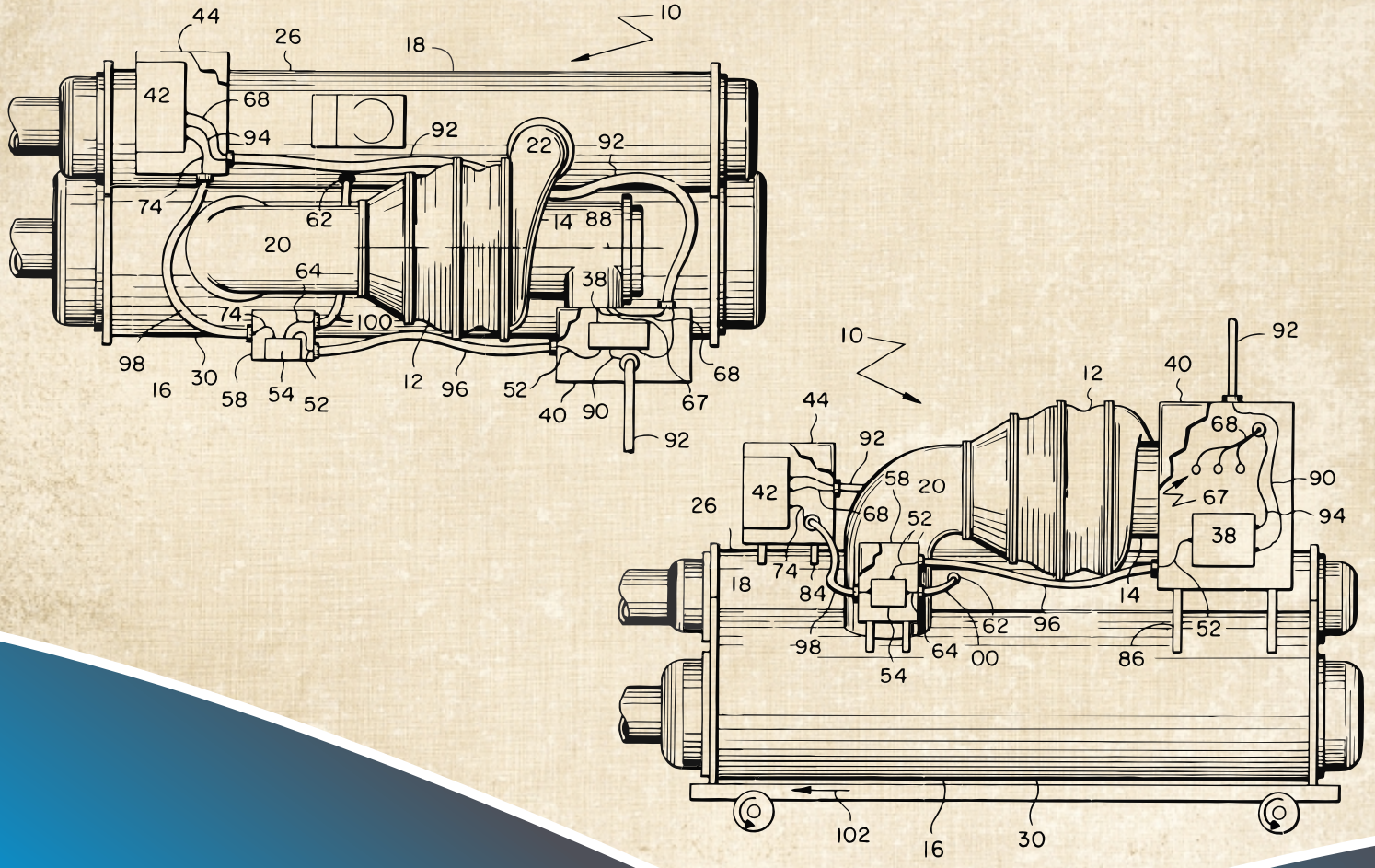
WATER-COOLED CHILLER SERVICES



advancoat
CORROSION SPECIALISTS

SOUNDS ATTENUATION SOLUTIONS

Custom Sound Package, reduction of - 18 dB

ADVANCOAT consultants can work with you to design and install a custom Sound Package to specifically reduce chiller noise in sensitive environments. Design engineers specify factory sound jackets to reduce chiller noise based on the chiller's "sound power". This does not take into account the mechanical room construction, chiller positioning, and other factors that make up what the whole environment truly contributes, known as "sound pressure".

