supply partner for critical copper tubing.

A leading data center customer needed a dependable, domestic source of C12200 copper tubing for cooling systems. Ameritube developed into a trusted supply partner for recurring monthly shipments.



MATERIAL

C12200 DHP
Copper Seamless
Tubing



SIZE RANGE

7/8" to
2-1/8" OD



SPECIFICATION

ASTM B-75 /
Customer
Specification



RELATIONSHIP

3-Year Program |
Ongoing Monthly
Shipments



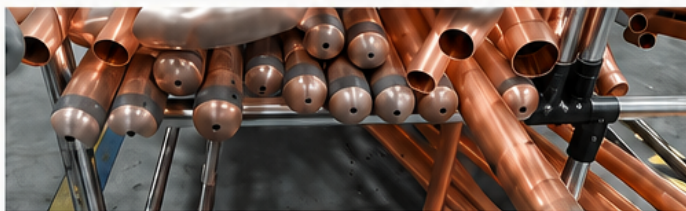
THE CHALLENGE

- Domestic source needed for straight-length C12200 tubing.
- Consistent quality across multiple sizes and tempers.
- Full traceability, testing, and documentation for qualification and recurring orders.



OUR SOLUTION

- ✓ Sourced and released raw hollows.
- ✓ Pilgering and drawing to size.
- ✓ Annealing for soft part numbers.
- ✓ Straightening and finishing.
- ✓ Eddy current, dimensional, and mechanical testing.
- ✓ MTRs and PPAP documentation.
- ✓ Careful packaging and on-time delivery.



TYPICAL SPECIFICATIONS

Alloy	C12200 DHP Copper
Temper	Hard H85 / Soft Annealed
Sizes	7/8" – 2-1/8" OD
Lengths	Straight lengths as required
Testing	Eddy Current, Dimensional, Mechanical, Hydro (optional)
Documentation	MTR, PPAP, Dimensional Data, Visual Inspection Records



PROVEN RESULTS



Qualified supplier for a leading data center customer.



Consistent monthly shipments across multiple part numbers and sizes for three years.



Reliable quality, documentation, and on-time delivery for critical data center cooling systems.



C44300 ADMIRALTY BRASS TUBE FOR POWER PLANT CONDENSER RETUBES

CASE STUDY

Supporting successful condenser retube projects with high-quality admiralty brass tubing, technical oversight, and phased delivery.

Ameritube successfully supplied C44300 Admiralty Brass condenser tubes for multiple power plant retube applications. The program required long straight lengths, tight dimensional control, material traceability, third-party inspection support, and careful export packaging. Ameritube coordinated production, verified quality, and delivered the tubing in phased shipments to help support critical condenser outage schedules.



MATERIAL

C44300
Admiralty Brass
Tube



SIZE

1 in. OD x
0.049 in. wall
(18 BWG)



LENGTH

23 ft 2-1/2 in.
straight lengths



STANDARD

ASME SB-111



THE CHALLENGE

- Long straight condenser tubes required for retube applications.
- Consistent quality, dimensional verification, and clear tube identification.
- Material traceability, MTR review, and inspection support.
- Packaging and phased delivery for outage-driven project schedules.



OUR SOLUTION

- Coordinated sourcing and production of C44300 Admiralty Brass tubing.
- Reviewed raw material certifications and tube marking requirements.
- Supported dimensional and visual inspection plus MTR review.
- Confirmed tube OD, wall thickness, length, and general visual condition.
- Managed careful packaging in export boxes/crates for safe delivery.
- Executed phased shipments to support project timelines.



TYPICAL SPECIFICATIONS

Alloy	C44300 Admiralty Brass
Standard	ASME SB-111
Tube Size	1 in. OD x 0.049 in. wall (18 BWG)
Tube Length	23 ft 2-1/2 in.
Application	Power plant condenser retubes
Quality Checks	Dimensional, Visual, MTR Review, Marking Verification
Packaging	Boxed/crated straight lengths for shipment



PROVEN RESULTS



Successfully supplied tubing for multiple condenser retube projects.



Supported inspection, documentation, and phased delivery requirements.



Delivered dependable quality and packaging for critical outage work.



1000 North Highway 77, Hillsboro, TX 76645



(254) 582-7106



ameritube.net



C71500 CuNi 70/30 Seamless Tubing

Dominion Energy Nuclear Plant

Documented process control, customer surveillance readiness, and validated testing for critical heat-exchanger tubing.