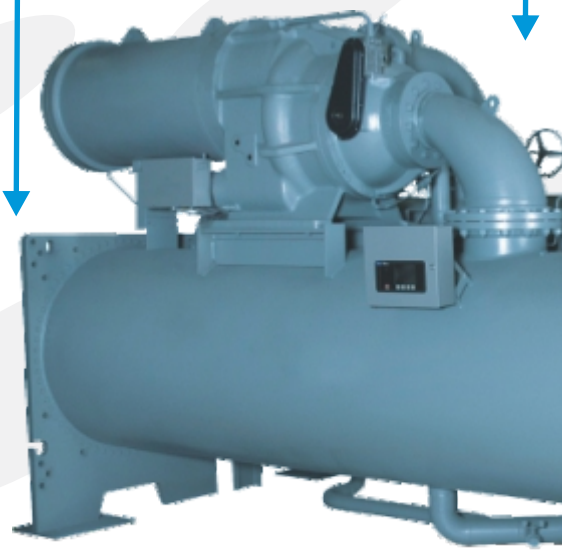
The misunderstanding of sound power and sound pressure results in either too much attenuation or too little attenuation. Most factory options only reduce sound power by 3 decibels (dB); noise sensitive applications usually require more attenuation that that. ADVANCOAT can provide custom attenuation from 3 dB up to 20 dB.

Our engineers will analyze the sound pressure of the mechanical room and model its acoustics in order to provide the appropriate amount of attenuation desired. This saves the building-owner time and revenue compared to the exponential prices of installed attenuation equipment.

COLD SURFACES INSULATION

Original failed insulation removed

New insulation installed



Proper insulation of cold surfaces is critical for chillers. Poor insulation results in loss of cooling BTUs. The cooling system will then have to spend more energy by the increased load due to the loss of efficiency. This results in higher energy costs, an over-worked system, leading to quicker break down of equipment.

ADVANCOAT will install new, replacement, or custom insulation for chillers of any size and brand. Our engineering department can calculate and design insulation packages for special applications where standard factory insulation is not enough.

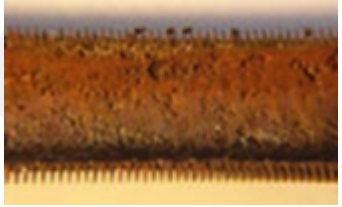
Below are some features of what it is we can offer to meet your needs:

- Fiber-free
- Formaldehyde-free
- Low VOC and non-particulate formulation protects indoor air quality
- Thickness of ¾", 1", 1.5", 2", 3" and 4"
- R-value from 4.2 to 16
- Built-in vapor retardant barrier eliminates need for additional vapor retarder
- Microban® antimicrobial product protection provides exceptional mold resistance

EDDY CURRENT TESTING (ECT)

ECT is the best method for the inspection of non-ferrous tubing. It can detect and size defects affecting tubing such as erosion, baffle cuts, pitting, and cracking. It is a nondestructive test technique based on electrical currents interacting with the material being inspected. Most of today's high efficiency chiller heat exchangers use internally and externally enhanced tubes and thinner tube-wall thickness. These new designs make it is more important than ever to monitor tube condition for corrosion or mechanical wear. This new generation of internally enhanced tubes wall thickness range from 0.019″ to 0.028″, which is about 30% to 50% thinner to what was used in older generations of chillers. Internally, enhanced tubes are harder to clean, making them more prone to under deposit corrosion resulting in quicker failures. Periodic eddy current inspections are an important tool to prevent tube failure and possible irreversible chiller damage.

Examples:



Enhanced condenser tube I.D. corrosion

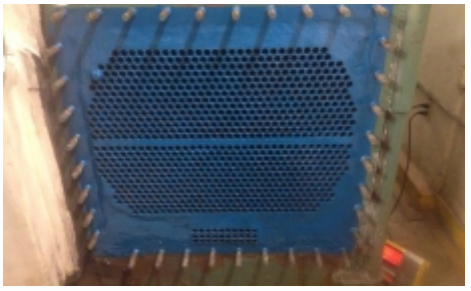
Smooth bore corrosion due to poor water treatment

Using ASNT TC-1a levels II and III technicians with excellent knowledge of the equipment being inspected, we provide:

- Fast and accurate results
- Simple and informative test reports
- On the spot reporting - allowing for a quick action in any situation

PROTECTION & RECONSTRUCTION - TUBE-SHEET, END-BELL, & MARINE WATER BOX

Tubesheet showing severe corrosion due to poor water treatment



Tubesheet rebuilt with High Build System

Same tubesheet opened for annual inspection, no defects were found

A leak free joint between the tube and tube-sheet is critical for the proper operation of any chiller. Loss of tube-to-tube-sheet joint integrity will lead to water intrusion of the refrigerant circuit causing severe damage to the internal components of the chiller. Failures are usually caused by corrosion and/or erosion of the tube-sheet material, improper rolling of the tubes during installation, and mechanical stresses during operation.

ADVANCOAT has engineered a permanent solution, the High-Build Solution, to eliminate chiller tube-sheet corrosion.

Our High-Build application system is unique and provides the greatest protection at a competitive price supported by a 5-year warranty.