PROJECT SNAPSHOT



Market

Power Generation / Nuclear



Alloy

C71500 Copper Nickel 70/30



Product Form

Seamless heat exchanger tubing



Application

Feedwater heater and condenser service



Key Requirements

Process documentation, surveillance readiness, hydrostatic and air-underwater testing, flattening, expansion, tensile, and micrographic analysis



Ameritube Role

Receiving inspection, pilgering, drawing, annealing, final inspection, testing, and bundling.

C71500 CuNi 70/30

COPPER NICKEL ALLOY



Excellent resistance to corrosion in seawater and condensing environments



High thermal conductivity and strong mechanical performance



Proven performance in condenser and feedwater heater applications



THE CHALLENGE

The customer required a controlled manufacturing process that documented work instructions, operating parameters, dimensional and testing data, and facilitated customer surveillance at the Ameritube facility in accordance with purchase order requirements.



AMERITUBE SOLUTION

- Work-order control and routing
- Heat/batch traceability throughout the process
- Pilgering, drawing, and annealing with controlled parameters
- In-process and final inspections to dimensional and visual criteria
- Documented SOP-based testing: hydrostatic, air-underwater, flattening, expansion, tensile, and micrographic analysis



PROJECT OUTCOME

- **Clear workflow visibility** from raw material to finished product documentation
- **Verified quality checkpoints** at critical stages with recorded results and traceability
- **Application-ready documentation** package supporting customer surveillance and project compliance



TRACEABLE WORKFLOW

Controlled processes with complete records and material traceability.



VERIFIED TESTING

SOP-based testing and inspections with documented results.



TECHNICAL SUPPORT

Experienced engineering and quality support for critical applications.



Manufacturing, Testing & Quality Control

How Ameritube managed traceability, process control, and inspection for a critical CuNi 70/30 tubing program.



1 TECHNICAL REQUIREMENTS

	Alloy	C71500 CuNi 70/30
	Product Form	Seamless heat exchanger tubing
	Application	Feedwater heater and condenser service
	Applicable Specifications	Condenser tube: ASME SB111 / ASTM B111 Seamless tube: ASME SB466 / ASTM B466 Tube U-Bend: ASME SB395 / ASTM B395 Finned tube: ASME SB359 / ASTM B359
	Fabrication Characteristics	Excellent soldering and brazing, excellent spot/seam/butt weld behavior, good cold work and hot form capacity
	Key Performance Notes	High corrosion resistance in seawater environments, durable condenser-tube performance, suitable for feedwater heater service.

2 PROCESS WORKFLOW

-  1 Receiving Inspection
-  2 Batch / Heat Allocation
-  3 Pilgering
-  4 Cutting
-  5 Drawing
-  6 Final Annealing
-  7 Final Inspection
-  8 Hydrostatic Testing
-  9 Air Underwater Testing
-  10 Flattening / Expansion / Tensile / Micrographic Analysis
-  11 Boxing & Bundling

3 QUALITY ASSURANCE & DOCUMENTATION

-  Work-order control and routing ensure full traceability from raw material to finished product.
-  Recorded operating parameters for all critical processes, including temperature, time, pressure, and material data.
-  In-process monitoring, inspections, and calibrated equipment ensure conformance to specifications.
-  Customer surveillance readiness with open access to production, inspection, and test records.
-  Documented SOP-based testing and inspections with complete traceability and certification packages.

4 TESTING MATRIX

NON-DESTRUCTIVE TESTS

- Eddy Current Testing
- Hydrostatic Testing
- Air Underwater Testing
- Ultrasonic Testing
- Positive Material Identification

DESTRUCTIVE / VERIFICATION TESTS

- Flattening Test
- Expansion Test
- Tensile Test
- Microstructure / Grain Size
- Optical / Spectrometry Review

5 WHY C71500?

-  Copper-nickel alloy formulated for corrosion resistance in seawater service.
-  Used in piping, condensers, evaporators, air ejectors, and boiler feedwater heaters.
-  Forms protective corrosion films and performs reliably in high-velocity water environments.

C70600 | 90-10 COPPER-NICKEL

PIPE & TUBE FOR MARINE + DEFENSE

Qualification-led sourcing, controlled production and documented release for demanding shipboard seawater service.

PROGRAM OUTCOME

Repeat, traceable project deliveries

PROGRAM SNAPSHOT

MARKET

Shipbuilding and U.S. defense programs

SERVICE

Seawater cooling, condensers and heat exchangers

MATERIAL

UNS C70600 / 90-10 Cu-Ni

SCOPE

Supplier qualification through final delivery

PRODUCT

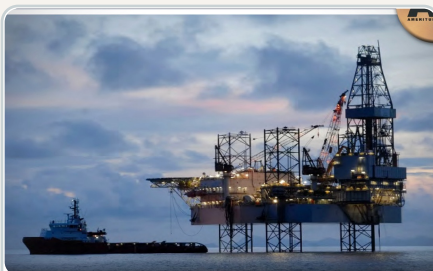
Seamless pipe, tube and project-specific forms

CONTROL

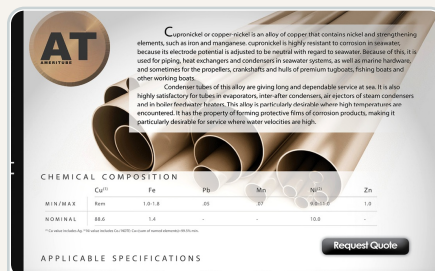
Lot traceability, inspection and documentation

THE REQUIREMENT

Marine and defense buyers required C70600 products capable of entering corrosion-critical seawater systems with consistent dimensions, verified material identity and complete release documentation. Each order had to translate end-user drawings and procurement clauses into an auditable manufacturing and inspection plan.



MARINE AND OFFSHORE SERVICE



C70600 ALLOY BROCHURE DETAIL

AMERITUBE RESPONSE

One controlled path

- Requirements review
- Qualified production source
- Inspection + NDE plan
- Traceable release package

ENGINEERING BASIS

C70600 is a nominal 90-10 copper-nickel alloy with iron and manganese additions. It is widely selected for marine piping and heat-transfer service because it combines seawater corrosion resistance, fabricability and reliable joining performance. Final suitability is established by the governing drawing, code and operating envelope.

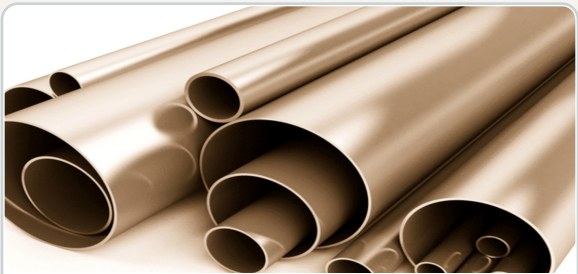
CONTROL AREA	TECHNICAL BASIS	VERIFICATION / RELEASE EVIDENCE
Material	UNS C70600; temper/condition defined by purchase order	Heat/lot-linked material certification and chemistry review
Product standard	ASTM B466/B466M or ASME SB-466 for seamless pipe/tube; ASTM B111/B111M for condenser/heat-exchanger tube when specified	Revision and supplementary requirements confirmed at contract review
Dimensions	OD or NPS, wall/schedule, length, straightness, end finish and tolerances	Calibrated dimensional inspection with recorded acceptance
Integrity testing	Hydrostatic, pneumatic, eddy-current or ultrasonic examination as required by product form and order	Test reports tied to the manufacturing lot
Traceability	Heat/lot identity maintained through processing, inspection, marking and packing	MTRs, inspection reports, packing list and certificate of conformance

EXECUTION CONTROLS

- Contract review converts drawings, defense clauses and application requirements into a controlled traveler and inspection plan.
 - Qualified sources and incoming certification checks establish material identity before release to production.
 - Forming controls address bend radius, ovality, wall thinning, surface condition and dimensional repeatability where applicable.
- Clean handling, protected ends and project-specific packaging reduce contamination and transit damage before installation.
 - Hold points and third-party or customer surveillance can be incorporated when required by the purchase order.
 - Final release reconciles traceability, inspection results, marking, quantities and documentation before shipment.



CONFIRMED C70600 PIPE INVENTORY



MARINE PIPE PRODUCT RANGE

RESULT

Accepted deliveries, repeat project experience and a documented supply path for marine and defense applications.



AMERITUBE

CASE STUDY

SA179 U-BEND BUNDLES

Large-format heat exchanger bundle program

Long-length tube sourcing, qualification, bending coordination, and delivery managed by Ameritube.

Ameritube supported a demanding industrial heat exchanger project involving SA179 U-bend bundles with complex geometry and long straight tube lengths exceeding 60 feet prior to bending. Over a 9-month project timeline, Ameritube coordinated sourcing, supplier qualification, procurement, technical review, quality verification, and delivery of customer-ready bundle components.