The metal surfaces are dry blasted to SSPC-SP5/NACE 1, white metal finish, and a High-Build polymeric ceramic coating is applied at a minimum thickness of ¼" beyond the edge of the tubes, completely encapsulating the tube O.D. and tube-sheet. Other wet surfaces like the end cap and marine water box receive a minimum coating thickness of 25 mils for protection.

The comprehensive nature of our High-Build system adds unparalleled strength and integrity to the tube-to-tube-sheet joint; the High-Build system is designed to withstand stresses associated with physical abuse, impact, and chemical attack, protecting your investment for the long-term life you come to expect.

Product Benefits

1. The products used are environmentally friendly and odorless.
2. CeramAlloy CP+AC Paste become a metal hard ceramic-like compound when cured.
3. The products used have a Tensile Shear Adhesion on steel of over 4,000 psi [highest in the industry]
4. The products used prevent under film corrosion.
5. 5 - Year Warranty

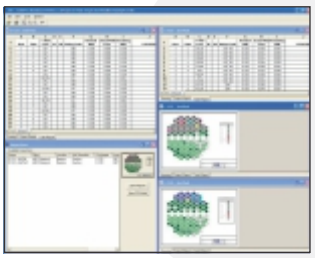
Tubesheet End Cap process

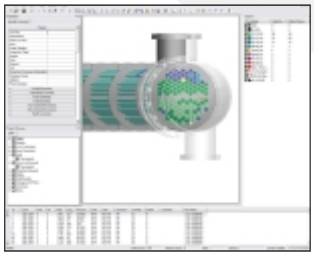
1- Original end cap condition

2- After dry blasting

3- Finished product

Advanced ECT Reports

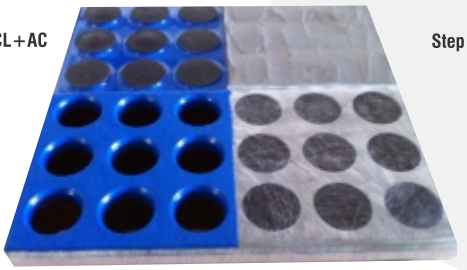




SAMPLE PICTURE OF FINISHED PRODUCT

Step 1: CeramAlloy CL+AC

Step 2: Build up CeramAlloy CP+AC



Step 4: Top Coat of CeramAlloy CL+AC

Step 3: Grind Down to Expose Plugs

SPECIALIZED COATINGS

Let ADVANCOAT be your corrosion solutions provider. We are factory trained and represent different manufactures in order to provide the most appropriate and competitive solution for each unique application. Popular factory coatings are not always the most appropriate answer to handle our corrosive environment. For protecting new or old equipment, ADVANCOAT can provide a range of solutions to meet your expectations, offering the best value in the industry. Contact the ADVANCOAT consultants today to discuss your specific application.

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"ELIMINATING CORROSION, ONE JOB AT A TIME"

With over 40 years of combined experience in HVAC/R corrosion protection and indoor air quality (IAQ) solutions ADVANCOAT is the preferred choice of manufacturers, contractors and owners to protect their investment against the environmental agents that deteriorate and reduce the life of the equipment, increase maintenance cost, cause IAQ problems and diminish efficiency and capacity.

As an independent corrosion specialist company, we are not restricted to using only one product. We offer an array of products to meet the individual needs of each customer and thus we can tailor a solution to conform to the project requirements and budget. We are certified by each manufacturer to apply their products as per their instructions to ensure the highest level of workmanship, which we guarantee.

Each product we represent has a distinct advantage and characteristic that makes it suitable for certain applications. Therefore, we are able to select the best product depending on the customer's needs. All the products we offer are tested and graded under ASTM and DIN standards by independent certified laboratories. These tests allow for a fair comparison between products and help us to provide the right solution for each customer.

Some of the services we offer are:

CHILLERS
- Tubesheet Reconstruction and Coating
- End-Cap and MWB Reconstruction and Coating
- Eddy Current Test
- Cold Surfaces Insulation
- Sound Attenuation

COOLING TOWERS

Reconstruction and Coating of:
- Basin, Sump, and Hot Deck
- Structural Elements
- Side Panels
- Drift Eliminator Supports
- Fan and Fan Shroud

PIPING
- Recondition and Coating
- Carbon-Fiber Wrapping Reinforcement
- Insulation

PUMPS
- Liner and Impeller Coating
- Casing and Motor Coating
- Reconstruction of Corroded Areas

AIR HANDLERS
- Drain Pan Reconstruction and Coating
- Fan Components Reconstruction and Coating
- Anti-Microbial Coating
- Insulation Replacement
- Cabinet Reconditioning and Coating

We also provide services to:
- Air-Cooled Chillers
- Packaged Units
- Vertical and In-line Fans
- Steel Structural Beams
- Concrete Issues Due to Rebar Corrosion
- and more...

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