PROJECT SNAPSHOT

Market / Application:	Industrial Heat Exchanger Project
Material / Spec:	ASME SA-179 Seamless Low-Carbon Steel Tubing
Product Form:	Large U-bend bundle assemblies
Tube Geometry:	Long-length straight tubes over 60 ft prior to bending
Project Duration:	9 months
Scope:	Sourcing, supplier qualification, procurement, technical coordination, quality verification, and delivery
Quality Documents:	Product certification, eddy current report, dimensional report, bending report



A. THE CHALLENGE

- Long-length SA179 tubing
- Complex U-bend geometry
- Multi-stage qualification and coordination
- Schedule-sensitive delivery
- Customer-ready documentation requirements



B. AMERITUBE SOLUTION

- Qualified and coordinated the supply chain
- Managed procurement and technical review
- Oversaw testing and documentation flow
- Coordinated bending and bundle preparation
- Delivered organized, customer-ready assemblies



C. PROJECT OUTCOME

- Successful completion of a 9-month program
- Demonstrated capability in large heat exchanger bundle work
- Strong execution across sourcing and quality steps
- Delivered ready-for-installation bundle components



**Supplier
Qualification**



**Long-Length
Tube Expertise**



**Complex Project
Coordination**

SOURCING, VERIFICATION & DELIVERY OF SA179 U-BEND BUNDLES

How Ameritube coordinated long-length SA179 tubing, qualification, technical review, and customer-ready bundle delivery for a complex heat exchanger program.



1. TECHNICAL REQUIREMENTS

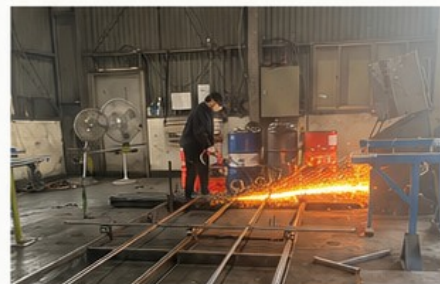
Material / Spec:	ASME SA-179 seamless low-carbon steel tubing
Product Form:	Large U-bend bundle assemblies
Tube OD / Wall:	0.750 in OD × 0.109 in wall (19.05 mm × 2.769 mm)
Tube Geometry:	Long straight tube lengths exceeding 60 ft prior to bending
Quality Verification:	Product certification, 100% eddy current testing, dimensional verification, bend inspection
Additional Controls:	Heat treatment and pressure testing coordinated per project requirements
Delivery Scope:	Customer-ready packaging, logistics coordination, and final delivery

2. PROJECT WORKFLOW

- 1 Technical review and quote development
- 2 Supplier qualification and sourcing
- 3 Procurement and production planning
- 4 Material certification review
- 5 Eddy current and dimensional verification
- 6 U-bending, heat treatment, and bend verification
- 7 Packaging and logistics coordination
- 8 Final delivery of completed bundles

3. QUALITY DOCUMENTATION

- Product test report confirming material compliance
- Eddy current test report for tubing verification
- Dimensional inspection report
- Bending inspection / bend geometry report
- Organized documentation package for customer release



4. AMERITUBE VALUE DELIVERED

- Managed a complex 9-month execution schedule
- Coordinated sourcing and qualification for a specialized bundle program
- Delivered large-format SA179 U-bend assemblies ready for installation
- Demonstrated strong project management across quality, logistics, and technical review
- Showcased Ameritube's capability in difficult heat exchanger bundle applications



Long-Length
Tube Coordination



Quality
Documentation



Heat Exchanger
Bundle Execution



CASE STUDY

Duplex SA789 U-Bend Bundles

Metalforms Ltd. | Motiva Chemical Plant Retube Project



14 U-Bend Bundles
difficult testing, bending and annealing requirements

Project Snapshot

PRODUCT

Duplex stainless U-bend bundles

MATERIAL

SA789 S31803 / S32205

SCOPE

14 U-bend bundles

END USE

Chemical plant condenser/retube service

Overview

Metalforms Ltd. required Ameritube to support a demanding duplex U-bend bundle package for a Motiva chemical plant retube project. The job required coordination of raw material traceability, supplier qualification, bending, annealing, inspection, third-party testing, and final quality documentation.

Why This Project Mattered

The bundle design required tight control over bend geometry, heat treatment, hardness, corrosion resistance, and nondestructive testing. Ameritube managed the commercial and technical supply chain and delivered a completed package suitable for customer review and plant installation planning.

Technical Control

SA789 material requirements, bend schedule conformity, heat treatment, hydrostatic testing, dimensional checks, and quality package review.

Documentation

Raw and final MTRs, PMI records, A923 testing, hardness reports, hydrostatic records, dimensional inspection, and heat treatment records.

Project Execution

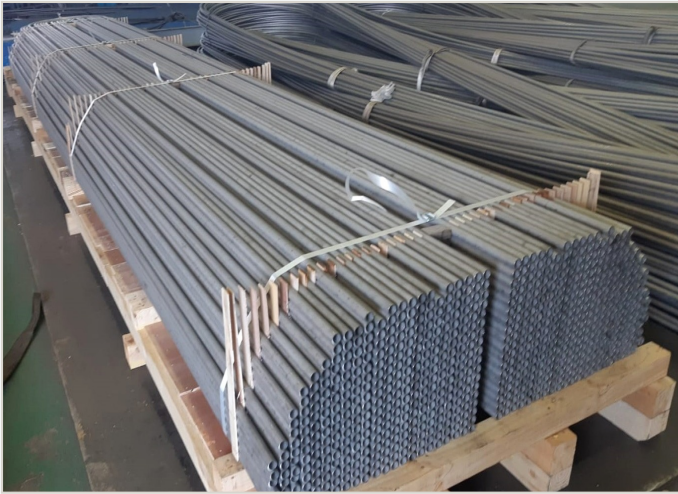
Ameritube sourced, qualified suppliers, managed inspection requirements, and coordinated delivery of a complex 14-bundle retube project.

Technical Execution & Quality Package

Duplex SA789 U-bend bundles for chemical plant condenser retube service



Manufacturing & Packaging Evidence



Technical Requirements Managed

Requirement Area	Execution / Documentation
Material / Grade	SA789 S31803 / S32205 duplex stainless tubing
Bending / Geometry	U-bend bundles produced to bend schedule and dimensional requirements
Heat Treatment	Solution annealing / electric resistance stress relief of selected U-bends and tangent length
NDE / Pressure Testing	Eddy current testing per SA-789 and hydrostatic records
Metallurgical Testing	ASTM A923 Method A and C testing, ferric chloride corrosion test, tensile, flaring, flattening, and hardness checks
Documentation	Raw/final MTRs, PMI, dimensional inspection, heat treatment records, and quality package

Quality Records Included



A923 / Corrosion



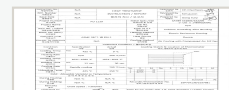
PMI



Dimensional



Hydrostatic



Heat Treatment

SA249 316/316L U-BEND BUNDLES

Controlled solution annealing, nondestructive examination and per-heat corrosion testing



PROJECT SNAPSHOT

MATERIAL	SA249 TP316/316L dual-certified welded tubing
PRODUCT	U-bend bundles for industrial-gas service
HEAT TREATMENT	U-bends plus 12-inch tangent solution annealed after bending
QUALITY	NDE reports and per-heat corrosion testing

THE EXECUTION CHALLENGE

The project required post-bend solution annealing, dual material certification, defined dimensional tolerance, supplemental SA249 requirements and documented nondestructive examination. Testing also had to be controlled by heat number, with representative samples retained after acceptance.

TECHNICAL REQUIREMENTS

- 1

Solution anneal U-bends plus 12-inch tangent after bending at 1950 F.
- 2

Meet applicable SA249 supplemental requirements, including S83 when specified.
- 3

Eddy-current testing per ASTM E426 or additional testing under SA249 S9, as required.
- 4

Provide an NDE report linked to the production material.
- 5

Perform per-heat ASTM A262 Practice A and ASTM G108 EPR testing.
- 6

Supply two 6-inch tube samples from each heat after test acceptance.
- 7

Maintain 316/316L dual certification and specified country-of-origin restrictions.
- 8

Control dimensions to the project tolerance of +/- 1/16 inch.

AMERITUBE VALUE DELIVERED

A coordinated technical package covering heat treatment, NDE, corrosion testing, traceability and dimensional acceptance.

AMERITUBE

22 YEARS OF PROJECT EXPERIENCE

LET'S REVIEW YOUR NEXT REQUIREMENT

Share your alloy, dimensions, specifications, testing requirements, quantities and delivery schedule. Ameritube will help define a practical manufacturing and supply path.

AMERITUBE LLC

1000 North Highway 77 | Hillsboro, TX 76645
254.580.9888 | ameritube.net

Copper | Copper-Nickel | Brass | Carbon Steel | Stainless Steel | Duplex